PSYCHOLOGY AND MENTAL HEALTH

NOTES

SECOND EDITION

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HIGH-YIELD NOTES

FOR THE TIME-POOR
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Table Of Contents:

What's included: Ready-to-study summaries of mental health and psychiatry presented in succinct, intuitive and richly illustrated downloadable PDF documents. Once downloaded, you may choose to either print and bind them, or make annotations digitally on your iPad or tablet PC.

Free Bonus: 'Psychiatry' chapter of Toronto Notes for reference and further detailed reading.

File List:

PSYCHOLOGY

Definitions: (You will not be asked for definitions in the exam) – (Not by Anna Marie Babey anyway)

- **Affect:**
  - **"The Experience of a Feeling**/Emotion that's **NOT Related to Bodily Changes**."
- **Emotion:**
  - **"A Mental *And* Physiological reaction** to stimuli, experienced as **Affect *plus* Physiological Changes** in the Body."
- **Feelings:**
  - **"A partly mental, partly physical response** to a person, thing or situation, **marked by pleasure, pain, attraction or repulsion."**
- **Arousal:**
  - **"The Visceral (Body's) Response to stimuli**; Including Autonomic Nervous System & Neuro-Endocrine Activity."
- **Cognition:**
  - **"The process of knowing**, including both awareness & judgement."
- **Behaviour:**
  - **"The Active Response to Stimuli** (Posture, Facial Expression, Speed, Eye Movement, Vocalisation, etc)"

- **3 Phases/Components/Types of Emotion:**
  1. **Primary Emotions:**
     - "What is Felt 1st" – The 1st Instantaneous Emotion - (Usually the Simplest/Primitive Emotions)
     - Generally independent of culture (Universal)
       - Joy
       - Sadness
       - Fear
       - Anger
       - Surprise
  2. **Secondary Emotions:**
     - "What is Felt 2nd" – What the Primary Emotion Leads to – (Slightly more Complex Emotion)
     - Generally a Combination of Primary Emotions + Context.
       - Affection/Love
       - Lust
       - Contentment
       - Disgust
       - Envy
       - Guilt
  3. **Tertiary Emotions:**
     - An Aggregate of Primary and/or Secondary Emotions – (The most Complex Emotions)
     - Generally the result of a Decision, taking into account Many Factors.
       - Satisfaction
       - Hope
       - Frustration
       - Gloom
       - Contempt

- **Physiological Context of Emotion:**
  - The physiological state of a person & body can influence resulting emotions & emotional reactivity.
    - Well-being
    - Depression
    - Calm
    - Tense
    - Fatigue

Consciousness & Emotion:

- Emotional Experience is thought to underpin Consciousness. (Ie. Ability to "feel" is being "truly alive")
- **Consciousness:**
    - **Core Consciousness:**
        - Sense of 'Here & Now'. "Feeling"
    - **Extended Consciousness:**
        - Ability to Recall Past Experiences, Learn & Plan for the Future.

- **Emotions affect the way we respond to stimuli:**
    - People with 'Alexithymia' can't feel emotions. They experience:
        - Difficulty linking a Stimuli to an Experience
        - Serious Difficulty with Decision-Making
        - Difficulty Understanding Emotions
        - Difficulty Describing Emotions
        - Minimal Imagination
        - Feeling 'cold'/'alouf'

- **Rational Brain Vs. Emotional Brain:**
    - Higher Cognitive Processing & Decision-Making relies on Co-Operation of the "Rational Brain" & the "Emotional Brain".
    - Anatomically, the "Emotional Brain" is favoured. (Higher number & organisation of Synaptic Connections)
    - Relative Contributions of both "Rational" & "Emotional" Brains depend heavily on Context.
        - Eg. Triage – Letting someone die to save another's life.
            - Saving the one that can be saved is consistent with the "Rational Brain"
            - However, letting someone die goes against the "Emotional Brain".

Panic Disorder:

- Overwhelming wave of Fear & Anxiety:
    - Not necessarily associated with apparent trigger (Can be spontaneous)
- NB: Direct administration of CCK (Cholecystokinin) to brain can cause Panic-Attack Symptoms

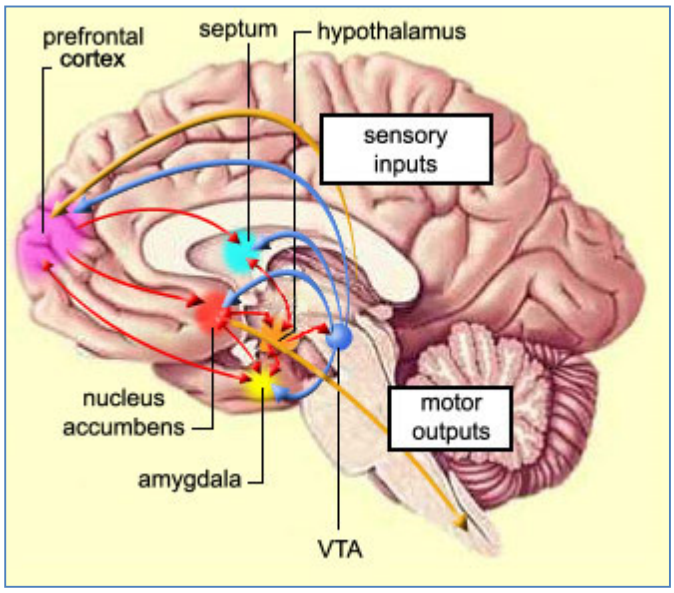
Aggression:

- **Affective Aggression Vs Predatory Aggression:**
    - Predatory aggression is related to feeding behaviour & isn't accompanied by sympathetic physiological response with which affective aggression is associated.
- **Associated Structures:**
    - Cerebral Cortex
    - ***Amygdala***
    - ***Hypothalamus***
    - Periaqueductal Grey-Matter (PAG)
    - Ventral Tegmental Area (VTA)

  IE. "Aggression is controlled by a neural pathway from the Amygdala through the Hypothalamus, PAG & VTA.
- **Neurotransmitter:**
    - Serotonin
- **Possible Hormonal Link:**
    - Adenosine.

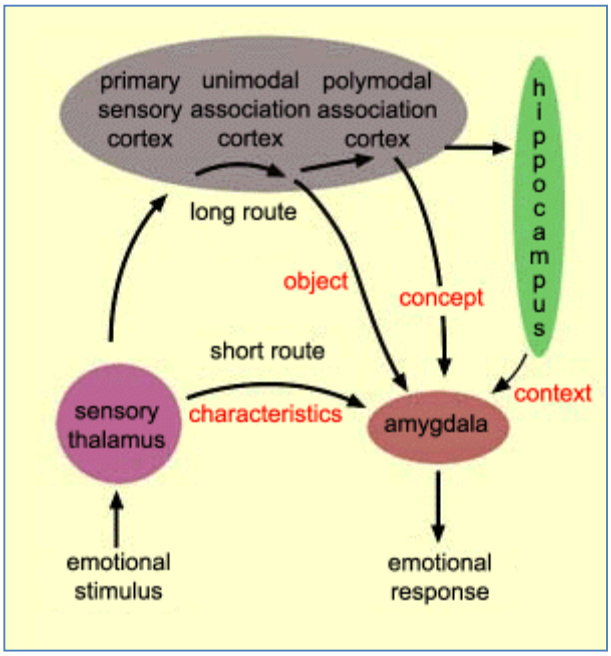
Pleasure & Reward: The 'Reward Circuit':

- **Brain Structures Involved:**
    - ***Ventral Tegmental Area (VTA)***
    - ***Nucleus Accumbens***
    - Amygdala
    - Pre-Frontal Cortex
    - Thalamus
- **Neurotransmitters Involved:**
    - ***Dopamine*** **-** VTA & Nucleus Accumbens



Fear:

- **Brain Structures Involved:**
  - Thalamus →
    - Amygdala
  - Thalamus →
    - Primary Sensory Cortex
    - Association Cortices
- **Long & Short Pathways:**
  - **Long:**
    - Info processed by higher brain centres & Hppocampus.
    - Results in a more complex response
  - **Short:**
    - Info sent straight to Amygdala
    - Results in a basic response (Recoil from stimulus/Freeze)
    - **Advantage =** *No cortical processing means quicker reaction times → ↑Survival.*
- **Process of Fear:**
  - 1.Sensory Info enters brain → Thalamus
  - 2.Thalamus Sends info to Amygdala (Via Long/Short Route)
  - 3.Amygdala activates Visceral Responses through Hypothalamus
  - 4.Amygdala Activates Ventromedial Pre-Frontal Cortex (Allows conscious recognition of the Emotion)
  - 5.Visual Cortex also inform Prefrontal Cortex about the Threat.



Personality:

What is Personality?:

- "Qualities of an individual that are shown in their way of behaving in a wide variety of circumstances.
- Ie. A mental picture of someone's mind that allows us to predict the way they behave.

Why it Matters:

- Doctors have to be able to influence a patient's behaviour to:
  - Change their lifestyle
  - Cooperate with treatment
  - Etc.
- Doctors also have to be able to influence other health professionals.

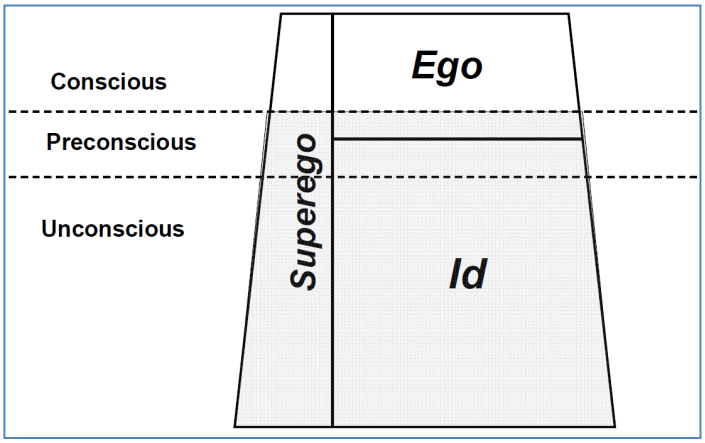
Personality Theories:

- **Trait Theory:**
  - **Synopsis:**
    - People can be described in terms of enduring ***underlying qualities***.
    - These qualities are thought to be:
      - Independent
      - Stable
      - Have a Neurological & Biological Basis
  - **"State" Vs. "Trait":**
    - State = How you are right now.
    - Trait = How you tend to be over your whole life
  - **Traits include:**

Moody	Sociable	Reserved
Rigid	Easygoing	Careful
Pessimistic	Aggressive	Peaceful
Passive	Optimistic	Reliable
Thoughtful	Anxious	Impulsive

    - **Hans Eysenk's Version:**
      - Introversion Vs. Extraversion
      - Neurotic Vs. Emotionally Stable
      - Psychotic Vs. Impulse Control
    - **The "5 Factor Theory":**
      - Neuroticism (Worried, Highly Strung)
      - Extraversion (Sociable, Affectionate)
      - Openness (Independent, Creative)
      - Agreeableness (Good-Natured, Trusting)
      - Conscientiousness (Reliable, Organised)
  - **How is it Measured?:**
    - Self-Report Questionnaires – Identify stable, enduring personality traits.
      - Objective
      - Lots of Yes/No Questions about Feelings & Behaviour.

- **Psychoanalytic & Developmental Theories:**
  - **Synopsis:**
    - Personality is a compromise between ***Instinctive Biological Urges*** Vs. ***Social Prohibitions***.
    - Consists of the **3 Freudian** aspects:
      - The "Id" ("It") Desire
      - The "Ego" ("I/me") Choice
      - The "Superego" ("Over me") Reality/Morality

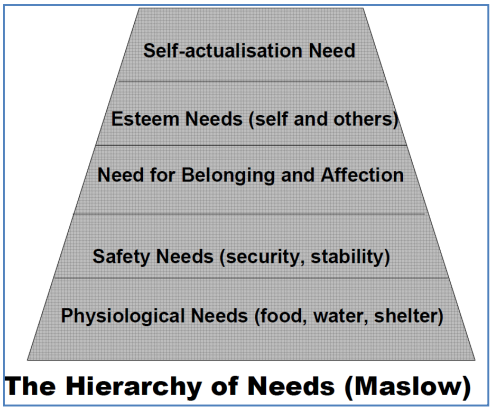


    - Consists of the **5 Stages of Desire** (or 'Libido'):
      - Oral Stage
      - Anal Stage
      - Phallic Stage
      - Latency
      - Genital Stage

      NB: Personality Problems result from failure to resolve conflicts between 'Desire' & 'External Constraints'.
    - Involves the concept of **Defences:** (Keeping intolerable fears/desires out of consciousness)
      - Denial
      - Repression
      - Projection
      - Rationalisation
      - Etc.
    - Involves the concept of **Unconscious Re-Enactment:**
      - One's thoughts/feelings about **Past Relationships** (eg. With parents) get re-enacted in **Present-Day Relationships** (eg. With partners).
    - Involves the **Bowlby & Attachment Theory:**
      - "The primary instinct isn't sexual, rather the desire for ***closeness, comfort & protection.***
      - "Personality can be traced back to the ***Mother-Child Relationship***"
      - "Your childhood attachment influences the way you conduct relationships as an adult.
  - **How is it Measured?:**
    - Aim: To Identify Unconscious Wishes, Fears & Defences:
      - Detailed Biographical History
      - Projective Tests
      - Dreams
      - Transference (Feelings from early childhood relationships are "transferred" to present day relationships.

- **Social-Learning Theory:**
  - **Synopsis:**
    - Behaviour is driven by:
      - **Reward & Punishment**.
      - **Beliefs & Expectations**
    - We learn from Direct & Indirect Experience (observing others)
      - Observational Learning
      - Social Rewards for Behaviour
      - Self Efficacy – Comes from experiences of success & social reinforcement.
    - Encompasses the '**Locus of Control'** theory:
      - Internal Locus – you are responsible for your feelings/actions/destiny.
      - External Locus – the actions of others are the reason for your feelings/actions/etc.
  - **Where Beliefs & Expectations Come From:**
    - Experience (Reward & Punishment)
    - How people have treated us (Past & Present)
    - Social Role (Race/Class/Gender/Stigma)
  - **How is it Measured?**
    - Clinical Interview - Subject is asked to clarify his/her:
      - Beliefs
      - Behaviour Patterns
      - Expectations about themselves.

- **Humanistic Theory:**
  - **Synopsis:**
    - Concerned with:
      - Present & Future (Not Past)
      - The Person's Motivation
      - The Person's Potential (Not their deficits/flaws)
      - The Person's Individuality (Uniqueness)
    - "Everyone has the capacity to fulfil their own potential.
    - Concerned with T**he Hierarchy of Needs:**
      - NB: one can only achieve the 'Self Actualisation Need' (ie. Fulfilment) after they meet the first 4 needs.



The Hierarchy of Needs (Maslow)

  - **How is it Measured?:**
    - **Aim:** to understand a person's experience & self-concept.
    - **How: Clinical Interview:**
      - Person's self-description
      - Observation of Non-verbal Communication
      - Empathy

Psychiatry & Personality Disorders

Personality Disorders:

- **Overview:**
  - Lifelong abnormal patterns of behaviour/relationships leading to very poor functioning.
  - NB: Some may be very successful in limited areas, but on the whole, they function poorly & are a burden on other people.
- **3 Clusters of Personality Disorders:**
  - **Cluster A: "Odd":**
    - Paranoid
      - Secretive, suspicious, you're either with me or against me, bears grudges
    - Schizoid
      - Detached, solitary, unemotional
    - Schizotypal
      - Magical & superstitious thinking, socially anxious, solitary, odd emotional expression
  - **Cluster B: "Dramatic":**
    - Antisocial
      - Lacking in empathy, manipulative, deceitful, criminal, impulsive, violent
    - Borderline
      - Instability of mood, identity, personal relationships. Impulsive self harm, drug/alcohol abuse
    - Histrionic
      - Theatrical, seductive, dramatic. Superficial relationships
    - Narcissistic
      - Arrogant, manipulative, preoccupied with power & image, needs to be admired
  - **Cluster C: "Anxious":**
    - Avoidant
      - Fears criticism and rejection; avoids risk taking in relationships and employment
    - Dependent
      - No initiative or autonomy; great reliance on supportive relationships; cannot express disagreement
    - Obsessive-Compulsive
      - Perfectionist, rigid, miserly, resists change, needs to be in control, cannot delegate
- **Another Category – Type A Personality:**
  - Impatient
  - Aggressive
  - Angry
  - Competitive
  - Hard Working

Thinking & Language

Communication:

- **What is it?:**
  - The exchange of ideas between 2 or more people.
  - Involves *Transmission* and *Response/Feedback*.
  - Encompasses Verbal & Non-Verbal elements.
  - NB: Communication doesn't necessarily require speech or language (think how babies communicate)
- **Importance of Communication:**
  - Share Thoughts/Feelings
  - Express Identity
  - Build Relationships
  - Conduct Business
  - Teach & Learn
- **Aspects of Communication:**
  - **Language (Expressive & Receptive)**
  - **Speech**
  - **Voice**
  - **Fluency**

Language:

- **What is it?:**
  - The *Coding* of meaning into an arbitrary system of symbols, words, sentences & texts in order to Communicate (Convey ideas & feelings).
- **4 Components of Language:**
  - **Form:**
    - **1. Phonology** (The sounds used to make words.)
      - 'Phoneme' – Consonant/Vowel SOUNDS that carry meaning (F,M,C – Fan, Man, Can)
    - **2. Morphology** (Proper use of prefixes/suffixes/plural/tense – past, present & future)
      - 'Free Morphemes' – Stand alone as a word (eg. Ball, run, yellow, was, the)
      - 'Bound Morphemes' – grammatical units attached to words (eg. Ing, ed, ly, s, ation)
    - **3. Syntax** (Proper Word Order – Noun→Verb→Object→Adverb)
  - **Content:**
    - **4. Semantics** (Meaning – Linguistic representation of objects/ideas/feelings/etc.)
- **NB: Morphology + Syntax = Grammar**

Speech:

- **What is it?:**
  - The way the sounds of the words are produced.
- **3 Components of Speech:**
  - **1. Phonemes** – Consonant/Vowel *SOUNDS* that carry meaning (F,M,C – Fan, Man, Can)
  - **2. Syllables** - Groups of phonemes with core Vowel *SOUNDS* (ba-by; mu-ffin; en-vel-ope)
  - **3. Prosody** - Rhythm of spoken language (Pitch, stress, intonation, intensity & duration of sounds)
- **Fluency:**
  - The 'flow' of speech. (Rate/Timing/Rhythm)

Voice:

- **What is it?:**
  - Production of Sound using:
    - The Respiratory System (Moving air)
    - The Larynx (Vibration)
    - The Vocal Tract (resonance)
- **Voice Characteristics:**
  - Pitch
  - Loudness
  - Quality, Tone.

Modes of Communication & Language:

- **Verbal Vs. Non-Verbal:**
  - **Verbal/Written:**
    - Pragmatics (Refers to language ***use*** rather than structure.)
      - Context, Conversational Rules/Conventions, Cultural Rules/Conventions, Politeness, Bluntness, Literal or Non-literal.
    - Language
    - Speech
    - Voice
    - Fluency
  - **Non-Verbal:**
    - Body language
    - Facial expression
    - Gestures
    - Intonation (Pitch, Tone, Stress, Timing, Rhythm, Volume)

Process of Communication:

- **Speech:**
  - Linguistic Encoding – Encode meaning into words/sentences.
  - Translation of Linguistic Code into a Motor Plan → Sequenced & Coordinated movement of:
    - Respiratory Muscles (For Airflow through larynx)
    - Laryngeal Muscles (Phonation & Voice)
    - Tongue, Lips, Palate & Jaw (Articulation)
- **Hearing & Comprehension:**
  - Transduction of Sound Waves into Electrical Impulses & Interpretation of Meaning by the Brain.
- **Language:**
  - **Receptive Language:**
    - Understanding & Comprehension of Language we hear (or Read)
  - **Expressive Language:**
    - The *Production* of language (Usually Spoken; Sometimes Written)

Stages in Development of Communication Skills in Children:

- **Infants (6-12 months):**
  - **Speech Development:**
    - Babbling (repetition of syllables – No Meaning)
  - **Language Development:**
    - Understand 3-50 words/phrases.

- **Toddlers (1-2 yrs):**
  - **Speech Development:**
    - First Words.
    - Develop a Vocab of up to 200 words.
  - **Language Development:**
    - Understand 50-300 words
    - Use of Words to Communicate Needs.
    - Request Information (Expressive Language) & Answer Questions (Receptive Language)

- **Toddler (2-3yrs):**
  - **Speech Development:**
    - Develop a Vocab of up to 1000 words
    - Master the 'Early 8' Speech Sounds: (M, P, B, W, D, N, Y, H)
  - **Language Development:**
    - Understand Directions
    - Listens to stories
    - Understand Specific Questions (Who/what/where/why)
    - Maintain & Extend Conversations

- **Early Childhood (3-5yrs):**
  - **Speech Development:**
    - Develop a Vocab of over 2000 words
    - Master the 'Middle 8' speech sounds: (ng, k, g, t, f, v, ch, j)
  - **Language Development:**
    - Understand up to 10,000 words.
    - Develop Complex Sentence Structure
    - Learn Polite forms of Language Use (Pragmatics)

- **Primary School Years (5-12yrs):**
  - **Speech Development:**
    - Vocab becomes more abstract
    - Master the 'Late 8' speech sounds: (sh, zh, s, z, l, r)
    - Master Multisyballic words (Eg. Hospital, spaghetti)
    - Master Consonant Clusters (Eg. Skr)
    - Speech should be Error-Free by 8 yrs.
  - **Language Development:**
    - Understand more complex & abstract forms of language:
      Ie. Stories, Explanations, Jokes, Riddles, Instructing.

- **High School Years (13-18 yrs):**
  - **Speech Development:**
    - Vocab exceeds 10,000 words.
  - **Language Development:**
    - Understand even more Complex & Abstract forms of language:
      Ie. Argumentation, Persuasion, Debate, Satire (irony, sarcasm & ridicule).
    - Able to use complex, literate language for Academic Writing

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Communication Defects:

Origins/Causes of Communication Defects:

- **Acquired:**
  - **Due to:**
    - Hearing Impairment
    - Head injury
    - Meningitis
- **Congenital:**
  - **Due to:**
    - Cleft Lip/Palate
    - Craniofacial Abnormalities
    - Syndromes (Eg. Down's)
    - Intellectual Disability
- **Developmental:**
  - **Due to:**
    - Parental Neglect
    - Social Deprivation

Types of Communication Deficits:

- **Receptive Language Delay:**
  - Poor understanding of words/questions/comments
  - Can't follow simple instructions
  - Can't comprehend a conversation/joke/story
  - Rely on context, rather than what is said.
- **Expressive Language Impairments:**
  - Limited Vocab or Word-Finding Difficulties
  - Omission of Grammatical Morphemes (Eg. "He swimming beach" – missing 'is', 'at' & 'the')
  - Confused Word Order
  - Difficulty conversing
  - Difficulty constructing a text (story/essay/explanation/arguments) (Oral/Written)
- **Pragmatic Impairments:**
  - Mismatch between context & what is being communicated (Eg. A stranger tells you all about his personal problems while waiting for the bus)
  - Problems with Conversation Management (eg. Irrelevant to the topic, ignore questions, interrupt)
  - Problems with Non-Verbal Communicaiton (eg. Eye contact; Poor interpretation of facial expression)
- **Speech Impairments:**
  - Difficulty producing a sound (Vowel/Consonant) accurately.
    - Eg. 'th' for 's'/'z'
    - Eg. 'w' for 'r'
  - Imprecise speech (Slurred, Disrupted Rhythm, Effortful)
  - Omission of Syllables (eg. 'puter' for 'Computer')
- **Voice Impairments:**
  - Quality Issues (Hoarseness/breathiness)
  - No Voice
  - Pitch too high/low
  - Pitch Breaks (eg. 'Blowouts')
- **Fluency Impairments:**
  - Non-Fluency (Hesitations, unusual rhythm/intonation, slow)
  - Stuttering:
    - Repetitions
    - Prolongations
    - Blocks

Red Flags in Speech & Language Development:

- **Speech Impairment:**
  - Omission of sounds from beginning/middle of words @ >2yrs
  - Unusual sounds @ >2yrs
  - Unintelligible (impossible to understand) even to family members @ >3yrs
  - Any speech errors @ >5yrs
- **Language Impairment:**
  - **Early Years:**
    - Not attending to sounds @ >4mths
    - Not responding to naming of familiar objects @>18mths.
    - Not Speaking by 2yrs
    - No simple sentences by 2.5yrs
  - **Preschool:**
    - Persistent poor grammar @ <4yrs
    - Not listening to/comprehending simple picture-book stories @<4yrs
    - Poor social skills/behaviour problems @<4yrs
  - **School Age:**
    - Can't provide explanations @<5yrs
    - Unable to stay on topic
    - Learning difficulties at school
    - Poor social skills/behaviour problems

Memory & Intelligence

Memory:

- **Sensory Memory:**
  - **Iconic Memory:**
    - Visual signal held briefly in memory.
      - Eg. Blurring of fast moving objects into 1 object – Fan Blade.
  - **Echoic Memory:**
    - Auditory signal held briefly in memory.
      - Eg. Listening to a lecturer & writing down what they're saying.

- **Short Term (Working Memory):**
  - **Properties:**
    - Is Conscious
    - Is Active
    - Has a Limited Capacity (≈7 'element' limit)
    - Is Short-Lived (≈9-12 Seconds unless rehearsed)
  - **3 Components:**
    - **1. Phonological Loop:**
      - Holds Verbal Material
      - Involves Left Parietal Lobe
      - 'Chunking' allows more to be packed into each 'Element'.
      - Info is Short-Lived (Surface-learned) unless **Rehearsed:**
        - Maintenance Rehearsal
        - Elaborative Rehearsal
        - Integrated with previous info
        - Previous info is Accommodated.
      - Rehearsal transfers info from Surface to **Deep Learning.**
      - Info Stored here is Disrupted by Verbal Activity (Eg. Speaking)
    - **2. Visiospatial Sketchpad:**
      - Holds Spatial Information (Usually conveyed by Vision)
      - The 'Mind's Eye'
      - Involves Right Parietal Lobe
      - Info Stored here is Disrupted by Spatial Activity (Eg. Pointing)
    - **3. Central Executive:**
      - The 'Boss' of the Phonological Loop & Visiospatial Sketchpad.
      - The 'Core' of the Working Memory System.
      - Involves the Frontal Lobes of the Brain.
        - Frontal Lobe Damage → 'Dysexecutive Syndrome' – loss of the ability to Plan, Make Decisions & Solve Problems.
        - Eg. Cook who could remember recipes & cooking techniques but couldn't prepare a meal.

- **Long Term Memory:**
  - **Entry into LTM depends on the Level of Processing:**
    - Info from Working Memory that has been 'Encoded'/'Rehearsed'/'Integrated'/ 'Accommodated' enters Long-Term Memory.
    - Info becomes organised & therefore easier to retrieve.
    - Understanding = Systematic Arrangement of Knowledge
  - **Consolidation (Creating Long-Term Memories):**
    - Requires Structural Changes @ the Synapse
    - Takes Time – (Hence why concussion victims can't remember events directly preceding the incident because those memories were still being 'formed')
  - **LTM's Stored In:**
    - *Hippocampus
    - Para-Hippocampal Regions & Amygdala (Medial Temporal Lobe)
    - Thalamus + Hypothalamus
    - Areas of Cerebral Cortex
  - **'Primacy Effect':** Words at the start of a list are recalled better than those in the middle.
    - Words are transferred to Long-Term Memory
  - **'Recency Effect':** Words at the end of a list are recalled better than those in the middle.
    - Words are held in Working-Memory.
  - **2 TYPES OF LONG-TERM MEMORY:**
    - **Explicit (Declarative):**
      - Remembering Facts/Words/Ideas/Concepts/Events
      - Is Conscious – Can be consciously recalled.
      - **Semantic Memory:**
        - Encyclopaedic information (Facts)
      - **Episodic Memory:**
        - Specific Events in Time & Place.
        - Autobiographical (sense of self)
    - **Implicit (Non-Declarative):**
      - Procedural Memory:
        - Walking
        - Driving a car
        - Doing Algebra
        - How to get Home
      - Is Unconscious – Can't be consciously recalled, BUT Does Influence Thought & Behaviour.
  - **Permanency of Long-Term Memory:**
    - Memories are forgotten at a rate of 6% per year.
    - The Point is We *DO* Forget (And not due to retrieval issues)
  - **Seven 'Sins of Memory' – (Types of Memory Deficits):**
    - **1. Transience**
      - – Memory 'Fade'
    - **2. Absent-Mindedness**
      - – Brushing teeth when already brushed them
    - **3. Blocking**
      - – When a memory is on the 'Tip of the tongue'.
    - **4. Misattribution**
      - – Where you Misremember where you saw/heart something, or even if.
    - **5. Suggestibility**
      - **-** Where someone suggests that you saw/heard something (when you didn't) and you 'remember' seeing/hearing it.
    - **6. Bias (Negative Bias)**
      - **-** Tend to recall only the Negative Things.
    - **7. Persistence**
      - - Remember a *Single Failure* rather than multiple successes (eg. Post Exam Briefings)
    - ...**8. Confabulation –** When you elaborate on a memory.

Intelligence - Theories:

- **"g" ('General Intelligence'):**
  - 'g' is biologically based
  - **'g' is the Primary Factor.**

- **Factor Theory**
  - **Secondary Factors Exist:**
    - g_f : Fluid intelligence
    - g_c: Crystallised intelligence
    - P_v: Visualisation
    - g_r: Retrieval capacity/general fluency
    - g_s: Cognitive speed factor

- **Theory of Multiple Intelligences:**
  - **7 Intelligences:**
    - **Linguistic:** - Good with words/dates/names/places.
    - **Logical-Mathematical** - Good with numbers/abstract/puzzles/logic/computers
    - **Spatial** - Good with pictures/directions/jigsaws/construction/drawing
    - **Musical** - Good with sounds/notes/rhythms.
    - **Bodily-Kinaesthetic** - Good with motor/sports/mimicking/fine craft
    - **Interpersonal** - Good with people/leading /manipulation/streetwise/team/Co-op
    - **Intrapersonal** - Independent/Loner/sense of self-worth/individual/opinionated

- **Emotional Intelligence:**
  - **Properties:**
    - Knowing your feelings/strengths/weaknesses.
    - Managing your emotions/motives/behaviour
    - Persisting despite setbacks
    - Empathy (good at reading other's emotions)
    -
  - **Indicators of EI:**
    - Optimism
    - Taking Initiative
    - Achievement Motivation
  - **3 Adaptive Abilities:**
    - Appraisal & Expression of Emotion
    - Regulation of Emotion
    - Utilisation of Emotion

FAB (FRONTAL ASSESSMENT BATTERY)

1. Similarities (conceptualisation)

"In what way are they alike?"
A banana and an orange (If incorrect, provide answer as fruit but do not prompt for others)
A table and a chair
A tulip, a rose, and a daisy

Score: Only category responses (fruit, furniture, flowers) are considered correct
Three correct: 3, Two correct: 2, One correct: 1, None correct: 0

2. Lexical fluency (mental flexibility)

"Say as many words as you can beginning with the letter 'S', any words except surnames or proper nouns ". (The time allowed is 60 seconds).

Score: Word repetitions or variations (shoe, shoemaker), surnames, or proper nouns are not counted
More than nine words: 3, Six to nine words: 2, Three to five words: 1, Less than three words: 0

3. Motor Series (programming)

"Look carefully at what I'm doing". (Perform alone three times with left hand, the series "fist-edge-palm". **" Now with your right hand do the same, first with me, then alone."** (Perform the series three times with the patient) **"Now do it on your own".**

Score: Patient performs six correct consecutive series alone: 3
Patient performs at least three correct consecutive series alone: 2
Patient fails alone, but performs three correct consecutive series with the examiner: 1
Patient cannot perform three consecutive series, even with the examiner: 0

4. Conflicting Instructions (sensitivity to interference)

"Tap twice when I tap once" (Demonstrate with a series of three trials: 1-1-1).
"Tap once when I tap twice" (Demonstrate with a series of three trials: 2-2-2).
(Perform the following series: 1-1-2-1-2-2-2-1-1-2).

Score: No error: 3, One or two errors: 2, More than two errors: 1, Patient taps like the examiner at least four consecutive times: 0

5. Go-No Go (inhibitory control)

"Tap once when I tap once" (Demonstrate a series of three trials: 1-1-1).
"Do not tap when I tap twice" (Demonstrate a series of three trials: 2-2-2).
(Perform the following series: 1-1-2-1-2-2-2-1-1-2).

Score: No error: 3, One or two errors: 2, More than two errors: 1, Patient taps like the examiner at least four consecutive times: 0

6. Prehension behaviour (environmental autonomy)

(Place the patient's hand palm up on his/her knees. Without saying anything or looking at the patient, bring your hands close to the patient's hands and touch the palms of both the patient's hands, to see if he/she will spontaneously take them. If the patient takes your hands, try again after asking him/her)
"Now, do not take my hand".

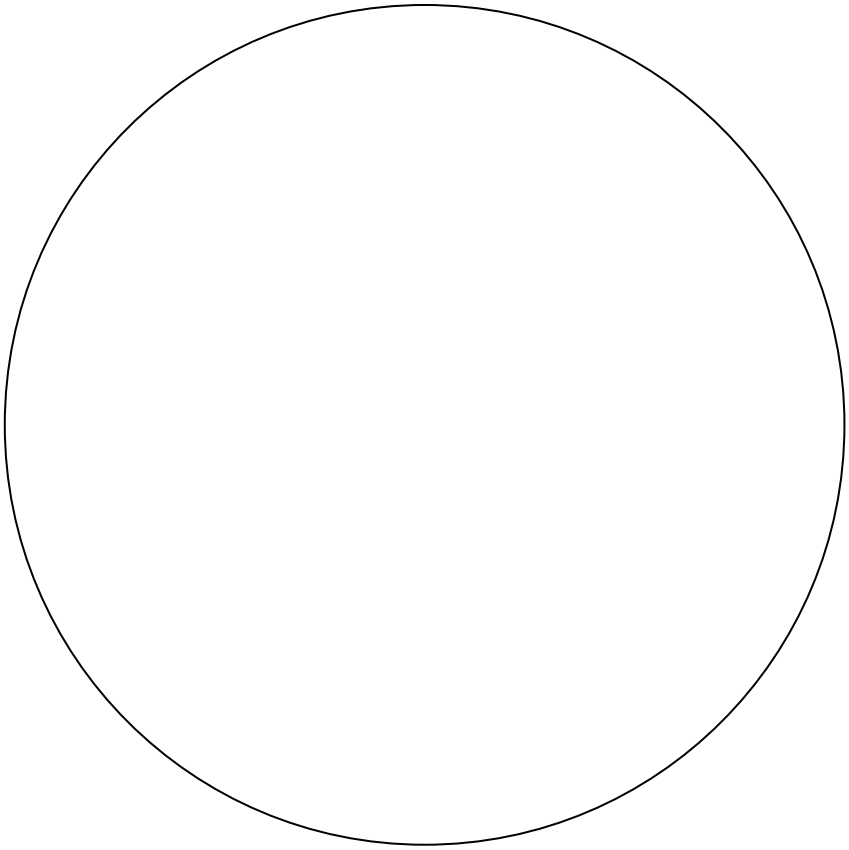
Score: Patient does not take the examiner's hands: 3
Patient hesitates and asks what he/she has to do: 2
Patient takes the hands without hesitation: 1
Patient takes the examiner's hands even after told not to do so: 0

Cut off for normal performance = 15

Total Score

CLOCK DRAWING TASK

"Draw in the numbers of a clock face below".
"Now draw in the hands that show the time as 'ten past eleven'."



Scoring

10: normal drawing, number and hands in approximately correct positions, hour hand distinctly different from minute hand.
9: Slight errors in placement of hands, or one missing number on clock face.
8: More noticeable errors in placement of hour and minute hand (off by one number), number spacing showing gaps.
7: Placement of hands significantly off course (more than one number), very inappropriate spacing of numbers (eg, all on one side).
6: Inappropriate use of clock hands (digital display or circling of numbers despite repeated instructions), crowding of numbers at one end of the clock, or reversal of numbers.
5: Perseverative or otherwise inappropriate arrangement of numbers (eg, numbers indicated by dots), hands may be represented but do not clearly point to a number.
4: Numbers absent, written outside of clock or in distorted sequence, integrity of clock face is missing, hands not clearly represented or drawn outside of clock.
3: Numbers and clock face no longer connected in the drawing, hands not recognisably present.
2: Drawing reveals some evidence of instructions received but representation of clock is only vague, inappropriate spatial arrangement of numbers.
1: Irrelevant, uninterpretable figure or no attempt.

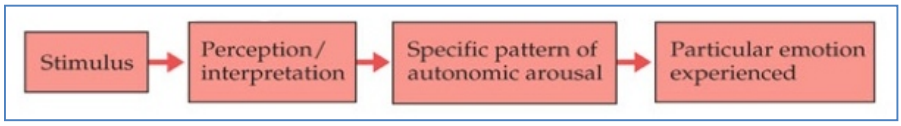
8 – 10: Normal
1 – 7: Abnormal

Mood & Emotions

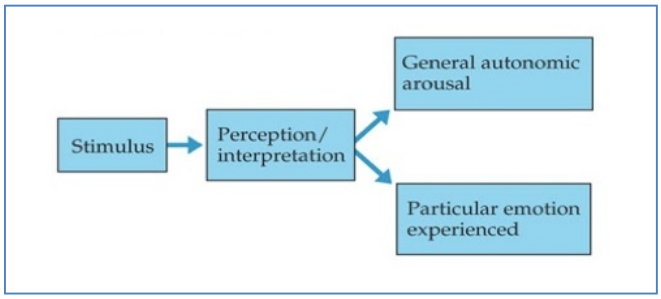
1. **Distinguish between Mood and Affect:**
   a. **Affect:** The 'Feeling' or 'Emotional State' subjectively experienced by a person.
   b. **Mood:** A Persistent Affect (Experience)
   NB- Mood:Affect = Climate:Weather

2. **List the six (6) components of Affect that are relevant to clinical medicine:**
   a. **Quality**
   b. **Reactivity**
   c. **Lability** (Short Lasting) (How quickly does it vary?)
   d. **Appropriateness** (Is the Emotional State appropriately responsive to the environment?)
   e. **Congruence** (Is the Affect Congruent with Mood?)
   f. **Communicability**

3. **List four (4) Emotion theorists:**
   a. **James-Lange:**
      i. Perception of Stimulus
      ii. Bodily (Visceral) Reactions
      iii. Then the Emotion/Emotional Experience.
   Ie. Our feeling of the Visceral Changes ***IS*** our Emotion.

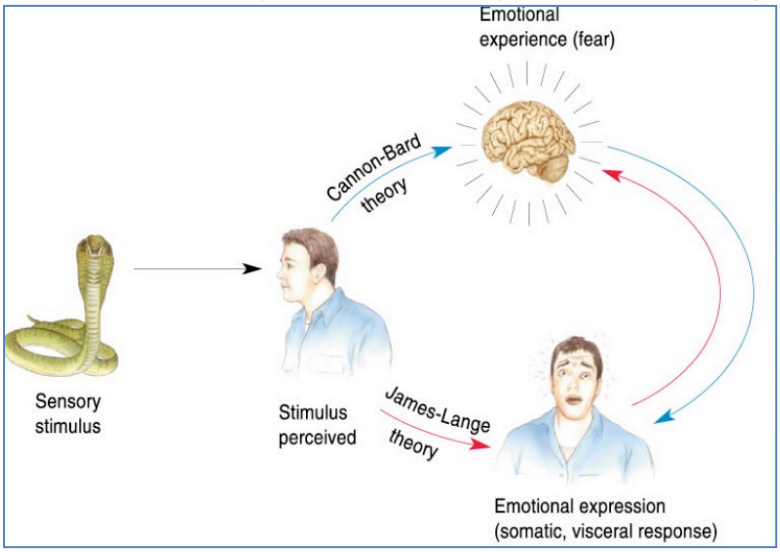


   b. **Cannon-Bard:**
      i. Perception of Stimulus
      ii. Conscious Awareness of Emotion (Emotional Experience)
      iii. Then the Visceral Reactions Follow. (OR simultaneously with Emotional Experience)

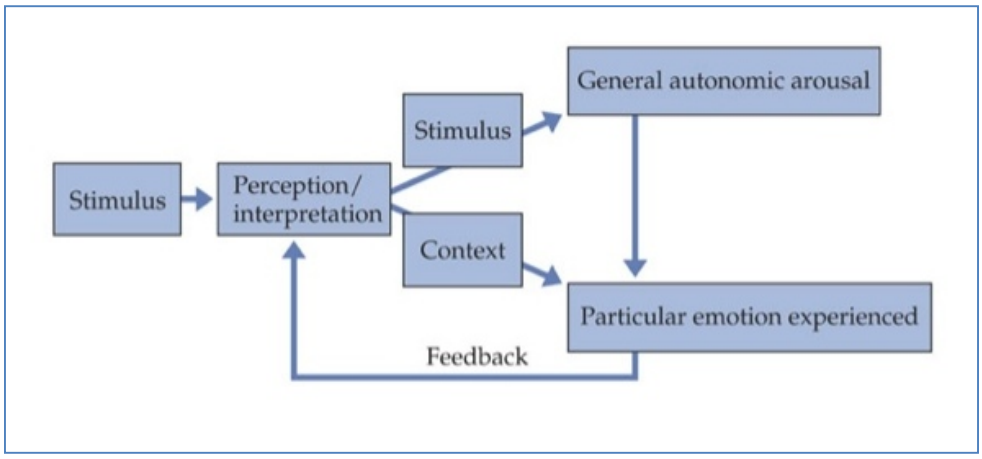


James-Lange VS Cannon-Bard Theories:

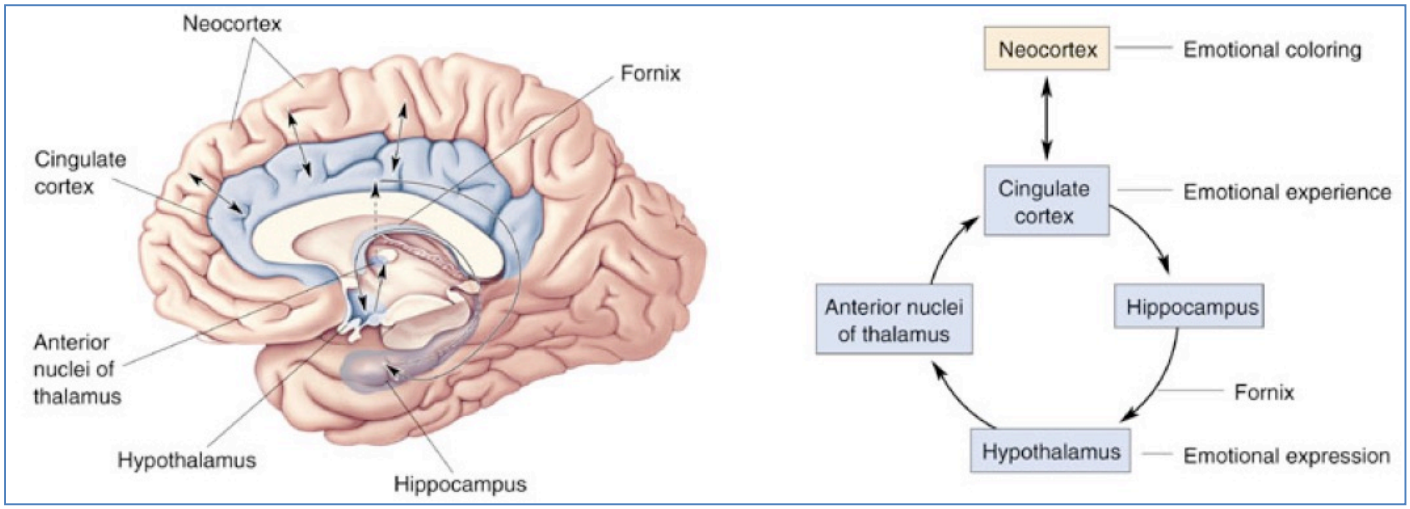
The Roles of Emotional Perception & Visceral Responses in Determining Emotion



c. **Schachter & Singer: *The 'Two-Factor' (Attribution) Theory:***
   i. Noted that the *Huge Variety of Emotions* Far Exceeds the *Small Variety of Visceral Patterns* – Therefore Cognitive Factors must be major determinants of Emotional States.
   ii. ***"Both* Physiological Arousal AND Cognitive Factors Determine Emotion":**
      1. **Bodily Reactions** → Determine *Intensity* of Emotion.
      2. **Cognitions** → Determine *Quality* of Emotion (Ie. Give *Context*)



d. **James Papez:**
   i. Proposed that Emotions Flowed in A *Circuit*. – Origin of the Limbic System.
   ii. Believed that The Emotional Experience was determined by activity in the Cingulate Cortex, and that Emotional Expression (Visceral Response) is governed by the Hypothalamus.
   iii. **The Papez Circuit:**
      1. **1. Thalamus** relays Sensory Input to Cingulate Cortex.
      2. **2. Cingulate Cortex** - gives you the Emotional Experience
         - also relays to the **Neocortex**, which gives Context/Colouring to the Emotion.
         - also relays to the **Hippocampus** →
      3. **3. Hippocampus** Relays to the **Hypothalamus** – Causes the Emotional Expression (Visceral Response)



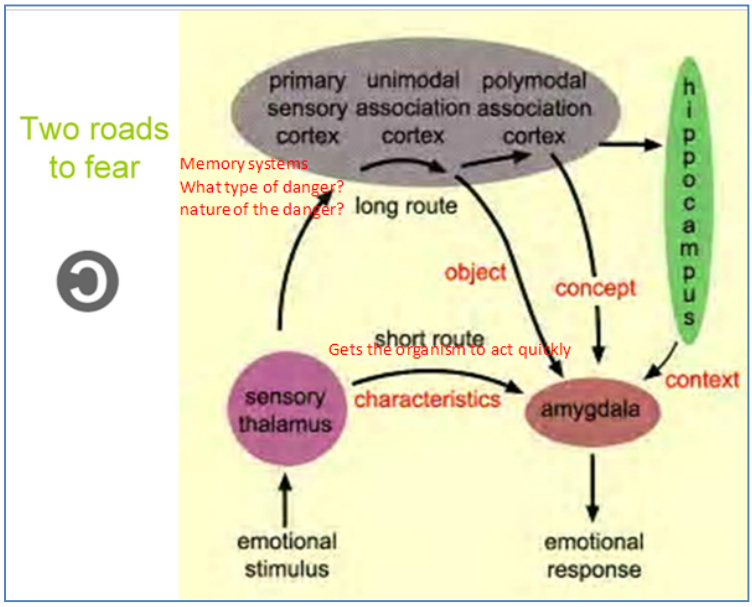
e. **Paul Eckman's Five (5) Characteristics of Basic Emotions:**
   i. Distinctive Universal Signals
   ii. Distinctive Physiology
   iii. Presence in other Primates
   iv. Quick onset
   v. Breif Duration
   vi. Involuntary Occurrence

f. **Damasio:**
   i. **States that *Emotion Precedes Feeling*** – in a 3-Stage Continuum:
      1. Stimulus Triggers Execution of an Emotional State.
      2. Non-Conscious Emotional State
      3. Conscious state of Feeling / Awareness of bodily changes.
   ii. **"Background Emotions":**
      1. Well-Being
      2. Malaise
      3. Fatigue
      4. Calm
      5. Tension
   iii. **6x "Primary Emotions":**
      1. Happiness
      2. Sadness
      3. Fear
      4. Anger
      5. Surprise
      6. Disgust
   iv. **"Secondary Emotions:**
      1. Combinations of Primary Emotions + Background Emotions.
         a. Ie. Jealousy/Guilt/Shame/Pride/Love/Embarrassment/etc

4. **Explain the stimulus event, cognition, overt behaviour and effects of the six (6) Primary Emotions:**

Primary Emotion	Stimulus Event	Cognition	Overt Behaviour	Effect
Happiness	Gain of Valued Object	"Possess"	Retain or Repeat	Gain Resources
Sadness	Loss of Valued Object	"Abandonment"	Cry	Reattach to Lost Object
Fear	Threat	"Danger"	Escape	Safety
Anger	Obstacle	"Enemy"	Attack	Destroy Obstacle
Surprise	Unexpected Event	"What is it?"	Stop	Gain Time to Orient
Disgust	Unpalatable Object	"Poison"	Vomit	Eject Poison

5. **Name the brain structures involved in the perception, assessment and response to fear:**
   a. **Perception:** - Sensory Thalamus →
   b. **Assessment:** - Sensory Cortices + Hippocampus (Long Route)
      - Amygdala (Short Route)
   c. **Response:** - Amygdala → Emotional Response.



6. **Briefly explain, in no more than two (2) sentences, how the 'short route' might be biologically adaptive:**
    a. Short route requires no cortical processing, therefore taking less time for an emotional response, allowing a quicker response to fearful/threatening stimuli.

7. **How the Mirror Neuron concept might apply to Emotion:**
    a. Eg. Mirror-Neurons for Motor Action are active when both *'Doing an Action'* AND *'Thinking about an action'* .
    b. Therefore, Mirror-neurons for Emotion allow us to understand other's emotions by mirroring it in ourselves without having to physically experience the emotion. – Important in EMPATHY.
        i. Gives us a 'Third Person' View of Other's Emotions.

8. **State the Role of Brain Regions in Emotion:**
    a. **Amygdala:**
        i. Assesses Context & Meaning of a Situation & Triggers Immediate Responses.
        ii. Responses include:
            1. Behavioural (Avoidance/Fight/Flight)
            2. Autonomic NS: (Stress Response via SNS & Endocrine → ↑BP & ↑HR)
    b. **PFC (Prefrontal Cortex):**
        i. Recognition of the Object/Concept that is creating the stimulus.
    c. **Hippocampus:**
        i. Gives the Emotion Context (In terms of Previous Similar Experiences)

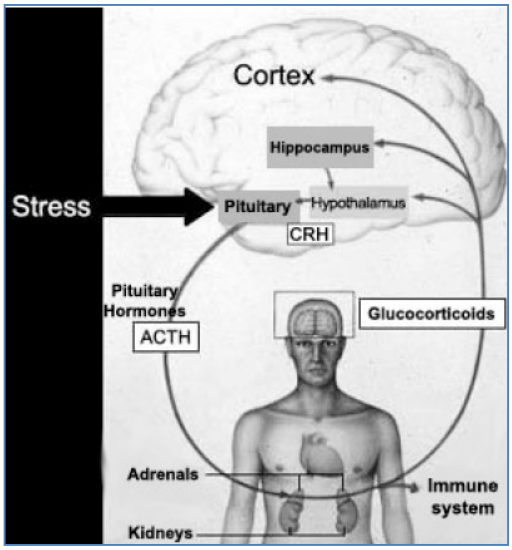
9. **List four (4) Neurotransmitters Modulating Emotional Response:**
    a. Dopamine - Reward Centres (Pleasure)
    b. Noradrenaline - Fight/Flight (Fear)
    c. Serotonin - Mood Regulation + Initiation of Sleep.
    d. Acetyl Choline - Vigilance + Memory

10. **State the three (3) broad psychiatric disorders in which significant alteration of emotional state is a pre-requisite:**
    a. Mood Disorders
    b. Anxiety Disorders
    c. Psychotic Disorders

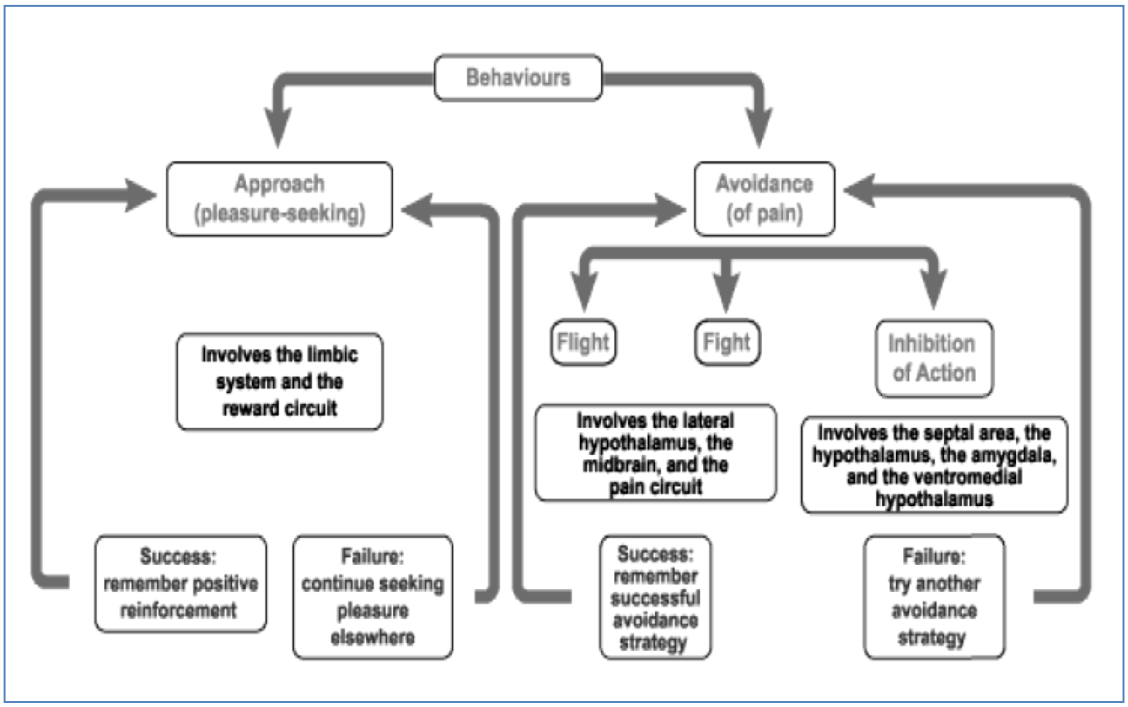
11. **State the Systems Involved in Stress and the Physiological Consequences of Arousal:**
    a. **Systems of Stress:**
        i. Cortex → Hippocampus → Hypothalamus:
        ii. Hypothalamus → Releases CRH → Pituitary Releases ACTH → Stimulates Adrenal Glands.
        iii. Adrenal Glands Secret Glucocorticoids → Physiological Arousal.
    b. **Physiological Consequences:**

↑Heart rate
Diverts blood to muscles
Dilates pupils
Piloerection

↑Breathing
↑Adrenaline secretion
↑Sweating
Sexual arousal



12. **State Gray's proposed Three (3) Brain Systems and Describe each one:**
    a. **Behavioural Approach:**
        i. Innate encouraging of Goal-Oriented Behaviour (***Impulsiveness***)
    b. **Behavioural Inhibition:**
        i. Animal Immediately ***Freezes*** & becomes ***Hyper vigilant*** in the face of direct threat.
    c. **Fight/Flight:**
        i. Either flight or defensive fighting manouvers.



13. **List three (3) brain structures that show the effects of chronic stress:**
    a. Hippocampal Atrophy
    b. Amygdalar Hypertrophy
    c. Prefrontal Cortex Atrophy

14. **List the brain structures involved in the emotions of anger, sadness and fear:**
    a. **Anger:** Brainstem
    b. **Sadness:** Ventromedial Pre-Frontal Cortex, Parietal Cortex, Brainstem & Hypothalamus
    c. **Fear:** Brainstem, Basal Forebrain, Hypothalamus, Amygdala & Insula.

15. **State the neurotransmitter associated with the disorders of substance dependence and schizophrenia:**
    a. Dopamine

16. **State the neurotransmitter associated with nicotine dependence and Alzheimer's dementia:**
    a. Acetylcholine

17. **State the neurotransmitter associated with mood, anxiety and sleep disorders:**
    a. Serotonin

18. **State the neurotransmitter associated with anxiety, panic attacks and depression:**
    a. Noradrenaline

Human Development & Behaviour Notes

Stages of the Lifespan:

Phase	Approx age	Highlights
Prenatal	Conception to birth	Rapid development of both nervous system and body
Infancy	Birth to 2years	Motor development, attachment to primary carer
Childhood	2-13 years	Increasing ability to think logically and reason abstractly, refinement of motor skills, peer influences
Adolescence	13-20 years	Thinking and reasoning becomes more adult like, identity crisis, continued peer influences
Adulthood	20-65 years	Love, marriage, career, stability and then decrease in physical abilities
Old Age	65 years to death	Reflection on one's life work and accomplishments, physical health deteriorates,prepare for death, death

(Major Developments in) Piaget's 4 Stages of Cognitive Development:

- **(0-2yrs) Sensorimotor:**
  - Object 'Permanence' (Ie. Hide something from them & they won't forget about it)
  - Deferred Imitation (Where they start to imitate 'seen' movements & activities)
  - Basic Symbolic Thinking (Using words to represent objects)
- **(2-7yrs) Preoperational:**
  - Rapid Development of Language.
  - Starting to classify & categorise objects.
  - Learning to count
  - Egocentrism (Ie. "The World Revolves Around Me!")
- **(7-11 yrs) Concrete Operational:**
  - More logical reasoning
  - Symbolic Thought (Ie. If A>B & B>C, therefore A>C)
  - Understand classification & categorisation.
- **(11yrs +) Formal Operational:**
  - Beginning of Abstract & Scientific Thinking
  - Problem Solving (Cause/Effect & Hypothesising.)

Erikson's 8 Stages of Psychosocial Development:

Life Stage	Outcomes
Birth-1yr	Trust vs Mistrust: *babies learn either to trust others for basic needs or lack confidence in the care of others*
1-3 yrs	Autonomy vs Shame &Doubt: children learn either to be self-sufficient (.e.g feeding, walking, talking) or to doubt their own abilities
3-6yrs	Initiative vs. Guilt: ***children want to undertake adult activities, overstep limits and feel guilty***
7-11yrs	Industry vs. inferiority: *children learn to be competent and productive or feel inferior and unable to do things well*
Adolescence	Identity vs. role confusion: ***Adolescents figure out who they are or are confused about what roles to play***
Yng Adulthood	Intimacy vs. Isolation: *seek companionship/love with another **or** become isolated to avoid rejection*
Middle Adulthood	Generativity vs. Stagnation: *contribute to next generation **or** become stagnant/inactive*
Older Adulthood	Integrity vs. Despair: ***make sense out of life as a meaningful whole or despair about goals never achieved***

PRENATAL

Factors Affecting a Foetus's Health:

- **Biological:**
  - Maternal nutrition, age
  - Genetic abnormalities
  - Exposure to infection
  - Congenital malformation
- **Psychological:**
  - Maternal ***Stress & Anxiety*** → a risk factor for mental-health issues in the child.
- **Social:**
  - Support for parents
  - Finance

INFANCY

Major Milestones for Infant Development from age 0-2yrs:

- **Motor:**
  - **At Birth:**
    - The 'Moro' Reflex (Startle Reflex when dropped)
    - Palmar Grasp Reflex
    - Sucking Reflex
  - **From Birth → ≈ 2yrs:**

Age	Milestones in Motor Development
2 months	Lifts head up
2.5 months	Rolls over
3 months	Sits propped up
6 months	Sits without support
6.5 months	Stands holding on
9 months	Walks holding on
10 months	Stands momentarily
11 months	Stands alone
12 months	Walks alone
14 months	Walks backwards
20 months	Walks up steps, can kick balls, adept at independent movement

NB: The above are influenced by many factors. (Eg. Siblings, Environment, Full-Term vs. Premature)

- **Perceptual:**

Age	milestones in perceptual development
From birth	Indicate taste preference by facial expressions and selective eating behaviours
Hours after birth	Can discriminate sound and visual stimuli, follow a light, capacity for visual fixation
10 days	Respond to mother's smell (versus non-mother)
4 months	Fully accomodated vision; visual fixation is increased when presented with complex pattern (especially if resembles human face)
6 months	Majority of infants will not cross over in a visual cliff experiment (ability to perceive 3-D space develops early)
2 years	Preference for natural face arrangements

- **Emotional Development:**
  - **0-6 Months:**
    - Smiling (12-16 weeks)
    - Laughter
    - Happier when around familiar people
  - **7-12 Months:**
    - Anger & Fear increase
    - Ability to detect others' emotional expressions
    - Rely on others' reactions to understand uncertain situation.
  - **12-24 Months:**
    - Self-conscious emotions appear
    - Empathic responding appears

- **Cognitive Development:**
  - **2 Processes Help Children Adapt to their Environment:**
    - **Assimilation:** New information is modified to fit existing mental rules/representations.
    - **Accomodation:** Old mental rules/representations are changed/replaced by new experiences.

- **Common Clinical Issues:**
  - **Growth delay:**
    - Due to Poor Nutrition/Neglect
  - **Developmental Delay:**
    - Social
    - Cognitive
  - **Abuse:**
    - Sexual
    - Physical
    - Emotional
    - Verbal

CHILDHOOD

- **Emotional Development:**
  - **3-6yrs:**
    - Increased Emotional Expressiveness
    - Emotional Conformation despite conflicting emotions.
    - Increased Understanding of others' Feelings
  - **7-11Yrs:**
    - Engage in Emotional Self-Regulation
    - Awareness that people can experience more than one emotion at a time.
    - Empathic Responding increases

- **Common Clinical Issues:**
  - **Biological:**
    - Cancer
    - Asthma
  - **Psychological:**
    - Bullying
    - Eating Disorders
  - **Social:**
    - School-phobia
    - Separation anxiety

ADOLESCENCE

Major Milestones for Adolescence

- **Physical:**
  - Physical & Sexual Maturation
  - Reach ultimate height
  - Develop increased muscle size & pubic hair
  - Reproductive system capable of reproduction.
- **Social:**
  - Transition from dependency to independence.
  - Desire to seek out new experiences
  - Begin to define their roles & assert them
  - General happiness & self-confidence.

- **Common Clinical Issues:**
  - Depression
  - Anxiety
  - Substance abuse
  - Eating disorders
  - Risk taking

ADULTHOOD & OLDER AGE

- **Major Life Events:**
  - Marriage & Family
  - Work
  - Death
- **Physical:**
  - Strength peaks around 25-30yrs, then declines
  - Slow decline in sensory systems
- **Psychological:**
  - Gradual reduction in cognitive abilities (Flexible thinking/learning new events)
  - **Crystallised Knowledge** (Ie. Facts & general knowledge) tends not to decline.
  - However, **Fluid Knowledge** (Ie. Abstract reasoning) tends to decline.

- **Common Clinical Issues:**
  - Depression
  - Anxiety
  - Stress
  - Chronic Health Disorders (obesity/diabetes/CVD/arthritis)
  - Cancer
  - Degenerative Disease

Kubler-Ross' Stages of Grief/Loss:

Grief and Loss

- Shock
- Denial
- Bargaining
- Loneliness
- Depression
- Despair
- Longing
- Guilt
- Anger
- Unexpected Feelings
- Acceptance

These stages can occur in any order.

Impact of Separation & Divorce on Children:

- 0-5 years

Have trouble sleeping
Being clingy and withdrawling
Wetting pants when usually toilet trained

- 5-8 Years

Being reluctant and distressed to leave the other parent
Behaving badly by being abnormally angry
Asking lots of questions and appearing anxious

- 8-12 years

Being angry or bossy with you
Missing the other parent intensely
Being judgmental about who is the bad parent
Stomach aches all the time to be off school
Frequent lying
Stealing
Trying to run away

- 12-16 years

Lack of concentration in school
Blaming parents for separation
Increased acting out
Withdrawing from the family

-

Methods used to Assess Temperament & Personality in Children:

Secure Attachment Vs. Insecure Attachment Vs. Avoidant Attachment Behaviour:

Stress & Coping

What is Stress?

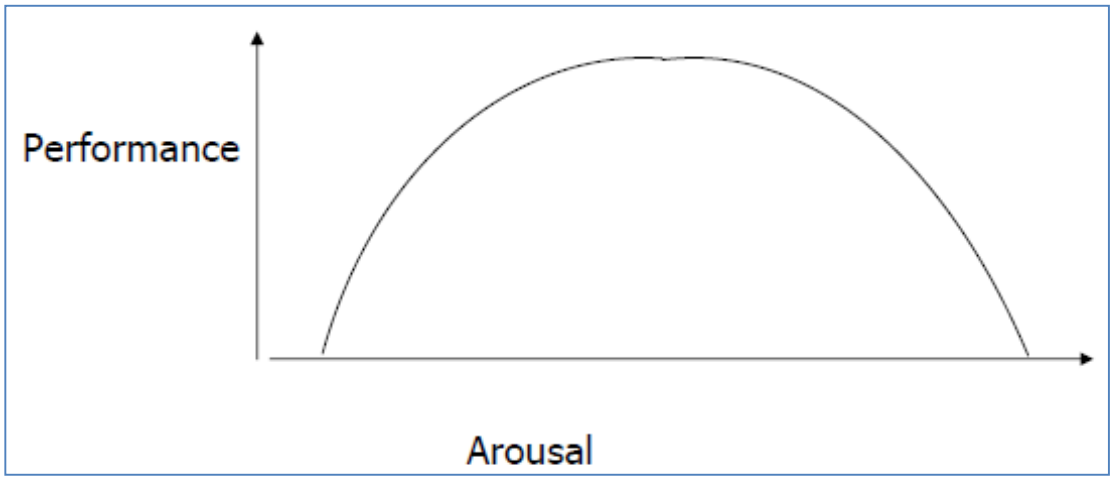
- **Forced Change/Strain/Disequilibrium.**
- **Simply –** A gap between demands on you & your resources available to meet them.
- **Demands may be:**
  - Biological (Eg. Physical Illness)
  - Psychological (Eg. Embarrassment/Anxiety)
  - Social (Eg. Migration)
  - Cultural (Eg. Culture Shock)
- **3 Possible Responses to Stress:**
  - **Fight** - take on your opponent
  - **Flight** - run from your opponent
  - **Freeze** - don't move and hope you go unnoticed –Can be Maladaptive. (Related to Learned Helplessness)

Fight or Flight Response:

- **Physiological Changes:**
  - **↑Adrenaline/Noradrenaline →**
    - ↑HR
    - ↑Breathing
    - ↑O_2
  - **↑Cortisol →**
    - Metabolic changes:
      - Hyperglycaemic Action (Increases Blood [Glucose])
        - Stimulates Gluconeogenesis (Liver) → Glucose Output by Liver
      - Glucose-Sparing Effect:
        - Inhibits Glucose Uptake (Muscle & Adipose)
      - Can also stimulates Glycogenesis in Liver (If Blood [Glucose] is high enough)
- **Neurological Changes:**
  - Heightened arousal

Yerkes-Dodson Law:

- "Stress increases level of performance to a certain point, after which it is detrimental to performance"
  - NB: on this graph, arousal = stress.
- Ie. There is an optimum level of stress – it allows us to adapt to our environment



4 Factors Related to Resilience to Stress:

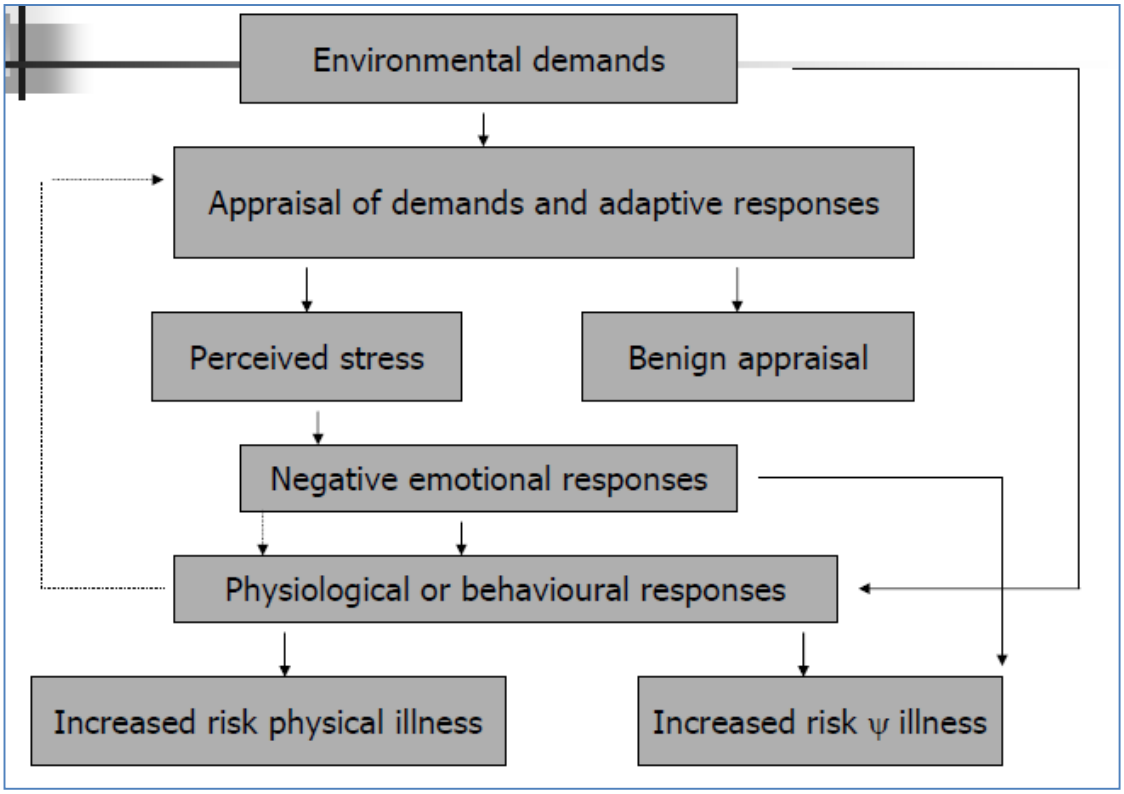
- **Psychological Coping Strategies:**
  - **Adaptive:**
    - Humour
    - Suppression – temporarily avoiding thinking about it – allows you to do the task at hand.
    - Sublimation – Channelling your stress into socially acceptable behaviour (boxing bag)
  - **Maladaptive:**
    - Repression – Removing the experience from consciousness, while retaining emotion.
    - Denial – Refusing to acknowledge the experience.
    - Projection – Blaming someone/something else for your conflict.
    - Passive Aggression – Unassertively expressing aggression towards others.
- **Physical:**
  - **Adaptive:**
    - Good Health/Fitness – Helps cope with Fatigue/Pain/Infection/Depression
- **Social**
  - **Adaptive:**
    - High Class/Social Status/SES – Eg. Titanic survivors/Hurricanes/Medical Care
    - Support Networks "Affiliation" – Friends/Family/Church (IE. Sharing your problems)
- **Cultural:**
  - **Adaptive:**
    - Belief Systems – eg. "It was meant to be" – helps *Acceptance*.
    - Inbuilt Support Structures – Eg. Rites of Passage, Funerals, 'Last Rites'.

***Dissociation (Aka: "Psychogenic Amnesia"):**

- "The Breakdown of Consciousness, Memory & Perception of Self"

Taylor's Model of Stress:

- **Pathways to Increased Risk of Physical Illness & Psychological Illness:**



Disorders Associated with Stress:

- **Psychological**
  - **Precipitated by Stress:**
    - PTSD (Post-Traumatic Stress Disorder)
    - Dissociative Disorders
      - Psychogenic Amnesia
      - Multi Personalities
    - Substance Abuse
  - **Made worse by Stress:**
    - Depression
    - Major Psychoses (Eg. Schizophrenia)
    - Addiction Disorders
    - Eating Disorders
    - Anxiety Disorders

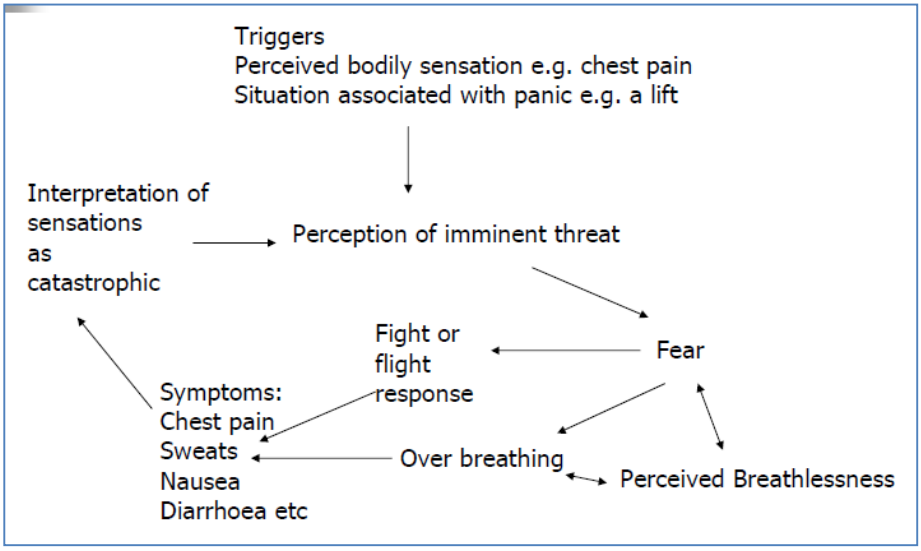
- **Physical:**
  - **Precipitated by Stress:**
    - Vomiting
    - Pain
    - Hypertension
    - Eating Disorders
  - **Made worse by Stress:**
    - Myocardial Infarction
    - Wound Healing
    - Gastric Ulcer
    - Pain

Stress Management Strategies:

- **4 Cognitive Behavioural strategies for Coping with Stress:**
  - Relaxation/Slow-Breathing → ↓Physiological Arousal
  - Reframing (Positive Thinking – the glass is half full, not half empty)
  - Pleasurable Activities/Distractions – Exercise/Prayer/Music/Driving.
  - Promoting Self-Esteem
- **5 Components of Stress Management Program:**
  - **Time Management:**
    - Prioritisation
    - Scheduling
    - Execution
  - **Problem-Solving:**
    - 1. A good description of the problem must be developed.
    - 2. Possible options for dealing with it.
    - 3. Selection of realistic choices from this list.
    - 4. Rank the selected options based on feasibility.
    - 5. Decide on the one that a) has the best outcome, & b) requires the least resources.
  - **Relaxation:**
    - Voluntarily releasing tension & reducing arousal:
      - Progressive Muscle Relaxation
      - Slow Breathing
      - Music
  - **Behaviour Modification:**
    - Used to alter problematic patterns of behaviour.
      - 1. Recognise problem behaviour
      - 2. Practice good behaviour solo → Show Friend → etc...
  - **Cognitive Therapy:**
    - Involves identifying & modifying the dysfunctional thoughts that lead to unwanted emotions/behaviours.
      - Eg. Expectations/Perceptions/Attributions/Appraisals.
    - Unhelpful thought patterns must be challenged and replaced with more functional thoughts that allow better coping with life situations.
    - Adopt & implement these new views.

Panic Disorder "Attacks":

- **Common Symptoms & Presentation of Panic Disorder:**
  - Chest pain
  - Dizziness
  - Shortness of Breath
  - Palpitations
  - Choking feeling
  - Churning Stomach
  - Feelings of Unreality
  - Dears of Disaster
  - **NB:** Many of these symptoms are self-perpetuating → Vicious Circle
    - = "Cognitive-Behavioural Appraisal" of panic attacks.



- **Common Frightening Thoughts Accompanying a Panic Attack:**
  - Losing Control
  - Going Mad
  - Heart Attack
  - Sudden Death
- **4 Medical Conditions that Mimic Panic Attacks:**
  - Arrhythmia
  - Myocardial Ischemia
  - Unstable Angina
  - Thyrotoxicosis
- **4 Steps of Advice to follow during a Panic Attack:**
  - Stay where you are
  - Concentrate on controlling anxiety
  - Slow, Controlled breathing.
  - **Cognitive Behavioural Schema for a Panic Attack:**
    - Tell yourself that it's just a panic attack, not a heart attack etc.
    - Tell yourself that it will soon pass.
    - Identify exaggerated fears that occur during attacks, and challenge them.
    - Cognitive Reframing:
      - What is *most likely* causing your chest pain? – Heart Attack/Panic Attack
      - What are the chances of the lift breaking down (other fear/s)?
- **Treatment:**
  - **Pharmacotherapy for Panic Attacks:**
    - Anti-Anxiety Meds – Diazepam.
    - Anti-Depressant Meds – If attacks are frequent or severe, or if Depression is present.
  - **Graded Exposure – Combating Fears:**
    - Starting with a very mild trigger of the phobia, (eg. Thinking of the situation) and then graduating to stronger & stronger triggers of the phobia → Desensitises patient to triggers.

Obsessive Compulsive Disorder:

- **Presentation:**
  - Intrusive thoughts that produce anxiety.
  - Repetitive behaviours/Obsessions that are aimed at reducing anxiety.
    - Eg. Repetitive hand-washing
    - Eg. Extensive Hoarding
- **Psychological Consequences:**
  - OCD sufferers often recognize their thoughts and subsequent actions as irrational, and they may become further distressed by this realization.
- **Social Consequences:**
  - Symptoms can be **Alienating**
  - Behaviours can be **Time-Consuming**
  - Can cause severe **Emotional/Economic** Disadvantage.
- **Neurobiology:**
  - Linked to abnormalities with Serotonin (which is thought to have a role in decreasing anxiety)
  - It is thought that there is a ↓sensitivity of serotonin receptors.
  - OCD patients may benefit from SSRIs (Selective Serotonin Reuptake Inhibitors) (Antidepressant)

Families:

What is A Family?

- **Definition:**
  - ABS = "2 or More Persons, One of whom is 15yrs^{+}, related by blood/marriage/adoption/step/fostering, and who usually reside in the same household.

- **Family Structures:**
  - Kids in Nuclear Family
  - Single-Parent
  - Step/Blended Family
  - Communal Family
  - Homosexual couple/family
  - Etc.
  - **2001 Census:**
    - 90% of households = 'Family' Households
    - 47% of 'Family' Households – Have Children.
    - 90% of 'Family' Households with Children – Have *their own* children.

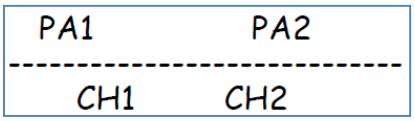
- **Roles Within A Family:**
  - Identified Parent/s
  - Parentified Child (A Child responsible for Rearing His/Her Siblings)
  - Black Sheep
  - Good Child
  - Distracter
  - Caretaker (Cinderella)

Patterns differ by **Gender & Marital Status**
- When men marry, they do less
- When women marry, they do more

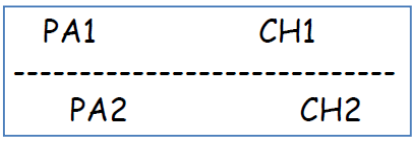
Patterns differ by **Gender of Child**
- Men spend more time with sons than daughters
- Families rely on daughters for domestic work

Patterns differ by **Education & Ethnicity**
- More education correlated with more sharing
- Mixed patterns by race/ethnicity

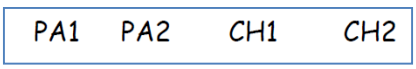
- **Family Structure & Hierarchies:**
  - **Normal:**



  - **Family with a Parentified Child:**



  - **No Hierarchies:**

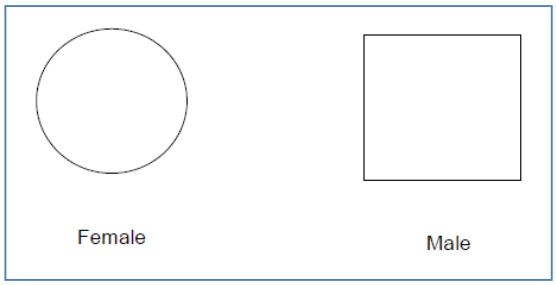


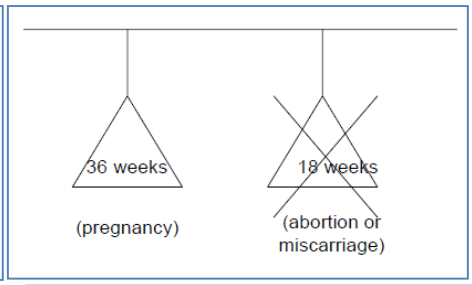
- **Core Functions of Families:**
  - Reproductive - Child Rearing:
    - Giving Birth
    - Feeding
    - Protection
    - Socialisation (Setting Social Rules)
    - Education
  - Love:
    - Fulfils the basic human need for Attachment Relationships
    - Primary Attachment Relationship = Parent-Child
    - In Adulthood, Attachment becomes sexual = Sexual Partners
      - (Marriage gives this a moral/legal foundation)
  - Sex:
    - Family Determines Who you *Can* & *Can't* have sex with:
      - Yes: Same Generation, Long-Term Partner
      - No: Different Generation/Siblings/Cousins/Offspring/Parents/Children.
  - An Economic Unit
    - Division of Labour:
      - Income
      - Childcare
      - Caring for Ill/Elderly members
      - Cooking/Cleaning
      - Home Maintenance
      - Safety/Protection

- **The Life-Cycle of A Family:**

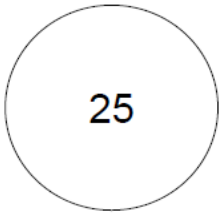
The child in a family	Birth of siblings
Leaving home	
Courtship and pairing	
Commitment and marriage	Death of grandparents
Having children	
	Death of parents
Children leave home	
Birth of grandchildren	Death of partner

- **Recording Family Structure/History – Genograms: MSAT STATION!!**
  - Know how to take a family history & record family structure using a genogram.
  - Similar to Pedigree, but genetics are ignored. Rather Social factors & Medical Conditions.
  - **Key:**
    - Circle = Female
    - Square = Male
    - Triangle = Pregnant
    - Age = inside shape
    - Name = Under Shape
    - Clinical Info = Under Name
    - Cross = Deceased (+ Year)
    - The Subject/Patient = Shaded
    - Married = Single Line between People
    - De-facto = Dotted Line between People
    - Separated = Single Crossed Line between people (+ Year)
    - Divorced = Double-Crossed Line between people (+ Year)
    - Child = Perpendicular Line joining Shape to a 'Relationship Line'
    - Adopted = Dotted Perpendicular Line joining Shape to a 'Relationship Line'
    - Household = Circled Family Members



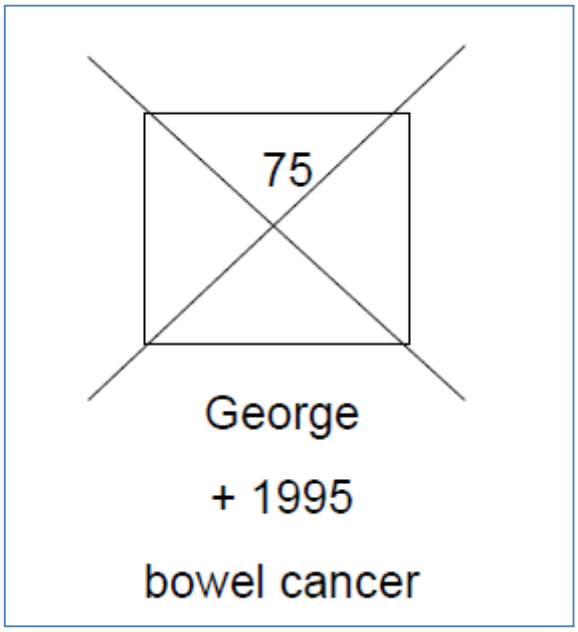


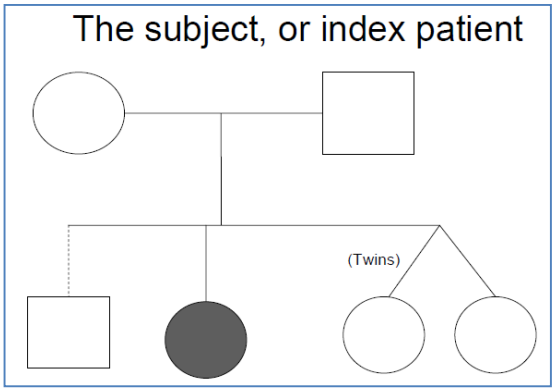
Genogram – personal details

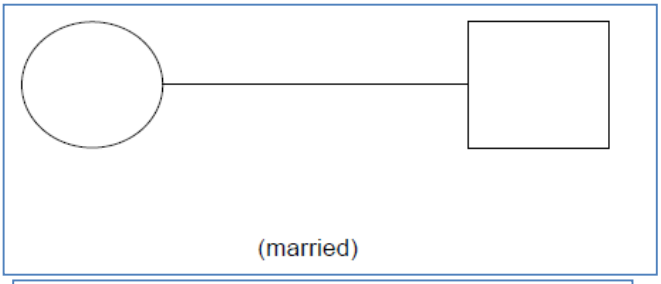


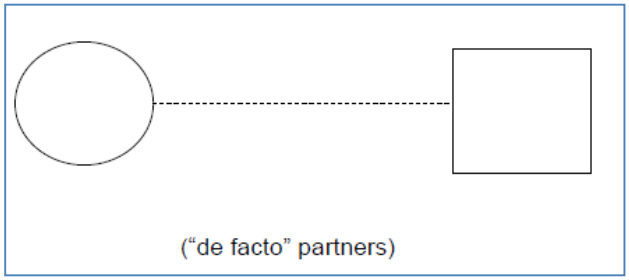
Jane,

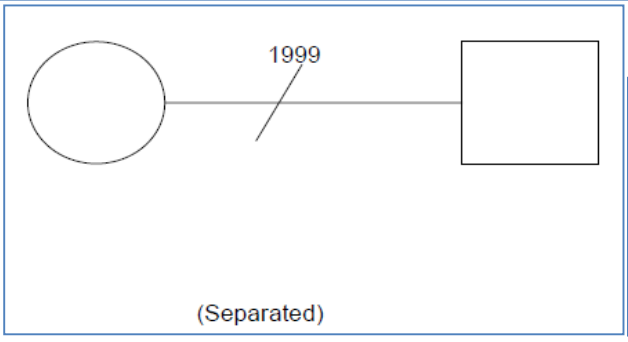
Diabetic

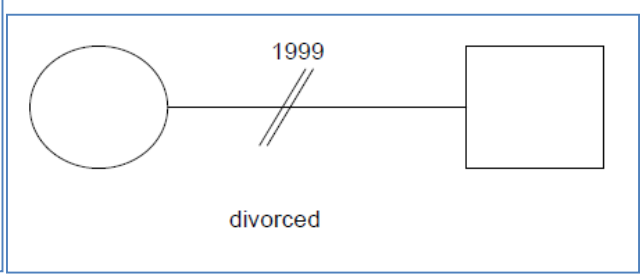


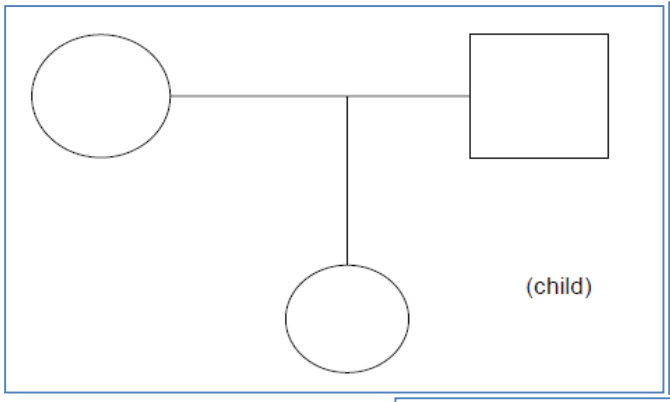


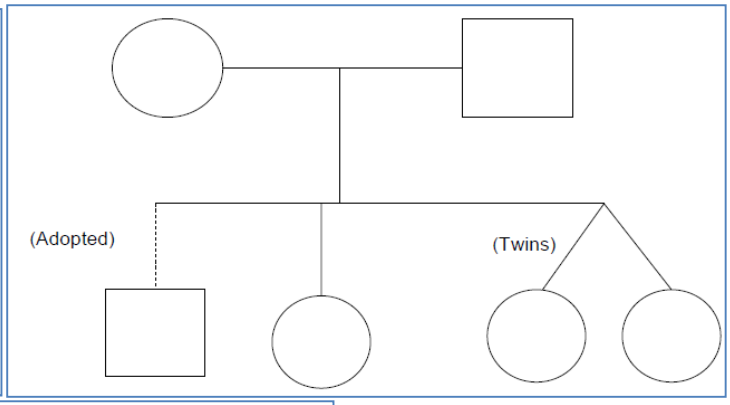




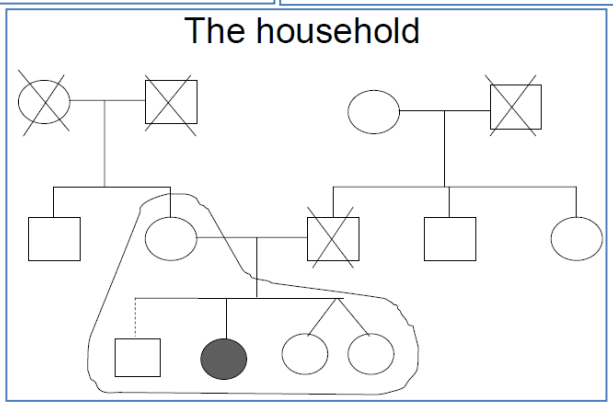




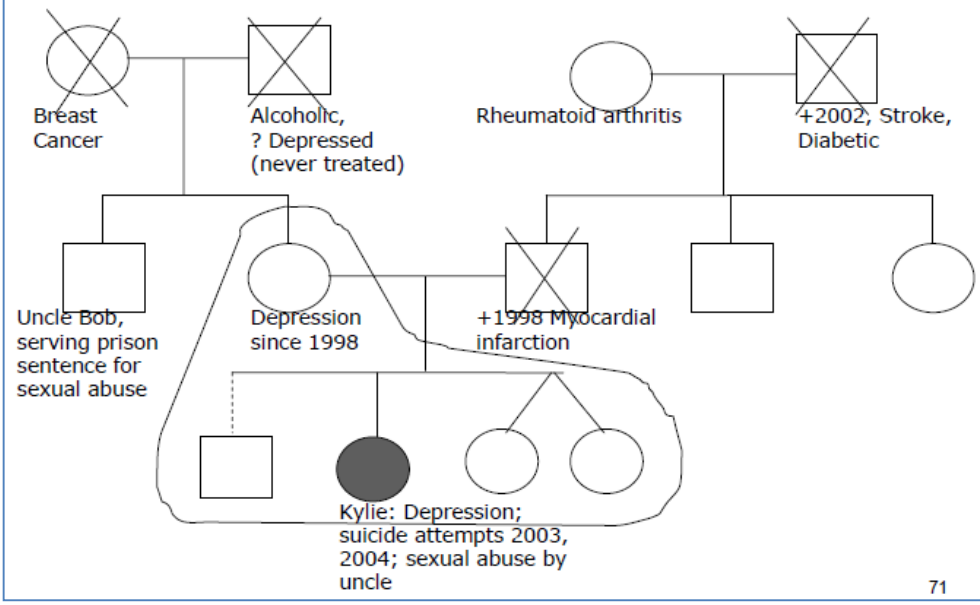




The household



Clinically relevant information



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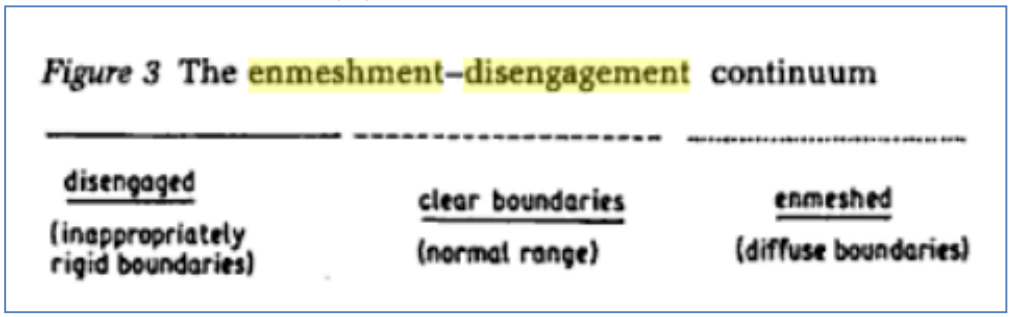
The Family Under Stress:

- **Migration:**
  - Disruption of kinship systems & Extended Family
- **Economic Stresses:**
  - The 2-working-parent family
- **Cultural Change:**
  - Decline of religion in modern society
  - Loss of indigenous culture
- **Divorce:**
  - Associated with Poverty & unemployment
  - Associated with Marrying Young (<20)
  - Higher SES Favours Marital Stability
  - No evidence that children are harmed by divorce.
  - **Is a risk factor for Depression/Anxiety/Suicide**
- **Domestic Violence:**
  - **Legal Definition:**
    - Violence committed against a *Heterosexual Partner*, including injury intimidation, wilful damage to property, or *threats* to commit these acts.
  - **Clinical Definition:**
    - Any violence within a household, including abuse of partners, elders or children.
  - **Prevalence:**
    - Up to 25% of women will experience domestic violence in their lifetime
  - **Effects on Victims:**
    - Physical Injury/Death
    - Pregnancy Complications
    - Post-Traumatic Stress Disorder
    - Depression
    - Drug/Alcohol use.
  - **Effects on Child Victims:**
    - Poor School Performance
    - Violence/Aggression towards peers
    - Self-Harming Behaviour
    - Sleep Disturbances
    - Bedwetting
    - Anxiety
- **Child Abuse:**
  - **Effects in Childhood:**
    - Attachment Problems
    - Aggression
    - Self-Harm
    - Poor Education
  - **Effects in Adulthood:**
    - Personality Disorders
    - Depression / other Mental Illnesses
    - Drug/Alcohol Abuse
    - Criminality

Functional Vs. Dysfunctional Families:

- **Functional:**
  - Each member is encouraged to participate
  - Family strives to make each member feel loved & valued
  - Family Members' expectations are realistic & flexible
  - Handle conflicts well
  - Family climate founded on trust.
- **Dysfunctional:**
  - **Exhibit Pseudomutuality & Pseudohostility:**
    - **Pseudomutuality:**
      - Everyone pretends everything is fine, when it's not.
    - **Pseudohostility:**
      - Mild aggression/slapping/arguing in order to maintain low intimacy. (An Avoidance Technique)
  - **Exhibit 'Marital Schisms':**
    - The family is in a constant state of disequilibrium through repeated threats of parental separation. Communication consists of defiant and coercive attempts to avoid and mask conflicts. Parents disqualify each other, seek collusions with children thereby excluding the partner.
  - **Exhibit 'Marital Skew':**
    - Family equilibrium is achieved through distorted parental relationship. The marriage is not under threat, due to one excessively powerful and dominant parent.
  - **May Tend towards the Extreme Ends of the Enmeshment-Disengagement Continuum:**
    - At the Enmeshed end – Diffuse Boundaries → 'Over-involvement'
    - At the Disengaged end – Inappropriately Rigid Boundaries → 'Lack of Involvement'

    NB: Enmeshment/Disengagement occurs between Adult-Adult/Adult-Child/Child-Child.



Issues with Different Family 'Types':

- **Single-Parent Families:**
  - Can cause Financial Strain
  - Parent's Attachment Needs not met.
  - Parent takes on multiple roles
  - Kid's needs may not be met
- **Blended/Reconstituted Families:**
  - Ie. Parent A & Child + Parent B & Child.
  - Economically Stronger than Single-Parent Families.
  - Stressors/Conflicts result from:
    - Members' attachment/love needs
    - Sexual boundaries
    - Child-rearing Expectations
- **Step Families:**
  - Child abuse (Sexual/Physical) is prevalent.
  - Issues with Child Disciplining.

Health Issues in Relation to Family Life:

- **Illness in the Family:**
  -
- **Families, The Sick Role & Caring Behaviour:**
  - The impact of a child with a chronic severe illness on family life.

Culture & Family Life:

- **Indigenous Families:??**
  - How do Indigenous Families differ from 'White-Australian' Families?
  - What are the Strengths of Indigenous Families?
  - What are the Stressors of Indigenous Families?
  - How Indigenous Families use terms like Aunty/Uncle, Brother/Sister, Cousin, Etc.
  - How do Generations relate to each other in Traditional Indigenous Families?
  - Traditional Indigenous Attitudes to Child Care.

SPECIFIC PSYCHIATRY NOTES:
AFFECTIVE DISORDERS (Depression & Bipolar)

AFFECTIVE DISORDERS

- **= Disorders in which there is a *Major Disruption of Mood*:**
  - **Eg. Major Depression:**
    - Mental disorder of *SUSTAINED* Depression of Mood, Loneliness, Despair, Insomnia, Appetite Loss, and feelings of Worthlessness, Guilt, & Hopelessness.
  - **Eg. Bipolar Disorder (AKA: Manic-Depressive Disorder):**
    - Mental disorder characterised by *PERIODS* of abnormally Elevated Mood (Hyperactivity/ Talkativeness/Insomnia/↑Libido; and *PERIODS* of Depressed Mood.

- **Aetiology:**
  - **Recognised that Pts with Depression have *Lower* levels of NA & 5HT in the CSF.**
    - Ie. Reinforced that *Deficient* NE & 5HT → Depression.
- **Current Hypotheses:**
  - ***The Amine (Monoamine) Hypothesis:**
    - Mood Disorders are due to a **Deficiency (Depression)** or **Surplus (Mania)** of at least one of three monoamine neurotransmitters **(Norepinephrine, Serotonin, or** Dopamine**)** in their respective pathways. **(NE & 5HT are the Relevant ones here)**
    - **(NE/5HT Deficiency → Depression)**
      - ***:. Anti-Depressant Drugs all act to → Increase NA &/or 5HT Signalling.***
    - **(NE/5HT Surplus → Mania)**

- ***Antidepressant Drug Groups:** **(*Anti-Depressant Drugs all act to → ↑NA and/or 5HT Signalling*)**
  - **Tricyclic Antidepressants (TCA's)(3-Ringed Structures); & Tetracyclics (4-Ringed Structures):**
    - **MOA: Block BOTH Noradrenaline AND Serotonin (5HT) Reuptake**.
  - **Selective Serotonin Reuptake Inhibitors (SSRI's):**
    - **MOA: Block Serotonin (5HT) Reuptake**
  - **Selective Noradrenaline Reuptake Inhibitors (SNRI's):**
    - **MOA: Block Noradrenaline Reuptake**.
  - **Monoamine Oxidase Inhibitors (MAOi's):**
    - **MOA: Inhibit Monoamine Oxidase Function:**
      - (Ie. ↓Catecholamine Breakdown → Surplus of NE and/or 5HT → Improved Mood.)
- ***Bipolar Drugs:**
  - **Lithium (Lithium Carbonate):**
    - Used to stabilise Bipolar Disorder (Manic/Depressive)
      - – Ie. Counteract both Mania & Depression.
    - **MOA:**
      - Increases Serotonin Levels → Counteracts Depression
      - Decreases Noradrenaline Levels → Counteracts Mania
  - **Valproate:**
    - **MOA:** Enhance GABA's Action → Thought to Stabilise Neurotransmission in this pathway.
      - → Prevents mood swings & Reduces Mania.
    - **NB: Less toxic than Lithium.**

- **Depression:**
  - **K10 Scale:**
    - **10 Questions: Over the Past MONTH, How Often did you Feel...**
      - Tired for no good reason?
      - Nervous?
      - Uncontrollably Nervous?
      - Hopeless?
      - Worthless?
      - Restless/Fidgety?
      - Uncontrollably Restless/Fidgety?
      - Depressed?
      - Uncontrollably Sad?
      - Everything was an effort?
    - **5 Possible Answers Each:**
      - None - of the time
      - A Little -
      - Some -
      - Most -
      - All -
    - **Score Range 10-50 – Risk of Anx/Dep Disorder:**
      - 0-15 Low; 16-30 Mod; 30-50 High

SPECIFIC PSYCHIATRY NOTES:
DEFINITIONS OF DISORDERS

Psychiatry:

Anxiety Disorders (Respond to certain objects or situations with fear and dread, as well as with physical signs of anxiety or nervousness, such as a rapid heartbeat and sweating - diagnosed if the person's response is not appropriate for the situation, if the person cannot control the response, or if the anxiety interferes with normal functioning.)	Generalised Anxiety Disorder PTSD (Post Traumatic Stress Disorder) OCD (Obsessive-Compulsive Disorder) Panic Disorder Social Anxiety Disorder Specific Phobias (
Mood Disorders (Affective Disorders) (Persistent feelings of sadness or periods of feeling overly happy, or fluctuations from extreme to extreme)	Depression Mania Bipolar (Manic Depressive)
Psychotic Disorders distorted awareness and thinking. Two of the most common symptoms of psychotic disorders are hallucinations -- the experience of images or sounds that are not real, such as hearing voices -- and delusions, which are false beliefs that the ill person accepts as true, despite evidence to the contrary.	Schizophrenia
Eating Disorders	Anorexia Nervosa Bulimia Nervosa
Impulse Control & Addiction Disorders (unable to resist urges, or impulses, to perform acts that could be harmful to themselves or others, and cause them to ignore responsibilities & relationships.)	Pyromania (Starting Fires) Kleptomania (Stealing) Compulsive Gambling/Alcohol/Drugs
Personality Disorders (extreme and inflexible personality traits that are distressing to the person and/or cause problems in work, school, or social relationships. In addition, the person's patterns of thinking and behavior significantly differ from the expectations of society and are so rigid that they interfere with the person's normal functioning.)	Antisocial Personality Disorder
Adjustment Disorder (when a person develops emotional or behavioral symptoms in response to a stressful event or situation.Adjustment disorder usually begins within three months of the event or situation and ends within six months after the stressor stops or is eliminated.)	
Dissociative Disorders (severe disturbances or changes in memory, consciousness, identity, and general awareness of themselves and their surroundings. These disorders usually are associated with overwhelming stress, which may be the result of traumatic events, accidents, or disasters that may be experienced or witnessed by the individual.)	Dissociative Identity Disorder (AKA: Multiple Personality Disorder/ Split Personality)
Factitious Disorders:	

Family Studies Tutorial
Postnatal Depression

Presentation:

- Anxiety/Depression/Acopia
- Referral from external source (Midwives, comm. health)
- Inability to cope
- Husband/family member presents with concerns
- **Symptoms:**
  - Somatic Symptoms
  - Issues with children
  - Irribability & Tearfulness
  - Avoiding personal discussion
  - Anxiety
  - Denial
  - Delayed attachment
  - Negative feelings to infant
- **Risk Factors:**
  - Indigenous background
  - Lower Socio-economic status
  - Younger age
  - Absence of partner
  - Medical complications
  - Marital problems
  - History of abuse
  - Not breast-feeding
  - No job to return to
  - Problematic births
  - Reluctance to seek help
- **Protective Factors:**
  - Optimism & Self esteem
  - Higher education
  - Good SES
  - Strong relationship with partner
- **Management:**
  -
- **Effect on Infant:**
  - Insecure infant – lack of trust, poor interaction with caregiver
  - Attachment issues – discipline, behaviour & aggression problems
  - Infant withdrawn, passive
  - Slow to reach milestones
  - High risk of mental health issues in child.
- **Dads:**
  - Fathers can get depressed too
  -

12-15% of mothers

Depression:

- **= Depressed mood, or loss of interest or pleasure.**
  - **+ 4 of the following:**
    - Sadness or fear
    - Inability to feel emotion (Anhedonia)
    - Decreased pleasure derived from previously pleasurable activities
    - Changing appetite and weight gain/loss
    - Insomnia
    - Restlessness

        - Fatigue
        - **Guilt**, helplessness, anxiety, fear
        - Decreased self-esteem
        - REminating on death or suicide
- **Post natal Depression –** Non-psychotic depression occurring in the first 3mths

Screening:

- K10
- EPDS - Edinburgh postnatal depression scale (10qs, 5mins, responses graded).

<u>Other Postpartum Distresses:</u>

- **Post-partum Anxiety**
- **Postpartum OCD**
- **Postpartum Psychosis (Hallucinations & Delusions)**
- **Exacerbation of Pre-existing mental illness**
- **Baby Blues:**
    - 70-80% of women
    - Feelings of depression, anger, anxiety & guilt lasting for several days
    - Rx: Supportive management & Explanation
    - Disappears within a few days

Eg.

- **22yo F pw. Inability to sleep. 2wks post delivery.**
- **Questions:**
    - How is bub sleeping?
    - How are you managing at home?
    - Who is supporting you?
    - Hows your diet?
    - Do you feel down?
    -

SPECIFIC PSYCHIATRY NOTES:
PSYCHOSES

PSYCHOSIS

- **= Cognitive/behavioural disturbances that manifest as either:**
  - Inability to recognise reality
  - Or. Inability to differentiate between reality and surreal experiences.

Schizophrenia:

- A ***Group*** of Psychosis-Related Disorders.
- **Characterised by:**
  - **Altered Perception** and/or **Content of Thought**.
  - **Delusions** and/or **Hallucinations**
    - »may involve personality "splitting" (but this is not multiple personality disorder)
- **Patient Presentation:**
  - **Symptoms may be either *'Positive'* (Ie. Distortions), or '*Negative*' (Ie. Diminished Function):**

Positive Symptoms:	Negative Symptoms:
Hallucinations Delusions Disorganised speech/thought Disorganised & Bizarre Behaviour	Poor fluency of Speech/Thought Poor Drive/Motivation Poor Concentration Blunted Affect (Emotionless) No Concept of Time NB: Patient may seem to show ***Self-Neglect*** – (Ie. Forget to take pills/eat/go to toilet) but this is just a manifestation of the above symptoms.

- **PATHOPHYSIOLOGY: TWO Current Hypotheses:**
  - NB: Both Assume that ***Dopamine is Out of Control***.
  - ****1. Dopamine Hypothesis (Dopamine Theory):**
    - **Hypothesis = Overactivity of Dopaminergic Pathways.**
    - Either from ↑Dopamine Release; or ↑DA-Receptor Density.
  - **2. Dysregulation Hypothesis:**
    - **Hypothesis = An extension of the '*Dopamine Hypothesis*': Psychosis is due to Improper Activity of the Dopaminergic Pathways AND OTHER Pathways**
    - **NB: *Other* Neurotransmitters (aside from Dopamine) implicated in Schizophrenia:**
      - **Serotonin** (Modulation of Dopaminergic Transmission & Cognitive Function)
      - **Glutamate** (Recognised that NMDA-Glutamate-R's can cause → Psychosis)
      - **GABA** (Loss of GABA "Sensory Gate")

- ***DOPAMINE – What does it do in the brain?:**
  - **Dopamine Receptor Subtypes:**
    - **D_1-like Receptors:** (Now includes D_1 & D_5)
      - **→ Activates Adenylate Cyclase → ↑Signalling.**
    - ***D_2-like Receptors:** (Now includes D_2, D_3, D_4)
      - **→ Inhibits Adenylate Cyclase → ↓Signalling.**
      - **(The ones implicated in Schizophrenia)**
  - **NB: Most Neuroleptic Drugs are *D_2R-Antagonists*, but *can* affect others somewhat.**
    - **D_2R's are most dense in the Mesocortical-Mesolimbic Pathway** – Ie. The pathway affected in Schizophrenia.
    - **However, D_2R's are also important in the Basal Ganglia** - for *Initiation of Movement*, & hence D_2R-Antagonists may cause '*Extra-Pyramidal*' (Motor) side effects due to "apparent" Dopamine Depletion → *Parkinson-like Symptoms*. (Side Effect)

Antipsychotics:

- **= Any class of drug used to treat psychosis.**
- **Key MOA:**
  - **All are D_2-Like Receptor Antagonists** → Inhibition of Adenylate Cyclase → ↓Intracellular Signalling.
    - **NB: Some also block D_4-Receptors.**
  - **NB: Some block other monoamine receptors (Ie. Serotonin)**
  - **NB: *REMODELLING* also takes place – Responsible for 'Lag-Period'.**

- **Classified by: (a) Whether they trigger Motor Side Effects:**

	Typical	***Atypical***
Motor ("Extrapyramidal") Side Effects?	Yes (Drugs work non-specifically dopamine pathways – Incl. Basal Ganglia aka. "Nigrostriatal Pathway")	No (or *Much Less*) (Drugs work specifically on the Mesocortical-Mesolimbic Pathway – Little/no influence on Basal Ganglia, aka. "Nigrostriatal Pathway")
MOA:	D_2-Receptor Antagonists	Selective as D_4-Receptors Antagonists Are also 5HT-Receptor Antagonists (Also D_2-Receptor Antagonists)
Examples:	**Chlorpromazine (THORAZINE)** **Haloperidol (HALDOL)**	**Clozapine** **Sulpiride**

- **Classified by: (b) Structural Differences:**
  - **Phenothiazines:**
    - **Clorproma**zine **(THORAZINE)**
    - Fluphen**azine**
    - Perphen**azine**
    - Triflourper**azine**
  - **Heterocyclics:**
    - **Haloperidol**
    - **Risperidone**
    - **Cloza**pine
    - Lox**apine**
    - Olanz**apine**

- **Side Effects – NB: Significant variability between drugs :. Treatment is Individualised:**
  - **Motor (Extrapyramidal) Disturbances:** (From Dopamine Antagonism in Basal Ganglia)
    - Akathesia – Motor Restlessness
    - Pseudoparkinsonism (or Parkinson-like symptoms) – rigidity, tremor, dyskinesia
    - Dystonia – spasms of the face and neck
    - Tardive dyskinesia – involuntary movements of face (smacking lips, tongue), trunk and limbs.
  - **Endocrine Disturbances:**
    - Prolactin secretion → Menstrual alterations, Gynecomastia, lactation, loss of libido.
      - (Dopamine is Prolactin inhibiting factor :. ↓Dopamine → ↑Prolactin)
  - **Antimuscarinic Effects:** (Muscarinic Antagonism)
    - Dry Mouth/Blurred Vision/Tachycardia/Urinary Retention/Constipation
  - **Anti-Adrenergic Effects:** (From α_1-Adrenergic Antagonism)
    - Hypotension
  - **Antihistamine Effects:**
    - Sedation
    - Increased Appetite → Weight Gain (Can be severe)
  - **Hypersensitivity Reactions:**
    - **Jaundice:** 'Obstructive Jaundice'
    - **Rare: Leucopenia & Agranulocytosis:** Low WBCs & No Granulocytes → Potentially Fatal
    - **Rare: Antipsychotic Malignant Syndrome** (Unknown Cause):
      - hyperthermia and Parkinson-like symptoms (especially muscle rigidity)
- **Compliance – A Significant Problem:**
  - Paranoid Pts may resist taking drugs due to *'Lag Period*' of Side Effects.
  - Pts may have No Sense of Time → forget *when* to take meds.
  - Pts may *Enjoy* aspects of their condition (Eg. Creativity, consoling hallucinations etc.)
  - **NB: Long-Term "Depo" (Intradermal Implants) are available in place of Oral Tablets for those with memory problems & paranoia etc.**

Mental Health

PTSD – POST TRAUMATIC STRESS DISORDER

Epidemiology:

- ≈65% of men & 50% of women are exposed to a traumatic event in their lifetime.
- **'At-Risk' Populations:**
  - Aboriginal and Torres Strait Islander peoples
  - Refugees/Asylum seekers
  - Military and Emergency-Service Personnel (Higher in women)
  - Car Accidents Victims
  - Criminals & Victims
  - Sexual Assault
  - Natural Disasters
  - Victims of Terrorism

Aetiology:

- **A *Stressor* = Causative Factor**
  - NB: Not everyone will develop PTSD from a traumatic event.
  - NB: Different traumatic events affect people differently – ***Ie. Subjective***
- **The *Response* MUST Involve:**
  - Intense Fear; or
  - Helplessness; or
  - Horror
  - (Disorganised/Agitated Behaviour in Children)
- **Risk Factors:**
  - Being Female
  - Recent Stressful Life-Changes
  - Childhood Trauma
  - Inadequate Social Support (family or peer)
  - *External* 'Locus of Control' – Ie. Helplessness - Rather than an *internal* one (human cause)
  - Recent Excessive Alcohol Intake
  - Personality Component – (Borderline, Paranoid, Dependent, or Antisocial Personality disorders)
  - Genetic Component - (Genetic vulnerability to psychiatric illness)

Pathophysiology:

- **Traumatic Events cause *Lasting Changes* in the Brain → PTSD:**
  - **Abnormal Secretion of Cortisol**
    - (Ie. ↑CRH release → ↑ACTH secretion → Adrenal Cortisol secretion)
  - **Changes in the Hippocampus**
    - Impact on Memory & Learning
  - **Changes in the Amygdala**
    - Impact on Emotional response to Fear & Stress

Presentation:

- **3 Main Groups of Symptoms:**
  - **1. Intrusive Recollection:**
    - Distressing Recollections of the Traumatic Event
      - (Eg. Flashbacks, Nightmares)
    - Intense Psychological distress or Physical Reactions when reminded of the event.
      - (Eg. Sweating, Heart Palpitations or Panic)
  - **2. Avoidance & Emotional Numbing:**
    - Avoidance of Activities, Places that cause recollections.
    - Avoidance of Thoughts, Feelings, or Conversations associated with the trauma.
    - Restricted Emotions – (Feeling detached from others)
  - **3. Hyperarousal:**
    - Difficulty Sleeping
    - Irritability
    - Difficulty Concentrating
    - Hypervigilance
    - Exaggerated Startle Response
  - **NB: The DSM-IV Stipulates that symptoms must occur for *More Than One Month*.**
  - **NB: The DSM-IV also requires *Significant Distress* or *Social/Occupational Impairment*.**
- **Duration of Symptoms:**
  - **Acute –** Symptoms subside after 3mths.
  - **Chronic –** Symptoms *continue* after 3mths.
  - **Delayed Onset** – Symptoms appear at least 6mths *After* the stressor.

Diagnosis:

- **DSM-IV Criteria for PTSD:**

Exposure to a Traumatic Event in which ***Death/Serious Injury*** was ***Experienced/Witnessed***.	***← AND →***	***Responded*** with ***Intense Fear, Helplessness,*** or ***Horror.***
↑ ***AND*** ↓		
- Experience one of the 3 Symptom-'Clusters' For LONGER Than 1Mth:		
Intrusive Recollection	Avoidance/Numbing	Hyperarousal
↑ ***AND*** ↓		
Symptoms must occur for at least 1 Month **Diagnosis requires *Significant Distress* or *Social/Occupational Impairment***		

- **Separating PTSD from its 2 Differential Diagnoses:**
  - **Acute Stress Disorder:**
    - **Differ by Timeframe** – ASD is symptoms lasting ***Up To 1Mth***; PTSD symptoms last for ***>1Mth***.
    - **ASD also Involves Dissociative Symptoms** – Detachment, ↓Awareness of Surroundings, Depersonalisation, & Dissociative Amnesia. (NB: PTSD → *Avoidance*, not *Dissociation*)
  - **Adjustment Disorder:**
    - **Stressor Not Necessarily Severe** – Eg. PTSD symptoms following a *Non-Extreme* Stressor.
    - ***Response* to Stressor DOES NOT meet DSM-IV Criteria** – Ie. No Fear/Helplessness/Horror.

- **Other Considerations:**
    - **Difficulty in Diagnosing:**
        - PTSD is Under-Diaganosed
        - Pt. May fail to Disclose Adequate Information
    - **Comorbidity:**
        - PTSD often presents *with* Major Depression/Substance Abuse.
        - PTSD Increases risk of Panic Disorder, Agoraphobia, OCD, Social Phobia, etc.
    - **PTSD in Children:**
        - Children may have different symptoms
        - There are Child-Specific screening tools.

Screening:

- Do you avoid being reminded of the experience by staying away from certain places, people or activities?
- Have you lost interest in activities that were once important or enjoyable?
- Have you begun to feel more distant or isolated from other people?
- Do you find it hard to feel love or affection for other people?
- Have you begun to feel that there is no point in planning for the future?
- Have you had more trouble than usual falling or staying asleep?
- Do you become jumpy or easily startled by ordinary noise or movements?

- (Yes= 1. No=0. A score of 4 or higher indicates possible PTSD) (Positive predictive value of 71% and a negative predictive value of 98%)

Treatment considerations – PTSD and ASD:

- **Treating PTSD:**
    - Ensure Adequate Sleep (Medicate if necessary)
    - Ensure social support (Family/Friends/Helpline)
    - Give opportunity to review emotional feelings about a traumatic event.
    - **Psychotherapeutic Interventions (≈10x 1hr sessions):**
        - Supportive counselling
        - Discuss the event
        - Coping Strategies(e.g., relaxation)
        - Trauma-focused Cognitive Behaviour Therapy (CBT)
        - Hypnosis
    - **Pharmacological Interventions:**
        - ***SSRI's** – Selective Serotonin Reuptake Inhibitors (Antidepressants):
            - → Prolongs action of serotonin on the brain.
            - → Reduces all symptoms of PTSD.
        - **MAOIs -** Monoamine Oxidase Inhibitors (Antidepressant):
            - → Prolongs action of catecholamines in the brain.
        - **Carbamazepine (Tegretol) –** (Anticonvulsant):
            - → Voltage-Gated Na-Channel Modulator (slows 'recovery' of VG-Na-Channels)
            - → Prevents Repetitive Neuronal Firing.
- **Treating ASD:**
    - **NB:** Treatment SHOULD NOT start until 2 weeks ***After*** traumatic event.
    - Pt. should be offered Trauma-Focussed CBD (Cognitive Behavioural Therapy)
    - **NB:** Drug treatments should be avoided within 4 weeks of onset of symptoms.

Summary:

- Important to distinguish between ASD & PTSD
- Psycho-Education, Desensitisation & Normalisation can help.
- Antidepressants & CBT are effective treatments for PTSD
- Other mental disorders can Co-Present with PTSD (Panic Disorder, Major Depression, Alcohol Abuse)

THE MENTAL HEALTH INTERVIEW – (HEADSS Assessment):

HEADSS Assessment:

- **Presenting Problem**
- **Previous Mental Health History**
- **Family Mental Health History**
- **Personal History**
- **General Medical History**
- **Medications**
- **Substance Use History**
- **Risk Assessment – *Just ask the question*:**
    - **Suicide/Harm to Self:**
        - Past/Present
        - Intent
        - Plan
        - Family History of Suicide
    - **Harm to Others**
    - **Forensic**

MSE – Mental Status Examination:

- **NB:** Not a series of structured questions
- **Rather – It is just a *Snapshot* of general mental status at that point in time:**
    - **Appearance & Behaviour**
    - **Mood –** (The general 'feeling')
    - **Affect –** (Look to see whether their *Affect* is congruent with *Mood*)
    - **Speech –** (Rate/Nonsense/Pressured)
    - **Thoughts** – Does their thinking make sense?
    - **Sensory Function & Perceptions –** (Orientation & Understanding)
    - **Insight –** (Do they realise that something's wrong?)
    - **Judgement –** (Capacity to make safe decisions)
    - **Risk** – (To Self/Others)

NB: NEVER GIVE YOUR PERSONAL NUMBER TO A MENTAL HEALTH PATIENT – Refer them to a helpline.

EXAM: SUBSTANCES & RISK – Mention these issues in every exam question.

Personality Disorders:

- **Come in 3 Broad Classifications:**
    - **The "Mad" –** Eg. Obsessional /Crazy
    - **The "Bad" –** Eg. Narcissistic
    - **The "Sad" –** Eg. Depressed
- **Curable?**
    - Some grow out of it
    - Psychotherapy can help.

Introduction to Addiction

Drugs are NOT NEW – Have been Used & Abused for Centuries:

- Incl. Opium, Alcohol, Cocaine, Tobacco, etc...

In the Context of PAS, a 'Drug' is:

- "A Chemical, used *Non-Medically*, and *Self-Administered* for its Psychoactive Effects."

What Drugs:

- **NB: The Media tends to Focus on *'Illicit'* Drugs:**
  - Cannabis
  - Amphetamines
  - Ecstasy
  - Cocaine
  - Heroin & Other Opioids
  - Benzodiazepines
  - Hallucinogens
  - GHB (Gamma-hydroxy-butyrate)
  - Ketamine
- **However, the *Most Damaging* Drugs *In Our Society* Are Tobacco & Alcohol:**
  - **Tobacco**
  - **Alcohol**

Why the Concern About Drugs?:

- **Drugs have Many Potential Adverse Health Effects:**

Effect on CNS	Substance	Intoxication Effects	Potential Adverse Effects
CNS Depressants	**Alcohol**	Analgesia Relaxation Disinhibition Impaired Balance/Coordination	Dependence Trauma Other Multi-System Effects
	Opioids (Heroin, Codeine, Fentanyl, Morphine, etc)	Analgesia Euphoria Drowsiness	Dependence Nausea Constipation Sedation/Unconsciousness Coma
	Depressants (Barbituates, Benzodiazepines)	Analgesia Relaxation Bradycardia Hypotension Slowed Breathing Poor Concentration	Dependence Fatigue Respiratory Depression/Arrest
	Cannabinoids (Hash & Cannabis)	Euphoria Slowed thinking Confusion Impaired Balance/Coordination	Dependence Cough Impaired Memory/Learning Anxiety Panic Attacks (Schizophrenia)
CNS Stimulants	**Stimulants** (Amphetamines, Cocaine, Ecstasy, Methamphetamines, Nicotine, Caffeine)	Tachycardia Hypertension Hyper-Metabolism Excitement Hyper Vigilance	Dependence Palpitations ↓Appetite Weight Loss Heart Failure

What Constitutes *"Hazardous"* Use?:

- = "Any pattern of Substance Use that Increases the Risk of Harmful Consequences for the User or the Public"
- **Harmful Consequences May Affect All Aspects of Health:**
  - Physical (Eg. Hepatitis – From injection drugs)
  - Mental (Eg. Depressive Episodes – From Alcoholism)
  - Social (Eg. Turning to Crime – To Fund Addiction; Or Domestic Violence)

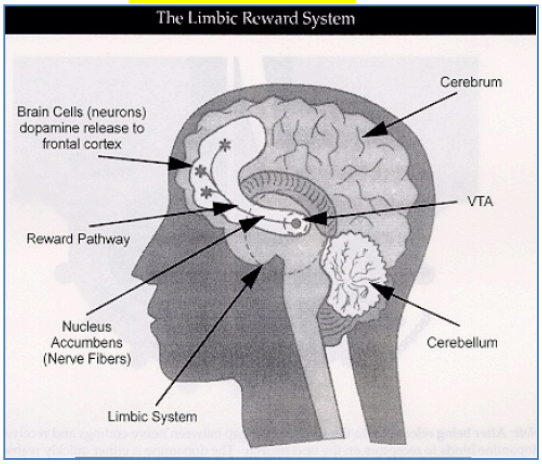
What Constitutes *"Substance Abuse"*?:

- = "A Maladaptive Pattern of Substance Use → ***Clinically Significant Impairment*** or ***Distress***"
- **Typically Manifests as one of the following (Within a 12mth Period):**
  - Failure to fulfil Major Role Obligations (eg. Job/Parent/etc)
  - Use in Situations in which it is Physically Hazardous
  - Recurrent Substance-Related Legal Problems
  - Continued Use, Despite Persistent Social/Interpersonal Problems related to effects of substance.
- **NOT related to Withdrawal, Tolerance or Compulsive Use** (Which are characteristics of Substance Dependence)**.**

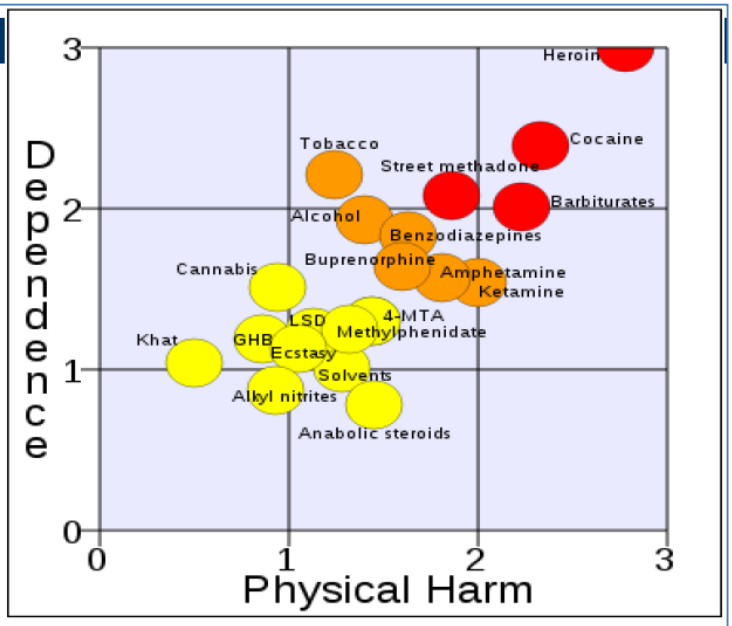
What Constitutes *"Substance Dependence" ("Addiction")*?:

- = "Substance Abuse → ***Some form of Physiological/Mental Addiction***".
- **Manifests as one of the following (Within a 12mth Period):**
  - **Tolerance – Physiological Adaptation** → Diminishing Effect, or ↑Dose required for same effect.
    - *Withdrawal Symptoms – (Tolerance-Related Symptoms after sudden cessation of drug use)
    - Substance is Taken in Larger Amounts (or for longer than intended)
  - **Mental Addiction** → Change in Behaviour:
    - ***Compulsive Use *Despite* Serious Negative Consequences.**
    - Persistent Desire, but Unsuccessful Attempts to Cut Down Use.
    - Obsessive behaviour focussed on *Obtaining/Recovering From* the Substance.
    - Social/Occupational/Recreational Activities *Given Up* in favour of substance.
    - Substance Use continues Despite Awareness of Problems.
  - **IE>** The Need to Constantly Take the Drug to Feel Physically/Mentally 'Normal'.
  - **NB:** *Pathological Symptoms Occur on Cessation of Use*.

- **Why Do People Become Dependent on Drugs? – 'The 'Mesolimbic' Dopamine Pathway':**
  - **Primary Effects are on the Midbrain → contains many areas important to Substance Dependence:**
    - ***Ventral Tegmental Area* & *Nucleus Accumbens*:**
    - -Regions are involved with Motivation & Learning
    - -Involved in Reinforcing Behaviours that are:
      - Pleasurable
      - Or Life-Sustaining.
    - Therefore, Ironically, the pathways critical to evolutionary fitness are central to the Self-Destructive condition of Drug Dependence.
  - **The "Limbic (or 'Mesolimbic') Reward System" – AKA: The "Addiction Pathway":**
    - Pleasurable Stimuli → **Dopamine Release** in **Nucleus Accumbens** & **onto Prefrontal Cortex**.



Which are the *Most Addictive & Physically Harmful* Drugs?:



Data from *The Lancet* shows heroin to be the most addictive and most harmful of 20 drugs.(ref available)

- NB: Alcohol & Tobacco are more harmful & addictive than Ecstasy, LSD & Cannabis.

Substance Withdrawal:

- **Defined as Either:**
  - Characteristic Withdrawal Syndrome (Symptoms Specific to the Particular Substance)
    - OR
  - Where the *Same* or *Closely-Related* Substance is taken to Relieve/Avoid Withdrawal Symptoms. (Eg. Nicotine Supplements for Smoking Cessation)
- **NB:** Withdrawal Symptoms usually ≈ Opposite Effects of the Drug.
- **NB:** Withdrawal is a *Consequence of Dependence*.

Why Do People Use Drugs?

- **Individual Risk Factors:**
  - Positive Expectations of Use
  - Poor Coping Skills
  - Interpersonal Difficulties
  - Psychological Trauma
  - Impulsiveness
  - Low Self-Esteem
  - Anxiety
  - Depression
  - Poor Academia
  - Sensation-Seeking Personality
- **Social/Environmental Risk Factors:**
  - Low SES Status
  - Liberal/Cultural Norms Towards Use
  - High Crime Rate
  - High Unemployment
  - Alienation
  - Drug Availability
- **Family Risk Factors:**
  - Parental Substance Abuse
  - Positive Family Attitudes towards Use
  - Family Disruption
  - Parental Anti-Social Behaviour
  - Poor Attachment
  - Poor Parental Monitoring
- **Peer Risk Factors:**
  - Heavy Substance Use among Peers
  - Positive Peer Attitudes towards Use
  - Greater Attachment to Peers than to Parents.
  - Delinquent Peer Group.

Barriers to Accessing Healthcare for Drug User:

- Discrimination & Stigma
- Negative Attitudes based on Stereotypes & Fear
- NB: Drug Users are a Diverse Group who require Professional & Effective Treatment.

Drug Seeking Behaviours:

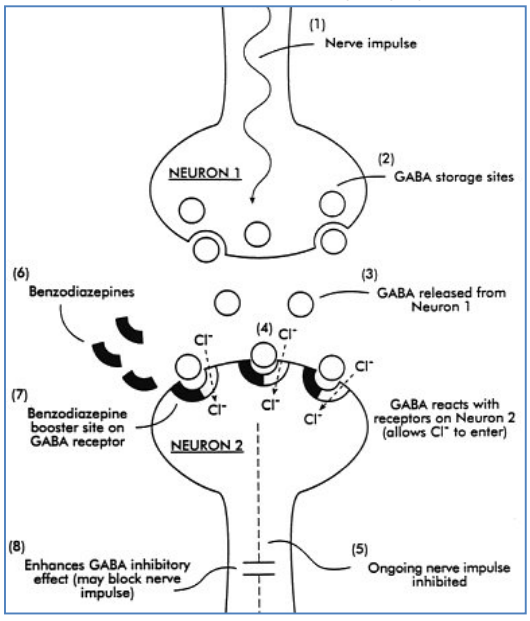
- **Verbal & Non-Verbal Communication Don't Match.**
  - Eg. Says they are having a migraine, but don't mind bright light or don't look like they're in pain.
- **Asking for Drug by Name & Dismissing other suggestions.**
- **Arriving Near Closing Time**
- **"Not from the area"**
- **May bring a False Letter from 'Their Doctor'.**
- **Last Minute Requests ('Doorknob Questions')**

ILLICIT DRUGS:

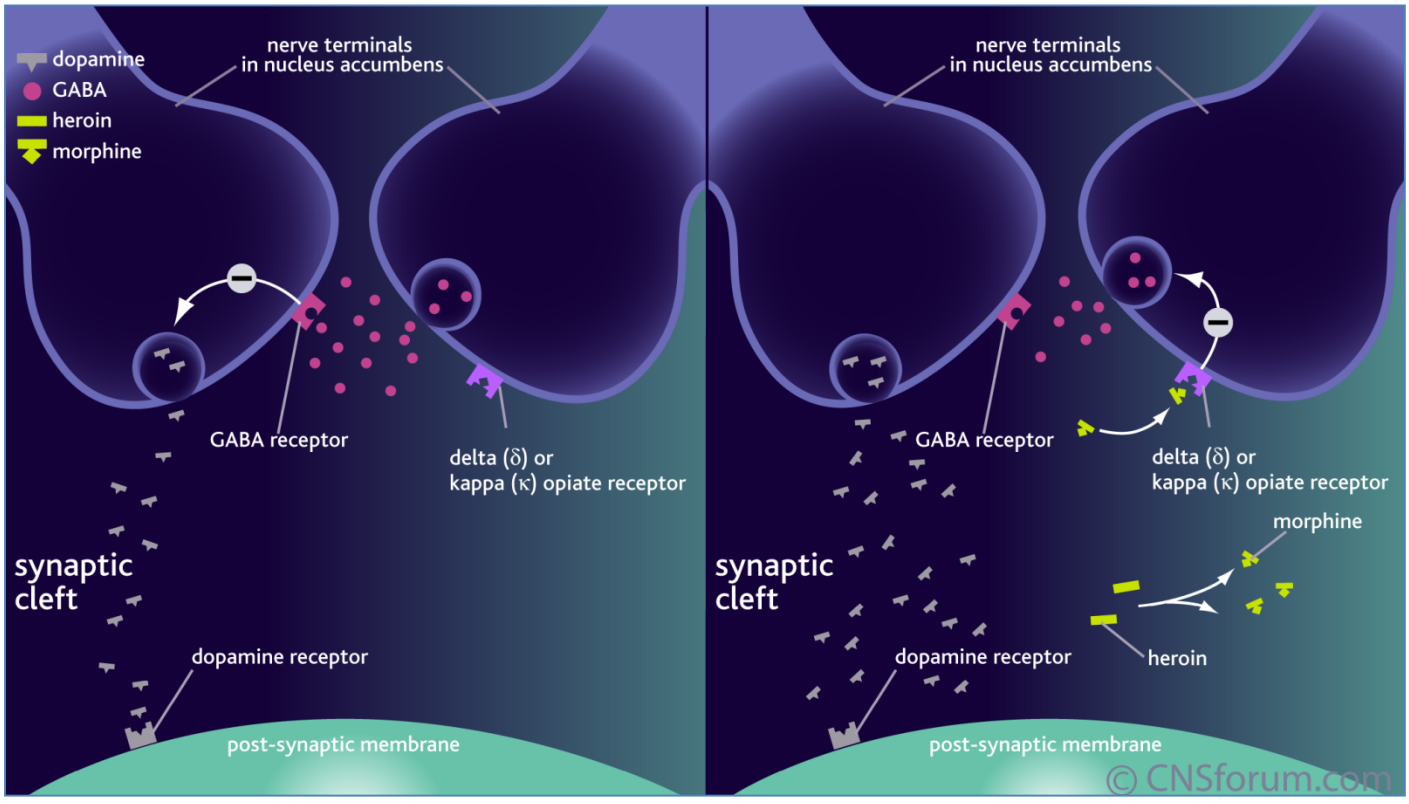
- **Summary of the Basic Pharmacodynamic Effects:**

CNS Depressants		CNS Stimulants	
Drug	**Pharmacodynamics (MOA)**	**Drug**	**Pharmacodynamics (MOA)**
Alcohol (Legal)	**↑Effects of GABA (Inhibitory)** **↓Effects of Glut. (Stimulatory)** **Stimulates Mesolimbic Pathway**	**Cocaine**	Blocks Reuptake of: - Dopamine - Noradrenaline - Serotonin →Prolonged Effects. **Stimulates Mesolimbic Pathway**
Benzodiazepines	(GABA Channel Modulator – ↑Channel's Affinity for GABA) **↑GABA Actions →Cl-Influx (Inhibitory)**	**Amphetamines**	**↑Release of Dopamine** **↓Reuptake of Dopamine** → Prolonged Dopamine Action. **Stimulates Mesolimbic Pathway**
Opioids (Heroin/ Codeine/ Fentanyl)	('mu' & 'delta' Opioid Receptor Agonists) **Dopamine Release in Mesolimbic Pathway**	**Ecstasy**	**↑Release of Serotonin** **↓Reuptake of Serotonin** (Similar to antidepressant effects of 'SSRIs')

- **Detailed MOAs of Illicit Drugs in the Brain:**
  - **CNS Depressants:**
    - **Benzodiazepines:**
      - **Benzos are $GABA_A$ Channel *Modulators***.
      - **Agonist-Like Effect but NOT an Agonist →** Causes Conformational Change in GABA Channel
      - → Makes it easier for GABA to Open the Channel
      - →↑Frequency of GABA-Channel Opening:
        - Ie. ↑Cl^- Influx → Hyperpolarisation →Stabilises Membranes of Target Neurons. (NB: Useful in epilepsy)



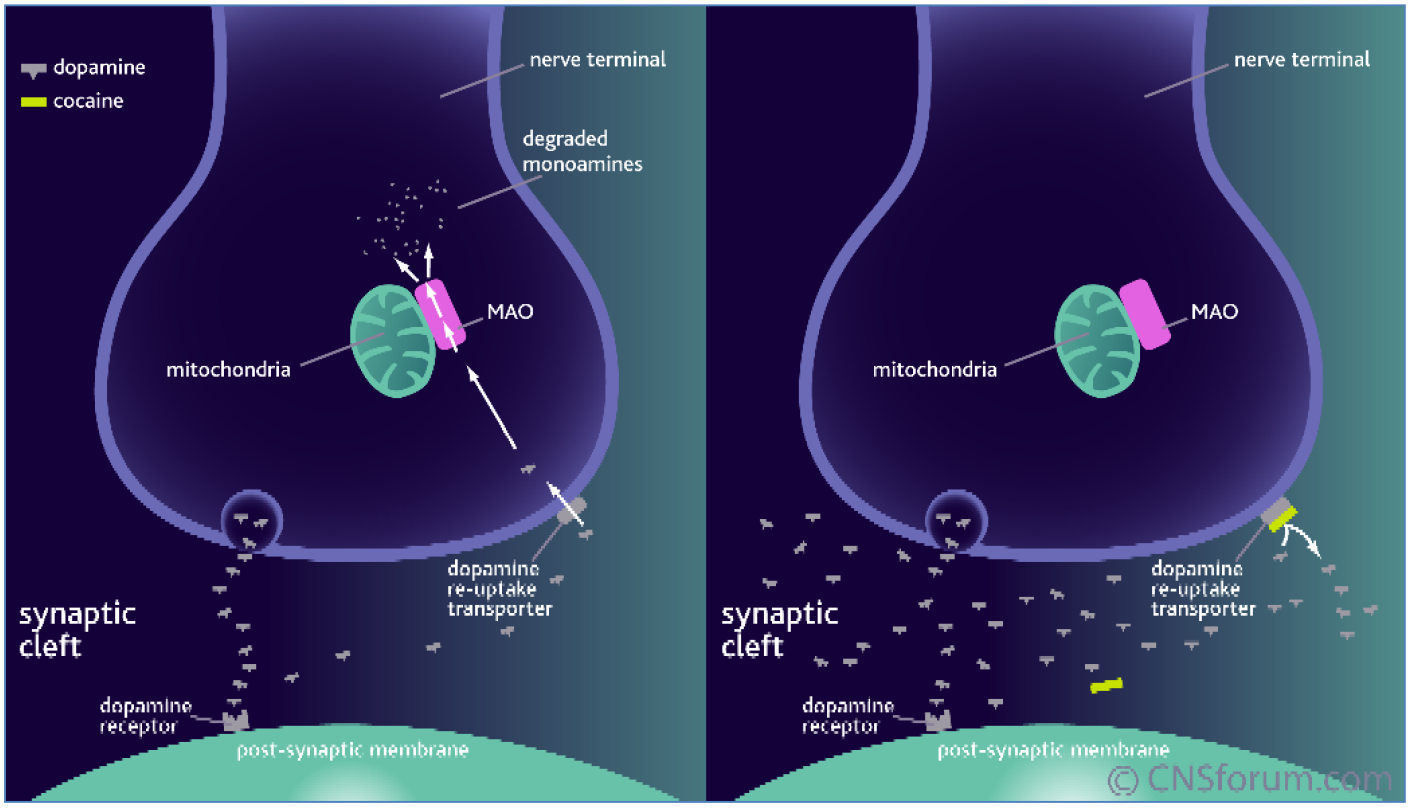
- **Heroin (& other Opioids):**
  - **Q.** Heroin is a *Precursor* to Morphine, so Why is it preferred to Morphine?
    - **A.** Because Heroin is *More Lipophilic* → Crosses the BBB *Much Quicker*.
  - **Mech. Of Action: Activates Opiate Receptors in Brain →**
    - → Inhibits GABA Release in Nucleus Accumbens (↓Inhibition)
    - →Decreased Inhibition of Dopaminergic Neurons → ↑Dopamine Release
    - ***→↑Dopamine Release in Mesolimbic Pathway → Pleasure.**
  - **Immediate Effects:**
    - Euphoria
    - Analgesia
    - Nausea/Vomiting (NB: Dopamine can trigger vomiting centres)
    - Pinpoint Pupils
    - Shallow Breathing
    - Hypothermia
    - Sedation
  - **Long Term Effects:**
    - Collapsed Veins & Skin Abscesses
    - ↑Risk of Blood-Borne Diseases (From Needle Use – eg. HIV/HEP-B/Etc.)
    - Chronic Constipation → Faecal Impaction
    - Fertility Problems
    - Malnutrition & ↓Immune Function.
    - Social Problems (Relationships/Career/etc)
    - Risk of Overdose (NB: Even in Experienced Users)



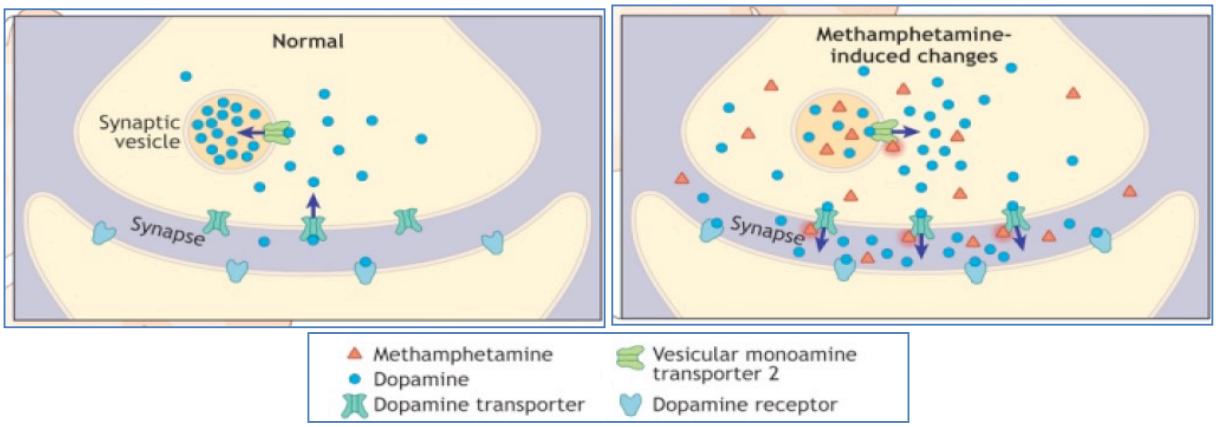
- **CNS Stimulants:**
  - **Cocaine:**
    - Is a Powerful Anaesthetic (If Pure).
    - Is Usually Snorted, but can also be injected.
    - **Mech. Of Action: Blocks Dopamine Reuptake Transporter →**
      - → Elevated Dopamine Levels in the Synapse.
      - (NB: Same MOA to Serotonin Reuptake Inhibitors (Antidepressants)).
    - **Immediate Effects:**
      - Tachycardia
      - Hyperthermia
      - Pupil Dilation
      - Faster Movements than usual
      - **Others Depend on Dose:**

Small Amounts	Large Amounts
- Feeling Good - Feeling Excited - Feeling Confident (Taking more risk than usual) - ↓Appetite - Feeling Alert & Energetic - ↑Aggressive - ↑Sexual Drive	- Headaches - Dizziness - Hypervigilance - Violence/Aggression - Loss of Libido - Chest Pain - Myocardial Infarction - Convulsions - Psychosis

    - **Long Term Effects:**
      - Nose Bleeds (Epistaxis)
      - Sinus Problems
      - Damage Inside Nose (Eg. Hole in Nasal Septum)
      - ↑Risk of Blood-Borne Diseases (From Needle Use – eg. HIV/HEP-B/Etc.)



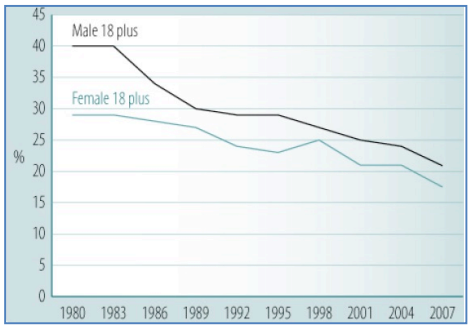
- **Amphetamines (Powder Methamphetamine – AKA: "Speed") (Crystal Meth – AKA: "ICE"):**
    - NB: "ICE" Is *Crystal* Methamphetamine – a powerful, synthetic stimulant.
        - ICE is more potent than other forms of Amphetamine.
        - ICE = 80% Pure
    - NB: "Speed" is *Powdered* Methamphetamine.
        - Speed is Less Potent
        - Speed = 20-30% Pure.
    - How is it taken? – Smoked/Swallowed/Snorted/Injected/Vaporised.
- **Mech. Of Action – 2 Fold Action on Dopamine Reuptake & Vesicular Storage:**
    - **1.** *Reverses* the Dopamine Reuptake Transporters.
        - (Ie. Instead of Taking Up Dopamine, they Secrete Dopamine into the Synapse)
        - → ↑[Dopamine] in the synapse.
    - **2.** *Inhibits* Dopamine Packaging Transporters in Vesicles.
        - → ↑[Dopamine] in Pre-Synaptic Terminal → More to be leaked out through the Reversed Reuptake Transporters.
    - **→ ↑[Dopamine] in the Synapse.**
- **Immediate Effects:**
    - **Physiological**:
        - Tachycardia & Palpitations
        - Tachypnoea
        - Hypertension
        - Hyperthermia
        - Excessive Sweating
        - ↓Appetite
        - Dilated Pupils
        - Dry Mouth
        - Nausea
        - Dizziness, Headaches, Blurred Vision
    - **Psychosomatic:**
        - Euphoria/Excitement
        - Hypervigilance & Insomnia
        - ↑Confidence
        - ↑Libido
        - Talkativeness
        - Itching, Picking/ Scratching
        - Tremors in Hands & Fingers
        - Amphetamine Psychosis:
            - Hallucinations
            - Paranoid Delusions & Panic Attacks
            - Bizarre Behaviour
            - Aggression & Hostility
    - **Coming Down:**
        - Tension
        - Depression
        - Radical Mood Swings
        - Uncontrollable Violence
        - Aggression
- **Long Term Effects:**
    - Hypertension (& Subsequent risk of MI & Heart Failure)
    - Malnutrition & Rapid Weight Loss
    - Chronic Insomnia
    - ↓Immunity
    - Depression/Anziety/Tension/Oparanoia
    - Brain Damage
    - Dental Problems (From Grinding Teeth) → "Meth Mouth"



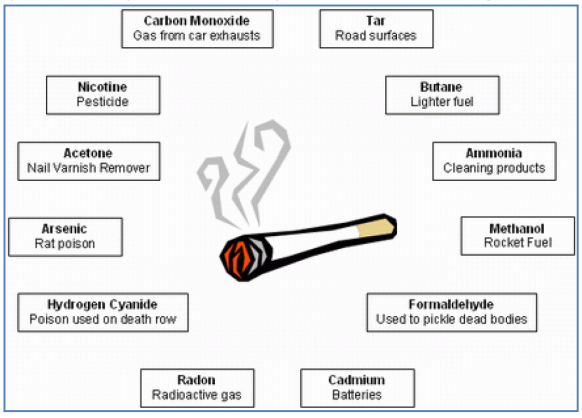
- **Ecstasy (MDMA – Methylene DioxyMethAmphetamine):**
  - NB: Contains *Both* Amphetamines & some Hallucinogens.
    - Ie. Has Stimulant & Psychogenic Effects.
  - NB: The Major Concern with 'E' is the Doubtful Purity of home-pressed tablets.
  - **Mech. Of Action – Inhibits the Vesicular Monoamine Transporter:**
    - → Increased Concentrations of Serotonin, Norepinephrine & Dopamine in the Cytoplasm.
    - Also Induces their release by Reversing their Respective Reuptake Transporters.
    - **→ ↑Synaptic [Serotonin, Norepinephrine & Dopamine].**
  - **Immediate Effects:**
    - NB: Effects can last for up to 6hrs.
    - Confidence
    - ↑Affection
    - Anxiety
    - Paranoia & Hallucinations
    - Tachycardia
    - Hypertension
    - Hyperthermia (& → ↑Sweating → Dehydration)
    - Seizures
    - Vomiting
    - Clenching of Jaw → Headaches.
  - **Long Term Effects:**
    - Insomnia
    - Grinding of teeth
    - Depression
    - Poor Concentration
  - **Overdose or Bad-Reaction:**
    - Extreme Hypertension
    - Tachycardia → Atrial Fibrillaiton
    - Hyperthermia → Possible Death
    - NB: Users must remember to keep hydrated.

LEGAL DRUGS – (TOBACCO & ALCOHOL):

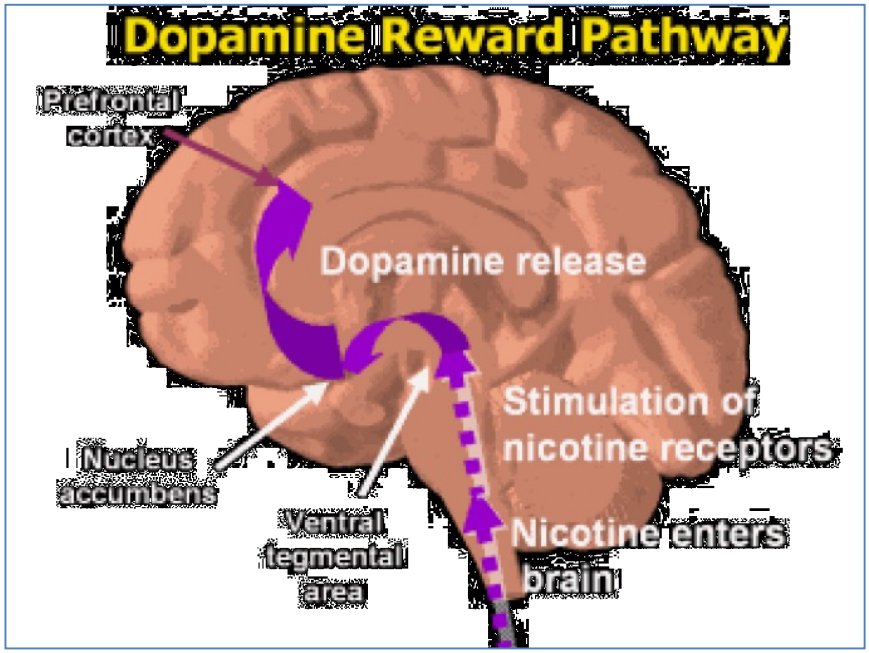
- **TOBACCO:**
  - **Definition of smoker:**
    - Someone who smokes daily-weekly.
  - **Epidemiology:**
    - **Is the Leading preventable Cause of Death in Australia & Worldwide.**
    - 1/3 of adult population smokes worldwide
    - The younger you are when you start smoking, the more likely you are to become lifetime smokers.
    - About 50% of smokers die of a tobacco-related disease.
    - Higher Proportion of men smoke than women (Overall Rate is Declining)



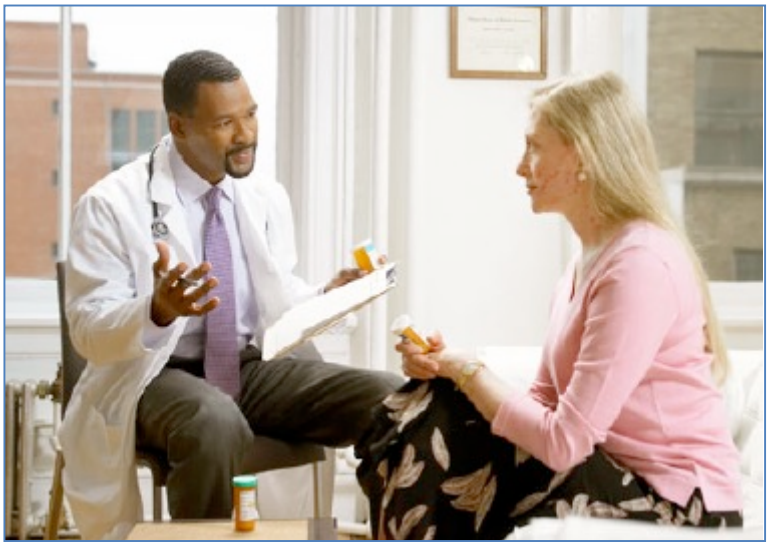
    - Highest rate of smoking in:
      - 24-29 yrs
      - Men
      - Low SES
      - Indigenous (twice the rate)
    - **In ATSI Populations:**
      - Half of all aboriginal adults were smokers
      - 1/3 reported never smoking
      - NB: Smoking rate increased with rurality & remoteness.
      - Smoking rates are not declining in ATSI populations (although it is declining overall)
  - **Components of Tobacco Smoke:**
    - ***NICOTINE* – The Addictive Stuff.**
    - **Also Contains Mono-Amine-Oxidase Inhibitor Compounds:**
      - MAO's are Responsible for the Breakdown of many Neurotransmitters including:
        - *Dopamine
        - Serotonin
        - Epinephrine
        - Norepinephrine
    - **Also Contains Lots and lots of Carcinogens:**
      - → ↑↑Risk of Cancer (Esp. Mouth, Tongue, Nose, Tracheal, Lungs)
    - **Also Contains Lots of Carbon Monoxide**
      - Has a higher affinity for Hb than oxygen. → Prevents full O_2 saturation of Hb.
    - **Also contains TAR:**
      - Approx. 1 cup of tar is deposited in the lungs from a pack a day after just 1 year.



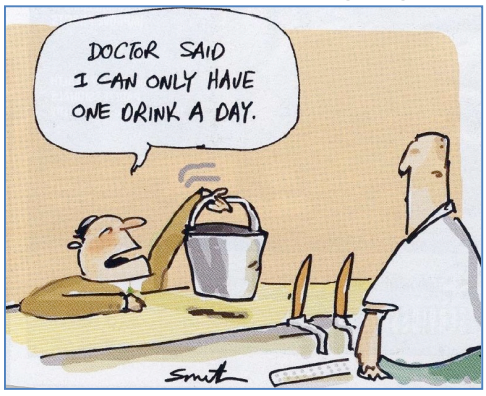
- **Health Effects:**
  - Vascular Changes:
    - Atherosclerosis
    - Heart Disease
    - Cerebrovascular Disease
    - Peripheral Vascular Disease
  - Cancer
  - Lung Disease (COPD & emphysema)
  - Toxicity to Reproductive system
    - Impaired fertility
    - Foetal effects (prematurity, low birth weights)
  - Delayed healing of Peptic Ulcer Disease
- **What do you die of?:**
  - Mostly Cancer
    - *Lung
    - Head/neck cancers
    - Pancreatic cancer
  - Vascular Disease (eg. Peripheral Vascular Disease → Necrosis of peripheral limbs)
  - COPD
  - Other Respiratory (Emphysema)
- **What Makes Tobacco Addictive?:**
  - **Nicotine is the active ingredient. (It is a natural Insecticide)**
    - Nicotine is readily absorbed through the skin
    - Is a Euphoric substance in small doses:
      - Explains why people like to smoke
    - Is a Neurotoxin in large doses:
      - Parasympathetic Responses
    - Metabolised by the P450 Enzyme System.
  - **Neurobiology of Nicotine Adiction:**
    - *Nicotine Enters Brain → Stimulates Nicotininc Acetylcholine Receptors → Dopamine secretion → ↑Dopamine Concentration in Dopamine Reward pathway.
      - →Addiction to "Reward" sensation.
    - The Dopamine Reward Pathway is what motivates you to do activities that ensure your survival (eg. Eating when hungry, reproductive urges) Hence why it is so hard to override.
    - NB: all addictive substances influence this mesolimbic pathway (Brain Dopamine Reward Circuit)→ Dopamine release into this circuit causes mild euphoria.

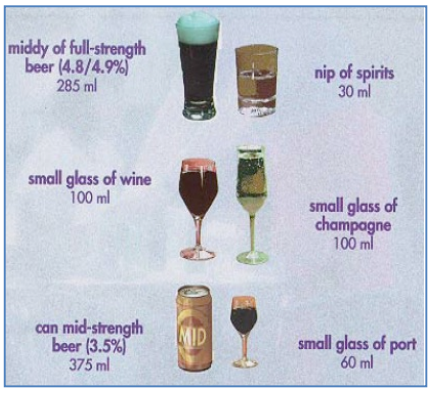


- **Nicotine Withdrawal:**
  - Due to Re-Regulation of the Nicotinic Ach Receptors (complete after 2-3 weeks)
  - NB: Long term susceptibility to relapse.
  - **Symptoms:**
    - Depressed mood
    - Insomnia
    - Irritability
    - Anxiety
    - Poor concentration
    - Restlessness
    - ↓HR
    - ↑Appetite
    - ↑Weight
- **Pharmacological Interventions:**
  - **Nicotine Replacement <u>with step down plan</u>:**
    - Gum
    - Patch
    - Inhaler/electronic cigarette
    - Lozenge
    - Sublingual Tab
  - **Bupropion:**
    - An antidepressant
    - Stimulates Dopamine and Noradrenaline Release
    - Stimulates the reward pathway
    - Is NOT addictive, but can still have some withdrawal symptoms.
  - **Varenicline (chantix):**
    - Work at the nicotinic receptor level
    - Has the highest success rate (of approx 16%)
  - **Vaccine?? –** Still Being Developed
  - **Behavioural Treatment:**
    - Motivational Interviewing by Doctor
    - Quitline
    - Advice
    - Counselling with craving avoidance strategies.



- **ALCOHOL:**
  - **Why do People Drink?**
    - Pleasure (For the Effects/Taste)
    - NB: Is an *'Anxiolytic'* (Ie. Reduces Anxiety)
    - Self Medication for domestic problems
    - Genetic Predisposition to Alcoholism
    - Parents were Alcoholics
    - Psychiatric Co-Morbidity (Eg. Depression/Eating Disorders/Sexual Abuse)
  - **Mechanism of Action (in Brain):**
    - Increases GABA Activity (Inhibitory)
    - Decreases Glutamate Activity (Stimulatory)
    - Stimulates Reward Pathway.
  - **Statistics:**
    - **Alcohol is Implicated in:**
      - 50% of Assaults
      - 30% of Motor Vehicle Accidents
      - 12% of Suicides
      - 10% of Industrial Accidents
    - **Is the 2nd Biggest Cause of Drug-Deaths in Aus** (NB: Tobacco is #1):
      - Also Accounts for ≈5% of *Total* burden of Disease & Injury.
    - **Who Drinks:**
      - **Males:**
        - 48% Drink at least 1/week
        - 12% Drink at least 1/day
        - 10% Drink at HAZARDOUS LEVELS
      - **Females:**
        - 35% Drink at least 1/week
        - 6% Drink at least 1/day
        - 10% Drink at HAZARDOUS LEVELS
  - ***Standard Drinks:**
    - ***1 Standard = 10g of Pure Alcohol**
      - = 30ml. Spirits
      - = 285ml. Beer
        - = 1can. Mid-Strength
        - = 2 cans. Light Beer
      - = 100ml. Wine
      - = 60ml. Port
    - ***Calculating Standard Drinks from a %.Alcohol:**
      - **Figures to Remember:**
        - 1 Standard = 10g.Alcohol
        - Specific Gravity (Ie. Density) = 0.789g/ml
      - **Exemplar - Q. How many Standards in 170ml of Champagne (11.5%)?**
        - 170ml x 11.5% = 19.55ml of Alcohol
        - 19.55ml x SG (0.789) = 15.4g of Alcohol.
        - 15.4g/10g = 1.54 Standard Drinks.





- **Australian Guidelines for 'Low-Risk' Drinking:**
  - NB: *No Amount* of Alcohol is 'Safe'.
  - **Guideline 1 – For Low Risk of Present/Future Harm from Drinking:**
    - No More Than 2x Standard Drinks/Day.
    - No More Than 4x Standard Drinks on a Single Occasion.

  - **Guideline 2 – For Children & Under-18:**
    - Not Drinking = Safest
    - If Drinking Does Occur – Parental Supervision is Advised.
  - **Guideline 3 – For Pregnant/Breastfeeding Women:**
    - Not Drinking = Safest

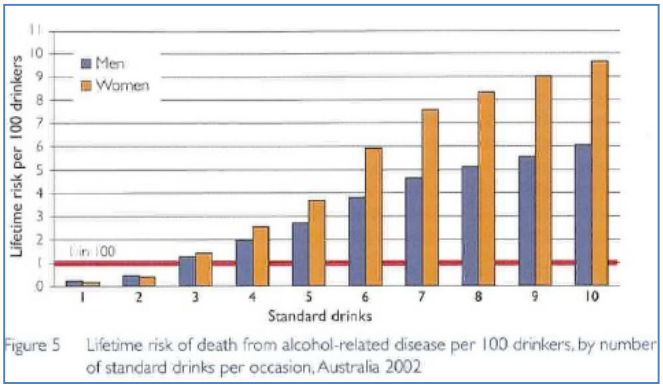
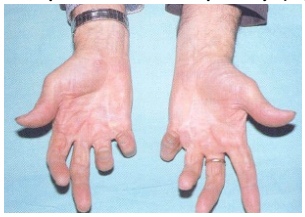


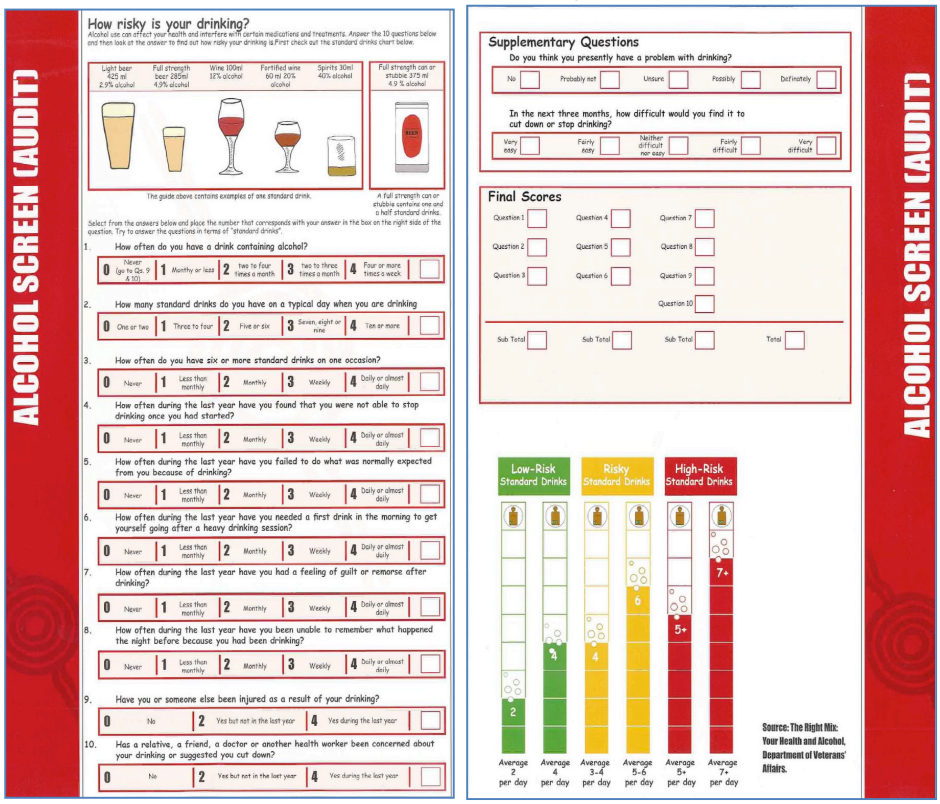
Figure 5 Lifetime risk of death from alcohol-related disease per 100 drinkers, by number of standard drinks per occasion, Australia 2002

NB: Notice how High Alcohol Intake is *More Risky* for Women.
(Eg. Women Develop Hepatitis *Quicker* than Men.)

- **Adverse Effects:**

Psychosocial	**Physical**
- Loss of Self Esteem - Irritability - Devious Behaviour - Anxiety & Phobias - Depression - Stress - Relationship breakdown - Child Abuse - Memory Disturbances - Accidents - Driving Offences - Crime/Violence - Attempted Suicide.	- Brain Damage (Irreversible) - Epilepsy - Depression - Wernicke-Korsakoff Syndrome (AKA Alcoholic Encephalopathy) – Result of Thiamine ($VitB_1$) Deficiency. → Vision Changes, Ataxia & Impaired Memory - Insomnia - Hand Tremor - Peripheral Neuropathy (Eg. "Dupatens Contracture")  (Or Tactile Disturbances) - Hypertension - Heart Disease - Liver Disease - GIT Disease - Sexual Dysfunction. - Gout (from Red Wine) - Obesity - Metabolic/Endocrine Disorders (Gynecomastia, Hyperlipidaemia, Osteoporosis, etc) - Haematopoietic Effects (Macrocytic Anaemia, Leucopaenia, Thrombocytopaenia) - Some Cancers

- **Alcohol Dependence:**
  - For definition of 'Dependence', see start of notes.
  - **<u>NB: Dependence Requires a High Level of Tolerance:</u>**
    - **Tolerance =** If ↑Dose is required for the same effect.
  - **Random Fact:** People who start drinking @ 15 or younger, are 4X more likely to become dependent than those starting @ 21 or older.
  - **<u>"CAGE" Test – For Alcohol Dependence:</u>**
    - **1.** Ever wanted to **Cut** Down on Drinking?
    - **2.** Ever been **Annoyed** by someone criticising your drinking?
    - **3.** Ever felt **Guilty** about your drinking?
    - **4.** Ever had an **Eye Opener**? (Eg. Drank in the morning to steady nerves/fight hangover)
    - **NB: A score of 2/More Suggests Alcohol Dependence.**
  - **<u>"AUDIT" Test – For Alcohol Problems:</u>**
    - (Alcohol Use Disorders Identification Test)
    - **10 Question Questionnaire.**
      - Higher Score = Higher Risk Drinking
      - Very High Score = Dependence
      - NB: The Score is *Gender-Dependent*.



Alcohol-related problems score

Any scoring on **questions 7 to 10** warrants further investigation to determine whether the problem is of current concern and requires intervention.

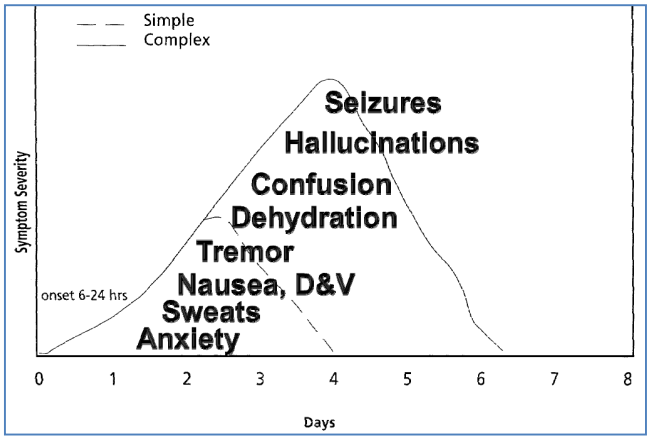
Audit Total score	*Dependence score*	*Risk level*	*Possible Interventions*
0-7	below 4	**Low-risk**	• Use the alcohol guidelines to reinforce low-risk drinking • Harm reduction advice may be appropriate
8-15	below 4	**Risky** or **hazardous level.** Moderate risk of harm. May include some clients currently experiencing harm (especially those who have minimised their reported intake and problems).	• Brief Intervention - feedback of AUDIT and harm reduction advice may be sufficient Ideally also: - setting goals and limits - a motivational interveiw - self-monitoring of drinking - use of the Alcohol guidelines for Indigenous communities • Counselling may be required.
	4 or more	Assess for dependency	
16-19	below 4	**High-risk** or **harmful level.** Drinking that will eventually result in harm, if not already doing so.	• Brief Intervention (all components) is a minimum requirement. • Assessment for more intensive intervention. • Counselling using CBT principles and motivationall interviewing in individual sessions and/or in groups. • Follow-up and referral where necessary
	4 or more	may be dependant. Asses for dependence	
20 or more	below 4	**High-risk** Definite harm, also likely to be alcohol dependent. Assess for dependence.	• Further assessement preferably including family and significant others. • More intensive counselling and/or group program. • Consider referral to medical or specialist services for withdrawal management. • Pharmacotherapy to manage cravings • relapse prevention, longer-term follow-up and support.
	4 or more	**Almost certainly dependant.** Assess for dependency.	

- **Clinical Presentation:**
  - **NB:** They won't present *Saying* they have an Alcohol Problem.
  - - Psychological Disorders
  - - Social Problems
  - - Accidents/Injuries
  - - Symptoms of Dependence
  - - Physical Illness
- **Biological Markers of Alcohol Abuse:**
  - **Macrocytic Anaemia** – (↑MCV & ↓Hb)
  - **Elevated Liver Enzymes** – (Especially GGT – 'Gamma Glutamyl Transferase')
  - **Fatty Liver**
  - **Alcoholic Hepatitis**
  - **Cirrhosis of Liver.**
- **Clinical Management:**
  - ***Early Recognition & Intervention*** → Best Outcomes.
    - **Early Brief Intervention**:
      - Ie. Motivational Interviewing (See End of Document)
      - – Is Effective for Pts. Drinking @ Hazardous Levels
    - **Pharmacotherapy:**
      - Is Used for Pts. with Alcohol Dependence.
  - **How to Bring it Up?**
    - ***ASK*** About Alcohol as part of the Social Hx & Lifestyle Factors (Ie. SN**A**P Approach)
    - Use Screening Tests – ***CAGE*** & ***AUDIT.***
  - **NB: A *Detailed* Assessment is Crucial:**
    - Alcohol History – (Qty, Time, Withdrawal, Pattern)
    - Physical, Social & Emotional Problems
    - Physical Examination – (Especially Liver Disease)
    - Investigations – (Eg. Blood Tests – Mean Cell Volume; & Liver Function Tests)
  - **Tips to Reduce Drinking:**
    - NB: these don't work for full-blown alcoholics.

Ways To Limit Yourself When Drinking	Ways To Avoid Drinking
Have your 1st drink after starting to eat. Quench thirst with *Non-Alcoholic* drink First. Have a Non-Alcoholic Drink before every Alcoholic one. Switch to Light-Beer/Dilute Spirits more. Take Smaller Sips	Plan other activities around the times you usually drink. When Bored/Stressed, do exercise instead of drinking. Explore new interests – Re-Occupy your time. Avoid the pub after work If under social pressure, say "my doctor told me not to"

- **Alcohol Withdrawal:**
  - **NB: Alcohol Withdrawal is one of the Only 2 Life-Threatening Withdrawal Syndromes.**
    - **2-10% Fatality Rate –** Due to Arrhythmia or Pneumonia.
    - (The other is Benzo-Withdrawal)
    - (All Other drug withdrawal symptoms are *Unpleasant*, but *Not Life-Threatening*.)
  - **NB: Severity is Measured by 'CIWA Score'** (Clinical Institute Withdrawal Assessment)
  - **Symptoms (Simple or Comlex):**
    - ***'Simple'*** **Withdrawal Symptoms:**
      - Confusion, Agitation, Hallucinations, Anxiety, Paranoia, Insomnia, Depression
      - Tremors
      - ↑Sympathetic Activity (Tachycardia, Perspiration)
      - Nausea & Vomiting
    - ***'Complex'*** – See Next Page: *'Delerium Tremens'*.

- ***SEVERE*** **Alcohol Withdrawal → Delerium Tremens (A *Medical Emergency*!!)**
  - AKA: "The DT's"/"Rum Fits"
  - **Timeframe:**
    - **Begin Within 2 Weeks** After Ceasing Alcohol
    - **Last for ≈1-6 Days**.
  - **Withdrawal Likely if:**
    - Over 30yrs
    - Regular (Daily) Heavy Alcohol Use
    - History of Previous DT's/Dependence/Withdrawal
    - Raised GGT or MCV
    - Presence of Alcohol-Related Disease.
  - **Pathophysiology of DT's:**
    - ↑Cardiac Workload
    - Hyperventilation → ↑Arterial pH → ↓Cerebral Blood Flow (Autoregulation)
    - ↑Sympathetic Activity → Sweating, Fever, Vomiting, Tachypnoea.
    - Hypokalaemia due to Renal Excretion & Altered Aldosterone Levels.
    - Hypomagnesemia → Causes Withdrawal Fits
    - Hypophosphataemia from Malnutrition → Can cause Heart Failure.
  - ***'Complex'*** **Withdrawal Symptoms:**
    - Seizures (Grand Mal /Tonic-Clonic)
    - Severe Hypervigilance & Agitation.
    - Hyperthermia
    - Tachycardia
    - Hypertension
    - Arrhythmias → Possible Cardiac Arrest
    - Possible CVA (Cerebrovascular Event)



- **Treating Alcohol Withdrawal:**
  - **Treated with Sedatives (#1 – *Diazepam*)**
    - Adjust doses until symptoms stabilise.
    - Patient is gradually weaned off as Symptoms Subside.
  - **Other Symptomatic Treatment:**
    - Ie. Drugs for Vomiting, Diarrhoea & Cramps.
  - **Correct Electrolytes**
  - **Correct Vitamin Deficiencies (VitB_1/Thiamine)**
    - NB: If not corrected, Pt. may develop Wernicke-Korsakoff Syndrome.

- **Wernicke-Korsakoff Syndrome (AKA Alcoholic Encephalopathy):**
  - A Preventable, but Irreversible Demented/Amnesic State.
    - Can be fatal – 20% (if Untreated)
    - 75% of Untreated Cases → PERMANENT BRAIN DAMAGE
    - 20 % of Survivors Require LIFE-LONG Care! (In Nursing Home/Mental Health)
  - – Results from Thiamine (VitB_1) Deficiency often due to Alcohol.
    - NB: Alcohol Inhibits Uptake of Oral Thiamine
  - **NB: Thiamine is Metabolically Critical:**
    - **- For Enzymes in the *Pentose Phosphate Pathway*:**
      - Which are Essential for Nucleic Acid Synthesis & Neurotransmitter Synthesis.
    - **- For Enzymes in *Glycolysis & TCA-Cycle*:**
      - Which are Essential for Acetylcholine, Myelin, & Neurotransmtter Synthesis.

(GAMBLING – A Non Substance-Based Addiciton):

- **Definitions:**
  - **Gambling =** "To Risk Something Valuable on a Game of Chance, hoping to Make A Profit."
  - ***Problem* Gambling =** "Gambling that results in Problems in *Any* Area of a Person's Life".
- **Epidemiology:**
  - 80% of Australian Adults gamble each year.
  - 2-3% have gambling *Problems*.
- **Who is *"At Risk"* of Gambling:**

Risk Factor	Explanation	Effective Treatment
#1 = Access	Accessibility/Availability	- Cognitive Behavioural Therapy - Education on Odds/Probability - Brief Solution-Focussed Therapy
Vulnerability	Eg. A Maladaptive Coping Strategy for Trauma/Abuse.	- Abstinence is Recommended - Cognitive Behavioural Therapy - Stress Coping - Problem Solving Strategies
Biological	Eg. ADHD & Impulsivity.	- ***NB: Very Challenging to Treat***. - Abstinence is Recommended - Cognitive Behavioural Therapy - Psychiatric Consultation

- **Why is it Addictive?**
  - Gambling Produces *Similar Physiological Effects* as *Drugs & Alcohol*.
    - **Ie.** It Triggers the Dopamine Reward Pathway.
    - People get addicted to the '*Rush*' associated with a *'WIN*'.
  - **NB:** Some believe gambling to be a *Maladaptive Coping Behaviour*, rather than a *Disorder*.
- **Problem Gambling:**
  - **Problems Associated With Gambling – The *'Ripple'* Effect:**
    - The Effects of Problem-Gambling spill over into all aspects of the person's life:
      - Work
      - Finance
      - Family/Friends
      - Community
  - ***Indicators* of Problem-Gambling:**
    - **Tense** – Nervous or 'On Edge'
    - **Lying –** Usually about money
    - **Unexplained Absences –** From home & work
    - **Isolation –** Decreased Interaction with others.
    - **Emotionally Absent –** In Relationships
    - **Secretive** – Ie. With mail (Ie. Avoiding bad bills, etc)
    - **Breaking Promises –** Ie. Unreliable.
    - **Out of Touch**
  - ***2 *SCREENING-QUESTIONS* For Problem-Gambling::**
    - **1.** Have you Ever Felt the Need to Bet *More Money*?
    - **2.** Have you ever had to lie to people important to you about *how much* you Gamble?
  - **Immediate Issues TO TARGET:**
    - **Money –** Controlling Cash flow
    - **Time –** Substitute Gambling Time with Other Activities.
    - **Stress/Anxiety/Depression –** Exploring new ways to Relax.
- **Motivational Interviewing:**
  - Essentially the **5-Stage Model** of Behaviour Change
    - - While Incorporating the **5-A's Model** as well.

GLS – Addiction Studies Workbook Questions:

Name the possible screening measures that you could implement to identify Alcohol-Related problems:

- **AUDIT**
  - Identify hazardous and harmful consumption in primary health care settings
  - Brief 2-5 minutes
- **CAGE Test**
- **Breath Alcohol Concentration**
  - Provides an accurate reflection of the alcohol concentration of the pulmonary blood circulation, by measuring end expiratory breath.
  - **However -** Cannot distinguish between binge drinking and long term alcohol abuse
- **LFT's – physiological marker of consumption**
  - Detect abnormalities in body chemistry as a result of heavy drinking
  - ***Y - GGT (gamma- glutamyl transferase)***
    - Non specific indicator of liver disease – also found in the blood and brain
    - Elevated in 60 –80 % of alcoholics (variable depending on studies)
- **Aspartate Aminotransferase (ASAT)**
  - Reflect overall health of the liver
- **CDT (Carbohydrate Deficient Transferin)**
  - Related specifically to the metabolism of alcohol and are dependent upon amount of alcohol consumed.
  - Better at detecting chronically heavy drinkers than hazardous drinkers.
  - Levels return to normal after a period of abstinence.
- **Mean Corpuscular Volume:**
  - Increased MCV can follow heavy drinking and correlates with the amount and frequency of alcohol ingestion. A month of drinking more than 60 grams of alcohol daily may raise the MCV above the reference range.
  - It takes several months of abstinence for MCV to return to normal
  - Other medical conditions in non healthy individuals may reduce the specificity.

Indicate on the Following Table Which of the Following are Signs/Symptoms of INTOXICATION of the Listed Drugs:

Signs & Symptoms	Drugs			
	Alcohol	Barbiturates	Opiates	Amphetamines
Nystagmus	X	X		
Tachycardia	X			X
Hyperreflexia				X
Constipation			X	
Dysarthria	X	X		

- **NB: Nystagmus** - involuntary rhythmic movement of the eyes, usually from side to side
- **NB**:**Dysarthria** - difficulty in speech articulation caused by damage to the central nervous system.

- Alcohol intoxication causes cerebellar dysfunction, which produces Dysarthria and Nystagmus.
  - Tachycardia is also present.
  - Diarrhoea is also present.
  - Hyporefelxia is also present
- Barbiturates also have cerebellar effects, producing Nystagmus and Dysarthria.
  - Hyporefelxia is also present
- Opiate intoxication will cause constipation.
- Amphetamine intoxication will cause tachycardia and hyperreflexia.

Indicate on the Following Table Which of the Following are Signs/Symptoms of WITHDRAWAL of the Listed Drugs:

Signs & Symptoms	Drugs			
	Diazepam	Heroin	Meth - amphetamine	Alcohol (100gms)
Rhinorrhea		X		
Prolonged Sleep			X	
Depression	X	X	X	X
Agitation	X	X		X
Hallucinations	X			X
Tremulousness	X			X

- **Rhinorrhea –** "Runny Nose"
- **Tremulousness -** shaking, trembling, or quavering.

Case Study:

- Mr Jones is an 18-year-old student who was observed to be picking at his skin and closely examining surrounding furniture. He then went to the toilet and ran scalding hot water over his skin.
- **On assessment:**
  - Alert and Orientated
  - Flushed
  - Tachycardic
  - Hypertensive
  - Sweating
  - He was suspicious of being questioned.
  - His friends reported that he had been using drugs to help him study.
- **Which Drug is Most Likely?**
  - **Amphetamine Intoxication**
  - ~~Heroin Intoxication~~
  - ~~Barbiturate Withdrawal~~
  - ~~Alcohol Intoxication~~
  - ~~Methadone Withdrawal~~
- **Which is the most useful Diagnostic Investigation?**
  - **Urine drug screen**
  - ~~Cat Scan~~
  - ~~Full Blood Count~~
  - ~~Liver Function Tests~~
  - ~~Serum Electrolytes~~

Alcohol:

- **Withdrawal seizures:**
  - Most commonly occur within 48 –72 hours after the last drink
    - (**True** / ~~False~~)
  - Are seen in about one third of patients who develop delirium tremens
    - (**True** / ~~False~~) Commonly occur before developing Delerium Tremens
- **Psychological Symptoms:**
  - Psychological symptoms affecting the spouse are frequently the earliest clues to the diagnosis of alcohol related problems:
    - **(True** / False)
    - Alcohol use should always be explored whenever relationship problems are evident.

Case Study:

- Three days after a laparotomy for perforated duodenal ulcer, a 38-year-old man becomes hyperthermic, tachcardic and delerium with auditory hallucinations. The most likely diagnosis is:
    - ~~Cocaine Intoxication~~
    - ~~Cerebral embolus~~
    - **Delirium Tremens**
    - ~~Internal hemorrhage~~
    - ~~Infection in wound~~
- Three days after the cessation of intake is the most likely time for DTs to occur.
- Cocaine intoxication is similar but symptoms would occur in a different time frame.

Case Study:

- A patient with a known history of heavy alcohol intake is admitted to hospital for routine surgery. What management would you as the treating medical officer instigate?
    - Take a recent history of drug and alcohol use.
    - If recently using more than 120 grams daily than monitor for withdrawal syndrome, may be lower if other existing illness states. **Use a withdrawal scale.**
    - Order thiamine IM
    - Order prn medication using parameters for administration
    - Conduct a physical examination
    - Order further investigations – physiological markers

List common street names for the following recreational drugs:

- **Cannabis** – marijuana, hash,
- **Amphetamines** – speed, go-ee, whizz, base, uppers, dexies, shabu, ox blood, Ice. Crystal meth
- **Ecstasy** – E, Vitamin E, Eccy, Love drug
- **Cocaine** – coke, okey doke, snow, C, blow, Charlie, (speedball = cocaine + heroin)
- **Heroin** – china white, dope, gear, H, Hammer, Harry, Horse, Powder, Shit, Skag, soow, Smack, Rocks, Whack, White
- **GHB** – blue nitro, easy lay, fantasy, GBH, liquid ecstasy, etc etc.
- **Ketamine** – K, Kit Kat, Cat Valium, Bump, Vitamin K, Special K

Case Study:

- Joe Mason aged 45 attends the Emergency Department after falling from the 1st floor balcony of a friend's house after a bout of drinking. After his immediate injuries had been treated you have been asked to take a history from him.
- **In terms of alcohol consumption, what information would you seek?**
    - How much he drinks
    - How long he has been drinking for
    - Problems associated with drinking (eg financial, legal, employment etc)
    - CAGE test
    - AUDIT test
    - Dependence questions – 3 of:
        - Strong desire or compulsion to drink?
        - Difficulty controlling drinking?
        - Evidence of tolerance (needing more to get same effect etc)
        - Physiological withdrawal (noticing symptoms if attempts to stop)
        - Neglecting other interests
        - Persistent drinking despite evidence of harm.
- He tells you that he usually drinks 6 stubbies of "real beer" (full strength), each night and gets through a 750ml bottle of Johnnie Walker every week.

Case Study:

- Denny Brunker, aged 31, presents asking for assistance to give up smoking. He has been smoking since he was 16 and would like to quit within the next 4 months as he and his partner are expecting their first child.
- **Outline two non-pharmacological strategies you could use that may be useful in assisting Denny to quit smoking.**
    - Brief intervention
    - Teaching Denny about strategies to use when he feels the urge to smoke
    - Highlighting the benefits of quitting for Denny in terms of his health and ability to interact with his growing child
    - Referral to Quitline.
- **Outline two pharmacological products that may assist Denny in his endeavour to quit smoking. What are the advantages of each and how does each of these work?**
    - **Nicotine replacement therapies:**
        - Act by minimizing effects of nicotine withdrawal
        - Available over the counter from pharmacies
        - Dose can be tailored to patient i.e. heavy smokers may require larger doses initially
        - Dose can be gradually reduced.
    - **Bupropion:**
        - Decreases cravings and withdrawal symptoms.
        - Works as nicotinic receptor antagonist.
        - Increases quitting rate significantly.

SS – Changing Behaviour: Motivational Interviewing (The 5 A's in Practice), & Health Coaching:

How People Change:

- **NB: Patients don't change just because you say so.**
  - Ambivalence, Resistance & Defence Mechanisms are Normal.
  - **Intentional Change Occurs Gradually**
- **Requirements for Change:**
  - Change in Thinking/Feeling about an Issue
  - **Motivation
  - Intention (& Therefore Commitment)
  - Planned Steps
  - Time

Motivational Interviewing & Health Coaching:

- **- Is a Good Basis for Brief Interventions in a GP Setting:**
  - Provision of Information & Advice in order to:
    - -Guide the Patient to Elicit & Strengthen Motivation to Change.
    - -Explore & Resolve the Patient's Ambivalence to Change.
    - → Increases *Intrinsic* Motivation (Not External *Imposed* Motivation).
- **Focuses on the *Patient's* - :**
  - Values
  - Goals
  - Insights
  - Motivations
  - Resources for Change
- **Things to Ask The Patient:**
  - "How important is the issue to them?"
    - (Scale 1-10)
  - "What do they want to change?"
  - "How confident are they in making the change?"
    - (Scale 1-10)
- **Things to Remember:**
  - Be Non-Judgemental
  - Be Respectful
  - Be Empathic
  - The Patient is the Expert *on Themselves*.
  - The Patient is OK *Now*...And they *Experience*...(Depression/Alcoholism/Obesity/etc..)
  - People don't *Purposely* stuff up their lives.
  - There is No Miracle Cure
  - Allow Pt. to make their own choices. (Whilst Encouraging Good Ones & Discouraging Bad Ones.)

Tools for Motivational Interviewing:

- **"SNAP": – Guidelines for Managing Lifestyle Risk Factors:**
  - **What are the Risk Factors?**
    - **S**moking
    - **N**utrition
    - **A**lcohol
    - **P**hysical Exercise

- **"GRACE" Model - of Motivational Interviewing:**
  - **Generate a Gap:**
    - - Between the current situation & what the patient wants.
  - **Roll with the Resistance:**
    - Be Agreeable → Prevents Stubborn Patients 'Digging their Heels In'.
  - **Avoid Arguments:**
    - Arguments only *Increase* Resistance.
  - **'Can-Do' Attitude:**
    - Encourage Self-Efficacy & Hope
    - **'Strengths Focus'** – What does the Pt already do well? – Build on this.
    - **'Solution Focused'** – Rather than problem solving.
    - Keep it Simple - Small Steps
  - **Empathy:**
    - Listen
    - Communicate Acceptance & Supprot
    - *Gently* Persuade
    - Respect Personal Views & Choices.

- **The 5 A's Approach to Motivational Interviewing:**
  - **1. Ask:**
    - Ask which Risk Factors apply to Patient.
    - Eg. Do you Smoke/Eat Healthily/Drink/Exercise?
  - **2. Assess:**
    - Assess Level of Risk & Relevance to Patient's Health.
      - Ie. Behaviour History (Smoking/Diet/Drinking/Exercise History)
      - BMI
      - ***Cardiovascular Risk Calculator** – Work out absolute risk level for CVD.
    - Assess Motivation/Readiness to Change
    - Assess Health Status
  - **3. Advise:**
    - Advise with Written Information (Eg. Pamphlets)
      - Eg. Consequences of *No Change*.
      - Eg. Benefits of *Change*.
    - Advise with a Lifestyle Prescription (Life Script)
    - Advise with a Brief Intervention & Motivational Interviewing.
  - **4. Assist:**
    - Set Goals & Strategies
    - Assist with Pharmacotherapy.
    - Assist with Self-Monitoring (Suggest Keeping a Diary)
    - Assist with Written ***"Life-Script"*.**
  - **5. Arrange:**
    - Arrange Referral to:
      - Specialist Services (Eg. Dietician/Exercise Physiologist/'ATODs')
        - NB: ATODs = Alcohol, Tobacco & Other Drugs
      - Support Groups
      - Helplines
      - Counselling
    - Arrange Follow-Up

- **"Life Scripts" – Tools for Assessing & 'Prescribing':**
  - Life-Scripts Utilise the ***5-A's*** method of Assessment.
  - They also Use Questionnaires (Specific for each of the **S.N.A.P** Lifestyle Risk Factors)
  - Finally, they Provide a Template for a **'*Prescription*'** for a ***Lifestyle Change***.

- **A Useful Tool: "The 5 Stages of Change Model":**
  - **1. Precontemplation:**
    - No intention to change behaviour.
    - **Precontemplation → Contemplation:**
      - Make the patient aware of the problem (Link their Behaviour to their Health)
      - Show the Pt. the *Trajectory* that they are on.
      - Encourage them to take ownership of the problem
      - Explain the Negative Aspects of Problem (Convince patient that the behaviour *Is* a problem)
    - Often it takes a '***Cue For Action'*** to move Pt. from Precontemplation → Contemplation.
  - **2. Contemplation:**
    - Person is thinking about changing behaviour.
    - **Contemplation → Preparation:**
      - Get patient to Think How the Behaviour is Affecting Others.
      - Change how they think & feel about the Issue.
      - NB: Pushing People to Change can be Counterproductive → Resentment.
      - 3 Strong Motivators:
        - Health
        - Money
        - Relationships
  - **3. Preparation:**
    - Person prepares to make the change:
    - **Preparation → Action:**
      - Gathers information
      - Finds out how to achieve the change
      - Set Firm Goals & Priorities
      - Acquiring Skills Necessary for change.
  - **4. Action:**
    - Person makes changes (may be small steps at first)
    - **Action → Maintenance:**
      - Self-Efficacy is very important.
      - Keep focussed
      - Acknowledge that Change is Difficult & Potential Relapse is Normal.
  - **5. Maintenance:**
    - Consistently practices new/altered behaviour.
    - Acknowledge that Change is Difficult & Potential Relapse is Normal.
  - **//Relapse:**
    - Person relapses back to original behaviour.
    - Move back to Contemplation if Relapse Occurs.

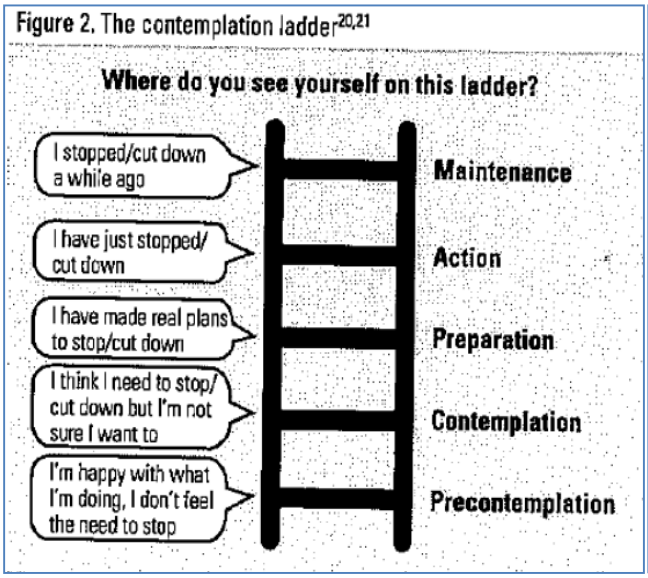
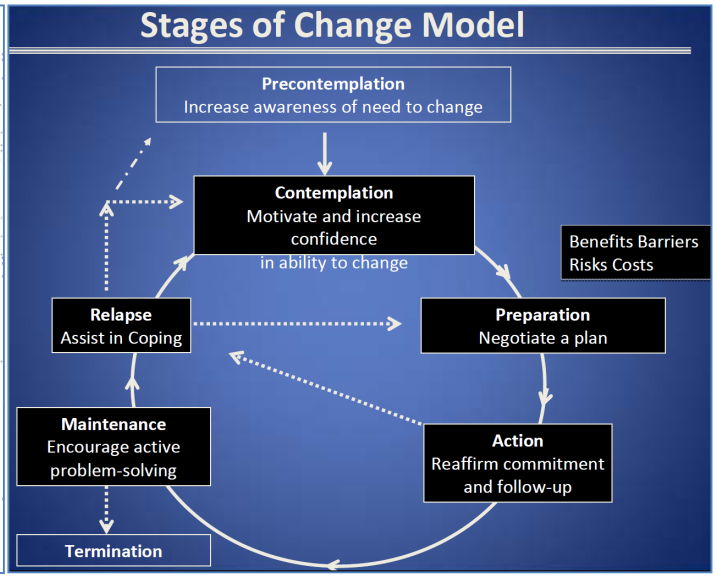


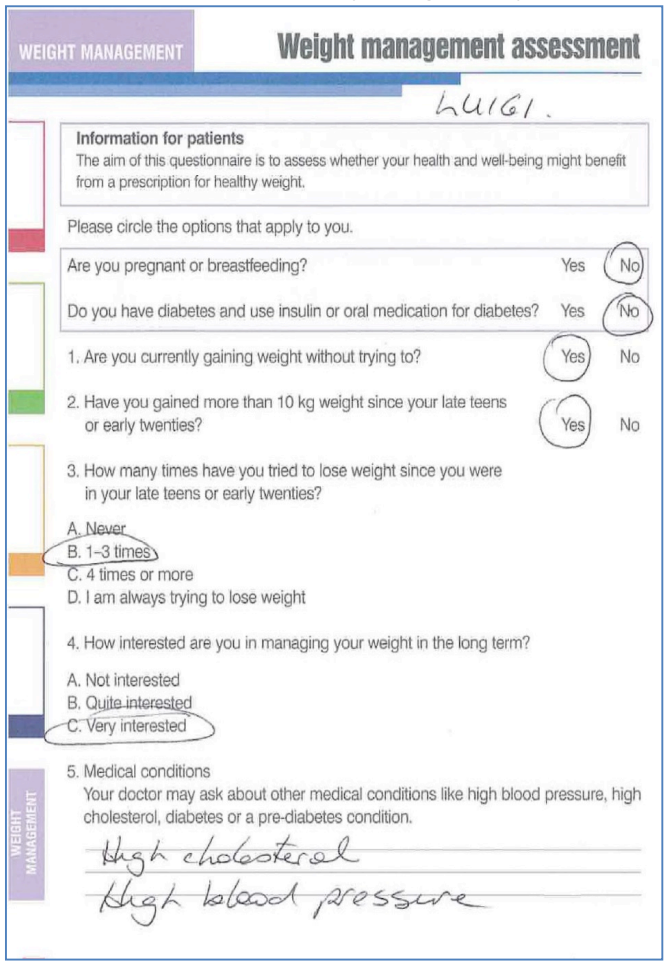
Figure 2. The contemplation ladder[20,21]
Where do you see yourself on this ladder?
I stopped/cut down a while ago
I have just stopped/ cut down
I have made real plans to stop/cut down
I think I need to stop/ cut down but I'm not sure I want to
I'm happy with what I'm doing, I don't feel the need to stop
Maintenance
Action
Preparation
Contemplation
Precontemplation


Stages of Change Model
Precontemplation
Increase awareness of need to change
Contemplation
Motivate and increase confidence
in ability to change
Benefits Barriers
Risks Costs
Preparation
Negotiate a plan
Action
Reaffirm commitment and follow-up
Maintenance
Encourage active problem-solving
Relapse
Assist in Coping
Termination

For the Exam – Very Likely MSAT:

1. **You will get a Patient with a Simulated Lifestyle Risk Factor:**
   a. Will be one of the SNAP's (Ie. Smoking, Nutrition (& Obesity), Alcohol & Physical Exercise)

2. **You will need to Assess the Patient's *Level* of Risk Factor:**
   a. By Either:
      i. Doing one of the Risk-Factor Assessment Sheets (From the Life-Scripts Program)
      ii. Or Interpreting a completed Risk-Factor Assessment Sheet.



WEIGHT MANAGEMENT

Weight management assessment

LUIGI.

Information for patients

The aim of this questionnaire is to assess whether your health and well-being might benefit from a prescription for healthy weight.

Please circle the options that apply to you.

Are you pregnant or breastfeeding?	Yes	(No)
Do you have diabetes and use insulin or oral medication for diabetes?	Yes	(No)
1. Are you currently gaining weight without trying to?	(Yes)	No
2. Have you gained more than 10 kg weight since your late teens or early twenties?	(Yes)	No

3. How many times have you tried to lose weight since you were in your late teens or early twenties?

A. Never
(B. 1–3 times)
C. 4 times or more
D. I am always trying to lose weight

4. How interested are you in managing your weight in the long term?

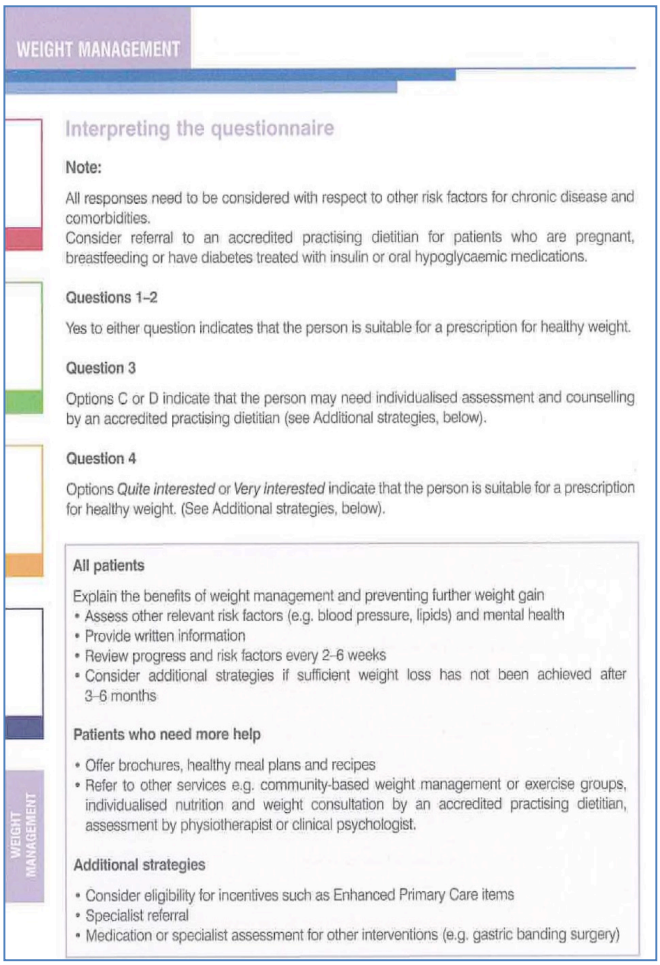
A. Not interested
B. Quite interested
(C. Very interested)

5. Medical conditions

Your doctor may ask about other medical conditions like high blood pressure, high cholesterol, diabetes or a pre-diabetes condition.

High cholesteral
High blood pressure

WEIGHT MANAGEMENT



WEIGHT MANAGEMENT

Interpreting the questionnaire

Note:

All responses need to be considered with respect to other risk factors for chronic disease and comorbidities.
Consider referral to an accredited practising dietitian for patients who are pregnant, breastfeeding or have diabetes treated with insulin or oral hypoglycaemic medications.

Questions 1–2

Yes to either question indicates that the person is suitable for a prescription for healthy weight.

Question 3

Options C or D indicate that the person may need individualised assessment and counselling by an accredited practising dietitian (see Additional strategies, below).

Question 4

Options *Quite interested* or *Very interested* indicate that the person is suitable for a prescription for healthy weight. (See Additional strategies, below).

All patients

Explain the benefits of weight management and preventing further weight gain
- Assess other relevant risk factors (e.g. blood pressure, lipids) and mental health
- Provide written information
- Review progress and risk factors every 2–6 weeks
- Consider additional strategies if sufficient weight loss has not been achieved after 3–6 months

Patients who need more help

- Offer brochures, healthy meal plans and recipes
- Refer to other services e.g. community-based weight management or exercise groups, individualised nutrition and weight consultation by an accredited practising dietitian, assessment by physiotherapist or clinical psychologist.

Additional strategies

- Consider eligibility for incentives such as Enhanced Primary Care items
- Specialist referral
- Medication or specialist assessment for other interventions (e.g. gastric banding surgery)

WEIGHT MANAGEMENT

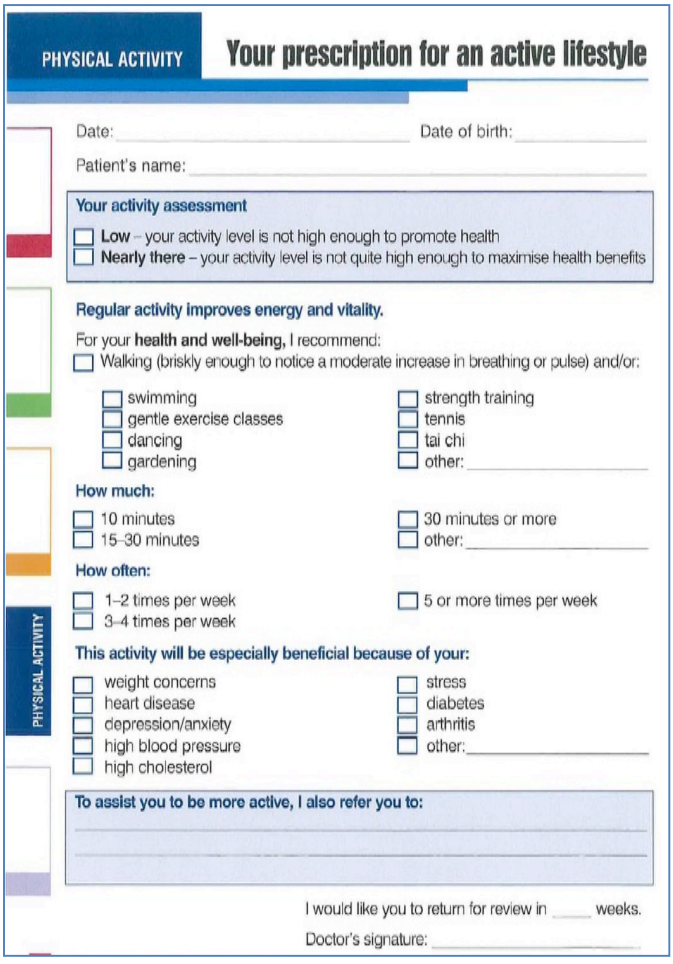
3. **You then need to Determine Which of the '*5-Stages of Change*' the Patient is In:**
   a. **Why? –** Because the **'Stage'** that the patient is in determines which of the **'5-A's'** you will use in your Motivational Interviewing. (See Table)

	Precontemplation (not considering change)	Contemplation (considering change)	Preparation (Planning change)	Action (recent change)	Maintenance (change established
5As	Ask Assess Advise	Ask Assess Advise Assist	Ask Assess Advise Assist Arrange	Ask Assist Arrange	Ask Arrange

   b. **NB:** You may manage to move the Patient from one **'Stage'** to another, & Hence, will have to change which of the **'5-A's'** you use.

4. **<u>Use the Appropriate '5-A's' In Order to Conduct a Motivational Interview:</u>**
    - **1. Ask:**
        - Ask which Risk Factors apply to Patient.
        - Eg. Do you Smoke/Eat Healthily/Drink/Exercise?
    - **2. Assess:**
        - Assess Level of Risk & Relevance to Patient's Health.
            - Ie. Behaviour History (Smoking/Diet/Drinking/Exercise History)
            - BMI
            - ***Cardiovascular Risk Calculator** – Work out absolute risk level for CVD.
        - Assess Readiness to Change
        - Assess Health Status
    - **3. Advise:**
        - Advise with Written Information (Eg. Pamphlets)
        - Advise with a Lifestyle Prescription (Life Script)
        - Advise with a Brief Intervention & Motivational Interviewing.
    - **4. Assist:**
        - Assist with Pharmacotherapy.
        - Assist with Self-Monitoring (Suggest Keeping a Diary)
        - Assist with Written **"*Life-Script*".**
    - **5. Arrange:**
        - Arrange Referral to:
            - Specialist Services (Eg. Dietician/Exercise Physiologist/'ATODs')
                - NB: ATODs = Alcohol, Tobacco & Other Drugs
            - Support Groups
            - Helplines
            - Counselling
        - Arrange Follow-Up

5. **<u>You Will Then Need to Fill Out a Full '*Life-Script*' for the Patient:</u>**



PHYSICAL ACTIVITY

Your prescription for an active lifestyle

Date: _____ Date of birth: _____

Patient's name: _____

Your activity assessment

☐ **Low** – your activity level is not high enough to promote health
☐ **Nearly there** – your activity level is not quite high enough to maximise health benefits

Regular activity improves energy and vitality.

For your **health and well-being,** I recommend:

☐ Walking (briskly enough to notice a moderate increase in breathing or pulse) and/or:

☐ swimming
☐ gentle exercise classes
☐ dancing
☐ gardening
☐ strength training
☐ tennis
☐ tai chi
☐ other: _____

How much:

☐ 10 minutes
☐ 15–30 minutes
☐ 30 minutes or more
☐ other: _____

How often:

☐ 1–2 times per week
☐ 3–4 times per week
☐ 5 or more times per week

PHYSICAL ACTIVITY

This activity will be especially beneficial because of your:

☐ weight concerns
☐ heart disease
☐ depression/anxiety
☐ high blood pressure
☐ high cholesterol
☐ stress
☐ diabetes
☐ arthritis
☐ other: _____

To assist you to be more active, I also refer you to:

_____

_____

I would like you to return for review in ____ weeks.

Doctor's signature: _____

Continue Reading For Bonus Supplementary Study Materials…

PS Psychiatry

Jordan Bawks and **Raman Srivastava,** chapter editors
Lindsey Chapman and **Meghna Rajaprakash,** associate editors
Shany Gertzbein, EBM editor
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Acronyms

5-HT	serotonin	CT	cognitive therapy	IPT	interpersonal therapy	OCD	obsessive-compulsive disorder
ACh	acetylcholine	CTO	community treatment order	MAOI	monoamine oxidase inhibitor	OCPD	obsessive-compulsive personality disorder
ACT	assertive community treatment	DA	dopamine	MDD	major depressive disorder	ODD	oppositional defiant disorder
ADHD	attention deficit hyperactivity disorder	DZ	dizygotic	MDE	major depressive episode	PD	personality disorder
AN	anorexia nervosa	ECT	electroconvulsive therapy	MET	motivational enhancement therapy	PDD	pervasive developmental disorder
ASD	autism spectrum disorder	EPS	extrapyramidal symptoms	MSE	mental status examination	PTSD	post-traumatic stress disorder
ASPD	antisocial personality disorder	ERP	exposure with response prevention	MST	magnetic stimulation therapy	rTMS	repetitive transcranial magnetic stimulation
BN	bulimia nervosa			MZ	monozygotic	SGA	second generation antipsychotics
CBT	cognitive behavioural therapy	EtOH	ethanol/alcohol	NA	Narcotics Anonymous	SNRI	serotonin and norepinephrine reuptake inhibitors
CD	conduct disorder	GAD	generalized anxiety disorder	NMS	neuroleptic malignant syndrome	SSRI	selective serotonin reuptake inhibitor
CRA	community reinforcement approach	GMC	general medical condition	NOS	not otherwise specified	TCA	tricyclic antidepressant

Psychiatric Assessment

History

Identifying Data
- necessary: name, sex, age, ethnicity, marital status, occupation/source of financial support, place and type of residency
- adjunct: makeup of household, religion, education, referral source, known or unknown to treatment team

Reliability of Patient as a Historian
- Indicate if, and for what content, collateral source used (e.g. parent, teacher) if patient unable/unwilling to cooperate

Chief Complaint
- in patient's own words, duration

History of Present Illness
- reason for seeking help (that day), current symptoms (onset, duration and course), stressors, supports, functional status, relevant associated symptoms (pertinent positives and negatives)
- safety screen: is the patient endangering self or others? dependants at home (e.g. children, pets), ability to drive safely, ability to care for self (e.g. eating, hygiene, taking medications)

Psychiatric Functional Inquiry
- mood: depression, mania
- anxiety: worries, obsessions, compulsions, panic attacks, phobias, history of trauma
- psychosis: hallucinations, delusions
- suicide/homicide: ideation, plan, intent, history of attempts (see *Suicide*, PS4)
- organic: EtOH/drug use or withdrawal, illness, dementia

Past Psychiatric History
- all previous psychiatric diagnoses, psychiatric contacts, treatments (pharmacological and non-pharmacological), and hospitalizations
- include past suicide attempts, substance use/abuse, and legal problems

Past Medical/Surgical History
- all medical, surgical, neurological (e.g. head trauma, seizures), and psychosomatic illnesses
- current medications, allergies

Family Psychiatric/Medical History
- family members: ages, occupations, personalities, medical or genetic illnesses and treatments, relationships with parents/siblings
- family psychiatric history: any past or current psychiatric illnesses and hospitalizations, suicide, substance abuse

Past Personal/Developmental History (as relevant)
- prenatal and perinatal history (desired vs. unwanted pregnancy, maternal and fetal health, domestic violence, maternal substance use, complications of pregnancy/delivery)
- early childhood to age 3 (developmental milestones, activity/attention level, family stability, attachment figures)
- middle childhood to age 11 (school performance, peer relationships, fire-setting, stealing, incontinence)
- late childhood to adolescence (drug/alcohol, legal problems, peer and family relationships)
- physical or sexual abuse in childhood/adolescence
- adulthood (education, occupations, relationships)
- personality before current illness, recent changes in personality
- psychosexual history (puberty, first sexual encounter, romantic relationships, gender roles, sexual dysfunction)

Screening Questions for Major Psychiatric Disorders
- Have you been feeling down, depressed or hopeless?
- Do you feel anxious or worry about things?
- Has there been a time in your life where you have felt euphoric, extremely talkative, had a lot of energy, and a decreased need for sleep?
- Do you see or hear things that you think other people cannot?
- Have you ever thought of harming yourself or committing suicide?

Psychiatric Functional Inquiry

MOAPS
Mood
Organic (e.g. substances and organic disease)
Anxiety
Psychosis
Safety

Always Remember to Ask About Abuse
See Family Medicine, FM27

Mental Status Exam

General Appearance
- dress, grooming, posture, gait, physical characteristics, body habitus, apparent vs. chronological age, facial expression (e.g. sad, suspicious), tattoos, piercings (if numerous or atypical), acute distress or relaxed

Behaviour
- psychomotor activity (agitation, retardation), abnormal movements or lack thereof (tremors, akathisia, tardive dyskinesia, paralysis), attention level and eye contact, attitude toward examiner (ability to interact, level of cooperation)

Speech
- rate (e.g. pressured, slowed), rhythm/fluency, volume, tone, articulation, quantity, spontaneity

Mood and Affect
- mood: subjective emotional state (in patient's own words)
- affect: objective emotional state inferred from emotional responses to stimuli; described in terms of
  - quality (euthymic, depressed, elevated, anxious, irritable)
  - range (full, restricted, flat, blunted)
  - stability (fixed, labile)
  - mood congruence (inferred by reader by comparing mood and affect descriptions)
  - appropriateness to thought content
- some clinicians use 0-10 scales when rating mood to help get a subjective norm for each patient that can help establish changes over time and with treatment

Thought Process/Form
- coherence (coherent, incoherent)
- logic (logical, illogical)
- stream
  - goal-directed: clearly answers questions in a linear, organized, logical fashion
  - circumstantial: speech that is indirect and delayed in reaching its goal; eventually comes back to the point
  - tangential: speech is oblique or irrelevant; does not come back to the original point
  - loosening of associations/derailment: illogical shifting between topics
  - flight of ideas: quickly skipping from one idea to another where the ideas are marginally connected, usually associated with mania
  - word salad: jumble of words lacking meaning or logical coherence
- perseveration: repetition of the same verbal or motor response to stimuli
- echolalia: repetition of phrases or words spoken by someone else
- thought blocking: sudden cessation of flow of thought and speech
- clang associations: speech based on sound such as rhyming or punning
- neologism: use of novel words or of existing words in a novel fashion

Thought Content
- suicidal ideation/homicidal ideation
  - frequency and pervasiveness of thoughts, formulation of plan, means to plan, intent, active vs. passive, protective factors
- preoccupations, ruminations: reflections/thoughts at length, not fixed or false
- obsession: recurrent and persistent thought, impulse, or image which is intrusive or inappropriate and unwanted
  - cannot be stopped by logic or reason
  - causes marked anxiety and distress
  - common themes: contamination, orderliness, sexual, pathological doubt/worry/guilt
- magical thinking: belief that thinking something will make it happen; normal in children and certain cultures
- ideas of reference: similar to delusion of reference, but less fixed (the reality of the belief is questioned)
- overvalued ideas: unusual/odd beliefs that are not of delusional proportions
- first rank symptoms of schizophrenia: thought insertion/withdrawal/broadcasting
- delusion: a fixed false belief that is out of keeping with a person's cultural or religious background and is firmly held despite incontrovertible proof to the contrary

Perception
- hallucination: sensory perception in the absence of external stimuli that is similar in quality to a true perception
  - auditory (most common), visual, gustatory, olfactory, tactile
- illusion: misperception of a real external stimulus (such as mistaking a coat on a rack as a person late at night)
- depersonalization: change in self-awareness such that the person feels unreal, distant, or detached from his or her body, and/or unable to feel emotion
- derealization: feeling that the world/outer environment is unreal

Mental Status Exam

ASEPTIC
Appearance and behaviour
Speech
Emotion (mood and affect)
Perception
Thought content and process
Insight and judgment
Cognition

The MSE is analogous to the physical exam. It focuses on current signs, affect, behaviour, and cognition

Spectrum of Affect
Full > Restricted > Blunted > Flat

There is poor correlation between clinical impression of suicide risk and frequency of attempts

Cognitive Assessment
Use MMSE to assess
- Orientation (time and place)
- Memory (immediate and delayed recall)
- Attention and concentration
- Language (comprehension, reading, writing, repetition, naming)
- Spatial ability (intersecting pentagons)

Gross screen for cognitive dysfunction: Total score is out of 30; <26 abnormal, 20-26 mild, 10-19 moderate, <10 severe

The key to differentiating obsessions and delusions is that obsessions are usually ego dystonic, meaning unwanted and not fitting in with a person's goals and self-image, while delusions are ego syntonic

Hallucinations other than auditory should prompt a consideration of organic causes

Delusions
- Persecutory: belief that others are trying to cause harm to you
- Reference: interpreting publicly known events/celebrities as having direct reference to you
- Erotomania: belief that another is in love with you
- Grandiose: an inflated sense of self-worth or power
- Religious: belief of receiving instructions/powers from a higher being; of being a higher being
- Somatic: belief that you have a physical disorder/defect
- Nihilistic: belief that things do not exist; a sense that everything is unreal

Cognition
- level of consciousness (alert, reduced, obtunded)
- orientation: time, place, person
- memory: immediate, recent, remote
- global evaluation of intellect (below average, average, above average, in keeping with person's education)
- intellectual functions: attention, concentration, calculation, abstraction (proverb interpretation, similarities test), language, communication
- MMSE/MOCA useful as standardized assessment of cognition

Insight
- patient's ability to realize that he or she has a physical or mental illness and to understand its implications (no, limited, partial, full)

Judgment
- patient's ability to understand relationships between facts and draw conclusions that determine one's actions

Assessing Insight and Judgment

Insight
- Do you think that you have a mental illness?
- Why are you taking this medication?
- Why are you in the hospital?

Judgment
Can be observed from collected history and patient's appearance and actions
- Is he/she dressed appropriately for the weather?
- Is he/she acting appropriately in the given situation?
- Is he/she taking care of self and/or dependents?

Assessment and Plan

Historical Multiaxial Model
- since DSM-5, this Model is no longer used for psychiatric diagnosis. Instead, relevant psychiatric and medical diagnoses are simply listed. Nevertheless, we offer it here as a possible framework for psychiatric patient assessment, as many physicians still employ it.

Multiaxial Assessment
- Axis I: differential diagnosis of DSM-5 clinical disorders
- Axis II: personality disorders, developmental disability
- Axis III: general medical conditions potentially relevant to understanding/management of the mental disorder
- Axis IV: psychosocial and environmental issues
- Axis V: Global Assessment of Functioning (GAF, 0 to 100) incorporating effects of axes I to IV

After History and MSE, the assessment and plan is recorded

Assessment/Problem Formulation
- identify predominant symptom cluster (mood, anxiety, psychosis, organic) - causing the most distress/interference, persist when other symptom categories not present (e.g. psychosis in the absence of mood symptoms)
- dominating symptoms will direct differential
- consider current issues as they relate to an individual's factors in three domains: biological, psychological, and social
- for each category: predisposing, precipitating, perpetuating, and protecting factors are considered

Approach to Management
- consider short-term and long-term, and three types: biological (e.g. pharmacotherapy), psychological (e.g. CBT), and social (e.g. support group)

Suicide

Importance
- absolutely must be screened for in every encounter; part of risk assessment along with violent/homicidal ideation

Approach
- ask every patient – e.g. "Have you had any thoughts of wanting to kill yourself?"
- classify ideation
  - passive ideation: would rather not be alive but has no active plan for suicide
    - e.g. "I'd rather not wake up" or "I would not mind if a car hit me"
  - active ideation
    - e.g. "I think about killing myself"
- assess risk
  - plan: "Do you have a plan as to how you would end your life?"
  - intent: "Do you think you would actually carry out this plan?" "If not, why not?"
  - past attempts: highest risk if previous attempt in past year
    - ask about lethality, outcome, medical intervention
- assess suicidal ideation
  - onset and frequency of thoughts: "When did this start?" or "How often do you have these thoughts?"

- control over suicidal ideation: "How do you cope when you have these thoughts?" "Could you call someone for help?"
- intended lethality: "Do you want to end your life?" or "What do you think would happen if you actually took those pills?"
- access to means: "How will you get a gun?" or "Which bridge do you think you would go to?"
- time and place: "Have you picked a date and place? Is it in an isolated location?"
- provocative factors: "What makes you feel worse (e.g. being alone)?"
- protective factors: "What keeps you alive (e.g. friends, family, pets, faith, therapist)?"
- final arrangements: "Have you written a suicide note? Made a will? Given away your belongings?"
- practiced suicide or aborted attempts: "Have you ever put the gun to your head?" "Held the medications in your hand?" "Stood at the bridge?"
- ambivalence: "I wonder if there is a part of you that wants to live, given that you came here for help?"

Assessment of Suicide Attempt

- setting (isolated vs. others present/chance of discovery)
- planned vs. impulsive attempt, triggers/stressors
- substance use/intoxication
- medical attention (brought in by another person vs. brought in by self to ED)
- time lag from suicide attempt to ED arrival
- expectation of lethality, dying
- reaction to survival (guilt/remorse vs. disappointment/self-blame)

Epidemiology

- attempted:completed = 20:1
- M:F = 1:4 for attempts, 3:1 for completed

Risk Factors

- epidemiologic factors
  - age: increases after age 14, second most common cause of death for ages 15-24, highest rates in persons >65 yr
  - sex: male
  - race/ethnic background: white or Native Canadians on reserves
  - marital status: widowed/divorced
  - living situation: alone; no children <18 yr old in the household
  - other: stressful life events, access to firearms
- psychiatric disorders
  - mood disorders (15% lifetime risk in depression; higher in bipolar)
  - anxiety disorders (especially panic disorder)
  - schizophrenia (10-15% risk)
  - substance abuse (especially alcohol – 15% lifetime risk)
  - eating disorders (5% lifetime risk)
  - adjustment disorder
  - conduct disorder
  - personality disorders (borderline, antisocial)
- past history
  - prior suicide attempt
  - family history of suicide attempt/completion

Suicide Risk Factors

SAD PERSONS
Sex (male)
Age >60 yr old
Depression
Previous attempts
Ethanol abuse
Rational thinking loss (delusions, hallucinations, hopelessness)
Suicide in family
Organized plan
No spouse (no support systems)
Serious illness, intractable pain

Clinical Presentation

- symptoms associated with suicide
  - hopelessness
  - anhedonia
  - insomnia
  - severe anxiety
  - impaired concentration
  - psychomotor agitation
  - panic attacks

Suicidal Ideation Assessment

- Asking patients about suicide will not give them the idea or the incentive to commit suicide
- The best predictor of completed suicide is a history of attempted suicide
- The most common psychiatric disorders associated with completed suicide are mood disorders and alcohol abuse

Management

- proper documentation of the clinical encounter and rationale for management is essential
- higher risk (hospitalization needs to be strongly considered)
  - patients with a plan and intention to act on the plan, access to lethal means, recent social stressors, and symptoms suggestive of a psychiatric disorder
  - do not leave patient alone; remove potentially dangerous objects from room
  - if patient refuses to be hospitalized, complete form for involuntary admission (Form 1)
- lower risk
  - patients who are not actively suicidal, with no plan or access to lethal means

  - discuss protective factors and supports in their life, remind them of what they live for, promote survival skills that helped them through previous suicide attempts
  - make a safety plan that could include an agreement that they will:
    - not harm themselves
    - avoid alcohol, drugs, and situations that may trigger suicidal thoughts
    - follow-up with you at a designated time
    - contact a health care worker, call a crisis line, or go to an emergency department if they feel unsafe or if their suicidal feelings return or intensify
- depression: consider hospitalization if symptoms severe or if psychotic features are present; otherwise outpatient treatment with good supports and SSRIs/SNRIs
- alcohol-related: usually resolves with abstinence for a few days; if not, suspect depression
- personality disorders: crisis intervention, may or may not hospitalize
- schizophrenia/psychosis: hospitalization might be necessary
- parasuicide/self-mutilation: long-term psychotherapy with brief crisis intervention when necessary

Psychotic Disorders

Definition
- characterized by a significant impairment in reality testing
- delusions or hallucinations (with/without insight into their pathological nature) behaving in a disorganized way so that it is reasonable to infer that reality testing is disturbed

Delusions: fixed, false beliefs
Hallucinations: perceptual experiences without an external stimulus

Differential Diagnosis of Psychosis

Approach
- to differentiate among psychotic disorders and distinguish them from other primary diagnoses with psychotic features,
- consider symptoms, persistence, and time
- symptoms: what symptoms exist? The primary diagnosis needs full criteria to be met
  - mood: depressive episodes with psychotic features, manic episodes with psychotic features
  - psychotic: consider symptoms in Criterion A of schizophrenia, such as delusions, hallucinations, disorganized speech, grossly disorganized/catatonic behaviour, negative symptoms (i.e. diminished emotional expression or avolition)
- persistence: is there a time when certain symptom clusters are present without other clusters?
  - e.g. if there is a period of time with mood symptoms but not psychotic symptoms, consider mood disorder
  - e.g. if two weeks where psychotic symptoms persist in the absence of mood symptoms, consider schizoaffective disorder
- time: how long have the symptoms been present?

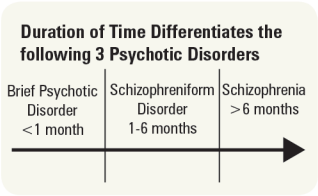

Figure 1. Differentiating psychotic disorders with duration

Differential
- primary psychotic disorders: schizophrenia, schizophreniform, brief psychotic, schizoaffective, delusional disorder
- mood disorders: depression with psychotic features, bipolar disorder (manic or depressive episode with psychotic features)
- personality disorders: schizotypal, schizoid, borderline, paranoid, obsessive-compulsive
- general medical conditions: tumour, head trauma, dementia, delirium, metabolic, infection, stroke, temporal lobe epilepsy
- substance-induced psychosis: intoxication or withdrawal, prescribed medications, toxins

Table 1. Differentiating Psychotic Disorders

Disorder	Psychotic Symptoms	Duration
Brief Psychotic Disorder	≥1 positive symptoms of criterion A	<1 mo
Schizophreniform Disorder	Criterion A	1-6 mo
Schizophrenia	Criterion A	>6 mo
Schizoaffective Disorder	Criterion A + major mood episode, but ≥2 wk psychotic without mood symptoms	>1 mo
Delusional Disorder	Non-bizarre delusions, hallucinations	>1 mo
2º to Substance Intoxication/ Withdrawal	Delusions or hallucinations	During intoxication/withdrawal, not > 1 mo without use
2º to Mood Disorder	Mood symptoms dominant + delusions/ hallucinations (mood congruent)	Psychosis may be present for the duration of the mood episode

Management of Acute Psychosis and Mania
- Ensure safety of self, patient, and other patients
- Have an exit strategy
- Decrease stimulation
- Assume a non-threatening stance
- IM medications (benzodiazepine + antipsychotic) often needed as patient may refuse oral medication
- Physical restraints may be necessary
- Do not use antidepressants or stimulants

Schizophrenia

DSM-5 Diagnostic Criteria for Schizophrenia

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A. two (or more) of the following, each present for a significant portion of time during a 1 mo period (or less if successfully treated). At least one of these must be (1), (2), or (3)
   1. delusions
   2. hallucinations
   3. disorganized speech (e.g. frequent derailment or incoherence)
   4. grossly disorganized or catatonic behaviour
   5. negative symptoms (i.e. diminished emotional expression or avolition)

B. decreased level of function: for a significant portion of time since onset, one or more major areas affected (e.g. work, interpersonal relations, self-care) is markedly decreased (or if childhood/adolescent onset, failure to achieve expected level)

C. at least 6 mo of continuous signs of the disturbance. Must include at least 1 mo of symptoms (or less if successfully treated) that meet Criterion A (i.e. active-phase symptoms) and may include periods of prodromal or residual symptoms (during which, disturbance may manifest by only negative symptoms or by two or more Criterion A symptoms present in an attenuated form (e.g. odd beliefs, unusual perceptual experiences)

D. rule out schizoaffective disorder and depressive or bipolar disorder with psychotic features because either 1) no major depressive or manic episodes have occurred concurrently with the active-phase symptoms, or 2) if mood episodes have occurred during active-phase symptoms, they have been present for a minority of the total duration of the active and residual periods of the illness

E. rule out other causes: GMC, substances (e.g. drug of abuse, medication)

F. if history of autism spectrum disorder or communication disorder of childhood onset, the additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations are also present for at least 1 mo (or less if successfully treated)

- **specifiers:** type of episode (e.g. first episode, multiple episodes, continuous), with catatonia, current severity based on quantitative assessment of primary symptoms of psychosis (in acute episode, in partial remission, in full remission)

Disorganized Behaviours in Schizophrenia

- Catatonic stupor: fully conscious, but immobile, mute, and unresponsive
- Catatonic excitement: uncontrolled and aimless motor activity, maintaining bizarre positions for a long time
- Stereotypy: repeated but non-goal-directed movement (e.g. rocking)
- Mannerisms: goal-directed activities that are odd or out of context (e.g. grimacing)
- Echopraxia: imitates movements and gestures of another
- Automatic obedience: carries out simple commands in robot-like fashion
- Negativism: refuses to cooperate with simple requests for no apparent reason
- Inappropriate affect, neglect of self-care, other odd behaviours (random shouting)

Epidemiology

- prevalence: 0.3-0.7%, M:F = 1:1
- mean age of onset: females late-20s; males early- to mid-20s
- suicide risk: 10% die by suicide, 30% attempt suicide

Etiology

- multifactorial: disorder is a result of interaction between both biological and environmental factors
  - genetic: 40% concordance in monozygotic (MZ) twins; 46% if both parents have schizophrenia; 10% of dizygotic (DZ) twins, siblings, children affected; vulnerable genes include Disrupted-in-Schizophrenia 1 (DISC1); neuregulin 1 (NRG 1); dystrobrevin binding protein / dysbindin (DTNBP1); catechol-O-methyltransferase (COMT); damino acid oxidase activator (DAOA); metabotropic glutamate receptor 3 (GRM3); and brain-derived neurotrophic factor (BDNF)
  - neurochemistry ("dopamine hypothesis"): excess activity in the mesolimbic dopamine pathway may mediate the positive symptoms of psychosis, while decreased dopamine in the prefrontal cortex may mediate negative and cognitive symptoms. GABA, glutamate, and ACh dysfunction are also thought to be involved
  - neuroanatomy: decreased frontal lobe function; asymmetric temporal/limbic function; decreased basal ganglia function; subtle changes in thalamus, cortex, corpus callosum, and ventricles; cytoarchitectural abnormalities
  - neuroendocrinology: abnormal growth hormone, prolactin, cortisol, and ACTH
  - neuropsychology: global defects seen in attention, language, and memory suggest lack of connectivity of neural networks
  - environmental: indirect evidence of cannabis use, geographical variance, winter season of birth, obstetrical complications, and prenatal viral exposure

Relationship Between Duration of Untreated Psychosis (DUP) and Outcome in First-Episode Schizophrenia

Am J Psychiatry 2005;162:1785-1804

Purpose: To review the association between DUP and symptom severity at first treatment contact, and between DUP and treatment outcomes.

Study Characteristics: Critical review and meta-analysis of 43 studies with 4,177 patients.

Participants: Patients with non-affective psychotic disorders at or close to first treatment.

Results: Shorter DUP was associated with greater response to antipsychotic treatment, as measured by global psychopathology, positive symptoms, negative symptoms, and functional outcomes. At the time of treatment initiation, longer DUP was associated with the severity of negative symptoms but not with the severity of positive symptoms, global psychopathology, or neurocognitive function.

Conclusions: DUP may be a potentially modifiable prognostic factor.

Pathophysiology

- neurodegenerative theory
- natural history may be a rapid or gradual decline in function and ability to communicate
- glutamate system may mediate progressive degeneration by excitotoxic mechanism which leads to production of free radicals
- neurodevelopmental theory: abnormal development of the brain from prenatal life
- neurons fail to migrate correctly, make inappropriate connections, and break down in later life
- inappropriate apoptosis during neurodevelopment resulting in faulty connections between neurons

Comorbidity

- substance-related disorders
- anxiety disorders
- decreased life expectancy because of associated medical conditions (e.g. weight gain, diabetes, metabolic syndrome, CV/pulmonary disease)

Management of Schizophrenia
- biological / somatic
  - acute treatment and maintenance: antipsychotics (haloperidol, risperidone, olanzipine, paliperidone; clozapine if refractory); often regiments of IM q2-4 weeks used in severe cases to ensure compliance
  - adjunctive: ± mood stabilizers (for aggression/impulsiveness - lithium, valproate, carbamazepine) ± anxiolytics ± ECT
  - treat for at least 1-2 years after the first episode, at least 5 years after multiple episodes (relapse causes severe deterioration)
- psychosocial
- psychotherapy: individual, family (important), group: supportive, CBT (see Table 14, PS43)
  - ACT (Assertive Community Treatment): mobile mental health teams that provide individualized treatment in the community and help patients with medication adherence, basic living skills, social support, job placements, resources
  - social skills training, employment programs, disability benefits
  - housing (group home, boarding home, transitional home)

Course and Prognosis
- majority of individuals display some type of prodromal phase
- course is variable: some individuals have exacerbations and remissions and others remain chronically ill; accurate prediction of the long-term outcome is not possible
- negative symptoms may be prominent early in the illness and may become more prominent and more disabling later on; positive symptoms appear and typically diminish with treatment
- over time: 1/3 improve, 1/3 remain the same, 1/3 worsen

Good Prognostic Factors
- Acute onset
- Shorter duration of prodrome
- Female gender
- Good cognitive functioning
- Good premorbid functioning
- No family history
- Presence of affective symptoms
- Absence of structural brain abnormalities
- Good response to drugs
- Good support system

Schizophreniform Disorder

Diagnosis
- criteria A, D, and E of schizophrenia are met; but episode lasts for at least 1 mo but less than 6 mo
- if the symptoms have extended past 6 mo the diagnosis becomes schizophrenia
- **specifiers**: with/without good prognostic features (e.g. acute onset, confusion, good premorbid functioning, absence of blunt/flat affect), with catatonia, current severity based on quantitative assessment of primary symptoms of psychosis

Treatment
- similar to acute schizophrenia

Prognosis
- better than schizophrenia; begins and ends more abruptly; good pre- and post-morbid function

Brief Psychotic Disorder

Diagnosis
- criteria A1-A4, D, and E of schizophrenia are met; an episode of the disorder lasts for at least 1 d, but less than 1 mo with eventual full return to premorbid level of functioning
- **specifiers**: with/without marked stressors, with postpartum onset, with catatonia, current severity
- can occur after a stressful event or postpartum (see *Postpartum Mood Disorders*, PS12)

Treatment
- secure environment, antipsychotics, anxiolytics

Prognosis
- good, self-limiting, should return to pre-morbid function within 1 mo

Schizoaffective Disorder

DSM-5 Diagnostic Criteria for Schizoaffective Disorder (Reformatted)
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A. concurrent psychosis (criterion A of schizophrenia) and major mood episode - uninterrupted period of illness
B. delusions or hallucinations for 2 or more wk in the absence of a major mood episode during the lifetime duration of the illness
C. major mood episode symptoms are present for the majority of the total duration of the active and residual periods of the illness
D. the disturbance is not attributable to the effects of a substance or another medical condition

- **specifiers**: bipolar type, depressive type, with catatonia, type of episode, severity
- one-third as prevalent as schizophrenia; schizoaffective disorder bipolar type more common in young adults, schizoaffective disorder depressive type more common in older adults
- depressive symptoms correlated with higher suicide risk

Non-bizarre delusions involve situations that could occur in real life (e.g. being followed, poisoned, loved at a distance)

Treatment
- antipsychotics, mood stabilizers, antidepressants

Prognosis
- between that of schizophrenia and of mood disorder

Delusional Disorder

DSM-5 Diagnostic Criteria for Delusional Disorder

A. the presence of one (or more) delusions with a duration of 1 mo or longer
B. criterion A for schizophrenia has never been met
   Note: hallucinations, if present, are not prominent and are related to the delusional theme
C. apart from the impact of the delusion(s) or its ramifications, functioning is not markedly impaired, and behaviour is not obviously bizarre or odd
D. if manic or major depressive episodes have occurred, these have been brief relative to the duration of the delusional periods
E. the disturbance is not attributable to the physiological effects of a substance or another medical condition and is not better explained by another mental disorder

- **subtypes**: erotomanic, grandiose, jealous, persecutory, somatic, mixed, unspecified
- further specify: bizarre content, type of episode (e.g. first episode, multiple episode), severity

Treatment
- psychotherapy, antipsychotics, antidepressants

Prognosis
- chronic, unremitting course but high level of functioning; a portion will progress to schizophrenia

Mood Disorders

Definitions
- mood disorders are characterized by the presence of diagnosable mood episodes
- mood episodes represent a combination of symptoms comprising a predominant mood state that is abnormal in quality or duration (e.g. major depressive, manic, mixed, hypomanic). DSM-5 Criteria for mood episodes are listed below.
- types of mood disorders include
- depressive (major depressive disorder, persistent depressive disorder)
- bipolar (bipolar I/II disorder, cyclothymia)
- secondary to general medical condition, substances, medications, other psychiatric issue
- accurate diagnosis of a mood disorder requires a careful past medical and psychiatric history to detect past mood episodes and to rule out whether these episodes were secondary to substance use, a medical condition, a loss, etc.

Medical Workup of Mood Disorder
- routine screening: physical exam, CBC, thyroid function test, extended electrolytes, urinalysis, drug screen, medications list
- additional screening: neurological consultation, chest X-ray, ECG, CT head

Mood Episodes

DSM-5 Diagnostic Criteria for Major Depressive Episode

A. ≥5 of the following symptoms have been present during the same 2 wk period and represent a change from previous functioning; at least one of the symptoms is either 1) depressed mood or 2) loss of interest or pleasure (anhedonia)
   Note: Do not include symptoms that are clearly attributable to another medical condition
   - depressed mood most of the day, nearly every day, as indicated by either subjective report or observation made by others
   - markedly diminished interest or pleasure in all, or almost all, activities most of the day, nearly every day
   - significant and unintentional weight loss/weight gain, or decrease/increase in appetite nearly every day
   - insomnia or hypersomnia nearly every day
   - psychomotor agitation or retardation nearly every day
   - fatigue or loss of energy nearly every day
   - feelings of worthlessness or excessive or inappropriate guilt (which may be delusional) nearly every day (not merely self-reproach or guilt about being sick)

Criteria for Depression (≥5)

MSIGECAPS
Mood: depressed
Sleep: increased/decreased
Interest: decreased
Guilt
Energy: decreased
Concentration: decreased
Appetite: increased/decreased
Psychomotor: agitation/retardation
Suicidal ideation

- diminished ability to think or concentrate, or indecisiveness, nearly every day
- recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

B. the symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning
C. the episode is not attributable to the direct physiological effects of a substance or a GMC

DSM-5 Criteria for Manic Episode

A. a distinct period of abnormally and persistently elevated, expansive, or irritable mood and abnormally and persistently increased goal-directed activity or energy, lasting ≥1 wk and present most of the day, nearly every day (or any duration if hospitalization is necessary)
B. during the period of mood disturbance and increased energy or activity, ≥3 of the following symptoms have persisted (4 if the mood is only irritable) and have been present to a significant degree and represent a noticeable change from usual behaviour
   - inflated self-esteem or grandiosity
   - decreased need for sleep (e.g. feels rested after only 3 h of sleep)
   - more talkative than usual or pressure to keep talking
   - flight of ideas or subjective experience that thoughts are racing
   - distractibility (i.e. attention too easily drawn to unimportant or irrelevant external stimuli)
   - increase in goal-directed activity (either socially, at work or school, or sexually) or psychomotor agitation
   - excessive involvement in pleasurable activities that have a high potential for painful consequences (e.g. engaging in unrestrained shopping sprees, sexual indiscretions, or foolish business investments)
C. the mood disturbance is sufficiently severe to cause marked impairment in social or occupational functioning or to necessitate hospitalization to prevent harm to self or others, or there are psychotic features
D. the episode is not attributable to the physiological effects of a substance or another medical condition

   Note: A full manic episode that emerges during antidepressant treatment but persists at a fully syndromal level beyond the physiological effect of that treatment is sufficient evidence for a manic episode, and therefore, a bipolar I diagnosis

   Note: Criteria A-D constitute a manic episode. At least one lifetime manic episode is required for the diagnosis of bipolar I disorder

Criteria for Mania (≥3)

GST PAID
Grandiosity
Sleep (decreased need)
Talkative
Pleasurable activities, **P**ainful consequences
Activity
Ideas (flight of)
Distractible

Hypomanic Episode

- criterion A and B of a manic episode is met, but duration is ≥4 d
- episode associated with an uncharacteristic change in functioning that is observable by others but not severe enough to cause marked impairment in social or occupational functioning or to necessitate hospitalization
- absence of psychotic features. (If these are present the episode is, by definition, manic)

Mixed Features

- an episode specifier in bipolar or depression that indicates the presence of both depressive and manic symptoms concurrently, classified by the disorder and primary mood episode component (e.g. bipolar disorder, current episode manic, with mixed features)
- clinical importance due to increased suicide risk
- if found in patient diagnosed with major depression, high index of suspicion for bipolar disorder
- while meeting the full criteria for a major depressive episode, the patient has on most days ≥3 of criteria B for a manic episode
- while meeting the full criteria for a manic/hypomanic episode, the patient has on most days ≥3 of criteria A for a depressive episode. (The following criterion A cannot count: psychomotor agitation, insomnia, difficulties concentrating, weight changes)

Depressive Disorders

MAJOR DEPRESSIVE DISORDER

DSM-5 Diagnostic Criteria for Major Depressive Disorder (MDD)

A. presence of a MDE
B. the MDE is not better accounted for by schizoaffective disorder and is not superimposed on schizophrenia, schizophreniform disorder, delusional disorder, or psychotic disorder NOS
C. there has never been a manic episode or a hypomanic episode

- **Note**: This exclusion does not apply if all of the manic-like, or hypomanic-like episodes are substance or treatment-induced or are due to the direct physiological effects of another medical condition
- **specifiers**: with anxious distress, mixed features, melancholic features, atypical features, mood-congruent psychotic features, mood-incongruent psychotic features, catatonia, peripartum onset, seasonal pattern

- single vs. recurrent is an episode descriptor that carries prognostic significance. Recurrent is classified as the patient having two or more distinct MDE episodes; to be considered separate the patient must have gone 2 consecutive months without meeting criteria

Epidemiology
- lifetime prevalence: 12%
- peak prevalence age 15-25 yr (M:F = 1:2)

Etiology
- biological
  - genetic: 65-75% MZ twins; 14-19% DZ twins, 2-4 fold increased risk in first-degree relatives
  - neurotransmitter dysfunction: decreased activity of 5-HT, NE, and DA at the level of the synapse; changes in GABA and glutamate; various changes in brain circuitry and functional connectivity detectable by fMRI
  - neuroendocrine dysfunction: excessive HPA axis activity
  - neuroanatomy: decreased hippocampal volume, increased ventricle sizes
  - neurophysiologic: decreased REM latency and slow-wave sleep; increased REM length
  - immunologic: increased pro-inflammatory cytokines IL-6 and TNF
  - secondary to medical condition, medication, substance use disorder
- psychosocial
  - psychodynamic (e.g. low self-esteem, unconscious aggression towards self or loved ones, disordered attachment)
  - cognitive (e.g. distorted schemata, Beck's cognitive triad: negative views of the self, the world, and the future)
  - environmental factors (e.g. job loss, bereavement, history of abuse or neglect, early life adversity)
  - comorbid psychiatric diagnoses (e.g. anxiety, substance abuse, developmental disability, dementia, eating disorder)

Antidepressants for Depression in Medical Illness
Cochrane DB Syst Rev 2010; Issue 3
This systematic review and meta-analysis of 51 RCTs (3,603 patients) compared antidepressants to placebo in patients with a physical disorder (e.g. cancer, MI) who have been diagnosed as depressed (including major depression, adjustment disorder, and dysthymia).
Conclusions: Antidepressants, including SSRIs and TCAs, cause a significant improvement in patients with a physical illness, as compared to placebo.

Risk Factors
- sex: F>M, 2:1
- family history: depression, alcohol abuse, suicide attempt or completion
- childhood experiences: loss of parent before age 11, negative home environment (abuse, neglect)
- personality: neuroticism, insecure, dependent, obsessional
- recent stressors: illness, financial, legal, relational, academic
- lack of intimate, confiding relationships or social isolation
- low socioeconomic status

Depression in the Elderly
- affects about 15% of community residents >65 yr old; up to 50% in nursing homes
- high suicide risk due to social isolation, chronic medical illness, decreased independence
- suicide peak: males aged 80-90; females aged 50-65
- dysphoria may not be a reliable indicator of depression in those >85 yr
- often present with somatic complaints (e.g. changes in weight, sleep, energy) or anxiety symptoms
- may have prominent cognitive changes after onset of mood symptoms (dementia syndrome of depression)
- see Table 3, PS22, for a comparison of delirium and dementia

Treatment
- lifestyle: increased aerobic exercise, mindfulness-based stress reduction, zinc supplementation
- biological: SSRIs, SNRIs, other antidepressants, somatic therapies (see *Pharmacotherapy*, PS44, and *Somatic Therapies*, PS52)
  - 1st line pharmacotherapy: sertraline, escitalopram, venlafaxine, mirtazapine
  - for partial or non-response can change class or add augmenting agent: buproprion, quetiapine-XR, aripiprazole, lithium
  - typical response to antidepressant treatment: physical symptoms improve at 2 wk, mood/cognition by 4 wk, if no improvement after 4 wk at a therapeutic dosage alter regimen
  - ECT: currently fastest and most effective treatment for MDD. Consider in severe, psychotic or treatment-resistant cases
  - rTMS: early data support efficacy equivalent to ECT with good safety and tolerability
  - phototherapy: especially if seasonal component, shift work, sleep dysregulation
- psychological
  - individual therapy (psychodynamic, interpersonal, CBT), family therapy, group therapy
- social: vocational rehabilitation, social skills training
- experimental: magnetic seizure therapy, deep brain stimulation, vagal nerve stimulation, ketamine

St. John's Wort for Major Depression
Cochrane DB Syst Rev 2008;4:CD000448
Study: Systematic review of trials that were (1) randomized, double-blinded (2) with patients with major depression (3) comparing St. John's wort (hypericum extracts) with placebo or standard antidepressants and (4) included clinical outcomes.
Patients: 5,489 patients with major depression.
Outcomes: 1. Effectiveness: treatment response measured by a depression scale 2. Safety: the proportion of patients who dropped out due to adverse effects.
Intervention: St. John's wort vs. placebo; St. John's wort vs. standard antidepressants.
Results: 29 trials, 5,489 patients, with 18 comparisons with placebo and 17 with antidepressants. St John's wort is more effective than placebo (response rate ratio = 1.87), and similarly effective as antidepressants (RRR = 1.02). Less adverse effects with hypericum extracts. However, the effect size is dependent on the country of origin.

Prognosis
- one year after diagnosis of MDD without treatment: 40% of individuals still have symptoms that are sufficiently severe to meet criteria for MDD, 20% continue to have some symptoms that no longer meet criteria for MDD, 40% have no mood disorder

PERSISTENT DEPRESSIVE DISORDER

DSM-5 Diagnostic Criteria for Persistent Depressive Disorder

Note: in DSM-IV-TR this was referred to as Dysthymia

A. depressed mood for most of the day, for more days than not, as indicated either by subjective account or observation by others, for ≥2 yr
   Note: In children and adolescents, mood can be irritable and duration must be at least 1 yr
B. presence, while depressed, of ≥2 of the following
   - poor appetite or overeating
   - insomnia or hypersomnia
   - low energy or fatigue
   - low self-esteem
   - poor concentration or difficulty making decisions
   - feelings of hopelessness
C. during the 2 yr period (1 yr for children or adolescents) of the disturbance, the person has never been without the symptoms in criteria A and B for more than 2 mo at a time
D. criteria for a major depressive disorder may be continuously present for 2 yr
E. there has never been a manic episode or a hypomanic episode, and criteria have never been met for cyclothymic disorder
F. the disturbance is not better explained by a persistent schizoaffective disorder, schizophrenia, delusional disorder, or other specified or unspecified schizophrenia spectrum and other psychotic disorder.
G. the symptoms are not due to the direct physiological effects of a substance or another medical condition
H. the symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning

Epidemiology

- lifetime prevalence: 2-3%; M=F

Treatment

- psychological
  - traditionally psychotherapy was the principal treatment for dysthymia; recent evidence suggests some benefit but generally inferior to pharmacological treatment. Combinations of the two may be most efficacious
- biological
  - antidepressant therapy: SSRIs (e.g. sertraline, paroxetine) TCAs (e.g. imipramine) as an outpatient

Cognitive Therapy vs. Medications in the Treatment of Moderate to Severe Depression
Arch Gen Psychiatry 2005;62:409-416
Study: Randomized control trial.
Patients: 240 outpatients with moderate to severe MDD, aged 18-70.
Intervention: 16 wk of paroxetine with or without augmentation with lithium carbonate or desipramine hydrochloride (n=120) versus cognitive behavioural therapy (n=60). Response up to 8 wk was controlled by pill placebo (n=60).
Main Outcomes: The Hamilton Depression Rating scale was used to determine response to treatment.
Results: At 8 wk, 50% (95%CI 41-59%) of patients on medication and 43% (95%CI 31-56%) of patients on CBT had responded in comparison to 25% (95%CI 16-38%) of patients on pill placebo. There was no significant difference between medication and CBT. At 16 wk, 46% of patients on medication and 40% of patients on CBT achieved remission.
Summary: There is no difference in efficacy between CBT vs. paroxetine in the treatment of moderate to severe depression.

Postpartum Mood Disorders

Postpartum "Blues"

- transient period of mild depression, mood instability, anxiety, decreased concentration; considered to be normal changes in response to fluctuating hormonal levels, the stress of childbirth, and the increased responsibilities of motherhood
- occurs in 50-80% of mothers; begins 2-4 d postpartum, usually lasts 48 h, can last up to 10 d
- does not require psychotropic medication
- usually mild or absent: feelings of inadequacy, anhedonia, thoughts of harming baby, suicidal thoughts

MAJOR DEPRESSIVE DISORDER WITH PERIPARTUM ONSET (POSTPARTUM DEPRESSION)

Diagnosis

- MDD that occurs during pregnancy or in the 4 wk following delivery

Clinical Presentation

- typically lasts 2-6 mo; residual symptoms can last up to 1 yr
- may present with psychosis; rare (0.2%), usually associated with mania, but also with MDE
- severe symptoms include extreme disinterest in baby, suicidal and infanticidal ideation

Epidemiology

- occurs in 10% of mothers, risk of recurrence 50%

Risk Factors

- previous history of a mood disorder (postpartum or otherwise), family history of mood disorder
- psychosocial factors: stressful life events, unemployment, marital conflict, lack of social support, unwanted pregnancy, colicky or sick infant

Selective Serotonin Reuptake Inhibitors in Pregnancy and Infant Outcomes
Paediatr Child Health 2011;16:562-563
Study: Canadian Paediatric Society (CPS) Clinical practice guidelines.
Recommendations: It is important to treat depression in pregnancy. There is no evidence that SSRIs increase the risk of major malformations. There is conflicting evidence concerning the association of paroxetine and cardiac malformations. SSRIs are not contraindicated while breast-feeding.

Treatment
- psychotherapy (CBT or IPT)
- short-term safety of maternal SSRIs for breastfeeding infants established; long-term effects unknown
- if depression severe or psychotic symptoms present, consider ECT

Prognosis
- impact on child development: increased risk of cognitive delay, insecure attachment, behavioural disorders
- treatment of mother improves outcome for child at 8 mo through increased mother-child interaction

Bipolar Disorders

BIPOLAR I / BIPOLAR II DISORDER

Definition
- Bipolar I Disorder
  - disorder in which at least one manic episode has occurred
  - if manic symptoms lead to hospitalization, or if there are psychotic symptoms, the diagnosis is BP I
  - commonly accompanied by at least 1 MDE but not required for diagnosis
  - time spent in mood episodes: 53% asymptomatic, 32% depressed, 9% cycling/mixed, 6% hypo/manic
- Bipolar II Disorder
  - disorder in which there is at least 1 MDE, 1 hypomanic and no manic episodes
  - while hypomania is less severe than mania, Bipolar II is not a "milder" form of Bipolar I
  - time spent in mood episodes: 46% asymptomatic, 50% depressed, 1% cycling/mixed, 2% hypo/manic
  - a great masquerader, Bipolar II is often missed due to the severity and chronicity of depressive episodes and low rates of spontaneous reporting and recognition of hypomanic episodes

Classification
- classification of bipolar disorder involves describing the disorder (I or II) and the current or most recent mood episode as either manic, hypomanic, or depressed
- specifiers: with anxious distress, depressed with mixed features, hypo/manic with mixed features, melancholic features, atypical features, mood-congruent or -incongruent psychotic features, catatonia, peripartum onset, seasonal pattern, rapid cycling (4+ mood episodes in a 1 yr)

Bipolar II is quite often missed and many patients are symptomatic for up to a decade before accurate diagnosis and treatment

Epidemiology
- lifetime prevalence: 1% BPI, 1.1% BPII, 2.4% Subthreshold BPD; M:F = 1:1
- age of onset: teens to 20s, usually MDE first, manic episode 6-10 years after, average age of first manic episode 32 yr

Risk Factors
- genetic: 60-65% of bipolar patients have family history of major mood disorders, especially bipolar disorders
- clinical features predictive of bipolar > unipolar diagnosis given history of MDE: early age of onset (<25 yr), increased number of MDEs, psychotic symptoms, postpartum onset, anxiety disorders (espescially separation, panic), antidepressant failure due to early "poop out" or hypomanic symptoms, early impulsivity and aggression, substance abuse, cyclothymic temperament

Patients with bipolar disorder are at higher risk for suicide when they switch from mania to depression, especially as they become aware of consequences of their behaviour during the manic episode

Treatment
- **lifestyle**: psychoeducation for patient and supports on cycling nature of illness, ensure regular check ins, develop early warning system, "emergency plan" for manic episodes, promote stable routine (sleep, meals, exercise)
- **biological**: lithium, anticonvulsants, antipsychotics, ECT (if refractory); monotherapy with antidepressants should be avoided
  - mood stabilizers vary in their ability to "treat" (reduce symptoms acutely) or "stabilize" (prevent relapse and recurrence) manic and depressive symptoms; multi-agent therapy is common
  - treating mania: lithium, valproate, carbamazepine (2nd line), SGA, ECT, benzodiazepines (for acute agitation)
  - preventing mania: same as above but usually at lower dosages, minus benzodiazepines
  - treating depression: lithium, lurasidone, quetiapine, lamotrigine, antidepressants (only with mood stabilizer), ECT
  - preventing depression: same as above plus aripiprazole, valproate (note: quetiapine first line in treating bipolar II depression)
  - mixed episode or rapid cycling: multi-agent therapy, lithium or valproate + SGA (lurasidone, aripiprazole, olanzapine)

Lithium is among few agents with proven efficacy in preventing suicide attempts and completions and international research has found that populations with higher lithium levels in their drinking water have lower suicide rates in their general population

The 4 L's for Bipolar Depression
Lithium, **L**amotrigine, **L**urasidone, Seroque**L**

- **psychological**: supportive or psychodynamic psychotherapy, CBT, IPT or interpersonal social rhythm therapy, family therapy
- **social**: vocational rehabilitation, consider leave of absence from school/work, assess capacity to manage finances, drug and EtOH cessation, sleep hygiene, social skills training, education and recruitment of family members

Course and Prognosis
- high suicide rate (15% mortality from suicide), especially in mixed states
- BP I and II are chronic conditions with a relapsing and remitting course featuring alternating manic and depressive episodes; depressive symptoms tend to occur more frequently and last longer than manic episodes
- can achieve high level of functioning between episodes
- may switch rapidly between depression and mania without any period of euthymia in between
- high recurrence rate for mania – 90% will have a subsequent episode in the next 5 yr
- long term follow up of BP I – 15% well, 45% well with relapses, 30% partial remission, 10% chronically ill

A Randomized Controlled Trial of Cognitive Therapy for Bipolar Disorder: Focus on Long-Term Change
J Clin Psychiatry 2006;67:277-286
Study: Randomized, blinded clinical trial.
Patients: 52 patients with DSM-IV bipolar 1 or 2 disorder.
Intervention: Patients allocated to either a 6 mo trial of cognitive therapy (CT) with emotive techniques or treatment as usual. Both groups received mood stabilizers.
Main Outcomes: Relapse rates, dysfunctional attitudes, psychosocial functioning, hopelessness, self-control, medication adherence. Patients were assessed by independent raters blinded to treatment group.
Results: At 6 mo, CT patients experienced fewer depressive symptoms and fewer dysfunctional attitudes. There was a non-significant (p=0.06) trend to greater time to depressive relapse. At 12 mo follow-up, CT patients had lower Young Mania Rating scores and improved behavioural self-control. At 18 mo, CT patients reported less severity of illness.
Conclusions: CT appears to provide benefits in the 12 mo after completion of therapy.

CYCLOTHYMIA

Diagnosis
- presence of numerous periods of hypomanic and depressive symptoms (not meeting criteria for full hypomanic episode or MDE) for ≥2 yr; never without symptoms for >2 mo
- never have met criteria for MDE, manic or hypomanic episodes
- symptoms are not due to the direct physiological effects of a substance or GMC
- symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning

Treatment
- similar to Bipolar I: mood stabilizer ± psychotherapy, avoid antidepressant monotherapy, treat any comorbid substance use disorder

Anxiety Disorders

Definition
- anxiety is a universal human characteristic involving tension, apprehension, or even terror
- serves as an adaptive mechanism to warn about an external threat by activating the sympathetic nervous system (fight or flight)
- manifestations of anxiety can be described through
  - physiology: main brain structure involved is the amygdala (fear conditioning); neurotransmitters involved include 5-HT, cholecystokinin, epinephrine, norepinephrine, DA
  - psychology: one's perception of a given situation is distorted which causes one to believe it is threatening in some way
  - behaviour: once feeling threatened, one responds by escaping or facing the situation, thereby causing a disruption in daily functioning
- anxiety becomes pathological when:
  - fear is greatly out of proportion to risk/severity of threat
  - response continues beyond existence of threat or becomes generalized to other similar or dissimilar situations
  - social or occupational functioning is impaired
  - often comorbid with substance use and depression

Differential Diagnosis

Table 2. Differential Diagnosis of Anxiety Disorders

Cardiovascular	Post-MI, arrhythmia, congestive heart failure, pulmonary embolus, mitral valve prolapse
Respiratory	Asthma, COPD, pneumonia, hyperventilation
Endocrine	Hyperthyroidism, pheochromocytoma, hypoglycemia, hyperadrenalism, hyperparathyroidism
Metabolic	Vitamin B_{12} deficiency, porphyria
Neurologic	Neoplasm, vestibular dysfunction, encephalitis
Substance-Induced	Intoxication (caffeine, amphetamines, cocaine, thyroid preparations, OTC for colds/decongestants), withdrawal (benzodiazepines, alcohol)
Other Psychiatric Disorders	Psychotic disorders, mood disorders, personality disorders (OCPD), somatoform disorders

Medical Workup of Anxiety Disorder
- routine screening: physical exam, CBC, thyroid function test, electrolytes, urinalysis, urine drug screening
- additional screening: neurological consultation, chest X-ray, ECG, CT head

Panic Disorder

DSM-5 Diagnostic Criteria for Panic Disorder

A. recurrent unexpected panic attacks - a panic attack is an abrupt surge of intense fear or intense discomfort that reaches a peak within minutes, and during which time four (or more) of the following symptoms occur
   - palpitations, pounding heart, or accelerated heart rate
   - sweating
   - trembling or shaking
   - sensations of shortness of breath or smothering
   - feelings of choking
   - chest pain or discomfort
   - nausea or abdominal distress
   - feeling dizzy, unsteady, light-headed, or faint
   - chills or heat sensations
   - paresthesias (numbness or tingling sensations)
   - derealization (feelings of unreality) or depersonalization (being detached from oneself)
   - fear of losing control or "going crazy"
   - fear of dying

B. 1 mo (or more) of "anxiety about panic attacks" - at least one of the attacks has been followed by one or both of the following:
   - persistent concern or worry about additional panic attacks or their consequences
   - a significant maladaptive change in behaviour related to the attacks

C. the disturbance is not attributable to the physiological effects of a substance or another medical condition

D. the disturbance is not better explained by another mental disorder

Epidemiology

- prevalence: 2-5% (one of the top five most common reasons to see a family doctor); M:F = 1:2-3
- onset: average early-mid 20s, familial pattern

Treatment

- psychological
  - CBT: interoceptive exposure (eliciting symptoms of a panic attack and learning to tolerate the symptoms without coping strategies); cognitive restructuring (addressing underlying beliefs regarding the panic attacks), relaxation techniques (visualization, box-breathing)
- pharmacological
  - SSRIs: fluoxetine, citalopram, paroxetine, fluvoxamine, sertraline
  - SNRI: venlafaxine
  - with SSRI/SNRIs start with low doses, titrate up slowly
  - anxiety disorders often require treatment at higher doses for a longer period of time than depression (i.e. full response may take up to 12 wk)
  - treat for up to 1 year after symptoms resolve to avoid relapse
  - to prevent non-compliance due to physical side effects, explain symptoms to expect prior to initiation of therapy
  - other antidepressants (mirtazapine, MAOIs)
    - consider avoiding bupropion or TCAs due to stimulating effects (exacerbate anxious symptoms)
  - benzodiazepines (short-term, low dose, regular schedule, long half-life, avoid prn usage)

Prognosis

- 6-10 yr post-treatment: 30% well, 40-50% improved, 20-30% no change or worse
- clinical course: chronic, but episodic with psychosocial stressors

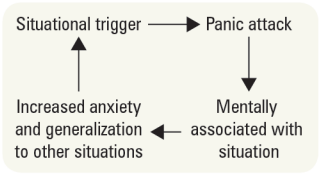

Figure 2. Panic attack

Criteria for Panic Disorder (≥4)

STUDENTS FEAR the 3 Cs
Sweating
Trembling
Unsteadiness, dizziness
Depersonalization, **D**erealization
Excessive heart rate, palpitations
Nausea
Tingling
Shortness of breath

Fear of dying, losing control, going crazy

3 Cs: Chest pain, **C**hills, **C**hoking

Panic Attack vs. Panic Disorder
Panic disorder consists of panic attacks + other criteria

Panic attack is not a codable disorder and can occur in the context of many different disorders

Starting Medication for Anxiety
Start low, go slow, aim high and explain symptoms to expect prior to initiation of therapy

Agoraphobia

DSM-5 Diagnostic Criteria for Agoraphobia

- "Anxiety about not being able to escape, > 6 mo"

A. marked fear or anxiety about two (or more) of the following five situations:
   - using public transportation
   - being in open spaces
   - being in enclosed places
   - standing in line or being in a crowd
   - being outside of the home alone

B. the individual fears or avoids these situations because of thoughts that escape might be difficult or help might not be available in the event of developing panic-like symptoms or other incapacitating or embarrassing symptoms

C. the agoraphobic situations almost always provoke fear or anxiety
D. the agoraphobic situations are actively avoided, require the presence of a companion, or are endured with intense fear or anxiety
E. the fear or anxiety is out of proportion to the actual danger posed by the agoraphobic situations and to the sociocultural context
F. the fear, anxiety, or avoidance is persistent, typically lasting ≥6 mo
G. the fear, anxiety, or avoidance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning
H. if another medical condition is present, the fear, anxiety, or avoidance is clearly excessive
I. the fear, anxiety, or avoidance is not better explained by the symptoms of another mental disorder and are not related exclusively to obsessions, perceived defects or flaws in physical appearance, reminders of traumatic events, or fear of separation
Note: agoraphobia is diagnosed irrespective of the presence of panic disorder. If an individual's presentation meets criteria for panic disorder and agoraphobia, both diagnoses should be assigned

Treatment
- as per panic disorder

Generalized Anxiety Disorder

DSM-5 Diagnostic Criteria for Generalized Anxiety Disorder
Reprinted with permission from the Diagnostic and Statistical Manual of Mental Disorders, 5th ed. 2013. American Psychiatric Association

A. excessive anxiety and worry (apprehensive expectation), occurring more days than not for at least 6 mo, about a number of events or activities (such as work or school performance)
B. the individual finds it difficult to control the worry
C. the anxiety and worry are associated with three (or more) of the following six symptoms (with at least some symptoms having been present for more days than not for the past 6 mo)
   1. restlessness or feeling keyed up or on edge
   2. being easily fatigued
   3. difficulty concentrating or mind going blank
   4. irritability
   5. muscle tension
   6. sleep disturbance (difficulty falling or staying asleep, or restless, unsatisfying sleep)
D. the anxiety, worry, or physical symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning
E. the disturbance is not attributable to the physiological effects of a substance or another medical condition
F. the disturbance is not better explained by another mental disorder

Criteria for GAD (≥3)

C-FIRST
Concentration issues
Fatigue
Irritability
Restlessness
Sleep disturbance
Tension (muscle)

Epidemiology
- 1 yr prevalence: 3-8%; M:F = 1:2
  - if considering only those receiving inpatient treatment, ratio is 1:1
- most commonly presents in early adulthood

Treatment
- lifestyle: caffeine and EtOH avoidance, sleep hygiene
- psychological: CBT including relaxation techniques, mindfulness
- biological
  - SSRIs and SNRIs are 1st line (paroxetine, escitalopram, sertraline, venlafaxine XL)
  - 2nd line: buspirone (tid dosing), bupropion (caution due to stimulating effects),
  - add-on benzodiazepines (short-term, low dose, regular schedule, long half-life, avoid prn usage)
  - β-blockers not recommended

Prognosis
- chronically anxious adults become less so with age
- depends on pre-morbid personality functioning, stability of relationships, work, and severity of environmental stress
- difficult to treat

Phobic Disorders

Specific Phobia
- definition: marked and persistent (> 6 mo) fear that is excessive or unreasonable, cued by presence or anticipation of a specific object or situation
- lifetime prevalence 12-16%; M:F ratio variable
- types: animal/insect, environment (heights, storms), blood/injection/injury, situational (airplane, closed spaces), other (loud noise, clowns)

Social Phobia (Social Anxiety Disorder)
- definition: marked and persistent (> 6 mo) fear of social or performance situations in which one is exposed to unfamiliar people or to possible scrutiny by others; fearing he/she will act in a way that may be humiliating or embarrassing (e.g. public speaking, initiating or maintaining conversation, dating, eating in public)
- 12 month prevalence rate may be as high as 7%; M:F ratio approximately equal

Diagnostic Criteria for Phobic Disorders
- exposure to stimulus almost invariably provokes an immediate anxiety response; may present as a panic attack
- person recognizes fear as excessive or unreasonable
- situations are avoided or endured with anxiety/distress
- significant interference with daily routine, occupational/social functioning, and/or marked distress

Treatment
- psychological
  - cognitive behaviour therapy (focusing on both in vivo and virtual exposure therapy, gradually facing feared situations)
  - behavioural therapy is more efficacious than medication
- biological
  - SSRIs/SNRIs (e.g. fluoxetine, paroxetine, sertraline, venlafaxine), MAOIs
  - β-blockers or benzodiazepines in acute situations (e.g. public speaking)

Prognosis
- chronic

Obsessive-Compulsive Disorder

DSM-5 Diagnostic Criteria for Obsessive-Compulsive Disorder

A. presence of obsessions, compulsions, or both
   - obsessions are defined by (1) and (2)
     1. recurrent and persistent thoughts, urges, or images that are experienced, at some time during the disturbance, as intrusive and unwanted, and cause marked anxiety or distress in most individuals
     2. the individual attempts to ignore or suppress such thoughts, urges, or images, or to neutralize them with some other thought or action (i.e. by performing a compulsion; see below)
   - compulsions are defined by (1) and (2)
     1. repetitive behaviours (e.g. hand washing, ordering, checking) or mental acts (e.g. praying, counting, repeating words silently) that the individual feels driven to perform in response to an obsession or according to rules that must be applied rigidly
     2. behaviours mental acts are aimed at preventing or reducing anxiety or distress, or preventing some dreaded event or situation; however, these behaviours or mental acts are not connected in a realistic way with what they are designed to neutralize or prevent, or are clearly excessive

B. the obsessions or compulsions are time-consuming (e.g. take >1 h/d) or cause clinically significant distress or impairment in social, occupational, or other important areas of functioning

C. the obsessive-compulsive symptoms are not attributable to the physiological effects

D. the disturbance is not better explained by the symptoms of another mental disorder

Epidemiology
- 12 mo prevalence 1.1-1.8%; females affected at slightly higher rates than males
- rate of OCD in first-degree relatives is higher than in the general population

Treatment
- CBT: exposure with response prevention (ERP) – involves exposure to feared situations with the addition of preventing the compulsive behaviours; cognitive strategies include challenging underlying beliefs
- pharmacotherapy: SSRIs/SNRIs (12-16 week trials, higher doses vs. depression), clomipramine; adjunctive antipsychotics (risperidone)

Prognosis
- tends to be refractory and chronic

Trauma- and Stressor-Related Disorders

Post-Traumatic Stress Disorder

DSM-5 Diagnostic Criteria for Post-Traumatic Stress Disorder

A. exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways
   1. directly experiencing the traumatic event(s)
   2. witnessing, in person, the event(s) as it occurred to others
   3. learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental
   4. experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g. first responders collecting human remains: police officers repeatedly exposed to details of child abuse)

B. presence of one (or more) of the following intrusion symptoms associated with the traumatic event(s), beginning after the traumatic event(s) occurred
   1. recurrent, involuntary, and intrusive distressing memories of the traumatic event(s)
   2. recurrent distressing dreams in which the content and/or affect of the dream are related to the traumatic event(s)
   3. dissociative reactions (e.g. flashbacks) in which the individual feels or acts as if the traumatic event(s) were recurring
   4. intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event(s)
   5. marked physiological reactions to internal or external cues that symbolize or resemble an aspect of the traumatic event(s)

C. persistent avoidance of stimuli associated with the traumatic event(s), beginning after the traumatic event(s) occurred, as evidenced by one or both of the following
   1. avoidance of or efforts to avoid distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s)
   2. avoidance of or efforts to avoid external reminders (people, places, conversations, activities, objects, situations) that arouse distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s)

D. negative alterations in cognitions and mood associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred, as evidenced by two (or more) of the following
   1. inability to remember an important aspect of the traumatic event(s)
   2. persistent and exaggerated negative beliefs or expectations about oneself, others, or the world
   3. persistent, distorted cognitions about the cause or consequences of the traumatic event(s) that lead the individual to blame himself/herself or others
   4. persistent negative emotional state (e.g. fear, horror, anger, guilt, or shame)
   5. markedly diminished interest or participation in significant activities
   6. feelings of detachment or estrangement from others
   7. persistent inability to experience positive emotions

E. marked alterations in arousal and reactivity associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred, as evidenced by two (or more) of the following
   1. irritable behaviour and angry outbursts (with little or no provocation) typically expressed as verbal or physical aggression toward people or objects
   2. reckless or self-destructive behaviour
   3. hypervigilance
   4. exaggerated startle response
   5. problems with concentration
   6. sleep disturbance (e.g. difficulty falling or staying asleep or restless sleep)

F. duration of the disturbance (criteria B, C, D, and E) is more than 1 mo

G. the disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning

H. the disturbance is not attributable to the physiological effects of a substance or another medical condition

Criteria for Post-Traumatic Stress Disorder

TRAUMA
Traumatic event
Re-experience the event
Avoidance of stimuli associated with the trauma
Unable to function
More than a **M**onth
Arousal increased
+ negative alterations in cognition and mood

Epidemiology

- prevalence of 7% in general population
- men's trauma is most commonly combat experience/physical assault; women's trauma is usually physical or sexual assault

Acute Stress Disorder
- May be a precursor to PTSD
- Similar symptoms to PTSD
- Symptoms persist 3 d after a trauma until 1 mo after the exposure

Treatment

- psychotherapy, CBT
  - ensure safety and stabilize: e.g. emotional regulation techniques (e.g. breathing, relaxation)
  - once coping mechanisms established, can explore/mourn trauma - challenge dysfunctional beliefs, etc.
  - reconnect and integrate - exposure therapy, etc.

- biological
  - SSRIs (e.g. paroxetine, sertraline)
  - prazosin (for treating disturbing dreams and nightmares)
  - benzodiazepines (for acute anxiety)
  - adjunctive atypical antipsychotics (risperidone, olanzapine)
- eye movement desensitization and reprocessing (EMDR): an experimental method of reprocessing memories of distressing events by recounting them while using a form of dual attention stimulation such as eye movements, bilateral sound, or bilateral tactile stimulation (its use is controversial because of limited evidence)

Complications
- substance abuse, relationship difficulties, depression, impaired social and occupational functioning disorders, personality disorders

Adjustment Disorder

- a versatile clinical entity designed to capture patients who have difficulty coping with a stressful life event or situation and develop acute, often transient, emotional or behavioural symptoms that resemble less severe versions of other psychiatric conditions

DSM-5 Diagnostic Criteria for Adjustment Disorder
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A. the development of emotional or behavioural symptoms in response to an identifiable stressor(s) occurring within 3 mo of the onset of the stressor(s)
B. these symptoms or behaviours are clinically significant as evidenced by either of the following:
   - marked distress that is in excess of what would be expected from exposure to the stressor
   - significant impairment in social or occupational (academic) functioning
C. the stress-related disturbance does not meet criteria for another mental disorder and is not merely an exacerbation of a pre-existing mental disorder
D. the symptoms do not represent normal bereavement
E. once the stressor (or its consequences) has terminated, the symptoms do not persist for more than an additional 6 mo
   - **specifiers**: with depressed mood, with anxiety, with mixed anxiety/depression, with conduct disturbance, with mixed disturbance of conduct/emotions, unspecified

Classification
- types of stressors
  - single (e.g. termination of romantic relationship)
  - multiple (e.g. marked business difficulties and marital problems)
  - recurrent (e.g. seasonal business crises)
  - continuous (e.g. living in a crime-ridden neighbourhood)
  - developmental events (e.g. going to school, leaving parental home, getting married, becoming a parent, failing to attain occupational goals, retirement)

Epidemiology
- F:M 2:1, prevalence 2-8% of the population

Treatment
- brief psychotherapy: individual or group (particularly useful for patients dealing with unique and specific medical issues; e.g. colostomy or renal dialysis groups), crisis intervention
- biological
  - benzodiazepines may be used for those with significant anxiety symptoms (short-term, low-dose, regular schedule)

Bereavement

Clinical Presentation
- bereavement is a normal psychological and emotional reaction to a significant loss, also called grief or mourning
- length and characteristics of "normal" bereavement are variable between individuals/cultures; however, there are general commonalities in the symptoms, course and expected resolution that allow clinicians to monitor for abnormal severity
- normal response: *protest* → *searching and acute anguish* → *despair and detachment* → *reorganization*
- if a patient meets criteria for MDD, even in the context of a loss or bereavement scenario, they are still diagnosed with MDD
- presence of the following symptoms may indicate abnormal grief/presence of MDD
  - guilt about things other than actions taken or not taken by the survivor at the time of death
  - thoughts of death other than the survivor feeling that they would be better off dead or should have died with the deceased person; morbid preoccupation with worthlessness

Risk Factors for Poor Bereavement Outcome
- Poor social supports
- Unanticipated death or lack of preparation for death
- Highly dependent relationship with deceased
- High initial distress
- Other concurrent stresses and losses
- Death of a child
- Pre-existing psychiatric disorders, especially depression and separation anxiety

  - marked psychomotor retardation; prolonged and marked functional impairment
  - hallucinatory experiences other than thinking that the survivor hears the voice of or transiently sees the image of the deceased person
  - dysphoria that is pervasive and independent of thoughts or triggers of the deceased, absence of mood reactivity
- after 12 mo, if patient continues to yearn/long for the deceased, experience intense sorrow/emotional pain in response to the death, remain preoccupied with the deceased or with their circumstance of death, then may start to consider a diagnosis of "persistent complex bereavement disorder"

Bereavement is associated with a significant increase in morbidity and mortality acutely following the loss, with effects seen up to 1 yr after

Treatment

- support and watchful waiting should be first line, as well as education and normalization of the grief process
- screen for increased alcohol, cigarette and drug use
- normal grief should not be treated with antidepressant or antianxiety medication, as it is important to allow the person to experience the whole mourning process to achieve resolution
- psychosocial: for those needing additional support, complex grief/bereavement, or significant MDD, grief therapy (individual or group) is indicated
- pharmacotherapy: MDD present, past history of mood disorders, severe or autonomous symptoms

Loneliness is the most common symptom that continues to persist in normal bereavement and may last several years

Neurocognitive Disorders

Delirium

- see Neurology, N21 and Geriatric Medicine, GM3

DSM-5 Diagnostic Criteria for Delirium

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A. attention and awareness: disturbance in attention (i.e. reduced ability to direct, focus, sustain, and shift attention) and awareness (reduced orientation to the environment)
B. acute and fluctuating: disturbance develops over short period of time (usually hours to days), represents a change from baseline attention and awareness, and tends to fluctuate in severity during the course of a day
C. cognitive changes: an additional disturbance in cognition (e.g. memory deficit, disorientation, language, visuospatial ability, or perception)
D. not better explained: disturbances in criteria A and C are not better explained by another neurocognitive disorder (pre-existing, established, or evolving) and do not occur in the context of a severely reduced level of arousal (e.g. coma)
E. direct physiological cause: evidence that disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal (i.e. due to a drug of abuse or medication), toxin, or is due to multiple etiologies

- **Note**: can have HYPERactive, HYPOactive, or MIXED presentation

Confusion Assessment Method (CAM) for Diagnosis of Delirium

Highly sensitive and specific method to diagnosis delirium
Part 1: an assessment instrument that screens for overall cognitive impairment.

Part 2: includes four features found best able to distinguish delirium from other cognitive impairments

Need (1) + (2) + (3 or 4)
(1) Acute onset and fluctuating course
(2) Inattention
(3) Disorganized thinking
(4) Altered level of consciousness - hyperactive or hypoactive

Clinical Presentation and Assessment

- common symptoms
  - distractibility, disorientation (time, place, rarely person)
  - misinterpretations, illusions, hallucinations
  - speech/language disturbances (dysarthria, dysnomia, dysgraphia)
  - affective symptoms (anxiety, fear, depression, irritability, anger, euphoria, apathy)
  - shifts in psychomotor activity (groping/picking at clothes, attempts to get out of bed when unsafe, sudden movements, sluggishness, lethargy)
- Folstein Mini Mental Status Exam is helpful to assess baseline of altered mental state (i.e. score will improve as symptoms resolve)

Visual hallucinations are organic until proven otherwise

Risk Factors

- hospitalization (incidence 10-56%)
- previous delirium
- nursing home residents (incidence 60%)
- polypharmacy (e.g. anticholinergic)
- old age (especially males)
- severe illness (e.g. cancer, AIDS)
- recent anesthesia or surgery
- substance abuse
- pre-existing cognitive impairment, brain pathology,psychiatric illness

Etiology

- **I**nfectious (encephalitis, meningitis, UTI, pneumonia)
- **W**ithdrawal (alcohol, barbiturates, benzodiazepines)
- **A**cute metabolic disorder (electrolyte imbalance, hepatic or renal failure)
- **T**rauma (head injury, post-operative)

- **C**NS pathology (stroke, hemorrhage, tumour, seizure disorder, Parkinson's)
- **H**ypoxia (anemia, cardiac failure, pulmonary embolus)
- **D**eficiencies (vitamin B_{12}, folic acid, thiamine)
- **E**ndocrinopathies (thyroid, glucose, parathyroid, adrenal)
- **A**cute vascular (shock, vasculitis, hypertensive encephalopathy)
- **T**oxins: substance use, sedatives, opioids (especially morphine), anesthetics, anticholinergics, anticonvulsants, dopaminergic agents, steroids, insulin, glyburide, antibiotics (especially quinolones), NSAIDs
- **H**eavy metals (arsenic, lead, mercury)

Investigations
- standard: CBC and differential, electrolytes, Ca^{2+}, PO_4^{3-}, Mg^{2+}, glucose, ESR, LFTs, Cr, BUN, TSH, vitamin B_{12}, folate, albumin, urine C&S, R&M
- as indicated: ECG, CXR, CT head, toxicology/heavy metal screen, VDRL, HIV, LP, blood cultures, EEG (typically abnormal - generalized slowing or fast activity, can also be used to rule out underlying seizures or post-ictal states as etiology)
- indications for CT head: focal neurological deficit, acute change in status, anticoagulant use, acute incontinence, gait abnormality, history of cancer

Management
- intrinsic
  - identify and treat underlying cause immediately
  - stop all non-essential medications
  - maintain nutrition, hydration, electrolyte balance and monitor vitals
- extrinsic
  - environment: quiet, well-lit, near window for cues regarding time of day
  - optimize hearing and vision
  - room near nursing station for closer observation; constant care if patient jumping out of bed, pulling out lines
  - family member present for reassurance and re-orientation
  - frequent orientation - calendar, clock, reminders
- biological
  - low dose, high potency antipsychotics: haloperidol has the most evidence; reasonable alternatives include risperidone, olanzapine (more sedating, less QT prolongation), quetiapine (if EPS), aripiprazole
  - benzodiazepines only to be used in alcohol withdrawal delirium; otherwise, can worsen delirium
  - try to minimize anticholinergic side effects
- physical restraints if patient becomes violent

Dosing for Haloperidol in Delirium
Typical dose 0.5-1 mg
Dosing schedule varies with clinical approach: PRN often used, but QHS or QHS and QAM also employed to account for hypoactive delirium, which is otherwise often missed

Prognosis
- up to 50% 1 yr mortality rate after episode of delirium

Major Neurocognitive Disorder (Dementia)

- see Neurology, N22

DSM-5 Diagnostic Criteria for Major Neurocognitive Disorder
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A. evidence of significant cognitive decline from a previous level of performance in one or more cognitive domains (complex attention, executive function, learning and memory, language, perceptual-motor, or social cognition) based on
   1. concern of the individual, a knowledgeable informant, or the clinician that there has been a significant decline in cognitive function; and
   2. substantial impairment in cognitive performance, preferably documented by standardized neuropsychological testing or, in its absence, another quantified clinical assessment
B. cognitive deficits interfere with independence in everyday activities (i.e. at a minimum, requiring assistance with complex instrumental activities of daily living such as paying bills or managing medications)
   - **Note**: if do not interfere in B, and impairments are mild-moderate in A, considered "mild neurocognitive disorder"; see Neurology, N21
C. cognitive deficits do not occur exclusively in the context of a delirium
D. cognitive deficits are not better explained by another mental disorder (e.g. major depressive disorder, schizophrenia)

The 4 As of Dementia
Amnesia
Aphasia
Apraxia
Agnosia

The "Mini Cog" Rapid Assessment
- 3 word recall
- Clock drawn to "10 past 11"
- Animal lists

Specify whether due to

Alzheimer's disease	Traumatic brain injury	Huntington's disease
Frontotemporal lobar degeneration	Substance/medication use	Another medical condition
Lewy body disease	HIV infection	Multiple etiologies
Vascular disease	Prion disease	Unspecified
Normal pressure hydrocephalus	Parkinson's disease	

Flags for Differentiating Most Common Causes of Dementia

Alzheimer's disease: predominantly memory and learning issues
Frontotemporal degeneration: language type (early preservation), behavioural type (apathy/disinhibition/self-neglect)
Lewy body disease: recurrent, soft visual hallucinations (e.g. rabbits), autonomic impairment (falls, hypotension), EPS, does not respond well to pharmacotherapy, fluctuating degree of cognitive impairment
Vascular disease: vascular risk factors, focal neurological signs, abrupt onset, stepwise progression
Normal pressure hydrocephalus: abnormal gait, early incontinence, rapidly progressive

Epidemiology
- prevalence increases with age: 10% in patients >65 yr of age; 25% in patients >85 yr of age
- prevalence is increased in people with Down's syndrome and head trauma
- Alzheimer's disease comprises >50% of cases; vascular causes comprise approximately 15% of cases (other causes of dementia neurocognitive disorder – see Neurology, N25-N27)
- average duration of illness from onset of symptoms to death is 8-10 yr

Subtypes
- with or without behavioural disturbance (e.g. wandering, agitation)
- early-onset: age of onset <65 yr
- late-onset: age of onset >65 yr

Investigations (rule out reversible causes)
- standard: see *Delirium*, PS20
- as indicated: VDRL, HIV, SPECT, CT head in dementia
- indications for CT head: same as for delirium, plus: age <60, rapid onset (unexplained decline in cognition or function over 1-2 mo), dementia of relatively short duration (<2 yr), recent significant head trauma, unexplained neurological symptoms (new onset of severe headache/seizures)

Management
- see Neurology, N22 for further management
- treat underlying medical problems and prevent others
- provide orientation cues for patient (e.g. clock, calendar)
- provide education and support for patient and family (e.g. day programs, respite care, support groups, home care)
- consider long-term care plan (nursing home) and power of attorney/living will
- inform Ministry of Transportation about patient's inability to drive safely
- consider pharmacological therapy
  - cholinesterase inhibitors (e.g. donepezil [Aricept®], rivastigmine, galantamine) for mild to severe disease
  - NMDA receptor antagonist (e.g. memantine) for moderate to severe disease
  - low-dose neuroleptics (e.g. risperidone, quetiapine), antidepressants or trazodone if behavioural or emotional symptoms prominent – start low and go slow
  - reassess pharmacological therapy every 3 mo

Table 3. Comparison of Dementia, Delirium, and Pseudodementia of Depression

	Dementia/Major Neurocognitive Disorder	Delirium	Pseudodementia of Depression
Onset	Gradual/step-wise decline	Acute (h-d)	Subacute
Duration	Months-years	Days-weeks	Variable
Natural History	Progressive Usually irreversible	Fluctuating, reversible High morbidity/mortality in very old	Recurrent Usually reversible
Level of Consciousness	Normal	Fluctuating (over 24 h)	Normal
Attention	Not initially affected	Decreased (wandering, easy distraction)	Difficulty concentrating
Orientation	Intact initially	Impaired (usually to time and place), fluctuates	Intact
Behaviour	Disinhibition, impairment in ADL/IADL, personality change, loss of social graces	Severe agitation/retardation	Importuning, self-harm/suicide
Psychomotor	Normal	Fluctuates between extremes	Slowing
Sleep Wake Cycle	Fragmented sleep at night	Reversed sleep wake cycle	Early morning awakening
Mood and Affect	Labile but not usually anxious	Anxious, irritable, fluctuating	Depressed, stable
Cognition	Decreased executive functioning, paucity of thought	Fluctuating preceded by mood changes	Fluctuating
Memory Loss	Recent, eventually remote	Marked recent	Recent
Language	Agnosia, aphasia, decreased comprehension, repetition, speech (echolalia, palilalia)	Dysnomia, dysgraphia, speech rambling, irrelevant, incoherent, subject changes	Not affected
Delusions	Compensatory	Nightmarish and poorly formed	Nihilistic, somatic
Hallucinations	Variable	Visual common	Less common, auditory predominates
Quality of Hallucinations	Vacuous/bland	Frightening/bizarre	Self-deprecatory
Medical Status	Variable	Acute illness, drug toxicity	Rule out systemic illness, medications

Substance-Related and Addictive Disorders

- a neurobiological disorder involving compulsive drug seeking and drug taking, despite adverse consequences, with loss of control over drug use (think issues with the "3 Cs": compulsive, consequences, control)

Overview

- dependence is the hallmark of substance use disorders and comes in the following forms:
  - behavioural: substance-seeking activities and pathological use patterns
  - physical: physiologic withdrawal effects without use
  - psychological: continuous or intermittent cravings for the substance to avoid dysphoria or attain drug state
- abuse: drug use that deviates from the approved social or medical pattern, usually causing impairment or disruption to function in self or others
- these disorders are usually chronic with a relapsing and remitting course

Epidemiology

- 47% of those with substance abuse have mental health problems
- 29% of those with a mental health disorder have a substance use disorder
- 47% of those with schizophrenia and 25% of those with an anxiety disorder have a substance use disorder

Etiology

- almost all drugs (and activities) of abuse increase dopamine in the nucleus accumbens, an action that contributes to their euphoric properties and, with repeated use, to their ability to change signalling pathways in the brain's reward system
- substance use disorders arise from multifactorial interactions between genes (personality, neurobiology) and environment (low socioeconomic status, substance-using peers, abuse history, chronic stress)

Diagnosis

- substance use disorders are measured on a continuum from mild to severe based on the number of criteria met within 12 mo
  - mild: 2-3
  - moderate: 4-5
  - severe: 6 or more
- each specific substance is meant to be addressed as a separate use disorder (e.g. a single patient may have moderate alcohol use disorder, and a mild stimulant use disorder) and diagnosed utilizing the same overarching criteria
- criteria for substance use disorders (PEC WITH MCAT)
  - use despite Physical or psychological problem (e.g. alcoholic liver disease or cocaine related nasal problems)
  - failures in important External roles at work/school/home
  - Craving or a strong desire to use substance
  - Withdrawal
  - continued use despite Interpersonal problems
  - Tolerance, needing to use more substance to get same effect
  - use in physically Hazardous situations
  - More substance used or for longer period than intended
  - unsuccessful attempts to Cut down
  - Activities given up due to substance
  - excessive Time spent on using or finding substance

Classification of Substances

	Drugs	Intoxication	Withdrawal
Depressants	Alcohol, opioids, barbiturates, benzodiazepines, GHB	Euphoria, slurred speech, disinhibition, confusion, poor coordination, coma (severe)	Anxiety, anhedonia, tremor, seizures, insomnia, psychosis, delirium, death
Stimulants	Amphetamines, methylphenidate, MDMA, cocaine	Euphoria, mania, psychomotor agitation, anxiety, psychosis (especially paranoia), insomnia, cardiovascular complications (stroke, MI, arrhythmias), seizure	'Crash', craving, dysphoria , suicidality
Hallucinogens	LSD, mescaline, psilocybin, PCP, ketamine, ibogaine, salvia	Distortion of sensory stimuli and enhancement of feelings, psychosis (++ visual hallucinations), delirium, anxiety (panic), poor coordination	Usually absent

General Approach to Assessment

- must be appropriate to the patient's current state of change (see Population Health and Epidemiology, *Health Promotion Strategies*, PH7, for Prochaska's Stages of Change Model)
- patients will only change when the pain of change appears less than the pain of staying the same
- provider can help by providing psychoeducation (emphasize neurobiologic model of addiction), motivation, and hope
- principles of motivational interviewing (see *Psychotherapy*, PS43)
  - non-judgmental stance
  - space for patient to talk and reflect
  - offer accurate empathic reflections back to patient to help frame issues
- although not explicitly in the substance use disorder criteria, the following questions are important to characterize HPI and safety
  - when was the last time you used? how long can you go without using?
  - by what route (oral ingestion, insufflation, smoking, IV) do you usually use?
  - are there any triggers that you know will cause you to use?
  - how has your substance use affected your work, school, relationships?
  - substances can be very expensive, how do you support your drug use?
  - have you experienced medical or legal consequences of your use?
  - any previous attempts to cut down or quit, did you experience any withdrawal symptoms?

General Approach to Treatment

- encourage and offer referral to evidence based services
  - social: 12-step programs (alcoholics anonymous, narcotics anonymous), family education and support
  - psychological therapy: addiction counselling, motivational enhancement therapy (MET), CBT, contingency management, group therapy, family therapy, marital counseling
  - medical management (differs for substances): acute detoxification, pharmacologic agents to aid maintenance
- harm reduction whenever possible: safe-sex practices, avoid driving while intoxicated, avoiding substances with child care, safe needle practices/exchange, pill-testing kits, reducing tobacco use
- comorbid psychiatric conditions: many will resolve with successful treatment of the substance use disorder but patients who meet full criteria for another disorder should be treated for that disorder with psychological and pharmacologic therapies

Nicotine

- see Family Medicine, FM11

Alcohol

- see Family Medicine, FM13 and Emergency Medicine, ER54

History

- **CAGE**: validated screening questionnaire
  - **C** ever felt the need to **C**ut down on drinking?
  - **A** ever felt **A**nnoyed at criticism of your drinking?
  - **G** ever feel **G**uilty about your drinking?
  - **E** ever need a drink first thing in morning (**E**ye opener)?
  - for men, a score of ≥2 is a positive screen; for women, a score of ≥1 is a positive screen
  - if positive CAGE, then assess further to distinguish between problem drinking and alcohol dependence

Table 4. Canada's Low-Risk Alcohol Alcohol Drinking Guidelines

Moderate Drinking		
Men: 3 or less/d (≤15/wk)	Women: 2 or less/d (≤10/wk)	Elderly: 1 or less/d

Alcohol Intoxication

- legal limit for impaired driving is 10.6 mmol/L (50 mg/dL) reached by 2-3 drinks/h for men and 1-2 drinks/h for women
- coma can occur with >60 mmol/L (non-tolerant drinkers) and 90-120 mmol/L (tolerant drinkers)

Alcohol Withdrawal

- occurs within 12-48 h after prolonged heavy drinking and can be life-threatening
- alcohol withdrawal can be described as having 4 stages, however not all stages may be experienced
  - stage 1 (onset 12-18 h after last drink): "the shakes" tremor, sweating, agitation, anorexia, cramps, diarrhea, sleep disturbance
  - stage 2 (onset 7-48 h): alcohol withdrawal seizures, usually tonic-clonic, non-focal and brief
  - stage 3 (onset 48 h): visual, auditory, olfactory or tactile hallucinations

Confabulations: the fabrication of imaginary experiences to compensate for memory loss

Make sure to ask about other alcohols: mouthwash, rubbing alcohol, methanol, ethylene glycol, aftershave (may be used as a cheaper alternative)

A "Standard Drink"
Spirit (40%): 1.5 oz. or 43 mL
Table Wine (12%): 5 oz. or 142 mL
Fortified Wine (18%): 3 oz. or 85 mL
Regular Beer (5%): 12 oz. or 341 mL

OR

1 pint of beer = 1.5 SD
1 bottle of wine = 5 SD
1 "mickey" = 8 SD
"26-er" = 17 SD
"40 oz." = 27 SD

  - stage 4 (onset 3-5 d): delirium tremens, confusion, delusions, hallucinations, agitation, tremors, autonomic hyperactivity (fever, tachycardia, HTN)
- course: almost completely reversible in young; elderly often left with cognitive deficits
- mortality rate 20% if untreated

Delirium Tremens (alcohol withdrawal delirium)
- Autonomic hyperactivity (diaphoresis, tachycardia, increased respiration)
- Hand tremor
- Insomnia
- Psychomotor agitation
- Anxiety
- Nausea or vomiting
- Tonic-clonic seizures
- Visual/tactile/auditory hallucinations
- Persecutory delusions

Management of Alcohol Withdrawal
- monitor using the Clinical Institute Withdrawal Assessment for Alcohol (CIWA-A) scoring system
  - areas of assessment include
    - physical (5): nausea and vomiting, tremor, agitation, paroxysmal sweats, headache/fullness in head
    - psychological/cognitive (2): anxiety, orientation/clouding of sensorium
    - perceptual (3): tactile disturbances, auditory disturbances, visual disturbances
  - all categories are scored from 0-7 (except: orientation/sensorium 0-4), maximum score of 67
    - mild <10, moderate 10-20, severe >20

Table 5. CIWA-A Scale Treatment Protocol for Alcohol Withdrawal

Basic Protocol	Diazepam 20 mg PO q1-2h prn until CIWA-A <10 points Observe 1-2 h after last dose and re-assess on CIWA-A scale Thiamine 100 mg IM then 100 mg PO OD for 3 d Supportive care (hydration and nutrition)
History of Withdrawal Seizures	Diazepam 20 mg PO q1h for minimum of three doses regardless of subsequent CIWA scores
If age >65 or patient has severe liver disease, severe asthma or respiratory failure	Use a short acting benzodiazepine Lorazepam PO/SL/IM 1-4 mg q1-2h
If Hallucinations are present	Haloperidol 2-5 mg IM/PO q1-4h – max 5 doses/d or atypical antipsychotics (olanzapine, risperidone) Diazepam 20 mg x 3 doses as seizure prophylaxis (haloperidol lowers seizure threshold)
Admit to Hospital if	Still in withdrawal after >80 mg of diazepam Delirium tremens, recurrent arrhythmias, or multiple seizures Medically ill or unsafe to discharge home

Wernicke-Korsakoff Syndrome
- alcohol-induced amnestic disorders due to thiamine deficiency
- necrotic lesions: mammillary bodies, thalamus, brainstem
- Wernicke's encephalopathy (acute and reversible): triad of nystagmus (CN VI palsy), ataxia, and confusion
- Korsakoff's syndrome (chronic and only 20% reversible with treatment): anterograde amnesia and confabulations; cannot occur during an acute delirium or dementia and must persist beyond usual duration of intoxication/withdrawal
- management
  - Wernicke's: thiamine 100 mg PO OD x 1-2 wk
  - Korsakoff's: thiamine 100 mg PO bid/tid x 3-12 mo

Treatment of Alcohol Use Disorder
- non-pharmacological
  - see *General Approach to Treatment*, PS24
- pharmacological
  - naltrexone (Revia®): opioid antagonist, shown to be successful in reducing the "high" associated with alcohol, moderately effective in reducing cravings, frequency or intensity of alcohol binges
  - disulfiram (Antabuse®): blocks oxidation of alcohol (blocks acetaldehyde dehydrogenase); with alcohol consumption, acetaldehyde accumulates to cause a toxic reaction (vomiting, tachycardia, death); if patient relapses, must wait 48 h before restarting Antabuse®; prescribed only when treatment goal is abstinence. RCT evidence is generally poor or negative
  - acamprosate (Campral®): NMDA glutamate receptor antagonist; useful in maintaining abstinence and decreasing cravings

Opioids

OxyNEO vs. OxyContin
As of 2012, OxyContin was no longer available in Canada and was replaced by a new formulation of oxycodone called OxyNEO. OxyNEO is reported to be more tamper-resistant than OxyContin as the tablet is more difficult to crush. Furthermore, if OxyNEO is crushed, and added to water, it forms a thick gel-like substance that cannot be easily injected

- types of opioids: heroin, morphine, oxycodone, Tylenol #3® (codeine), hydromorphone, fentanyl
- major risks associated with the use of contaminated needles: increased risk of hepatitis B and C, bacterial endocarditis, HIV/AIDS

Acute Intoxication
- direct effect on receptors in CNS resulting in decreased pain perception, sedation, decreased sex drive, nausea/vomiting, decreased GI motility (constipation and anorexia), and respiratory depression

Toxic Reaction
- typical syndrome includes shallow respirations, miosis, bradycardia, hypothermia, decreased level of consciousness
- management
  - ABCs
  - IV glucose
  - naloxone hydrochloride (Narcan®): 0.4 mg up to 2 mg IV for diagnosis
  - treatment: intubation and mechanical ventilation, ± naloxone drip, until patient alert without naloxone (up to >48 h with long-acting opioids)
- caution with longer half-life; may need to observe for toxic reaction for at least 24 h

Withdrawal
- symptoms: depression, insomnia, drug-craving, myalgias, nausea, chills, autonomic instability (lacrimation, rhinorrhea, piloerection)
- onset: 6-12 h; duration: 5-10 d
- complications: loss of tolerance (overdose on relapse), miscarriage, premature labour
- management: long-acting oral opioids (methadone, buprenorphine), α-adrenergic agonists (clonidine)

Treatment of Opioid Use Disorder
- see *General Approach to Treatment*, PS24
- long-term treatment may include withdrawal maintenance treatment with methadone (opioid agonist) or buprenorphine (mixed agonist-antagonist)
- Suboxone® formulation includes naloxone in addition to buprenorphine, in an effort to prevent injection of the drug. When naloxone is injected, it will precipitate opiate withdrawal and block the opiate effect of buprenorphine; however, it will not have this antagonist action when taken sublingually

Opioid Antagonists
Naltrexone vs. Naloxone

Naltrexone (Revia®)
- Used for opioid and EtOH dependence
- Long half life (h)

Naloxone (Narcan®)
- Used for life-threatening CNS/respiratory depression in opioid overdose
- Short half life (<1 h)
- Very fast acting (min)
- High affinity for opioid receptor
- Induces opioid withdrawal symptoms

Maintenance Medication for Opiate Addiction: The Foundation of Recovery
J Addict Dis 2012;31:207-225
Study: Review.
Discussion: Maintenance treatment of opioid addiction with methadone or buprenorphine is associated with retention in treatment, reduction in illicit opiate use, decreased craving, and improved social function. Recently, studies showing extended release naltrexone injections have showed some promise.

Cocaine

- street names: blow, C, coke, crack, flake, freebase, rock, snow
- alkaloid extracted from leaves of the coca plant; blocks presynaptic uptake of dopamine (causing euphoria), norepinephrine and epinephrine (causing vasospasm, HTN)
- self-administered by inhalation, insufflation, or intravenous route

Intoxication
- elation, euphoria, pressured speech, restlessness, sympathetic stimulation (e.g. tachycardia, mydriasis, sweating)
- prolonged use may result in paranoia and psychosis

Overdose
- medical emergency: HTN, tachycardia, tonic-clonic seizures, dyspnea, and ventricular arrhythmias
- treatment with IV diazepam to control seizures and propanolol or labetalol to manage HTN and arrhythmias

Withdrawal
- initial "crash" (1-48 h): increased sleep, increased appetite
- withdrawal (1-10 wk): dysphoric mood plus fatigue, irritability, vivid unpleasant dreams, insomnia or hypersomnia, psychomotor agitation or retardation
- complications: relapse, suicide (significant increase in suicide during withdrawal period)
- management: supportive management

Treatment of Cocaine Use Disorder
- see *General Approach to Treatment*, PS24
- no pharmacologic agents have widespread evidence or acceptance of use

Complications
- cardiovascular: arrhythmias, MI, CVA, ruptured AAA
- neurologic: seizures
- psychiatric: psychosis, paranoia, delirium, suicidal ideation
- other: nasal septal deterioration, acute/chronic lung injury "crack lung", possible increased risk of connective tissue disease

Common Presentations of Drug Use

System	Findings
General	Weight loss (especially cocaine, heroin) Injected conjunctiva (cannabis) Pinpoint pupils (opioids) Track marks (injection drugs)
MSK	Trauma
GI	Viral hepatitis (injection drugs) Unexplained elevations in ALT (injection drugs)
Behavioural	Missed appointments Non-compliance Drug-seeking (especially benzodiazepines, opioids)
Psychological	Insomnia Fatigue Depression Flat affect (benzodiazepines, barbiturates) Paranoia (cocaine) Psychosis (cocaine, cannabis, hallucinogens)
Social	Marital discord Family violence Work/school Absenteeism and poor performance

Amphetamines

- includes prescription medications for ADHD such as Ritalin® and Adderall®
- intoxication characterized by euphoria, improved concentration, sympathetic and behavioural hyperactivity and at high doses can mimic psychotic mania, can eventually cause coma
- chronic use can produce a paranoid psychosis which can resemble schizophrenia with agitation, paranoia, delusions and hallucinations
- withdrawal symptoms include dysphoria, fatigue, and restlessness
- treatment of amphetamine induced psychosis: antipsychotics for acute presentation, benzodiazepines for agitation, β-blockers for tachycardia, hypertension

Cannabis

- cannabis (marijuana) is the most commonly used illicit drug
- psychoactive substance: delta-9-tetrahydrocannabinol (Δ9-THC)
- intoxication characterized by tachycardia, conjunctival vascular engorgement, dry mouth, altered sensorium, increased appetite, increased sense of well-being, euphoria/laughter, muscle relaxation, impaired performance on psychomotor tasks including driving
- high doses can cause depersonalization, paranoia, anxiety and may trigger psychosis and schizophrenia if predisposed
- chronic use associated with tolerance and an apathetic, amotivational state, increases risk of later manic episodes
- cessation following heavy use does produce a significant withdrawal syndrome: irritability, anxiety, insomnia, decreased food intake
- treatment of cannabis use disorder: see *General Approach to Assessment*, PS24

Hallucinogens

- types of hallucinogens by primary action
  - 5-HT2A agonists: LSD, mescaline (peyote), psilocybin mushrooms, DMT (ayahuasca)
  - NMDA antagonists: PCP, ketamine
  - κ-opioid agonists: salvia divinorum, ibogaine
- 5-HT2A agonists are most commonly used, intoxication characterized by tachycardia, HTN, mydriasis, tremor, hyperpyrexia, and a variety of perceptual, mood and cognitive changes (rarely, if ever, deadly; treat vitals symptomatically)
- psychological effects of high doses: depersonalization, derealization, paranoia, and anxiety (panic with agoraphobia)
- tolerance develops rapidly (hours-days) to most hallucinogens so physical dependency is virtually impossible, although psychological dependency and problematic usage patterns can still occur
- no specific withdrawal syndrome characterized
- management of acute intoxication
  - support, reassurance, diminished stimulation; benzodiazepines or high potency antipsychotics seldom required (if used, use small doses), minimize use of restraints
- long term adverse effects: controversial role in triggering psychiatric disorders, particularly mood or psychosis, thought to be chiefly in individuals with genetic or other risk factors
- **Hallucinogen Persisting Perception Disorder**: DSM-5 diagnosis characterized by long lasting, spontaneous, intermittent recurrences of visual perceptual changes reminiscent of those experienced with hallucinogen exposure

"Club Drugs"

Table 6. The Mechanism and Effects of Common "Club Drugs"

Drug	Mechanism	Effect	Adverse Effects
MDMA ("Ecstasy", "X", "E")	Acts on serotonergic and dopaminergic pathways, properties of a hallucinogen and stimulant	Enhanced sensorium; feelings of well-being, empathy	Sweating, tachycardia fatigue, muscle spasms (especially jaw clenching), ataxia, hyperthermia, arrhythmias, DIC, rhabdomyolysis, renal failure, seizures, death
Gamma Hydroxybutyrate (GHB, "G", "Liquid Ecstasy")	Biphasic dopamine response (inhibition then release) and releases opiate-like substance	Euphoric effects, increased aggression, impaired judgment	Sweating, tachycardia, fatigue, muscle spasms (especially jaw clenching), ataxia, severe withdrawal from abrupt cessation of high doses: tremor, seizures, psychosis
Flunitrazepam (Rohypnol®, "Roofies", "Rope", "The Forget Pill")	Potent benzodiazepine, rapid oral absorption	Sedation, psychomotor impairment, amnestic effects, decreased sexual inhibition	CNS depression with EtOH
Ketamine ("Special K", "Kit-Kat")	NMDA receptor antagonist, rapid-acting general anesthetic used in pediatrics and by veterinarians	"Dissociative" state, profound amnesia/analgesia; hallucinations and sympathomimetic effects	Psychological distress, accidents due to intensity of experience and lack of bodily control, in overdose, decreased LOC, respiratory depression, catatonia

Cannabinoid Hyperemesis Syndrome
An interesting and relatively new clinical phenomenon associated with chronic cannabis use characterized by cyclical, recurrent severe nausea, vomiting, and colicky pain. Possibly due to increased potency of available THC products. Patients often present to ED in acute distress with no evidence of specific GI pathology. Many patients will successfully self-medicate with hot baths or showers

Medical Uses of Marijuana
- Anorexia-cachexia (AIDS, cancer)
- Spasticity, muscle spasms (multiple sclerosis, spinal cord injury)
- Levodopa-induced dyskinesia (Parkinson's Disease)
- Controlling tics and obsessive-compulsive behaviour (Tourette's syndrome)
- Reducing intra-ocular pressure (glaucoma)

Cannabis Use and Risk of Psychotic or Affective Mental Health Outcomes: A Systematic Review
The Lancet 2007;370:319-328
Purpose: To review the evidence for cannabis use and occurrence of psychotic or affective mental health outcomes.
Study Characteristics: A meta-analysis of 35 population-based longitudinal studies, or case-control studies nested within longitudinal designs.
Results: There was an increased risk of any psychotic outcome in individuals who had ever used cannabis (pooled adjusted odds ratio =1.41, 95% CI 1.20-1.65). Findings were consistent with a dose-response effect, with greater risk in people who used cannabis more frequently (2.09, 95% CI, 1.54-2.84). Findings for depression, suicidal thoughts, and anxiety outcomes were less consistent. In both cases (psychotic and affective outcomes), a substantial confounding effect was present.
Conclusions: The findings are consistent with the view that cannabis increases risk of psychotic outcomes independent of transient intoxication effects, although evidence is less strong for affective outcomes. Although cannabis use and the development of psychosis are strongly associated, it is difficult to determine causality and it is possible that the association results from confounding factors or bias. The authors did conclude that there is sufficient evidence to warn young people that using cannabis could increase their risk of developing a psychotic illness later in life.

Date Rape Drugs
- GHB
- Flunitrazepam (Rohypnol®)
- Ketamine

Emerging Medical Uses of Hallucinogens
Many hallucinogens are currently under investigation for therapeutic benefit; LSD & Psilocybin for end of life anxiety, MDMA for PTSD, Ketamine for rapid treatment of depression, ibogaine derivatives for addiction

Table 6. The Mechanism and Effects of Common "Club Drugs" (continued)

Drug	Mechanism	Effect	Adverse Effects
Methamphetamine ("speed", "meth", "chalk", "ice", "crystal")	Amphetamine stimulant, induces norepinephrine, dopamine, and serotonin release	Rush begins in min, effects last 6-8 h, increased activity, decreased appetite, general sense of well-being, tolerance occurs quickly, users often binge and crash	Short-term use: high agitation, rage, violent behaviour, occasionally hyperthermia and convulsions Long-term use: addiction, anxiety, confusion, insomnia, paranoia, auditory and tactile hallucinations (especially formication), delusions, mood disturbance, suicidal and homicidal thoughts, stroke, may be contaminated with lead, and IV users may present with acute lead poisoning
Phencyclidine ("PCP", "angel dust")	Not understood, used by veterinarians to immobilize large animals	Amnestic, euphoric, hallucinatory state	Horizontal/vertical nystagmus, myoclonus, ataxia, autonomic instability (treat with diazepam IV), prolonged agitated psychosis (treat with haloperidol); high risk for suicide; violence towards others High dose can cause coma

Formication
Tactile hallucination that insects or snakes are crawling over or under the skin (especially associated with crystal meth use)

Somatic Symptom and Related Disorders

General Characteristics

- physical signs and symptoms lacking objective medical support in the presence of psychological factors that are judged to be important in the initiation, exacerbation, or maintenance of the disturbance
- cause significant distress or impairment in functioning
- symptoms are produced unconsciously and are not the result of malingering or factitious disorder, which are disorders of voluntary "faking" of symptoms (or intentionally inducing, e.g. injecting feces) for secondary gain
- primary gain: somatic symptom represents a symbolic resolution of an unconscious psychological conflict; serves to reduce anxiety and conflict with no external incentive
- secondary gain: the sick role; external benefits obtained or unpleasant duties avoided (e.g. work)

Malingering: intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external reward (e.g. avoiding work, obtaining financial compensation, or obtaining drugs)

Factitious Disorder: intentional production or feigning of physical or psychological signs or symptoms

Management of Somatic Symptom and Related Disorders

- brief, regular scheduled visits with GP to facilitate therapeutic relationship and help patient feel cared for
- limit number of physicians involved in care, minimize medical investigations; coordinate necessary investigations
- emphasis on what the patient can change and control; the psychosocial coping skills, not their physical symptoms (functional recovery > explanation of symptoms)
- do not tell patient it is "all in their head," emphasize these disorders are real entities or functional in nature
- psychotherapy: CBT, mindfulness interventions, biofeedback, conflict resolution
- minimize psychotropic drugs: anxiolytics in short-term only, antidepressants for comorbid depression and anxiety

Somatic Symptom Disorder

DSM-5 Diagnostic Criteria for Somatic Symptom Disorder

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A. one or more somatic symptoms that are distressing or result in significant disruption of daily life
B. excessive thoughts, feelings, or behaviours related to the somatic symptoms or associated health concerns as manifested by at least one of the following
   1. disproportionate and persistent thoughts about the seriousness of one's symptoms
   2. persistently high level of anxiety about health or symptoms
   3. excessive time and energy devoted to these symptoms or health concerns
C. although any one somatic symptom may not be continuously present, the state of being symptomatic is persistent (typically >6 mo)

- **specify**: **With predominant pain** (previously pain disorder) for those whose somatic symptom is primarily pain
- patients have physical symptoms and believe these symptoms represent the manifestation of a serious illness
- they will persist in this belief despite negative medical investigations and may develop different symptoms over time
- lifetime prevalence may be around 5-7% in the general adult population
- females tend to report more somatic symptoms than males do, cultural factors may influence sex ratio
- complications: anxiety and depression commonly comorbid (up to 80%), unnecessary medications or surgery
- often a misdiagnosis for an insidious illness so rule out all organic illnesses (e.g. multiple sclerosis)

Illness Anxiety Disorder

- preoccupation with fear of having, or the idea that one has, a serious disease, to the point of causing significant impairment
- convictions persist despite negative investigations and medical reassurance
- somatic symptoms are mild or not present
- there is a high level of anxiety about health and the individual is easily alarmed about personal health status
- person engages in maladaptive behaviour such as excessive physical checking or total healthcare avoidance
- duration is ≥6 mo; onset in 3rd-4th decade of life
- a new diagnostic entity so epidemiology is not well known; however, it is likely less common than SSD
- possible role for SSRIs due to generally high level of anxiety

Conversion Disorder (Functional Neurological Symptom Disorder)

- one or more symptoms or deficits affecting voluntary motor or sensory function that mimic a neurological or GMC (e.g. impaired coordination, local paralysis, double vision, seizures, or convulsions)
- does not need to be preceded by a psychological event as per previous DSM criteria, however this is still worth exploring as many patients will present after such an event or related to a medical diagnosis in a first-degree relative
- 2-5/100,000 in general population; 5% of referrals to neurology clinics
- more common in rural populations and in individuals with little medical knowledge
- spontaneous remission in 95% of acute cases, 50% of chronic cases (>6 mo)
- key to diagnosis is specific neurological testing to detect incompatible findings (e.g. Hoover's sign, dermatome testing)

la belle indifférence
An inappropriately cavalier patient attitude in the face of serious symptoms. Classically associated with conversion disorder

Table 7. Differential of Somatic Symptom and Related Disorders

	Somatic Symptom Disorder	Illness Anxiety Disorder	Conversion Disorder	Factitious Disorder	Malingering
Somatic Symptoms	Present	Mild or absent	Neurologic, voluntary motor or sensory	Psychological or physical	Psychological or physical
Symptoms Produced	Unconsciously	Unconsciously	Unconsciously	Consciously	Consciously
Physical Findings	Absent	Absent	Incompatible	Possible, attempts to falsify	Possible, attempts to falsify

Dissociative Disorders

Definition

- dissociation so severe that the usually integrated functions of consciousness and perception of self break down
- differential diagnosis: PTSD, acute stress disorder, borderline personality disorder, somatization disorder, substance abuse, GMC (various neurologic disorders including complex/partial seizures, migraine, Cotard syndrome)

Dissociative Identity Disorder

- disruption of identity characterized by two or more distinct personality states or an experience of possession
- can manifest as sudden alterations in sense of self and agency (ego-dsytonic emotions, behaviours, speech)
- features recurrent episodes of amnesia (declarative or procedural)

Dissociative Amnesia

- inability to recall important autobiographical information, usually of a traumatic or stressful nature, that is inconsistent with normal forgetting. Not attributable to other psychiatric disorder or medical illness
- **localized/selective amnesia**: failure to recall all/some events during a prescribed period of time
- **generalized amnesia**: (more rare) complete loss of memory for one's life history, ± procedural, semantic knowledge. Usually sudden onset. Often will present with perplexity, disorientation, aimless wandering

Depersonalization/Derealization Disorder

- persistent or recurrent episodes of one or both of
  - **depersonalization**: experiences of detachment from oneself, feelings of unreality, or being an outside observer to one's thoughts, feelings, speech, and actions (can feature distortions in perception including time, as well as emotional and physical numbing)
  - **derealization**: experiences of unreality or detachment with respect to the surroundings (e.g. feeling as if in a dream, or that the world is not real, external visual world is foggy or distorted)
- transient (seconds-hours) experiences of this nature are quite common in the general population
- episodes can range from hours-years, patients are often quite distressed and verbalize concern of "going crazy"

Fugue
Purposeful travel or bewildered wandering while in amnesic state

During depersonalization or derealization patients usually have intact reality testing, which adds to their alarming nature

Sleep Disorders

- for more information regarding normal sleep cycles and the illnesses described, see Neurology, *Sleep Disorders*, N48

Overview

- adequate sleep is essential to functioning; deprivation can lead to cognitive impairment and can contribute to death
- circadian rhythms help regulate mood and cognitive performance
- neurotransmitters commonly implicated in psychiatric illnesses also regulate sleep
  - acetylcholine activity and decreased activity of monoamine neurotransmitters is associated with greater REM sleep
  - decreased adrenergic and cholinergic activity are associated with NREM sleep
- depression is associated with decreased delta (deep, slow-wave) sleep, decreased REM latency, and increased REM density
- criteria
  - must cause significant distress or impairment in functioning
  - not due to a GMC or medications/drugs (unless specified)

Management

- pharmacological treatments are illness-specific
  - non-benzodiazepines preferable (e.g. trazodone, zoplicone, quetiapine), but benzodiazepines a short term option
  - medication should not be prescribed without having first made a diagnosis and considering major psychiatric illnesses (major depression and alcohol use disorders are common etiologies)
- sleep hygiene is a simple, effective but often underutilized method for addressing sleep disturbances. Recommendations include
  - waking up and going to bed at same time every day, including on weekends
  - avoiding long periods of wakefulness in bed
  - not using bed for non-sleep activities (reading, TV, work)
  - avoiding napping
  - discontinuing or reducing consumption of alcohol, caffeine, drugs
  - exercising at least 3-4x per week (but not in the evening, if this interferes with sleep)

Table 8. Major DSM 5 Sleep-Wake Disorders

Note: For more information regarding specific disorders, see: Neurology, *Sleep Disorders*, N48; Family Medicine, *Sleep Disorders*, FM48; and Respirology, *Sleep Apnea*, R31

Category	Disorder	Description
(Uncategorized)	Insomnia disorder	Difficulty sleeping
	Hypersomnolence disorder	Feeling sleepy throughout the day
	Narcolepsy	Recurrent attacks of irrepressible need to sleep
	Circadian rhythm sleep-wake disorders	Insomnia or excessive sleepiness due to misalignment or alteration in endogenous circadian rhythm
	Restless legs syndrome	Uncomfortable, frequent urge to move legs at night
	Substance/medication-induced sleep disorder	Disturbance in sleep (insomnia or daytime sleepiness) caused by substance/medication intoxication or withdrawal
Breathing-related sleep disorders	Obstructive sleep apnea hypopnea	Breathing issues due to obstruction
	Central sleep apnea	Breathing issues due to aberrant brain signaling
	Sleep-related hypoventilation	Breathing issues due to decreased responsiveness to carbon dioxide levels
Parasomnias	Non-rapid eye movement sleep arousal disorders	Incomplete awakening from sleep, complex motor behaviour without conscious awareness; amnesia regarding episodes; includes symptoms of **Sleepwalking**: rising from bed and walking about, blank face, unresponsive, awakened with difficulty **Sleep terrors**: recurrent episodes of abrupt terror arousals from sleep, usually beginning with a panicky scream, intense fear and autonomic arousal, relative unresponsiveness to comfort during episodes **Specifiers**: sleep-related sexual behaviour (sexsomnia) and sleep-related eating
	Nightmare disorder	Repeated extended, extremely dysphoric, often very vivid, well-remembered dreams that usually involve significant threats; rapid orientation and alertness on awakening with autonomic arousal
	Rapid eye movement sleep behaviour disorder	Arousal during sleep, associated with vocalization and/or complex motor behaviours; can cause violent injuries; rapid orientation and alertness on awakening

Sexuality and Gender

Gender Dysphoria

Definition
- the distress that may coincide with conflict between one's experienced/expressed gender and one's assigned gender

Typical Presentation
- strong and persistent cross-gender identification
- desire to be rid of primary/secondary sex characteristics and to gain the primary/secondary sex characteristics of their identified gender
- repeated stated desire or insistence that one is of the opposite sex
- preference for cross-dressing, cross-gender roles in make-believe play
- intense desire to participate in the stereotypical games and pastimes of the opposite sex
- strong preference for playmates of the opposite sex
- significant distress or impairment in functioning and persistent discomfort with his or her sex or gender role

Treatment
- psychotherapy
- hormonal therapy
- sexual reassignment surgery

Paraphilic Disorders

Definition
- intense and persistent sexual interest other than sexual interest in genital stimulation or preparatory fondling with phenotypically normal, physically mature, consenting human partners
- **paraphilic disorder**: paraphilia that causes distress or functional impairment to the individual, or a paraphilia whose realization entails personal harm, or risk of harm to others

- **subtypes**: voyeuristic, exhibitionistic, frotteuristic, sexual masochism, sexual sadism, pedophilic, fetishistic, transvestic, other specified paraphilic disorder, unspecified paraphilic disorder
- rarely self-referred; come to medical attention through interpersonal or legal conflict
- person usually has more than one paraphilia; 5% of paraphilias attributed to women
- typical presentation
- begins in childhood or early adolescence; increasing in complexity and stability with age
- chronic, decreases with advancing age but may increase with stress

Treatment
- anti-androgen drugs
- behaviour modification
- psychotherapy

SEXUAL DYSFUNCTION
- see Gynecology, GY33 and Urology, U30

Eating Disorders

Epidemiology
- anorexia nervosa (AN): 1% of adolescent and young adult females; onset 13-20 yr old
- bulimia nervosa (BN): 2-4% of adolescent and young adult females; onset 16-18 yr old
- F:M=10:1; mortality 5-10%

Etiology
- multifactorial: psychological, sociological, and biological associations
- individual: perfectionism, lack of control in other life areas, history of sexual abuse
- personality: obsessive-compulsive, histrionic, borderline
- familial: maintenance of weight equilibrium and control in dysfunctional family
- cultural factors: prevalent in industrialized societies, idealization of thinness in the media
- genetic factors
  - AN: 6% prevalence in siblings, with one study of twin pairs finding concordance in 9 of 12 monozygotic pairs versus concordance in 1 of 14 dizygotic pairs
  - BN: higher familial incidence of affective disorders than the general population

Risk Factors
- physical factors: obesity, chronic medical illness (e.g. DM)
- psychological factors: individuals who by career choice are expected to be thin, family history (mood disorders, eating disorders, substance abuse), history of sexual abuse (especially for BN), homosexual males, competitive athletes, concurrent associated mental illness (depression, OCD, anxiety disorder [especially panic and agoraphobia], substance abuse [specifically for BN])

Anorexia Nervosa

DSM-5 Diagnostic Criteria for Anorexia Nervosa

A. intake and weight: restriction of energy intake relative to requirements, leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight is defined as a weight that is less than minimally normal or, for children and adolescents, less than that minimally expected
B. fear or behaviour: intense fear of gaining weight or of becoming fat, or persistent behaviour that interferes with weight gain, even though at a significantly low weight
C. perception: disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight

- **specifiers**: partial remission, full remission, severity based on BMI (mild = BMI >17 kg/m^2, moderate = BMI 16-16.99 kg/m^2, severe = BMI 15-15.99 kg/m^2, extreme = BMI <15 kg/m^2), type (restricting = during last 3 mo no episodes of binge-eating or purging vs. binge-eating/purging type = in last 3 mo have participated in recurrent episodes of binge-eating/purging)

Athletic Triad
- Disordered eating
- Amenorrhea
- Osteoporosis

Some patients with insulin-dependant DM may stop their insulin in order to lose weight

Management
- psychotherapy: individual, group, family (gold standard): address food and body perception, coping mechanisms, health effects
- medications of little value
- outpatient programs and inpatient programs are available
- inpatient hospitalization for treatment of eating disorders is rarely on an acute basis (unless there is a concurrent psychiatric reason for emergent admission e.g. suicide risk)
- admit to a medical ward for hospitalization: <65% of standard body weight (<85% of standard body weight for adolescents), hypovolemia requiring intravenous fluid, heart rate <40 bpm, abnormal serum chemistry or if actively suicidal
- agree on target body weight on admission and reassure this weight will not be surpassed
- monitor for complications of AN (see Table 9)
- monitor for refeeding syndrome

- a potentially life-threatening metabolic response to refeeding in severely malnourished patients resulting in severe shifts in fluid and electrolyte levels
- complications include hypophosphatemia, congestive heart failure, cardiac arrhythmias, delirium, and death
- prevention: slow refeeding, gradual increase in nutrition, supplemental phosphorus, close monitoring of electrolytes and cardiac status

Prognosis
- early intervention much more effective (adolescent onset has much better prognosis than adult onset)
- 1 in 10 adolescents continue to have anorexia nervosa as adults
- with treatment, 70% resume a weight of at least 85% of expected levels and about 50% resume normal menstrual function
- eating peculiarities and associated psychiatric symptoms are common and persistent
- long-term mortality: 10-20% of patients hospitalized will die in next 10-30 yr (secondary to severe and chronic starvation, metabolic or cardiac catastrophes, with a significant proportion committing suicide)

Bulimia Nervosa

DSM-5 Diagnostic Criteria for Bulimia Nervosa

A. recurrent episodes of binge-eating; an episode of binge-eating is characterized by both of the following
   - eating, in a discrete period of time, an amount of food that is definitely larger than what most individuals would eat during a similar period of time and under similar circumstances
   - a sense of lack of control over eating during the episode

B. recurrent inappropriate compensatory behaviour in order to prevent weight gain, such as self-induced vomiting, misuse of laxatives, diuretics, enemas, or other medications, fasting, or excessive exercise

C. the binge-eating and inappropriate compensatory behaviours both occur, on average, at least once a week for 3 mo

D. self-evaluation is unduly influenced by body shape and weight

E. the disturbance does not occur exclusively during episodes of AN

- **specifiers**: partial remission, full remission, severity (mild = 1-3 inappropriate compensatory behaviours/wk, moderate = 4-7 inappropriate compensatory behaviours/wk, severe = 8-13 inappropriate compensatory behaviours/wk, extreme = 14+ inappropriate compensatory behaviours/wk)

Associated Features
- fatigue and muscle weakness due to repetitive vomiting and fluid/electrolyte imbalance
- tooth decay
- swollen appearance around angle of jaw and puffiness of eye sockets due to fluid retention
- reddened knuckles, Russell's sign (knuckle callus from self-induced vomiting)
- trouble concentrating
- weight fluctuation over time

Management
- admission for significant electrolyte abnormalities
- biological: treatment of starvation effects, SSRIs (fluoxetine most evidence) as adjunct
- psychological: develop trusting relationship with therapist to explore personal etiology and triggers, CBT, family therapy, recognition of health risks
- social: challenge destructive societal views of women, use of hospital environment to provide external patterning for normative eating behaviour

Prognosis
- relapsing/remitting disease
- good prognostic factors: onset before age 15, achieving a healthy weight within 2 yr of treatment
- poor prognostic factors: later age of onset, previous hospitalizations, individual and familial disturbance
- 60% good treatment outcome, 30% intermediate outcome, 10% poor outcome

Binge-Eating Disorder

Definition
- recurrent episodes of binge-eating (as defined by criteria A of BN) that are associated with eating much more rapidly than normal, eating until feeling uncomfortably full, eating large amounts when not physically hungry, eating alone because embarrassed by how much one is eating, feeling disgusted with oneself/depressed/very guilty afterwards at least once/wk x 3 mo
- not associated with any compensatory behaviours
- dieting usually follows binge-eating (vs. BN where dysfunctional dieting typically precedes binge-eating)
- associated with health consequences (e.g. increased risk of weight gain, obesity)

Epidemiology
- F:M = 2:1
- begins in adolescence or young-adulthood

Treatment
- hallmark is CBT

Avoidant/Restrictive Food Intake Disorder

Definition
- eating/feeding disturbance to the point that there is persistent failure to meet appropriate nutritional and/or energy needs such that individual experiences significant weight loss/growth failure, have nutritional deficiencies, may become dependent on enteral feeding/oral nutritional supplementation, has a marked interference with psychosocial functioning
  - does not occur during an episode of AN or BN
  - no evidence of distress in the way in which one's body weight or shape is experienced

Risk Factors
- temperament (e.g. anxiety disorders), environment (e.g. familial anxiety), genetic (e.g. history of GI conditions)
- begins in infancy and can persist into adulthood

Treatment
- watchful waiting
- behaviour modification
- psychotherapy

Points for Differentiating Between Eating Disorders
- AN of binge-eating/purging type (significantly low body weight) takes priority over a BN diagnosis (body weight not in criteria)
- BN requires compensatory behaviours
- Binge eating disorder does not involve compensatory behaviours
- Avoidant/restrictive food intake disorder does not involve disturbances in body image

Table 9. Physiologic Complications of Eating Disorders

System	Starvation/Restriction	Binge-Purge
General	Low BP, low HR, significant orthostatic changes ± syncopal episodes, low temperature, vitamin deficiencies	Russell's sign (knuckle callus) Parotid gland enlargement Perioral skin irritation Periocular and palatal petechiae Loss of dental enamel and caries Aspiration pneumonia Metabolic alkalosis secondary to hypokalemia and loss of acid
Endocrine	Primary or secondary amenorrhea, decreased T_3/T_4	
Neurologic	Grand mal seizure (decreased Ca^{2+}, Mg^{2+}, PO_4^{3-})	
Cutaneous	Dry skin, lanugo hair, hair loss or thinning, brittle nails, yellow skin from high carotene	
GI	Constipation, GERD, delayed gastric emptying	Acute gastric dilation/rupture, pancreatitis, GERD, hematemesis secondary to Mallory-Weiss tear
CVS	Arrhythmias, CHF	Arrhythmias, cardiomyopathy (from use of ipecac), sudden cardiac death (decreased K^+)
MSK	Osteoporosis secondary to hypogonadism	Muscle wasting
Renal	Pre-renal failure (hypovolemia), renal calculi	Renal failure (electrolyte disturbances)
Extremities	Pedal edema (decreased albumin)	Pedal edema (decreased albumin)
Lab Values	Starvation: decreased RBCs, decreased WBCs, decreased LH, decreased FSH, decreased estrogen, decreased testosterone, increased growth hormone, increased cholesterol Dehydration: increased BUN	Vomiting: decreased Na^+, decreased K^+, decreased Cl^-, decreased H^+, increased amylase; hypokalemia with metabolic alkalosis Laxatives: decreased Na^+, decreased K^+, decreased Cl^-, increased H^+; metabolic acidosis

Important electrolytes in eating disorders: KPMg (potassium, phosphate, magnesium)

Personality Disorders

- an evolving personality disorder literature describes that personality is better understood using a trait-based dimensional approach (e.g. 5 major traits such as extraversion, agreeableness, conscientiousness, neuroticism, and openness to experiences rated on a continuum of dysfunctional effects) rather than discrete categories; however, the discrete categories still remain in the current DSM and will be referenced here

General Information

A flag for personality disorders in clinical setting is the reaction that a patient is eliciting in you

- an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual's culture; manifested in two or more of: cognition, affect, interpersonal functioning, impulse control
- inflexible and pervasive across a range of situations
- pattern is stable and well established by adolescence or early adulthood (vs. a sudden onset)
- associated with many complications, such as depression, suicide, violence, brief psychotic episodes, multiple drug use, and treatment resistance
- relationship building and establishing boundaries are important; focus should be placed on validating, finding things to be truly empathetic about, and speaking to strengths
- mainstay of treatment is psychotherapy with the addition of pharmacotherapy to treat associated axis I disorders (i.e. depression, anxiety, substance abuse)

Classification

Personality disorders with familial associations: Schizotypal, Antisocial, and Borderline

- personality disorders are divided into three clusters (A, B, and C), with shared features among disorders within each

Table 10. Description and Diagnosis of Personality Disorders

Cluster A "Mad" Personality Disorders
- Patients seem odd, eccentric, withdrawn
- Familial association with psychotic disorders
- Common defense mechanisms: intellectualization, projection, magical thinking

Paranoid Personality Disorder (0.5-3%)
Pervasive distrust and suspiciousness of others, interpret motives as malevolent
Blame problems on others and seem angry and hostile
Diagnosis requires 4+ of: **SUSPECT**
1. **S**uspicious that others are exploiting or deceiving them
2. **U**nforgiving (bears grudges)
3. **S**pousal infidelity suspected without justification
4. **P**erceive attacks on character, counterattacks quickly
5. **E**nemies or friends? Preoccupied with acquaintance trustworthiness
6. **C**onfiding in others is feared
7. **T**hreats interpreted in benign remarks

Schizotypal Personality Disorder (3-5.6%)
Pattern of eccentric behaviours, peculiar thought patterns
Diagnosis requires 5+ of: **ME PECULIAR**
1. **M**agical thinking
2. **E**xperiences unusual perceptions (including body illusions)
3. **P**aranoid ideation
4. **E**ccentric behaviour or appearance
5. **C**onstricted or inappropriate affect
6. **U**nusual thinking/speech (e.g. vague, stereotyped)
7. **L**acks close friends
8. **I**deas of reference
9. **A**nxiety in social situations
(Note: Rule out psychotic/pervasive developmental disorders - this is not part of the criteria)

Schizoid Personality Disorder
Neither desires nor enjoys close relationships including being a part of a family; prefers to be alone
Lifelong pattern of social withdrawal
Seen as eccentric and reclusive with restricted affect
Diagnosis requires 4 of: **DISTANT**
1. **D**etached/flat affect, emotionally cold
2. **I**ndifferent to praise or criticism
3. **S**exual experiences of little interest
4. **T**asks done solitarily
5. **A**bsence of close friends (other than first-degree relatives)
6. **N**either desires nor enjoys close relationships (including family)
7. **T**akes pleasure in few (if any) activities

Table 10. Description and Diagnosis of Personality Disorders (continued)

Cluster B "Bad" Personality Disorders
- Patients seem dramatic, emotional, inconsistent
- Familial association with mood disorders
- Common defense mechanisms: denial, acting out, regression (histrionic PD), splitting (borderline PD), projective identification, idealization/devaluation

Borderline Personality Disorder (2-4%)
Unstable moods and behaviour, feel alone in the world, problems with self-image. History of repeated suicide attempts, self-harm behaviours. Inpatients commonly report history of sexual abuse. Tends to fizzle out as patients age. DBT is the principal treatment (see *Psychotherapy*, PS43)
10% suicide rate
Diagnosis requires 5+ of: **IMPULSIVE**
1. **I**mpulsive (min. 2 self-damaging ways, e.g. sex/drugs/spending)
2. **M**ood/affect instability
3. **P**aranoia or dissociation under stress
4. **U**nstable self-image
5. **L**abile intense relationships
6. **S**uicidal gestures / self-harm
7. **I**nappropriate anger
8. a**V**oiding abandonment (real or imagined, frantic efforts to)
9. **E**mptiness (feelings of)

Narcissistic Personality Disorder (2%)
Sense of superiority, needs constant admiration, lacks empathy, but with fragile sense of self. Consider themselves "special" and will exploit others for personal gain
Diagnosis requires 5+ of: **GRANDIOSE**
1. **G**randiose
2. **R**equires excessive admiration
3. **A**rrogant
4. **N**eeds to be special (and associate with other specials)
5. **D**reams of success, power, beauty, love
6. **I**nterpersonally exploitative
7. **O**thers (lacks empathy, unable to recognize feelings/needs of)
8. **S**ense of entitlement
9. **E**nvious (or believes others are envious)

Antisocial Personality Disorder (M: 3%, F: 1%)
Lack of remorse for actions, manipulative and deceitful, often violate the law. May appear charming on first impression. Pattern of disregard for others and violation of others' rights must be present before age 15; however, for the diagnosis of ASPD patients must be at least 18. Strong association with Conduct Disorder, history of trauma/abuse common (see *Child Psychiatry*)
Diagnosis requires 3+ of: **CORRUPT**
1. **C**annot conform to law
2. **O**bligations ignored (irresponsible)
3. **R**eckless disregard for safety
4. **R**emorseless
5. **U**nderhanded (deceitful)
6. **P**lanning insufficient (impulsive)
7. **T**emper (irritable and aggressive)

Histrionic Personality Disorder (1.3-3%)
Attention-seeking behaviour and excessively emotional. Are dramatic, flamboyant, and extroverted. Cannot form meaningful relationships. Often sexually inappropriate
Diagnosis requires 5+ of: **ACTRESSS**
1. **A**ppearance used to attract attention
2. **C**enter of attention (else uncomfortable)
3. **T**heatrical
4. **R**elationships (believed to be more intimate than they are)
5. **E**asily influenced
6. **S**eductive behaviour
7. **S**hallow expression of emotions (which rapidly shift)
8. **S**peech (impressionistic and vague)

Cluster C "Sad"
- Patients seem anxious, fearful
- Familial association with anxiety disorder
- Common defense mechanisms: isolation, avoidance, hypochondriasis

Avoidant Personality Disorder (0.5-1.6%)
Timid and socially awkward with a pervasive sense of inadequacy and fear of criticism. Fear of embarrassing or humiliating themselves in social situations so remain withdrawn and socially inhibited
Diagnosis requires 4+ of: **CRINGES**
1. **C**riticism or rejection preoccupies thoughts in social situations
2. **R**estraint in relationships due to fear of being shamed
3. **I**nhibited in new relationships due to fear of inadequacy
4. **N**eeds to be sure of being liked before engaging socially
5. **G**ets around occupational activities requiring interpersonal contact
6. **E**mbarrassment prevents new activity or taking risks
7. **S**elf-viewed as unappealing or inferior

Obsessive-Compulsive Personality Disorder (3-10%)
Preoccupation with orderliness, perfectionism, and mental and interpersonal control. Is inflexible, closed-off, and inefficient
Diagnosis requires 4+ of: **SCRIMPER**
1. **S**tubborn
2. **C**annot discard worthless objects
3. **R**ule/detail obsessed (to point of activity lost)
4. **I**nflexible in matters of morality, ethics, values
5. **M**iserly
6. **P**erfectionistic
7. **E**xcludes leisure due to devotion to work
8. **R**eluctant to delegate to others

Dependent Personality Disorder (1.6-6.7%)
Pervasive and excessive need to be taken care of, excessive fear of separation, clinging and submissive behaviours. Difficulty making everyday decisions. Useful to set regulated treatment schedule (regular, brief visits) and being firm about in between issues. Encourage patient to do more for themselves, engage in own problem-solving
Diagnosis requires 5 of: **RELIANCE**
1. **R**eassurance required for everyday decisions
2. **E**xpressing disagreement difficult
3. **L**ife responsibilities assumed by others
4. **I**nitiating projects difficult (because no confidence)
5. **A**lone (feels helpless and uncomfortable when alone)
6. **N**urturance (goes to excessive lengths to obtain)
7. **C**ompanionship sought urgently
8. **E**xaggerated fears of being left to care for self

Table 11. Key Differences Among Schizoid, Schizotypal, and Schizophrenia

	Schizoid	Schizotypal	Schizophrenia
Thought Form	Organized	Organized, but vague and circumstantial	Disorganized, tangiental, loosening of associatations
Thought Content	No psychosis	No psychosis, may have ideas of reference, paranoid ideation, odd beliefs and magical thinking	Psychosis, hallucinations
Relationships	Solitary, NO desire for social relationships	Lacks close relationships, INTERESTED in relationships but socially inept	Socially marginalized, but not by choice

OCPD vs. OCD

	OCPD	OCD
Ego-Syntonic or Ego-Dystonic	Ego-syntonic	Ego-dystonic
Thought Content	Obsessional thinking, no compulsions, strict routine and rigidity in day-to-day matters	Obsessions and compulsions, rituals

Child Psychiatry

Developmental Concepts

- **temperament**: innate psycho-physiological and behavioural characteristics of a child (e.g. emotionality, activity, and sociability); spectrum from "difficult" to "slow-to-warm-up" to "easy temperament"
- **parental fit**: the congruence between parenting style (authoritative, authoritarian, permissive) and child's temperament
- **attachment**: special relationship between child and primary caretaker(s); develops during first year, best predictor of a child's attachment style is their parent's attachment style
- **separation anxiety** (normal between 10-18 mo): separation from attachment figure results in distress

Table 12. Attachment Models

Parent/Caregiver	Attachment Type	Features in Child
Loving, consistently available, sensitive, and receptive	Secure	Freely explore and engage strangers well (as long as mother in close proximity), upset with caregiver departure, happy with return
Rejecting, unavailable psychologically, insensitive responses	Insecure (avoidant)	Ignore caregiver, show little emotion with arrival or departure, little exploration
Inconsistent, insensitive responses, role reversal	Insecure (ambivalent/resistant)	Clingy but inconsolable, often display anger or helplessness, little exploration
Frightening, dissociated, sexualized, or atypical Often history of trauma or loss	Disorganized	Simultaneous approach/avoidance and stress related straining behaviour

Consider speaking to children alone. Always consider child abuse. See Pediatrics, P14

Tips for the Child Interview
- Use language the child will understand (i.e. don't ask about feeling of worthlessness, ask about whether they feel like they're a bad kid)
- Children in some cultures are taught to be quiet and avoid eye contact with adults who are authority figures (do not mistake with depression)
- Use developmentally-appropriate questions (i.e. don't ask about lack of interest in activities, ask children whether they feel bored)

HEADSSS Interview
Home environment
Education/**E**mployment
Activities
Drugs/**D**iet
Sex
Safety
Suicide/depression

Mood Disorders

MAJOR DEPRESSIVE DISORDER

Epidemiology
- pre-pubertal 1-2% (no gender differences); post-pubertal 4-18% (F:M = 2:1)

Clinical Presentation
- see *Mood Disorders*, PS9
- only difference in diagnostic criteria is that irritable mood may replace depressed mood
- physical factors: insomnia (children), hypersomnia (adolescents), somatic complaints, substance abuse, decreased hygiene
- psychological factors: irritability, boredom, anhedonia, low self-esteem, deterioration in academic performance, social withdrawal, lack of motivation, listlessness
- comorbid diagnoses of anxiety, ADHD, ODD, conduct disorder, and eating disorders

Treatment
- majority never seek treatment
- individual (CBT, IPT)/family therapy and education, modified school program
- SSRIs (strongest evidence for fluoxetine 10-40mg/d)
- close follow-up on adolescents starting SSRIs to monitor for increased suicidal ideation or behaviour
- in severe depression, best evidence for combined pharmacotherapy and psychotherapy
- ECT: only in adolescents who have severe illness, psychotic features, catatonic features, persistently suicidal
- light therapy, self-help books

Prognosis
- prolonged episodes, up to 1-2 yr
- adolescent onset predicts chronic mood disorder; up to 2/3 will have another depressive episode within 5 yr
- complications
- negative impact on family and peer relationships
- school failure
- significantly increased risk of suicide attempt (10%) or completion (however, suicide risk low for pre-pubertal children)
- substance abuse

DISRUPTIVE MOOD DYSREGULATION DISORDER

Clinical Presentation
- severe, developmentally inappropriate, recurrent verbal or behavioural temper outbursts at least 3 times per wk
- mood is predominantly irritable or angry in between outbursts, as observable by others
- these symptoms occur before 10 y, have been occurring for 12 mo, with no more than 3 consecutive mo free from symptoms
- high rates of comorbidities; ADHD, ODD, anxiety disorders, depressive disorders

BIPOLAR DISORDER

Clinical Presentation
- see *Bipolar Disorder*, PS13
- mixed presentation and psychotic symptoms (hallucinations and delusions) more common in adolescent population than adult population
- unipolar depression may be an early sign of adult bipolar disorder
- ~30% of psychotic depressed adolescents receive a bipolar diagnosis within 2 yr of presentation
- associated with rapid onset of depression, psychomotor retardation, mood-congruent psychosis, affective illness in family, pharmacologically-induced mania

Treatment
- Pharmacotherapy: mood stabilizers and/or antipsychotics
- Psychotherapy: CBT, Family Focused Therapy

Anxiety Disorders

- lifetime prevalence 10-20%; F:M = 2:1

Clinical Presentation
- children and adolescents rarely vocalize their anxiety but instead demonstrate it through their behaviour
- school problems, recurrent physical symptoms (abdominal pain, headaches) especially in mornings, social and relationship problems, social withdrawal and isolation, family conflict, difficulty with sleep initiation, irritability and mood symptoms, alcohol and drug use in adolescent

Differential Diagnosis
- clinical judgment important to differentiate developmentally normal from pathological anxiety
- for school avoidance, differentiate fear of general performance, humiliation, worry about separation and rule out bullying and school refusal due to learning disorder
- depressive disorders, ODD, truancy

Course and Prognosis
- better prognosis with later age of onset, lower co-morbidities, early initiation of treatment, ability to maintain school attendance and peer relationships, absence of social anxiety disorder
- with treatment up to 80% of children will not meet criteria for their anxiety disorder at 3 year follow-up but up to 30% will meet criteria for another psychiatric disorder

Treatment
- similar principles for most childhood anxiety disorders due to overlapping symptomatology and frequent comorbidity
- family psychotherapy, predictive and supportive environment
- CBT: child and parental education, relaxation techniques (e.g. deep breathing), exposure/desensitization, recognizing and correcting anxious thoughts
- pharmacotherapy: SSRIs (e.g. fluoxetine, paroxetine), benzodiazepines (alprazolam, clonazepam have evidence – use with caution due to addictive and abuse potential as well as disinhibiting effect, especially in neurodevelopmental delay)
  - fluvoxamine and sertraline also have good evidence, particularly for OCD

SEPARATION ANXIETY DISORDER
- excessive and developmentally inappropriate anxiety on real, threatened or imagined separation from primary caregiver or home with physical or emotional distress for at least 4 wk
- school refusal (75%)
- persistent worry, refusal to sleep alone, clinging, nightmares involving separation, somatic symptoms
- comorbid major depression common (2/3)
- worry about something happening to parent or themselves if separated

SOCIAL PHOBIA (SOCIAL ANXIETY DISORDER)
- situations in which the child feels they are exposed to scrutiny by others can provoke anxiety and become feared or avoided
- must distinguish between shy child, child with issues functioning socially (e.g. autism), and child with social anxiety
  - diagnosis only if anxiety interferes significantly with daily routine, social life, academic functioning or if markedly distressed. Must occur in settings with peers, not just adults
- features: temper tantrums, freezing, clinging behaviour, mutism, excessively timid, stays on periphery, refuses to be involved in group play
- significant implication for future quality of life if untreated; lower levels of satisfaction in leisure activities, higher rates of school dropout, poor workplace performance, increased rates of remaining single

SELECTIVE MUTISM
- consistent failure to speak in specific social situations in which there is an expectation for speaking despite speaking in other situations
- the disturbance interferes with educational or occupational achievement or with social communication

GENERALIZED ANXIETY DISORDER
- diagnostic criteria same as adults (see *Generalized Anxiety Disorder*, PS16)
  - **note**: only 1 item is required in children for Criteria C
- often redo tasks, show dissatisfaction with their work, and tend to be perfectionistic
- often fearful in multiple settings and expect more negative outcomes when faced with academic or social challenges, and require reassurance and support to take on new tasks

SPECIFIC PHOBIA
- common phobias in childhood include a fear of heights, small animals, doctors, dentists, darkness, loud noises, thunder and lightning

Neurodevelopmental Disorders

Autism Spectrum Disorder

Diagnosis
- persistent deficits in social communication and interaction, manifested in three areas
  - social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation, to reduced sharing of interests, emotions, or affect, to failure to initiate or respond to social interactions
  - nonverbal communicative behaviours, ranging, for example, from poorly integrated verbal and nonverbal communication, to abnormalities in eye contact and body language or deficits in understanding and use of gestures, to a total lack of facial expressions and nonverbal communication
  - developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behaviour to suit various social contexts, to difficulties in sharing imaginative play or in making friends, to absence of interest in peers
- restricted, repetitive patterns of behaviour, interests, or activities. Two or more of: stereotyped or repetitive motor movements, insistence on sameness, highly restricted fixated interests, hyper-/hypo-reactivity to sensory input
- symptoms must be present in early developmental period
- symptoms cause clinically significant impairment in social, occupational, or other important areas of current functioning
- not better explained by intellectual disability or global developmental delay

Attachment type can be assessed in infants 10-18 mo of age using the Strange Situation test, in which the child is stressed by the caregiver being removed from the situation and the stranger staying. Attachment style is measured by the child's behaviour during the reunion with the caregiver

Attachment problems may present as a child who is difficult to soothe, has difficulty sleeping, problems feeding, tantrums or behavioural problems

The shy child is quiet and reluctant to participate but slowly 'warms up'

Fluoxetine, Cognitive-Behavioural Therapy and Their Combination for Adolescents with Depression: Treatment for Adolescents with Depression Study (TADS) Randomized Controlled Trial
JAMA 2004;292:807-820
Study: Randomized controlled trial at 13 US academic and community clinics between spring 2000-summer 2003.
Patients: 439 patients ages 12-17 with a primary DSM IV diagnosis of major depressive disorder.
Outcomes: Children's Depression Rating Scale-Revised (CDRSR) total score.
Interventions: 12 wk of (1) fluoxetine (10-40 mg/d), (2) CBT, (3) CBT + fluoxetine (10-40 mg/d), or (4) placebo.
Results: Fluoxetine with CBT had a statistically significant CDRSR score as compared to placebo (p=0.001) with a 71% response rate. This combination was greater than fluoxetine alone (p=0.02), and CBT alone (p=0.01). Fluoxetine alone was greater than CBT alone (p=0.01).

Newer Generation Antidepressants for Depressive Disorders in Children and Adolescents
Cochrane DB Syst Rev 2012;11:CD004851
Study: Meta-analysis of 19 trials containing 3,335 participants (including RCTs, cross-over trials, and cluster trials).
Population: Children and adolescents aged 6-18 yr with diagnosed depressive disorder.
Interventions: Antidepressants, placebo.
Main Outcome Measure: Depression severity score.
Results: Children treated with an antidepressant had lower depression severity score and higher rates of response/remission. Children on antidepressants were also found to be at increased risk (58%) of suicide-related outcome (RR 1.58; 95% CI 1.02-2.45).
Conclusions: In children and adolescents, antidepressants are effective at treating depression, yet may cause a higher chance of suicide-related outcomes.

- **specifiers**
  - current severity: requiring very substantial support, requiring substantial support, requiring support
  - with or without accompanying language impairment
  - with or without accompanying intellectual impairment
  - associated with known medical or genetic condition or environmental factors (i.e. Rett's disorder)

Differential Diagnosis
- developmental disability, childhood schizophrenia, social phobia, OCD, communication disorder, non-verbal learning disorder, ADHD, abuse, hearing or visual impairment, seizure disorder, motor impairment

Management
- hearing and vision test to rule out impairment
- psychological testing to assess intellectual functioning and learning
- chromosomal analysis to rule out abnormalities (e.g. Trisomy 21, Fragile X syndrome)
- rule out psychotic disorders, social problems, depression, anxiety, abuse

Treatment
- team-based: school, psychologist, occupational therapist, physiotherapist, speech and language therapy, pediatrics, psychiatry
- psychosocial: family education and support, school programming, behaviour management, social skills training
- treat concomitant disorders such as ADHD, tics, OCD, anxiety, depression, and seizure disorder
- pharmacotherapy: atypical antipsychotics (for irritability, aggression, agitation, self-mutilation, tics), SSRIs (for anxiety, depression), stimulants (for associated inattention and hyperactivity)

Prognosis
- variable, but improves with early intervention
- better if IQ >60 and able to communicate

Attention Deficit Hyperactivity Disorder

- prevalence: 5-12% of school-aged children; M:F = 4:1, although girls may be under-diagnosed
- girls tend to have inattentive/distractible symptoms; boys have impulsive/hyperactive symptoms

Etiology
- genetic: 75% heritability, dopamine candidate genes DAT1, DRD4
- neurobiology: decreased catecholamine transmission, low prefrontal cortex (PFC) activity, increased beta activity on EEG
- cognitive: developmental disability, poor inhibitory control and other errors of executive function

Diagnosis
- differential: learning disorders, hearing/visual defects, thyroid, atopic conditions, congenital problems (fetal alcohol syndrome, Fragile X), lead poisoning, history of head injury, traumatic life events (abuse)
- diagnosis (3 subtypes)
  - **combined type**: 6 or more symptoms of inattention and 6 or more symptoms of hyperactivity-impulsivity
  - **predominantly inattentive type**: 6 or more symptoms of inattention
  - **predominantly hyperactive-impulsive type**: 6 or more symptoms of hyperactivity-impulsivity
  - for older adolescents (>17 yr) or adults, 5 symptoms required
  - symptoms persist for >6 mo
  - onset before age 12
  - symptoms present in at least two settings (i.e. home, school, work)
  - interferes with academic, family, and social functioning
  - does not occur exclusively during the course of another psychiatric disorder

Observe child for "ATENTION" features

Annoying
Temperamental
Energetic
Noisy
Task incompletion
Inattentive
Oppositional
Negativism

Table 13. Core Symptoms of ADHD (DSM-5)

Inattention	Hyperactivity	Impulsivity
Careless mistakes	Fidgets, squirms in seat	Blurts out answers before questions completed
Cannot sustain attention in tasks or play	Leaves seat when expected to remain seated	Difficulty awaiting turn
Does not listen when spoken to directly	Runs and climbs excessively	Interrupts/intrudes on others
Fails to complete tasks	Cannot play quietly	
Disorganized	"On the go", driven by a motor	
Avoids, dislikes tasks that require sustained mental effort	Talks excessively	
Loses things necessary for tasks or activities		
Distractible		
Forgetful		

Treatment with stimulant medications of ADHD in childhood actually decreases the likelihood of substance abuse later in life, contrary to the concerns of many parents and health care providers

A Systematic Review and Analysis of Long-Term Outcomes in Attention Deficit Hyperactivity Disorder: Effects of Treatment and Non-Treatment
BMC Med 2012;10:99
Study: Systematic review of 351 studies.
Purpose: To determine the long-term outcomes of ADHD and whether there is an effect on long-term outcomes with treatment.
Population: Patients with diagnosed or symptomatic presentation of ADHD.
Interventions: No treatment (control), treatment (pharmacological, non-pharmacological, and multi-modal).
Outcome Groups: Drug use/addictive behaviour, academic outcomes, antisocial behaviour, social function, occupation, self-esteem, driving outcomes, services use, obesity.
Results: Untreated participants with ADHD had poorer outcomes vs. non-ADHD participants in 74% (n=244) of studies, while 26% (n=89) showed similar outcomes. 72% (n=37) of studies showed a benefit from ADHD treatment vs. untreated ADHD and 28% (n=15) showed no benefit. Treatment of ADHD was found to be beneficial in studies looking at driving (100%), obesity (100%), self-esteem (90%), social function (83%), academic outcomes (71%), drug use/addictive behaviour (67%), antisocial behaviour (50%), and occupation (33%).
Conclusions: Overall, people with ADHD have poorer long-term outcomes than controls (those without ADHD). For those with ADHD, treatment improves long-term outcomes.

Features
- difficult to differentiate from highly variable normative behaviour before age 4
- often identified upon school entry
- rule out developmental delay, sensory impairments, genetic syndromes, encephalopathies or toxins (alcohol, lead)
- risk of substance abuse, depression, anxiety, academic failure, poor social skills, risk of comorbid CD and/or ODD, risk of adult ASPD
- associated with family history of ADHD, difficult temperamental characteristics

Treatment
- non-pharmacological: parent management, anger control strategies, positive reinforcement, social skills training, individual/family therapy, behaviour therapy, tutors, classroom intervention, exercise routines, extracurricular activities, omega-3 fatty acids
- pharmacological
- first line: stimulants (methylphenidate, amphetamine salts)
- second line: atomoxetine
- third line/adjunct: nonstimulants (α-agonists; clonidine, guanfacine, NDRI; buproprion)
- for comorbid symptoms: antidepressants, antipsychotics

Prognosis
- 70-80% continue into adolescence, but hyperactive symptoms usually abate
- 65% continue into adulthood; secondary personality disorders and compensatory anxiety disorders are identifiable

Disruptive, Impulse Control, and Conduct Disorder

Oppositional Defiant Disorder

- prevalence: 2-16%, M=F after puberty

Diagnosis
- pattern of negativistic/hostile and defiant behaviour for ≥6 mo with ≥4 of
  - angry/irritable mood: easily loses temper, touchy or easily annoyed, often angry and resentful
  - argumentative/defiant: argues with adults/authority figure, defies requests/rules, deliberately annoys, blames others for their own mistakes or misbehaviour
  - vindictiveness: spiteful or vindictive twice in past 6 mo
- behaviour causes significant impairment in social, academic, or occupational functioning
- behaviours do not occur exclusively during the course of a psychotic or mood disorder
- criteria not met for conduct disorder (CD); if 18 yr or older, criteria not met for ASPD
- may progress to CD, differentiated by an absence of destructive or physically aggressive behaviour
- features that typically differentiate ODD from transient developmental stage: onset <8 yr, chronic duration (>6 mo), frequent intrusive behaviour
- impact of ODD: poor school performance, few friends, strained parent/child relationships, risk of later mood disorders

ODD kids "ARE BRATS"

Annoying
Resentful
Easily annoyed
Blames others
Rule breaker
Argues with adults
Temper
Spiteful/vindictive

Treatment
- parent: management training, psychoeducation and family therapy to reduce punitive parenting and parent-child conflict
- behavioural therapy: to teach, practice and reinforce prosocial behaviour
- social: school/day-care interventions
- pharmacotherapy for comorbid disorders

Conduct Disorder

- prevalence: 1.5-3.4% (M:F = 4-12:1)

Etiology
- parental/familial factors: parental psychopathology (e.g. ASPD, substance abuse), child-rearing practices (e.g. child abuse, discipline), low socioeconomic status (SES), family violence
- child factors: difficult temperament, ODD, learning problems, neurobiology

Diagnosis
- differential: ADHD, depression, head injury, substance abuse
- diagnosis: use multiple sources (Achenbach Child Behavioural Checklist, Teacher's Report Form)
  - pattern of behaviour that violates rights of others and age appropriate social norms with ≥3 criteria noted in past 12 mo and ≥1 in past 6 mo
    - aggression to people and animals: bullying, initiating physical fights, use of weapons, forced sex, cruel to people, cruel to animals, stolen while confronting a person (e.g. armed robbery)
    - destruction of property: firesetting with intent to damage, deliberately destroying others' property
    - deceitfulness or theft: breaking and entering, conning others, stealing nontrivial items without confrontation
    - violation of rules: out all night before age 13, often truant from school before age 13, runaway ≥2 times at least overnight or for long periods of time
  - disturbance causes clinically significant impairment in social, academic, or occupational functioning
  - if individual is 18 yr or older, criteria not met for ASPD
- diagnostic types
  - childhood onset: at least one criterion prior to age 10
    - poor prognosis: associated with ODD, aggressiveness, impulsiveness
  - adolescent onset: absence of any criteria until age 10
    - better prognosis; least aggressive, gang-related delinquency
  - mild, moderate, severe

Conduct Disorder Diagnosis

TRAP
Theft: breaking and entering, deceiving, non-confrontational stealing
Rule breaking: running away, skipping school, out late
Aggression: people, animals, weapons, forced sex
Property destruction

Treatment
- early intervention necessary and more effective; long-term follow-up required
- psychosocial: parent management training, anger replacement training, CBT, family therapy, education/employment programs, social skills training,
- pharmacotherapy: for comorbid disorders

Prognosis
- poor prognostic indicators include early-age onset, high frequency, variety of behaviours, pervasiveness (i.e. in home, school, community), comorbid ADHD, early sexual activity, substance abuse
- 50% of CD children become adult ASPD

Intermittent Explosive Disorder

Diagnosis
- recurrent behavioural outbursts representing a failure to control aggressive impulses in children > 6 yr, manifested as either
  - verbal or physical aggression that does not damage others or property, occurring 2+ times per wk for 3 mo
  - 3 outbursts involving physical damage to another person, animal or piece of property in the last 12 mo
- outbursts are out of proportion to triggers or provocation, are not premeditated, and not for primary gain
- outbursts cause clinically significant impairment in social, academic, or occupational functioning

See Pediatrics
- Child Abuse, P14
- Chronic Abdominal Pain, P40
- Developmental Delay, P22
- Intellectual Disability, P23
- Learning Disabilities, P24
- Sleep Disturbances, P13

See Neurology
- Tic Disorders, N34
- Tourette's Syndrome, N35

Psychotherapy

- treatment in which a person with mental or physical difficulties aims to achieve symptomatic relief through talks with another person
- psychotherapy is delivered by a specially trained social worker, nurse, psychologist, psychiatrist, counselor or general practitioner
- various types of therapy exist because of diverse theories of human psychology and mental illness etiology

Freudian Psyche
id: instinctual drives, unconscious
superego: person's conscience, formed by societal/parental norms
ego: latin "I", sense of self, conscious actions, attempts to satisfy drives of id within confines of reality and demands of superego

Common Factors of Psychotherapy

- good evidence that effective psychotherapy creates observable changes in brain circuitry and connectivity, similar to those observed with successful pharmacologic and other treatment modalities
- studies suggest that up to 30-70% of therapy outcome is due to common factors with only 10-40% from specific factors
- common factors are: warmth (unconditional positive regard), accurate empathy, genuineness, goodness of fit

Table 14. Summary of Psychotherapeutic Modalities

Type	Indications	Approach, Technique and Theory	Ideal Candidates	Duration
Psychoanalytic/ psychodynamic	Psychoneuroses; anxiety, obsessional thinking, compulsive or conversion disorders, sexual dysfunction, depressive states	Theory: Exploration of meaning of early experiences and how they affect emotions and patterns of behaviour Recollection (remembering), repetition (reliving with the analyst), working through (gaining insight) Techniques: free association, dream interpretation, transference analysis	Psychologically minded, highly motivated, wish to understand selves and not just relieve symptoms Able to withstand difficult emotions without fleeing or self-destructive acts High level of function	Time intensive: -Classically: 4-5 times/wk for 3-7 yr Psychodynamically oriented therapy: 2-3 times/wk for fewer years
Supportive	Adjustment disorders, psychosomatic disorders, severe psychotic or personality disorders	Ameliorate symptoms through behavioural or environmental restructuring to aid adaptation and facilitate coping Help patients feel safe, secure and encouraged	Individuals in crisis or with severe symptoms in acute or chronic settings Low insight, low motivation, "weak" ego systems	Variable (single session to years, though often short-intermittent)
Interpersonal	Mood disorders, bulimia nervosa	Focuses on how interpersonal relationships impact symptoms 4 key problem areas addressed: grief and loss, role transitions, conflict, interpersonal deficits Break the interpersonal cycle: depression, self-esteem, social withdrawal	Individuals with depression or bipolar disorder with some insight and difficult social functioning Absence of severe psychotic process, personality disorder or comorbid substance abuse	12-20 wk
Behavioural	Most mental health disorders benefit from specific application of behavioural therapy (e.g. behavioural activation for depression;exposure therapy for phobias;contingency management for anorexia nervosa, substance use disorder)	Systematic Desensitization: mastering anxiety-provoking situations by approaching them gradually and in a relaxed state that limits anxiety Flooding: confronting feared stimulus for prolonged periods until it is no longer frightening Positive Reinforcement: strengthening behaviour and causing it to occur more frequently by rewarding it Negative Reinforcement: causing behaviour to occur more frequently by removing a noxious stimulus when desired behaviour occurs Extinction: causing a behaviour to diminish by not rewarding it Punishment (aversion therapy): causing a behaviour to diminish by applying a noxious stimulus	Individuals with motivation to change and specific symptoms that are amenable to change Global areas of dysfunction such as personality disorder are difficult to treat with behavioural therapy	Usually short term (weeks-months)
Cognitive Therapy	Depression, anxiety, panic disorder, personality disorders, and somatoform disorders	Moods/emotions are influenced by one's thoughts and psychiatric disturbances are often caused by habitual errors in thinking With therapy, help patient make explicit their inaccurate automatic thoughts and correct assumptions with a more balanced perspective Uses thought records (often charts with column headings including "situation," "feeling," "thought," "cognitive distortion") to help monitor thoughts, the situations they occur in, and the feelings they might provoke due to their underlying cognitive errors	Motivated patients who will comply with homework, openness to changing core beliefs	First course - usually 15 - 25 weeks Maintenance therapy can be carried out over years

Table 14. Summary of Psychotherapeutic Modalities (continued)

Type	Indications	Approach, Technique and Theory	Ideal Candidates	Duration
Cognitive Behavioural Therapy	Most mental health disorders including; mood, anxiety, OCD, personality, eating, substance use, psychotic disorders	Combines theory and method from Cognitive and Behavioural therapies to teach the patient to change connections between thinking patterns, habitual behaviours and mood/anxiety problems	Individuals with motivation to change and are able to participate in homework	Typically 6-18, 1hr sessions Maintenance sessions can be added over time
Dialectical Behavioural Therapy	Borderline Personality Disorder	Therapy that combines CBT techniques with Buddhist Zen mindfulness practices and dialectical philosophy Focuses on 4 types of skills: mindfulness, emotion regulation, interpersonal effectiveness, and distress tolerance Involves 4 components: individual therapy, group skills training, phone consultations, and a consultation team	Patients with severe problems of emotional dysregulation, impulsivity, and self-harm Patients with borderline personality disorder or borderline personality traits	Typically 1 yr
Motivational Interviewing **Motivational Enhancement Therapy (MET)**	Substance use disorders Techniques can be applied to facilitate behavioural change in most psychological problems	Spirit of MI (CAPE): Compassion, Acceptance, Partnership, Evocation Principles of MI (RULE): Resist "righting reflex", Understand client and their reasons for change, Listen, Empower by conveying hope and supporting autonomy Techniques of MI (OARS): Open-ended questions, Affirmations to validate client, Reflections (the skill of accurate empathy), Summaries to help client organize self	Patients with problematic substance use, maladaptive behaviour patterns (therapy disengagement, medication noncompliance, poor health habits)	Brief interventions (efficacy with as little as 15 min, single sessions), better result with more sessions. Addiction is a chronic condition, often need boosters over time MET = 4 sessions

Other Therapies

- **group psychotherapy**
  - aims to promote self-understanding, acceptance, social skills
- **family therapy**
  - family system considered more influential than individual especially for children
  - focus on here and now, re-establishing parental authority, strengthening normal boundaries, and rearranging alliances
- **narrative psychotherapy**
- an integrative approach that attempts to understand the patients experience as a whole
- **hypnosis**: mixed evidence for the treatment of pain, phobias, anxiety, and smoking cessation
  - mindfulness-based cognitive therapy(MBCT)/stress reduction(MBSR): derived from Buddhist meditative and philosophical practices; aims to help people attend to thoughts, behaviours and emotions non-judgmentally and in the moment using guided breathing exercises emerging evidence for adjustment disorder, MDD, anxiety, pain disorders, insomnia, substance relapse prevention

Two Year Randomized Controlled Trial and Follow-Up of Dialectical Behaviour Therapy vs. Therapy by Experts for Suicidal Behaviours and Borderline Personality Disorder
Arch Gen Psychiatry 2006;63:757-66
Objective: To determine how DBT compares with non-behavioural psychotherapy.
Study: One year randomized controlled trial followed by one year follow-up period.
Patients: 100 women with recent suicidal and self-injurious behaviours meeting DSM criteria and matched to various demographic data.
Intervention: One year of DBT or one year of non-behavioural therapy.
Outcomes: Trimester assessments of suicidal behaviour, emergency services use, general psychological well-being.
Results: Patients receiving DBT were half as likely to attempt suicide, required less hospitalization for suicidal ideation, had lower medical risk for suicide attempts, were less likely to drop out of therapy and had fewer emergency room visits for suicidal ideation.
Conclusions: DBT is effective in reducing suicidal behaviour in patients with borderline personality disorder.

Pharmacotherapy

Antipsychotics

- "antipsychotics" and "neuroleptics" are terms used interchangeably
- overall mechanism of action: block, to varying degrees, dopamine activity in target brain pathways (see sidebar)
- indications: for calm, sleep, psychosis and mania reduction, mood stabilizing - used in schizophrenia and other psychotic disorders, mood disorders with or without psychosis, violent behaviour, autism, Tourette's, somatoform disorders, dementia, OCD
- onset: immediate calming effect and decrease in agitation; thought disorder responds in 2-4 wk
- rational use
  - no reason to combine antipsychotics
  - choosing an antipsychotic
    - all antipsychotics are equally effective, except for clozapine (considered to be most effective in treatment-refractory psychosis)
    - atypical antipsychotics (SGA) are as effective as typical (first generation) antipsychotics but are thought to have better side effect profiles
    - choose a drug that the patient has responded to in the past or that was used successfully in a family member
- route: PO, short-acting or long-acting depot IM injections, sublingual
- if no response in 4-6 weeks, switch drugs; if response, titrate dose
- duration: minimum 6 mo, usually for life

Dopamine Pathways Affected by Antipsychotics

Pathway	Effects	Associated Pathology
Mesolimbic	Emotion origination, reward	HIGH dopamine causes positive symptoms of schizophrenia (delusions, hallucinations)
Mesocortical	Cognition, executive function	LOW dopamine causes negative symptoms of schizophrenia
Nigrostriatal	Movement	LOW dopamine causes EPS
Tuberoinfundibular	Prolactin hormone release	LOW dopamine causes hyperprolactinemia

Long-Acting Preparations

- antipsychotics formulated in oil for IM injection (see Table 15)
- received on an outpatient basis
- indications: individuals with schizophrenia or other chronic psychosis who relapse because of non-adherence
- dosing: start at low dosages, then titrate every 2 to 4 wk to maximize safety and minimize side effects
- should be exposed to oral form prior to first injection
- side effects: risk of EPS, parkinsonism, increased risk of NMS

Canadian Guidelines for the Treatment of Acute Psychosis in the Emergency Setting

- haloperidol 5 mg IM (or loxapine 25 mg) ± lorazepam 2 mg IM
- olanzapine 2.5-10 mg (PO, IM, quick dissolve)
- risperidone 2 mg (M-tab, liquid)

Table 15. Common Antipsychotic Agents

	Starting Dose	Maintenance	Maximum	Relative Potency (mg)
Typicals (in order of potency from high to low)				
Haloperidol (Haldol®)	2-5 mg IM q4-8h 0.5-5 mg PO b/tid 0.2 mg/kg/d PO	Based on clinical effect	20 mg/d PO	2
Fluphenazine enanthate (Moditen®, Modecate® for IM formulation)	2.5-10 mg/d PO	1-5 mg PO qhs 25 mg IM/SC q1-3wk	20 mg/d PO	2
Zuclopenthixol HCl (Clopixol®)	20-30 mg/d PO	20-40 mg/d PO	100 mg/d PO	4
Zuclopenthixol acetate (Acuphase®)	50-150 mg IM q48-72h		400 mg IM (q2wk)	
Zuclopenthixol decanoate (Cloxipol Depot®)	100 mg IM q1-4wk	150-300 mg IM q2wk	600 mg IM/wk	
Perphenazine (Trilafon®)	8-16 mg PO b/tid	4-8 mg PO t/qid	64 mg/d PO	10
Loxapine HCl (Loxitane®)	10 mg PO tid 12.5-50 mg IM q4-6h	60-100 mg/d PO	250 mg/d PO	10
Chlorpromazine (Largactil®)	10-25 mg PO b/t/qid	400 mg/d PO	1000 mg/d PO	100
Atypicals (in order of potency from high to low)				
Risperidone (Risperdal®, Risperdal Consta® for IM long acting preparation, Risperdal® M-Tab for melting form – placed on tongue)	1-2 mg OD/bid	4-8 mg/d PO 25 mg IM q2wk	8 mg/d PO	2
Paliperidone (Invega®)	3 mg/d PO	3-12 mg /d PO	12 mg/d PO	4
Olanzapine (Zyprexa®, Zyprexa Zydis® for melting form – placed on tongue, Zyprexa Intramuscular®)	5 mg/d PO	10-20 mg/d PO	30 mg/d PO	5
Asenapine (Saphris®)	5 mg SL bid	5-10 mg SL bid	10 mg bid	5
Ziprasidone (Zeldox®)	20 mg bid PO	40-80 mg bid PO	160 mg/d PO	6
Aripiprazole (Abilify®)	10-15 mg/d PO	10-15 mg/d PO	30 mg/d PO	7.5
Quetiapine (Seroquel®, Seroquel XR® for extended release®)	25 mg PO bid	400-800 mg/d PO	800 mg/d PO	75
Clozapine (Clozaril®)	25 mg PO bid	300-600 mg/d PO	600 mg/d PO	100

Typical (First Generation) vs. Atypical (Second Generation) Antipsychotics

	Typical	Atypical
Mechanism	Block postsynaptic dopamine receptors (D2)	Block postsynaptic dopamine receptors (D2) Block serotonin receptors (5-HT2) on presynaptic dopaminergic terminals, triggering dopamine release, and reversing dopamine blockade in some pathways
Pros	Inexpensive Plenty of injectable forms available	Fewer EPS Low risk of tardive syndromes Mood stabilizing effects
Cons	More EPS Tardive syndromes in long-term Not mood stabilizing	Expensive Few injectable forms available Metabolic side effects (weight gain, hyperglycemia, lipid abnormalities, metabolic syndrome) Exacerbation (or new onset) of obsessive behaviour

Effectiveness of Antipsychotic Drugs in Patients with Chronic Schizophrenia
NEJM 2005;353:1209-23

Study: Randomized, double-blind, active-control trial with median follow-up of 6 mo.

Patients: 1,432 patients with a diagnosis of schizophrenia (as per DSM-IV criteria) and able to take antipsychotic medications (as determined by study doctors). Mean age 41, 74% male, 26% female.

Intervention: 1-4 capsules daily of olanzapine (20.1 mg), quetiapine (543.4 mg), risperidone (3.9 mg), perphenazine (20.8 mg), or ziprasidone (112.8 mg), with dosage at the discretion of the study doctor. Mean modal doses in parentheses.

Main Outcome: Discontinuation of treatment for any cause.

Results: Olanzapine group had statistically significant lower rate of discontinuation for any cause (64%) from all others (quetiapine – 82%, risperidone – 74%, perphenazine – 75%, ziprasidone – 79%). There were no significant differences in time until discontinuation due to intolerable side effects; however, olanzapine was associated with a significantly higher rate of metabolic side effects.

Table 16. Commonly Used Atypical Antipsychotics

	Risperidone (Risperdal®)	Olanzapine (Zyprexa®, Zydis®)	Quetiapine (Seroquel®)	Clozapine (Clozaril®)	Aripiprazole (Abilify®)
Advantages	Lower incidence of EPS than typical antipsychotics at lower doses (<8 mg) Associated with less weight gain compared to clozapine and olanzapine	Better overall efficacy compared to haloperidol Well tolerated Low incidence of EPS and TD	Associated with less weight gain compared to clozapine and olanzapine Mood stabilizing	Most effective for treatment-resistant schizophrenia Does not worsen tardive symptoms; may treat them Approximately 50% of patients benefit, especially paranoid patients and those with onset after 20 yr	Less weight gain and risk of metabolic syndrome compared to olanzapine and a lower incidence of EPS compared to haloperidol
Disadvantages	SE: insomnia, agitation, EPS, H/A, anxiety, prolactin, postural hypotension, constipation, dizziness, weight gain Highest risk of EPS among atypicals (still lower than high-potency typicals)	SE: mild sedation, insomnia, dizziness, minimal anticholinergic, early AST and ALT elevation, restlessness High risk of metabolic effects (weight gain, DM, hyperlipidemia)	SE: H/A, sedation, dizziness, constipation Most sedating of first line atypicals	SE: drowsiness/ sedation, hypersalivation, tachycardia, dizziness, EPS, NMS 1% agranulocytosis	SE: H/A, agitation, anxiety, insomnia, weight gain, decreased serum prolactin levels
Comments	Quick dissolve (M-tabs), and long-acting (Consta®) formulations available	Quick dissolve formulation (Zydis®) used commonly in ER setting for better compliance IM form available		Weekly blood counts for at least 1 mo, then q2wk Do not use with drugs which may cause bone marrow suppression due to risk of agranulocytosis	

Note: Risk of weight gain: Clozapine > Olanzapine > Quetiapine > Risperidone

Table 17. Side Effects of Antipsychotics

System	Side Effects
Anticholinergic	Dry mouth, urinary retention, constipation, blurred vision, toxic-confusional states
α-adrenergic Blockade	Orthostatic hypotension, impotence, failure to ejaculate
Dopaminergic Blockade	Extrapyramidal syndromes, galactorrhea, amenorrhea, impotence, weight gain
Anti-histamine	Sedation
Hematologic	Agranulocytosis (clozapine)
Hypersensitivity Reactions	Liver dysfunction, blood dyscrasias, skin rashes, neuroleptic malignant syndrome, altered temperature regulation (hypothermia or hyperthermia)
Endocrine	Metabolic syndrome

Neuroleptic Malignant Syndrome

- **psychiatric emergency**
  - due to massive dopamine blockade; increased incidence with high potency and depot neuroleptics
- **risk factors**
  - medication factors: sudden increase in dosage, starting a new drug
  - patient factors: medical illness, dehydration, exhaustion, poor nutrition, external heat load, male, young adults
- **clinical presentation**
  - mental status changes (usually occur first), fever, autonomic reactivity, rigidity
  - develops over 24-72 h
  - labs: increased creatine phosphokinase, leukocytosis, myoglobinuria
- **treatment**: supportive - discontinue drug, hydration, cooling blankets, dantrolene (hydrantoin derivative, used as a muscle relaxant), bromocriptine (DA agonist)
- **mortality**: 5%

Extrapyramidal Symptoms

- incidence related to increased dose and potency
- acute (early-onset; reversible) vs. tardive (late-onset; often irreversible)

Note: high potency antipsychotics (e.g. haloperidol) have low doses, while low potency antipsychotics (e.g. chlorpromazine) have high doses

Anticholinergic Effects

Red	as a	beet
Hot	as a	hare
Dry	as a	bone
Blind	as a	bat
Mad	as a	hatter

Metabolic and Cardiovascular Adverse Effects Associated with Antipsychotic Drugs
Nat Rev Endocrinol 2012;8:114-126
Study: Review.
Conclusions: All antipsychotics can cause cardiovascular and metabolic side effects, such as obesity, dyslipidemia, hyperglycermia and metabolic syndrome. Olanzapine and clozapine are most likely to cause these side effects. The mechanism that underlies the metabolic and cardiovascular effects is not fully understood, however, the histamine, dopamine, serotonin, and muscarinic receptors are implicated.

Features of Neuroleptic Malignant Syndrome

FARM
Fever
Autonomic changes (e.g. increased HR/ BP, sweating)
Rigidity of muscles
Mental status changes (e.g. confusion)

FARM symptoms are also seen in SS

SS can be distinguished from NMS by the following:

SS	NMS
Twitchy, shivering, restless	Severe global rigidity
Flushed, sweaty	Pallor
Vomiting, diarrhea, abdominal pain	No GI symptoms

QT Prolongation is an important side effect of antipsychotics. ECGs should be obtained prior to initiating a new medication and to monitor side effects.
Pearls:
Typicals - chlorpromazine and haloperidol warrant cardiac monitoring
Atypicals - ziprasidone has the highest risk among atypicals, clozapine also warrants monitoring

Table 18. Extrapyramidal Symptoms

	Dystonia	Akathisia	Pseudoparkinsonism	Dyskinesia
Acute or Tardive	Both	Both	Acute	Tardive
Risk Group	Acute: Young Asian and Black males	Elderly females	Elderly females	
Presentation	Sustained abnormal posture; torsions, twisting, contraction of muscle groups; muscle spasms (e.g. oculogyric crisis, laryngospasm, torticollis)	Motor restlessness; crawling sensation in legs relieved by walking; very distressing, increased risk of suicide and poor adherence	Tremor; rigidity (cogwheeling); akinesia; postural instability (decreased/absent arm-swing, stooped posture, shuffling gait, difficulty pivoting)	Purposeless, constant movements, involving facial and mouth musculature, or less commonly – the limbs
Onset	Acute: within 5 d Tardive: >90 d	Acute: within 10 d Tardive: >90 d	Acute: within 30 d	Tardive: >90 d
Treatment	Acute: benztropine or diphenhydramine	Acute: lorazepam, propranolol, or diphenhydramine; reduce or change neuroleptic to lower potency	Acute: benztropine (or benzodiazepine if side effects); reduce or change neuroleptic to lower potency	Tardive: no good treatment; may try clozapine; discontinue drug or reduce dose

Antiparkinsonian Agents (Anticholinergic Agents)

- types
  - benztropine (Cogentin®) 2 mg PO, IM or IV OD (~1-6 mg)
  - amantadine (Symmetrel®) 100 mg PO bid (100-400 mg)
  - diphenhydramine (Benadryl®) 25-50 mg PO/IM qid
- do not always prescribe with neuroleptics
  - give antiparkinsonian agents only if at high risk for acute EPS or if acute EPS develops
- do not give these for tardive syndromes because they worsen the condition

Antidepressants

- onset of effect
  - relief of neurovegetative (physical) symptoms: 1-3 wk
  - relief of emotional/cognitive symptoms: 2-6 wk
- taper TCAs slowly (over weeks-months) because they can cause withdrawal reactions
- tapering of any kind of antidepressant is usually required and based on the half-life of the medication and the patient's individual sensitivity (e.g. fluoxetine does not require a slow taper due to long half life)
- it is important to be particularly vigilant over the first 2 wk of therapy as neurovegetative symptoms may start to resolve while emotional and cognitive symptoms may not (patients may be particularly at risk for suicidal behaviour during this time; in children/adolescents, paroxetine and venlafaxine not prescribed for this reason, as increases restlessness and suicidal ideation)
- treatment of bipolar depression
  - monotherapy with antidepressants is not advisable as a switch from depression to mania can occur
  - patients with bipolar disorder should only be treated with an antidepressant if it is combined with a mood stabilizer or antipsychotic

Selective Serotonin Reuptake Inhibitors (SSRIs) vs. Other Antidepressants for Depression
Cochrane DB Syst Rev 2004; Issue 3
This systematic review of 98 RCTs compared the efficacy of SSRIs with other kinds of antidepressants in the treatment of patients with depressive disorders.
Conclusions: There is no significant difference in the effectiveness of SSRIs vs. TCAs. Consider relative patient acceptability, toxicity, and cost when choosing.

How Long to Treat?
6-12 mo: if first or second episode
2 yr: if third episode, elderly, psychotic features, refractory depression, >2 episodes in 5 yr

Table 19. Common Antidepressants

Class	Drug	Daily Starting Dose (mg)	Therapeutic Dose (mg)	Comments
SSRI	fluoxetine (Prozac®) fluvoxamine (Luvox®) paroxetine (Paxil®) sertraline (Zoloft®) citalopram (Celexa®) escitalopram (Cipralex®)	20 50-100 10 50 20 10	20-80 150-300 20-60 50-200 20-40 10-20	Useful for anxiety states, OCD, eating disorders, seasonal depression, typical and atypical depression All SSRIs have similar effectiveness but consider side effect profiles and half-lives Sertraline, citalopram, and escitalopram have the least drug-interactions and are sleep-wake neutral Fluoxetine and paroxetine are the most activating drugs (recommend taking in the AM) Fluoxetine does not require a taper due to long half-life and is the most used in children as it has most evidence Fluvoxamine is sedating (should be taken in PM)
SNRI	venlafaxine (Effexor®) duloxetine (Cymbalta®)	37.5-75 40	75-225 40-60	Useful for depression, anxiety disorders
NDRI	bupropion (Wellbutrin®)	100	300-450	Useful for depression, seasonal depression Causes less sexual dysfunction (may reverse effects of SSRIs/SNRIs), weight gain, and sedation Increased risk of seizures at higher doses Contraindicated with history of seizure, stroke brain tumour, brain injury, closed head injury Not recommended for anxiety disorder treatment because of stimulating effects Important to specify formulation, as available in IR, SR, XL (longest)
TCA (3° Amines)	amitriptyline (Elavil®) imipramine (Tofranil®)	75-100 75-100	150-300 150-300	Useful for OCD (clomipramine), melancholic depression
TCA (2° Amines)	nortriptyline (Aventyl®) desipramine (Norpramin®)	75-100 100-200	75-150 150-300	
MAOI	phenelzine (Nardil®) tranylcypromine (Parnate®)	45 30	60-90 10-60	Useful for moderate/severe depression that does not respond to SSRI, atypical depression
RIMA	moclobemide (Manerix®)	300	300-600	Useful for depression unresponsive to other therapies
NASSA	mirtazapine (Remeron®)	15	15-45	Useful in depression with prominent features of insomnia, agitation, or cachexia

MAOI = monoamine oxidase inhibitors; NASSA = noradrenergic and specific serotonin antagonists; NDRI = norepinephrine and dopamine reuptake inhibitors; RIMA = reversible inhibition of MAO-A; SNRI = serotonin and norepinephrine reuptake inhibitors; SSRI = selective serotonin reuptake inhibitors; TCA = tricyclic antidepressants

Treatment Approach for Depression

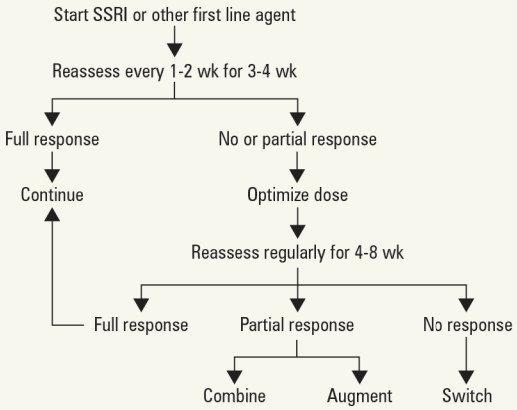

Figure 3. Treatment of depression

- **optimization**: ensuring adequate drug doses for the individual
- **augmentation**: the addition of a medication that is not considered an antidepressant to an antidepressant regimen (e.g. thyroid hormone, lithium, atypical antipsychotics [specifically: olanzapine, risperidone, aripiprazole])
- **combination**: the addition of another antidepressant to an existing treatment regimen (e.g. the addition of bupropion to an SSRI or SNRI)
- **substitute**: change in the primary antidepressant (within or outside a class)
- note: it is important to fully treat the symptoms of depression in order to decrease rates and severity of relapses

Psychopharmacology of SSRIs

Post-Synaptic Serotonin Receptor Stimulated	Effect/Side Effect
5HT1A centrally	• Relief of depression • Anxiolytic effect
5HT2A in spinal cord	• Sexual dysfunction: delayed ejaculation, anorgasmia, decreased interest/libido
5HT2C/5HT2A in brain	• Activation: anxiety, insomnia • Worst with fluoxetine, paroxetine • Warn patients anxiety may worsen in first 1-2 wk of treatment
5HT3A in gut	• GI upset: nausea, vomiting, bloating • Take with food

Table 20. Features of Commonly Used Antidepressant Classes

	SSRI	SNRI	TCA	MAOI
Examples	Fluoxetine, Sertraline, Citalopram	Venlafaxine, Duloxetine	Amitriptyline, Clomipramine	Phenelzine
Mode of Action	Block serotonin reuptake only	Block norepinephrine and serotonin reuptake	Block norepinephrine and serotonin reuptake	Irreversible inhibition of monoamine oxidase A and B Leads to ↑ norepinephrine and serotonin
Side Effects	Fewer than TCA, therefore increased compliance CNS: restlessness, tremor, insomnia, headache, drowsiness GI: N/V, diarrhea, abdominal cramps, weight loss Sexual dysfunction: impotence, anorgasmia CVS: increased HR, conduction delay, serotonin syndrome, EPS, SIADH	Low dose side effects include insomnia (serotonergic) Higher dose side effects include: tremors, tachycardia, sweating, insomnia, dose-dependent increase in diastolic BP (noradrenergic)	Anticholinergic effects: (see Table 17) Noradrenergic effects: tremors, tachycardia, sweating, insomnia, erectile and ejaculation problems α-1 adrenergic effects: orthostatic hypotension Antihistamine effects: sedation, weight gain CNS: sedation, stimulation, ↓ seizure threshold CVS: ↑ HR, conduction delay	Hypertensive crises with tyramine rich foods (e.g. wine, cheese), headache, flushes, palpitations, N/V, photophobia Dizziness, reflex tachycardia, postural hypotension, sedation, insomnia Weight gain Social dysfunction Energizing Minimal anticholinergic and antihistamine effects
Risk in Overdose	Relatively safe in OD	Tachycardia and N/V seen in acute overdose	Toxic in OD 3 times therapeutic dose is lethal Presentation: anticholinergic effects, CNS stimulation, then depression and seizures ECG: prolonged QT (duration reflects severity) Treatment: activated charcoal, cathartics, supportive treatment, IV diazepam for seizure, physostigmine salicylate for coma Do not give ipecac, as can cause rapid neurologic deterioration and seizures	Toxic in OD, but wider margin of safety than TCA
Drug Interactions	SSRIs inhibit P450 enzymes, therefore will affect levels of drugs metabolized by P450 system	MAOI, SSRI Does not seem to inhibit P450 system	MAOI, SSRI EtOH	EtOH Hypertensive crises with noradrenergic medications (e.g. TCA, decongestants, amphetamines) Serotonin syndrome with serotonergic drugs (e.g. SSRI, tryptophan, dextromethorphan)

Table 20. Features of Commonly Used Antidepressant Classes (continued)

	NDRI	RIMA	NASSA
Examples	Buproprion	Moclobemide	Mirtazapine
Mode of Action	Block norepinephrine and dopamine reuptake	Reversible inhibitor of monoamine oxidase A Leads to ↑ norepinephrine and serotonin	Enhance central noradrenergic and serotonergic activity by inhibiting presynaptic α-2 adrenergic receptors
Side Effects	CNS: dizziness, headache, tremor, insomnia CVS: dysrhythmia, HTN GI: dry mouth, N/V, constipation, ↓ appetite Other: agitation, anxiety, anaphylactoid reaction	CNS: dizziness, headache, tremor, insomnia CVS: dysrhythmia, hypotension GI: dry mouth, N/V, diarrhea, abdominal pain, dyspepsia GU: delayed ejaculatiοn Other: diaphoresis	CNS: somnolence, dizziness, seizure (rare) Endocrine: ↑ cholesterol, ↑ triglycerides GI: constipation, ↑ ALT
Risk in Overdose	Tremors and seizures seen in acute overdose	Risk of fatal overdose when combined with citalopram or clomipramine	Mild symptoms with overdose
Drug Interactions	MAOI Drugs that reduce seizure threshold: antipsychotics, systemic steroids, quinolone antibiotics, antimalarial drugs	MAOI, SSRI, TCA Opioids	MAOI, SSRI, SNRI, RIMA

Serotonin Syndrome

- thought to be due to over-stimulation of the serotonergic system
- can result from medication combinations such as SSRI+MAOI, SSRI+tryptophan, MAOI+meperidine, MAOI+tryptophan
- rare but potentially life-threatening adverse reaction to SSRIs, especially when switching from an SSRI to an MAOI
- symptoms include nausea, diarrhea, palpitations, chills, restlessness, confusion, and lethargy but can progress to myoclonus, hyperthermia, rigor and hypertonicity
- treatment: discontinue medication and administer emergency medical care as needed
- important to distinguish from NMS

Discontinuation Syndrome

- caused by the abrupt cessation of an antidepressant
- observed most frequently with paroxetine, fluvoxamine, and venlafaxine (drugs with shortest half-lives)
- symptoms usually begin within 1-3 d and include: anxiety, insomnia, irritability, mood lability, N/V, dizziness, headache, dystonia, tremor, chills, fatigue, lethargy, and myalgia
- treatment: symptoms may last between 1-3 wk, but can be relieved within 24 h by restarting antidepressant therapy at the same dose the patient was taking and initiating a slow taper over several weeks
- consider using a drug with a longer half-life such as fluoxetine

Symptoms of Antidepressant Discontinuation

FINISH
Flu-like symptoms
Insomnia
Nausea
Imbalance
Sensory disturbances
Hyperarousal (anxiety/agitation)

Sequenced Treatment Alternatives to Relieve Depression
Journal of Psychosocial Nursing 2008;46:21-24
Study: Prospective randomized anti-depressant treatment trial.
Patients: 4,000 patients with major depressive disorder.
Objective: To compare the efficacy and tolerability of various antidepressant therapies through four sequential treatment levels.
Intervention: Level 1-citalopram → if relapse → Level 2-citalopram + bupropion SR, sertraline, venlafaxine XR, or cognitive psychotherapy. Level 2A-switch to bupropion or venlafaxine XR. Level 3-either mirtazapine or nortriptyline + lithium, T3. Level 4-tranylcypromine or venlafaxine XR + mirtazapine.
Results: Remission rates were 28% for Level 1, 17% for Level 2, 12-25% for Level 3, and 7-14% for Level 4. When more treatment steps are required, there are lower remission rates, greater degrees of tolerance, and higher rates of relapse.

Mood Stabilizers

General Prescribing Information

- **examples: lithium, lamotrigine, divalproex, carbamazepine**
- used in conjunction with atypical antipsychotics for managing episodes of bipolar disorder - depression, mania, stabilization
- vary in their ability to "treat" (reduce symptoms acutely) or "stabilize" (prevent relapse and recurrence) manic and depressive symptoms; multi-agent therapy is common
- before initiating, get baseline: CBC, ECG (if patient >45 yr old or cardiovascular risk), urinalysis, BUN, Cr, electrolytes, TSH
- before initiating lithium: screen for pregnancy, thyroid disease, seizure disorder, neurological, renal, cardiovascular diseases
- full effects not for 2-4 wks, thus may need acute coverage with benzodiazepines or antipsychotics

Specific Prescribing Information

- detailed pharmacological guidelines available online from the Canadian Network for Mood and Anxiety Treatments (CANMAT) and International Society for Bipolar Disorders (ISBD)
- for clinical information for treating bipolar disorder (see *Mood Disorders*, PS9)

Long-term lithium use can lead to a nephropathy and diabetes insipidus in some patients

Table 21. Commonly Used Mood Stabilizers

	Lithium	Lamotrigine (Lamictal®)	Divalproex (Epival®)	Carbamazepine (Tegretol®)
Indications	**1st line** Acute mania (monotherapy or with adjunct SGA) Bipolar I depression (monotherapy or in combination with SSRI, divalproex, or bupropion) Bipolar disorder maintenance (monotherapy or with adjunct SGA) **Other uses** Bipolar II depression Augmentation of antidepressants in MDE and OCD Schizoaffective disorder Chronic aggression antisocial behaviour Recurrent depression	**1st line:** Bipolar I depression (monotherapy) Bipolar disorder maintenance (limited efficacy in preventing mania, more effective when combined with lithium) **Other uses**: Bipolar II depression Not recommended for: Acute mania as monotherapy	**1st line** Acute mania (monotherapy or with adjunct SGA) Bipolar I depression (combination with SSRI or lithium) Bipolar disorder maintenance (monotherapy or with adjunct SGA) **Other uses** Bipolar II depression Rapid cycling bipolar disorder Mixed phase/dysphoric mania	**2nd line** Acute mania (monotherapy) Bipolar disorder maintenance (monotherapy or in combination with lithium) **Other uses** Rapid cycling bipolar disorder
Mode of Action	Unknown Therapeutic response within 7-14 d	May inhibit 5-HT3 receptors May potentiate DA activity	Depresses synaptic transmission Raises seizure threshold	Depresses synaptic transmission Raises seizure threshold
Dosage	Adult: 600-1500 mg/d Geriatric: 150-600 mg/d Usually daily dosing	Starting: 12.5-15 mg/d Daily dose: 100-200 mg/d Dose adjusted in patients taking other anticonvulsants Note: very slow titration due to risk of Stevens-Johnson Syndrome	750-2500 mg/d Usually tid dosing	400-1600 mg/d Usually bid or tid dosing
Therapeutic Level	Adult: 0.8-1.0 mmol/L (1.0-1.25 mmol/L for acute mania) Geriatric: 0.5-0.8 mmol/L	Therapeutic plasma level not established Dosing based on therapeutic response	17-50 mmol/L	350-700 μmol/L
Monitoring	Monitor serum levels until therapeutic (always wait 12 h after dose) Then monitor biweekly or monthly until a steady state is reached, then q2mo Monitor thyroid function q6mo, creatinine q6mo, urinalysis q1yr	Monitor for suicidality, particularly when initiating treatment	LFTs weekly x 1 mo, then monthly, due to risk of liver dysfunction Watch for signs of liver dysfunction: nausea, edema, malaise	Weekly blood counts for first month, due to risk of agranulocytosis Watch for signs of blood dyscrasias: fever, rash, sore throat, easy bruising
Side Effects	GI: N/V, diarrhea, stomach pain GU: polyuria, polydipsia, GN, renal failure, nephrogenic DI CNS: fine tremor, lethargy, fatigue, headache Hematologic: reversible leukocytosis Other: teratogenic (Ebstein's anomaly), weight gain, edema, psoriasis, hypothyroidism, hair thinning, muscle weakness, ECG changes	GI: N/V, diarrhea CNS: ataxia, dizziness, diplopia, headache, somnolence Skin: rash (should discontinue drug because of risk of Stevens-Johnson syndrome), increased lamotrigine levels = increased risk of rash Other: anxiety	GI: liver dysfunction, N/V, diarrhea CNS: ataxia, drowsiness, tremor, sedation, cognitive blurring Other: hair loss, weight gain, transient thrombocytopenia, neural tube defects when used in pregnancy	GI: N/V, diarrhea, hepatic toxicity CNS: ataxia, dizziness, slurred speech, drowsiness, confusion, nystagmus, diplopia Hematologic: transient leukopenia (10%), agranulocytosis, aplastic anemia Skin: rash (5% risk; should discontinue drug because of risk of Stevens-Johnson syndrome) Other: neural tube defects when used in pregnancy
Interactions	NSAIDs decrease clearance		OCP	OCP

Lithium Toxicity

- clinical diagnosis as toxicity can occur at therapeutic levels
- **common causes**: overdose, sodium/fluid loss, concurrent medical illness
- **clinical presentation**
  - GI: severe nausea/vomiting and diarrhea
  - cerebellar: ataxia, slurred speech, lack of coordination
  - cerebral: drowsiness, myoclonus, tremor, upper motor neuron signs, seizures, delirium, coma
- **management**
  - discontinue lithium for several doses and begin again at a lower dose when lithium level has fallen to a non-toxic range
  - serum lithium levels, BUN, electrolytes
  - saline infusion
  - hemodialysis if lithium >2 mmol/L, coma, shock, severe dehydration, failure to respond to treatment after 24 h, or deterioration

Anxiolytics

- anxiolytics mask or alleviate symptoms; they do not cure them
- **indications**
- short-term treatment of transient forms of anxiety disorders, insomnia, alcohol withdrawal (especially delirium tremens), barbiturate withdrawal, organic brain syndrome (acute agitation in delirium), EPS and akathisia due to antipsychotics, seizure disorders, musculoskeletal disorders
- **relative contraindications**
- major depression (except as an adjunct to other treatment), history of drug/alcohol abuse, caution in pregnancy/breastfeeding
- **mechanism of action**
- benzodiazepines: potentiate binding of GABA to its receptors; results in decreased neuronal activity
- buspirone: partial agonist of 5-HT1A receptors

Benzodiazepines

- should be used for limited periods (weeks-months) to avoid dependence
- all benzodiazepines are sedating; be wary with use in the elderly
- have similar efficacy, so choice depends on half-life, metabolites and route of administration, OD or bid
- taper slowly over weeks-months because they can cause withdrawal reactions
  - low dose withdrawal: tachycardia, HTN, panic, insomnia, anxiety, impaired memory and concentration, perceptual disturbances
  - high dose withdrawal: hyperpyrexia, seizures, psychosis, death
- avoid alcohol because of potentiation of CNS depression; caution with drinking and driving/machinery use
- **side effects**
  - CNS: drowsiness, cognitive impairment, reduced motor coordination, memory impairment
  - physical dependence, tolerance
- **withdrawal**
  - symptoms: anxiety, insomnia, autonomic hyperactivity (less common)
  - onset: 1-2 d (short-acting), 2-4 d (long-acting)
  - duration: weeks-months
  - complications with above 50 mg diazepam/day: seizures, delirium, arrhythmias, psychosis
  - management: taper with long-acting benzodiazepine
  - similar to but less severe than alcohol withdrawal; can be fatal
- **overdose**
  - commonly used drug in overdose
    - overdose is rarely fatal
    - benzodiazepines are more dangerous and may cause death when combined with alcohol, other CNS depressants or TCAs

Benzodiazepine Antagonist – Flumazenil (Anexate®)

- use for suspected benzodiazepine overdose
- specific antagonist at the benzodiazepine receptor site

Buspirone (Buspar®)

- **primary use**: GAD
- may be preferred over benzodiazepines because are non-sedating, no interaction with alcohol, does not alter seizure threshold, not prone to abuse
- **onset of action**: 2 wk
- **side effects**: dizziness, drowsiness, nausea, headache, nervousness, EPS

Table 22. Common Anxiolytics

Class	Drug	Dose Range (mg/d)	$t_{1/2}$ (h)	Appropriate Use
Benzodiazepines				
Long-acting	clonazepam (Rivotril®)	0.25-4	18-50	Akathisia, generalized anxiety, seizure prevention, panic disorder
	diazepam (Valium®)	2-40	30-100	Generalized anxiety, seizure prevention, muscle relaxant, alcohol withdrawal
	chlordiazepoxide (Librium®)	5-300	30-100	Sleep, anxiety, alcohol withdrawal
	flurazepam (Dalmane®)	15-30	50-160	Sleep
Short-acting	alprazolam (Xanax®)	0.25-4.0	6-20	Panic disorder, high dependency rate
	lorazepam (Ativan®)	0.5-6.0	10-20	Sleep, generalized anxiety, akathisia, alcohol withdrawal, sublingual available for very rapid action
	oxazepam (Serax®)	10-120	8-12	Sleep, generalized anxiety, alcohol withdrawal
	temazepam (Restoril®)	7.5-30	8-20	Sleep
	triazolam (Halcion®)	0.125-0.5	1.5-5	Shortest $t_{1/2}$, rapid sleep, but rebound insomnia
Azapirones				
	buspirone (Buspar®)	20-60	2-11	Generalized anxiety
	zopiclone (Imovane®)	5-7.5	3.8-6.5	Sleep

Geriatric Benzodiazepines

LOT
Lorazepam
Oxazepam
Temazepam

Safe in liver disease because not metabolized by liver

Benzodiazepines used for Alcohol Withdrawal
- Diazepam 20 mg PO/IV q1h prn
- Lorazepam 2-5 mg PO/IV/SL for patients with liver disease, chronic lung disease, or elderly

Somatic Therapies

Electroconvulsive Therapy

- various methodological improvements have been made since the first treatment in 1938 to reduce adverse effects
- modern ECT: induction of a generalized seizure using an electrical pulse through scalp electrodes while the patient is under general anesthesia with a muscle relaxant
- considerations: unilateral vs. bilateral electrode placement, pulse rate, dose, number and spacing of treatments
- usual course is 6-12 treatments, 2-3 treatments per wk
- **indications**
  - depression refractory to adequate pharmacological trial (MDD or Bipolar I depression)
  - high suicide risk
  - medical risk in addition to depression (dehydration, electrolytes, pregnancy)
  - previous good response to ECT
  - familial response to ECT
  - elderly
  - psychotic depression
  - catatonic features
  - marked vegetative features
  - acute schizophrenia unresponsive to medication
  - mania unresponsive to medications
  - OCD refractory to conventional treatment
- **side effects**: risk of anesthesia, memory loss (may be retrograde and/or anterograde, tends to resolve by 6-9 mo, permanent impairment controversial), headaches, myalgias
- unilateral ECT causes less memory loss than bilateral but may not be as effective
- **contraindications**: increased intracranial pressure, recent (< 2 wk) MI (not absolute but requires special monitoring)

Magnetic Seizure Therapy (MST)
- seizure induction by magnetic current induction rather than direct stimulation
- early studies demonstrate efficacy for depression as well as anxiety, reduced memory side effects vs. ECT

ECT in Society
Prior to the 1940's, ECT was performed without the use of muscle relaxants, resulting in seizures with full-scale convulsions and rare but serious complications such as vertebral and long-bone fractures. This practice may have led to negative societal perceptions of ECT, further perpetuated by barbaric depictions in popular culture. Despite ongoing stigmatization, ECT as it is practiced today is an effective and safe option for patients struggling with mental illness

Efficacy of ECT in Depression: A Meta-Analytic Review
J of ECT 2004; 20:13-20
Study: Meta-analysis of randomized and non-randomized control trials.
Patients: Individuals with unipolar and bipolar depression.
Methods: MEDLINE search for relevant papers from 1966-2003.
Main Outcomes: The Hamilton Depression Rating scale was used to determine response to treatment.
Results: ECT was found to be superior to simulated ECT, placebo, TCAs, MAOIs, and anti-depressants in general.
Summary: ECT is an efficacious treatment modality, particularly in severe and treatment-resistant depression.

Repetitive Transcranial Magnetic Stimulation (rTMS)

- noninvasive production of focal electrical currents in select brain areas using magnetic induction
- **indications**: strong evidence for treatment-resistant depression, pain disorders; possibly efficacious for anxiety disorders, eating disorders, substance use disorders
- **adverse effects**: common - transient local discomfort, hearing issues, cognitive changes; rare - seizure, syncope, mania induction

Neurosurgical Treatments

Ablative/Lesion Procedures

- used for intractable MDD or OCD, efficacy ranges from 25-75% depending on procedure
- **adverse effects**: related to lesion location and size, high risk of suicide in those who are not helped by surgery

Deep Brain Stimulation

- placement of small electrode leads in specific brain areas to alter neuronal signaling, usually for intractable MDD
- response rates (>50% symptom reduction) of 40-70%, adverse effects related to surgical risks and poor treatment response

Vagus Nerve Stimulation

- direct, intermittent electrical stimulation of left cervical vagus nerve via implanted pulse generator
- used for chronic, recurrent MDD that has failed previous therapy and ECT; slow onset, approximately 30% response rate at 1 yr

Other Therapy Modalities

Phototherapy (Light Box Therapy)

- bright light source exposure, best in morning, for 30-60 minutes (usually 10 000 lux)
- proposed mechanisms: reverses pathological alterations in circadian rhythm through action on suprachiasmatic nucleus
- **indications**: SAD, non-seasonal depression (as augmentation), sleep disorders
- **adverse effects**: mania induction, reaction with photosensitizing drug or photosensitive eye or skin conditions

Aerobic Exercise

- moderate-intense aerobic exercise is associated with acute increased secretion of serotonin, phenethylamine, BDNF, endogenous opioids and cannabinoids (likely this combination is what contributes to the "runner's high")
- long term increases gray matter in multiple areas, as well as improvements in cognition, memory and stress tolerance
- **indications**: ongoing research suggests efficacy as adjunctive treatment for MDD; may be helpful in PTSD, schizophrenia

Canadian Legal Issues

Common Forms

Table 23. Common Forms Under the *Mental Health Act* (in Ontario)

Form	Who Signs	When	Expiration Date	Right of Patient to Review Board Hearing	Options Before Form Expires
Form 1: Application by physician to hospitalize a patient for psychiatric assessment against his/her will to a schedule 1 facility (Form 42 given to patient)	Any MD	Within 7 d after examination of the patient	72 h after hospitalization Void if not implemented within 7 d	No	Form 3 + 30 or voluntary admission or Send home ± follow-up
Form 2: Order for a psychiatric assessment against his/her will which is ordered by Justice of the Peace	Justice of the Peace	No statutory time restriction	7 d from when completed Purpose of form is complete once patient brought to hospital	No	Form 1 + 42 or Send home ± follow-up
Form 3: Certificate of involuntary admission to a schedule 1 facility (Form 30 given to patient, notice to rights advisor)	Attending MD (different than MD who completed Form 1)	Before expiration of Form 1 Any time to change status of a voluntary patient	14 d	Yes	Form 4 + 30 or Voluntary admission (Form 5)
Form 4: Certificate of renewal of involuntary admission to a schedule 1 facility (original Form 30 given to patient, notice to rights advisor)	Attending MD following patient on Form 3	Prior to expiration of Form 3	First: 1 mo Second: 2 mo Third: 3 mo (max)	Yes	Form 4 + 30 or Voluntary admission (Form 5)
Form 5: Change to informal/voluntary status	Attending MD following patient on Form 3/4	Whenever deemed appropriate	N/A	N/A	N/A
Form 30: Notice to patient that they are now under involuntary admission on either Form 3 or 4. Original to the patient, copy to chart	Attending MD	Whenever Form 3 or Form 4 filled	N/A	Yes	N/A
Form 33: Notice to patient that patient is incapable of consenting to treatment of mental disorder, and/or management of property and/or disclosure of health information (original copy to patient)	Attending MD	Whenever deemed appropriate	N/A	Yes	N/A

* Schedule 1 Facilities: Able to provide intensive inpatient and outpatient care

Form 1: Application for Psychiatric Assessment

- Filled out when a patient is suspected of being an imminent harm to themselves (suicide) or others (homicide) or when they are incapable of self-care (e.g. not dressed for freezing weather) and are suffering from an apparent mental disorder
- Based on any combination of the physician's own observations and facts communicated by others
- Box A or Box B completed
- **Box A**: Serious Harm Test
- The Past/Present Test assesses current behaviours/threats/attempts
- The Future Test assesses the likelihood of serious harm occurring as a result of the presenting mental disorder. In this section, one should document evidence of the mental disorder
- **Box B**: Patients with a known mental disorder, who are incapable of consenting to treatment (existing substitute decision-maker), have previously received treatment and improved, and are currently at risk of serious harm due to the same mental disorder

Testing for Capacity

Test has two parts
(1) Is the patient able to understand the information presented?
AND
(2) Is the patient able to appreciate how this information applies to him/her and appreciate the consequences of a decision or lack of a decision?

Consent

- see Ethical, Legal, and Organizational Medicine, ELOAM7

Community Treatment Order (CTO)

- purpose: a CTO orders a person suffering from a serious mental disorder to receive treatment and supervision in the community. Based on a comprehensive plan outlining medications, appointments, and other care believed necessary to allow the person to live in the community (vs. in a psychiatric facility, where things are more restrictive)
- intended for those who
  - due to their serious mental disorder, experience a pattern of admission to a psychiatric facility where condition is usually stabilized
  - after being released, these patients often lack supervision and stop treatment, leading to destabilization
  - due to the destabilization of their condition, these patients usually require re-admission to hospital
  - if CTO violated (e.g. treatment not taken), patient brought in by police to hospital for treatment as per CTO
- criteria for a physician to issue a CTO
  - patient with a prior history of hospitalization
  - a community treatment plan for the person has been made
  - examination by a physician within the previous 72 h before entering into the CTO plan
  - ability of the person subject to the CTO to comply with it
  - consultation with a rights advisor and consent of the person or the person's substitute decision maker
- CTOs are valid for 6 mo unless they are renewed or terminated at an earlier date such as:
  - where the person fails to comply with the CTO
  - when the person or his/her substitute decision-maker withdraws consent to the community treatment plan
- CTO process is consent-based and all statutory protections governing informed consent apply
- the rights of a person subject to a CTO include
  - the right to a review by the Consent and Capacity Board with appeal to the courts each time a CTO is issued or renewed
  - a mandatory review by the Consent and Capacity Board every second time a CTO is renewed
  - the right to request a re-examination by the issuing physician to determine if the CTO is still necessary for the person to live in the community
  - the right to review findings of incapacity to consent to treatment
  - provisions for rights advice

CTO Legislature

- Ontario passed CTO legislature on December 1, 2000 (known as "Brian's Law")
- Similar CTOs have been implemented in Saskatchewan (1995), Manitoba (1997), and British Columbia (1999)

Duty to Inform/Warn

- see Ethical, Legal, and Organizational Medicine, ELOAM6

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