

# PSYCHIATRY

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## A. Identifying Data

- name, sex, age, race, marital status, religion, occupation, education, referral source

## B. Reliability of Patient as a Historian

- may need collaborative source for history if patient unable to co-operate

## C. Chief Complaint

- in patient's own words; include duration

## D. History of Present Illness

- reason for seeking help THAT DAY, current symptoms (onset, duration, and course), stressors, relevant associated symptoms (pertinent positives and negatives)

## E. Past Psychiatric History

- inquire about all previous psychiatric disorders, contact with psychiatrists, treatments and hospitalizations in chronological order (with dates)
- also include past suicide attempts, substance abuse/use, and legal history

## F. Past Medical History

- all medical, neurological (e.g. craniocerebral trauma, convulsions), and psychosomatic illnesses
- medications, smoking, caffeine use, allergies

## G. Family History

- family members: ages, occupations, personalities, medical or genetic illnesses and treatment, relationships with parents/siblings
- family psychiatric history: any past or current psychiatric illnesses and hospitalizations, suicide, depression, substance abuse, history of "bad nerves", any past treatment by psychiatrist

## H. Past Personal History

- prenatal and perinatal history
- early childhood to age 3 (e.g. developmental milestones, activity/attention level, fire-setting, stealing, incontinence)
- middle childhood to age 11 (e.g. school performance, peer relationships)
- late childhood to adolescence (e.g. drug/EtOH, legal history)
- adulthood (e.g. education, occupations, relationships)
- psychosexual history (e.g. paraphilias, gender roles, sexual abuse)
- personality before current illness

## I. Mental Status Exam

### 1. General Appearance and Behaviour

- dress, grooming, posture, gait, physical characteristics, apparent vs. chronological age, physical health, body habitus, facial expression (e.g. sad, suspicious), attitude toward examiner (e.g. ability to interact, level of co-operation), psychomotor activity (e.g. agitation, retardation), abnormal movements (e.g. tremors, akathisia, tardive dyskinesia), attention level, and eye contact

### 2. Speech

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

### 3. Mood and Affect

- mood - subjective emotional state; in patient's own words
- affect - objective emotional state; described in terms of quality (euthymic, depressed, elevated, anxious), range (full, restricted), stability (fixed, labile), appropriateness, intensity (flat, blunted)

## 4. Suicidal Ideation / Homicidal Ideation

- low – fleeting thoughts, no formulated plan, no intent
- intermediate – more frequent ideation, has formulated plan, no active intent
- high – persistent ideation and profound hopelessness, well formulated plan + active intent, believes suicide is the only helpful option available
- poor correlation between clinical impression of suicide risk and probability of attempt

## 5. Thought Process Abnormalities

- circumstantiality
  - speech that is indirect and delayed in reaching its goal; eventually comes back to the point
- tangentiality
  - speech is oblique or irrelevant; does not come back to the original point
- flight of ideas
  - skipping verbally from one idea to another where the ideas are more or less connected
  - this differs from loosening of associations which describes illogical shifting between unrelated topics
- others include
  - thought blocking (sudden interruption in the flow of thought or speech)
  - neologisms (invention of new words)
  - clanging (speech based on sound such as rhyming or punning)
  - perseveration (repetition of phrases or words)
  - word salad (jumble of words lacking meaning or logical coherence)
  - echolalia (echoing words/phrases of another's speech)

## 6. Thought Content Abnormalities

- delusions
  - 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
  - types of delusions
    - persecutory (belief others are trying to cause harm)
    - delusions of reference (interpreting events as having direct reference to the patient)
    - thought insertion/ withdrawal/ broadcasting
    - erotomania (belief another is in love with you)
    - grandiose (belief of an inflated sense of self-worth or power)
    - religious
    - delusions of control (belief that one's thoughts/actions are controlled by some external source)
    - somatic (belief one has a physical disorder/defect)
  - quality of delusions: bizarre vs. non-bizarre
- obsession
  - recurrent and persistent thought, impulse or image which is intrusive or inappropriate
  - cannot be stopped by logic or reason
  - causes marked anxiety and distress
  - common themes: dirt/contamination, orderliness, sexual, pathological doubt
- preoccupations, phobias, recurrent themes

## 7. Perceptual Disturbances

- hallucination
  - sensory perception in the absence of external stimuli that is similar in quality to a true perception; auditory is most common; other types include visual, gustatory, olfactory, somatic
- illusion
  - misperception of a real external stimulus
- depersonalization
  - change in self-awareness such that the person feels unreal, detached from their body, and/or unable to feel emotion
- derealization
  - feeling that the world/outer environment is unreal

## 8. Cognition

- level of consciousness
- orientation: time, place, person
- memory: remote, recent, immediate
- intellectual functions
  - attention, concentration and calculation
  - abstraction (proverb interpretation, similarities test)
  - intelligence

## 9. Insight

- patient's ability to realize that they have a physical or mental illness and understand its implications

## 10. Judgement

- ability to understand relationships between facts and draw conclusions that determine one's action

## J. Summary

## K. Multiaxial Assessment (Impression)

- Axis I - clinical disorders - DSM IV; differential diagnosis
- Axis II - personality disorders - DSM IV
  - mental retardation
- Axis III - general medical conditions
  - (as they pertain to Axis I/other Axes)
- Axis IV - psychosocial and environmental problems
- Axis V - global assessment of functioning (GAF)
  - GAF scale scored from 0 to 100

## L. Formulation

- biopsychosocial predisposing, precipitating, perpetuating, and protecting factors

## M. Disposition (Plan)

## MINI-MENTAL STATUS EXAM (FOLSTEIN)

## Orientation

- orientation to time [5 points]
  - what year is this?
  - what season of the year is it?
  - what is the month?
  - what day of the month is it?
  - what day of the week is it?
- orientation to place [5 points]
  - what country are we in?
  - what province are we in?

- what city are we in?
- what street are we on/what hospital are we in?
- what is the number of this house/what floor or ward are we on?

## Memory

- immediate recall [3 points]
  - ask patient to immediately repeat the following 3 words: honesty, tulip, black
- delayed recall [3 points]
  - ask patient to recall the 3 words previously given, approximately 5 minutes after telling them to the patient

## Attention and Concentration

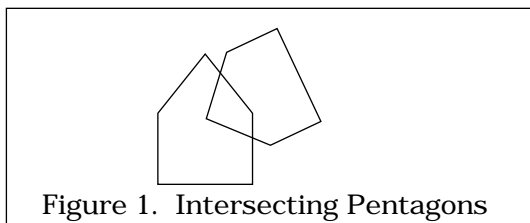
- attention [5 points]: do either one of
  - serial 7s
  - spell "WORLD" backwards
- delayed recall [3 points]
  - ask patient to recall the 3 words previously given, approximately 5 minutes after telling them to the patient

## Language Tests

- comprehension (three stage command ) [3 points]
  - "take this piece of paper in your right hand, fold it in half and place it on the floor"
- reading [1 point]
  - ask patient to read "close your eyes" on a piece of paper, and then to do what it says
- writing [1 point]
  - ask patient to write any complete sentence
- repetition [1 point]
  - repeat "no ifs, ands or buts"
- naming [2 points]
  - point to a watch and pen and ask patient to name them

## Test of Spatial Ability

- copying [1 point]
  - ask patient to copy the design in Figure 1 exactly
  - all 10 angles must be present and 2 must intersect to score 1 point



- total score out of 30; abnormal if < 26
- note: although not officially part of the Folstein, many examiners ask the patient to draw a clock with the time showing "10 after 11"

## SCHIZOPHRENIA

## Epidemiology

- ❑ prevalence: 0.5%-1%; equal in men and women
- ❑ mean age of onset: females - 27; males - 21

## Etiology

- ❑ multifactorial: disorder is a result of interaction between both biological and environmental factors
- ❑ genetic
  - 50% concordance in monozygotic (MZ) twins
  - 40% if both parents schizophrenic
  - 10% of dizygotic (DZ) twins, siblings, children affected
- ❑ neurochemistry - "dopamine hypothesis" theory: dopamine excess contributes to schizophrenia
  - supportive evidence
    - DA agonists exacerbate schizophrenia
    - anti-psychotic drugs act by blocking post-synaptic DA receptors
    - potency of many anti-psychotic drugs correlates with D2 blockade of post-synaptic receptors
    - antipsychotic drugs are associated with an increase in the number of D2 and D4 post-synaptic receptors
    - other neurotransmitters: serotonin (5-HT), norepinephrine, GABA, glutamate, and CCK are currently being investigated
- ❑ neuroanatomy
  - implication of 3 brain structures: 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 GH, PRL, cortisol, and ACTH responses to pharmacological challenges (e.g. bromocriptine, fenfluramine) in schizophrenia
- ❑ other
  - indirect evidence of
    - geographical variance
    - association with winter season of birth
    - association with prenatal exposure to viral epidemics
  - neuropsychology: global defects seen in attention, language, and memory suggest lack of connectivity of neural networks

## Diagnosis

- A. characteristic symptoms (Active Phase): 2 or more of the following, each present for a significant portion of time during a 1 month period (or less if successfully treated)
1. delusions \*\*
  2. hallucinations \*\*
  3. disorganized speech
  4. grossly disorganized or catatonic behaviour
  5. negative symptoms, i.e. flat affective, alogia or avolition
- \*\*note: only 1 symptom is required if:
- 1) delusions are bizarre, or
  - 2) hallucinations consist of a voice keeping up a running commentary on person's behaviour/thoughts or 2 (or more) voices conversing with each other
- B. social/occupational dysfunction
- C. continuous signs of disturbance for at least 6 months including at least 1 month of active phase symptoms; may include prodromal or residual phases
- D. schizoaffective and mood disorders excluded
- E. exclude if substance induced or due to GMC
- F. if history of pervasive developmental disorder, additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations are also present for at least 1 month

Subtypes

- paranoid
  - preoccupation with 1 or more delusions (typically persecutory or grandiose) or frequent auditory hallucinations
  - relative preservation of cognitive functioning and affect; onset tends to be later in life; thought to have the best prognosis
- catatonic
  - at least 2 of: motor immobility (catalepsy or stupor); excessive motor activity (purposeless, not influenced by external stimuli); extreme negativism (resistance to instructions/attempts to be moved) or mutism; peculiar voluntary movement (posturing, stereotyped movements, prominent mannerisms); echolalia or echopraxia
- disorganized
  - all of the following are prominent: disorganized speech and behaviour; flat or inappropriate affect
  - poor premorbid personality, early and insidious onset, and continuous course without significant remissions
- undifferentiated
  - symptoms of criterion A met, but does not fall into other 3 types
- residual
  - absence of prominent delusions, hallucinations, disorganized speech, grossly disorganized or catatonic behaviour
  - continuing evidence of disturbance indicated by presence of negative symptoms or 2 or more symptoms in criteria A present in attenuated form

Management of Schizophrenia  
(see Treatment Algorithms Section)

- pharmacological
  - acute and maintenance
  - neuroleptics (PO and IM)
  - management of side effects
- psychosocial
  - psychotherapy (individual, family, group)
  - social skills training
  - occupational/vocational training
  - housing (group home, boarding home, transitional home)

Prognosis

- 1/3 improve, 1/3 remain the same, 1/3 worsen
- good prognostic factors
  - acute onset
  - precipitating factors
  - 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

- epidemiology: only a slightly increased incidence in the family
- diagnosis: symptoms of schizophrenia are met except symptoms last from 1-6 months
- treatment: similar to acute schizophrenia
- prognosis: better than schizophrenia; begins and ends more abruptly; good pre- and post-morbid function



### BRIEF PSYCHOTIC DISORDER

- diagnosis: acute psychosis (presence of 1 or more positive symptoms in criteria A1-4) lasting from 1 day to 1 month
- can occur after stressful event or post-partum
- treatment: secure environment, antipsychotics, anxiolytics
- prognosis: good, self-limiting, should return to premorbid function in about one month

### SCHIZOAFFECTIVE DISORDER

- diagnosis
  - A. uninterrupted period of illness during which, at some point, there is either MDE, manic episode, or mixed episode concurrent with symptoms meeting criterion A for schizophrenia
  - B. in the same period, delusions or hallucinations for at least 2 weeks without prominent mood symptoms
  - C. symptoms that meet criteria for a mood episode are present for a substantial portion of total duration of active and residual periods
- treatment: antipsychotics, lithium, antidepressants
- prognosis: between that of schizophrenia and affective disorder

### DELUSIONAL DISORDER

- diagnosis
  - non-bizarre delusions for at least 1 month
  - criterion A has never been met (though patient may have tactile or olfactory hallucinations if they are related to the delusional theme)
  - functioning not markedly impaired; behaviour not odd or bizarre
  - if mood episodes occur concurrently with delusions, total duration has been brief relative to delusion duration
- subtypes: erotomanic, grandiose, jealous, persecutory, somatic, mixed, unspecified
- treatment: psychotherapy, antipsychotics, antidepressants
- prognosis: chronic, unremitting course but high level of functioning

### SHARED PSYCHOTIC DISORDER (FOLIE À DEUX)

- diagnosis: a delusion that develops in an individual who is in close relationship with another person who already has a psychotic disorder with prominent delusions
- treatment: separation of the 2 people results in the disappearance of the delusion in the healthier member
- prognosis: good

### DIFFERENTIAL DIAGNOSIS OF PSYCHOTIC DISORDERS

- general medical conditions: tumour, head trauma, etc...
- dementia/delirium
- substance-induced psychosis
- affective disorders: psychotic depression, bipolar disorder - manic phase
- personality disorders: schizotypal, schizoid, borderline, paranoid

### DIFFERENTIATING PSYCHOTIC DISORDERS

#### Schizophrenia vs. Schizophreniform

- symptom complex is the same for both disorders
- key difference is that with schizophreniform disorder the prodromal, residual, and active phases last less than six months whereas with schizophrenia symptoms last longer than six months

#### Schizophreniform vs. Brief Psychotic Disorder

- inclusion criteria for brief psychotic disorder are broader and only require the presence of one of: delusions, hallucinations, disorganized speech, disorganized / catatonic behaviour
- with brief psychotic disorder these symptoms last less than one month with eventual full return to premorbid level of functioning
- in schizophreniform disorder the symptoms last greater than one month



Schizophrenia vs. Schizoaffective Disorder

- ❑ the psychotic symptoms are the same in both disorders
- ❑ in schizoaffective disorder, a manic or depressive episode must be present and the duration of the mood symptoms can not be brief relative to the duration of the psychosis
- ❑ to be diagnosed with schizoaffective disorder there must also be at least a two week period during which psychotic symptoms are present in the absence of mood symptoms

Schizophrenia vs. Delusional Disorder

- ❑ in delusional disorder, the content of the delusion involves events that may actually happen to people in real life (i.e. non-bizarre); hallucinations can occur but must be limited to a few brief periods
- ❑ bizarre delusions, prominent hallucinations, disorganized speech / behaviour and negative symptoms rule out delusional disorder

Schizoaffective vs. Mood Disorder with Psychotic Features

- ❑ in a mood disorder with psychotic features the mood symptoms and psychosis must always overlap in time
- ❑ in schizoaffective disorder, psychotic symptoms must be present in the absence of mood symptoms for at least two weeks

MOOD DISORDERS

- ❑ mood DISORDERS are defined by the presence of mood EPISODES
- ❑ mood EPISODES represent a combination of symptoms comprising a predominant mood state
- ❑ types of Mood EPISODES: major depressive, manic, mixed, hypomanic
- ❑ types of Mood DISORDERS
  - depressive (major depressive disorder, dysthymia)
  - bipolar (Bipolar I/II disorder, cyclothymia)

MOOD EPISODES

Major Depressive Episode (MDE)

- A. at least 5 of the following symptoms present for 2 weeks, one of which must be either depressed mood or loss of interest
  - Mood - depressed
  - Sleep - increased or decreased (if decreased, often early morning awakening)
  - Interest - decreased
  - Guilt/worthlessness
  - Energy - decreased or fatigued
  - Concentration, decision-making, thinking - decreased
  - Appetite and/or weight increase or decrease
  - Psychomotor activity - increased or decreased
  - Suicidal ideation
- B. symptoms do not meet criteria for mixed episode
- C. symptoms cause significant social or occupational impairment/distress
- D. exclude if substance induced or due to a GMC
- E. symptoms not better accounted for by bereavement (a constellation of depressive symptoms meeting criteria for a MDE appearing within 2 months of the death of a close relative)

Manic Episode

- A. a period of abnormally and persistently elevated, expansive, or irritable mood lasting at least 1 week (or less if hospitalized)

- B. during this period, at least 3 of (4 if mood is only irritable)
- increased self-esteem or grandiosity
  - decreased need for sleep
  - pressure of speech
  - flight of ideas (racing thoughts)
  - distractibility
  - increase in goal-directed activity, or psychomotor agitation
  - reckless activity (5 S's - sex, spending, substance use, speeding, inappropriate speech) with high potential for painful consequences
- C. symptoms do not meet criteria for a mixed episode
- D. mood disturbance is severe enough to cause psychotic features, marked impairment in social/occupational functioning, or necessitate hospitalization
- E. symptoms not substance induced or due to a GMC
- mnemonic for mania
- Grandiosity/increased self esteem
  - Increased goal directed activity or psychomotor agitation
  - Decreased judgement (sex, drugs, money)
  - Distractibility
  - Irritable mood
  - Need for sleep decreased
  - Expansive or elevated mood
  - Speedy thoughts (flight of ideas)
  - Speedy talk (pressured speech)

#### Mixed Episode

- criteria met for both manic episode and MDE nearly every day for 1 week

#### Hypomanic Episode

- criteria A of mania but duration is at least 4 days
- criteria B and E of mania
- episode associated with an uncharacteristic change in functioning that is observable by others
- change in function is NOT severe enough to cause marked impairment in social or occupational functioning or necessitate hospitalization
- absence of psychotic features

## DEPRESSIVE DISORDERS

### Major Depressive Disorder

- epidemiology
- prevalence: male 2-4%, female 5-9% (male:female = 1:2)
  - mean age of onset: ~ 30 years
- etiology
- genetic
    - 65-75% MZ twins
    - 14-19% DZ twins
  - neurotransmitter dysfunction at level of synapse (decreased activity of serotonin, norepinephrine, dopamine)
  - psychodynamic (e.g. low self-esteem)
  - cognitive (e.g. negative thinking)
- risk factors
- sex: female
  - age: onset in 25-50 age group
  - family history: depression, alcohol abuse, sociopathy
  - childhood experiences: loss of parent before 11 year old, negative home environment (abuse, neglect)
  - personality: insecure, dependent, obsessional

- recent stressors (illness, financial, legal)
- postpartum
- lack of intimate, confiding relationships (social isolation)
- ❑ diagnosis
  - history of one or more MDE
  - absence of a previous manic, hypomanic, or mixed episode
- ❑ other possible presentations (subtypes):
  - with psychotic features (delusions of sin, guilt, poverty, nihilism, paranoia, hypochondriacal)
  - chronic (lasting 2 years or more)
  - with melancholic features (i.e. severe anhedonia, psychomotor retardation)
  - with atypical features (increased sleep, weight gain)
  - postpartum onset
  - seasonal pattern (SAD)
- ❑ depression in the elderly
  - accounts for about 50% of acute psychiatric admissions in the elderly
  - affects about 15% of community residents > 65 years old
  - high suicide risk due to increased lethality and decreased communication of suicide attempt due to social isolation
  - suicide peak: males: 80-90 year, females: 50-65 year
  - often present with somatic complaints (e.g. changes in weight, sleep, energy) or anxiety symptoms rather than classic depression
- ❑ differential diagnosis for MDD
  - adjustment disorder with depressed mood
  - bereavement
  - dementia
  - GMC / substance use (see below)
- ❑ treatment (see Treatment Algorithm Section)
  - biological: antidepressants, lithium, ECT
  - psychological: psychodynamic, cognitive, behavioural, family, and group therapy
  - social: vocational rehabilitation, social skills training

### Dysthymia

- ❑ depressed mood for most of the day, for more days than not, and for at least 2 years
- ❑ presence, while depressed, of at least 2 of
  - poor appetite or overeating
  - insomnia or hypersomnia
  - low energy or fatigue
  - low self esteem
  - poor concentration or difficulty in decision making
  - feelings of hopelessness
- ❑ never without depressed mood for more than 2 months at a time
- ❑ no evidence of past MDE, manic, mixed, or hypomanic episodes
- ❑ not due to GMC or substance use

## BIPOLAR DISORDERS

### Bipolar I/ Bipolar II Disorder

- ❑ epidemiology
  - prevalence: 0.6-0.9%
  - male = female
  - age of onset: teens to 20's
  - slight increase in upper SES groups
  - 60-65% of bipolar patients have family history of major mood disorders
- ❑ diagnosis
  - Bipolar I disorder - one or more manic or mixed episodes, commonly accompanied by 1 or more MDE but not required for Dx

- Bipolar II disorder - at least one MDE and one hypomanic episode; no past manic episode or mixed episode
- both can occur with rapid cycling (presence of at least 4 mood episodes within 1 year; must be symptom free for at least 2 months between episodes or display a change in mood to an opposite type of episode)
- must consider GMC/substance use in the DDx
- ❑ clinical course
  - may present initially with a manic, depressive, or hypomanic episode
  - usually there is intervening period of normal mood and function; cycle length can vary
- ❑ treatment
  - biological: lithium, valproic acid, carbamazepine, antipsychotics, ECT
  - psychological: supportive and psychodynamic psychotherapy, cognitive or behavioural therapy
  - social: vocational rehabilitation, leave of absence from school/work, avoid drugs/EtOH, substitute decision maker for finances, sleep hygiene, social skills training, educate family members

#### Cyclothymia

- ❑ presence of numerous periods of hypomanic and depressive symptoms (not meeting criteria for MDE) for at least 2 years; never without symptoms for > 2 months
- ❑ no MDE, manic or mixed episodes; no evidence of psychosis
- ❑ not due to GMC/substance use

#### MEDICAL/SUBSTANCE INDUCED MOOD DISORDERS

- ❑ infectious: encephalitis, hepatitis, pneumonia, TB, syphilis
- ❑ endocrine: hypothyroidism, hypopituitarism, SIADH
- ❑ metabolic: porphyria
- ❑ vitamin disorders: Wernicke's, beriberi, pellagra, pernicious anemia
- ❑ collagen vascular: SLE, polyarteritis nodosa
- ❑ neoplastic: pancreatic cancer, carcinoid, pheochromocytoma
- ❑ CV: cardiomyopathy, CHF, MI, CVA
- ❑ neurologic: HD, MS, tuberous sclerosis, Wilson's, PD
- ❑ drugs: antihypertensives, antiparkinsonian, hormones, steroids, antituberculous, antineoplastic medications

## ANXIETY DISORDERS

#### Definition

- ❑ anxiety is a universal human characteristic
- ❑ it serves as an adaptive mechanism to warn about an external threat by activating the sympathetic nervous system (fight or flight)
- ❑ anxiety becomes pathological when our fear response overreacts inappropriately to a stimulus
- ❑ manifestations of anxiety can be described along a continuum of physiology, psychology, and behaviour
  - physiology – main brain structure involved is the amygdala; neurotransmitters involved include serotonin, CCK, adrenaline
  - 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/avoiding the situation causing a disruption in daily functioning

#### PANIC DISORDER WITHOUT AGORAPHOBIA

##### Epidemiology

- ❑ onset: average late 20's, familial pattern
- ❑ male:female = 1:2-3
- ❑ one of the top 5 most common reasons to see a family doctor

## Diagnosis

- A. recurrent, unexpected panic attacks; at least 1 attack has been followed by at least 1 month or more of either persistent concern about having another panic attack, worry about consequences of the attack, or significant behavioural change related to the attack
- B. panic attack - a discrete period of intense fear in which at least 4 of the following symptoms develop abruptly and reach a peak within 10 minutes
  - palpitations, pounding heart, or accelerated heart rate
  - sweating
  - trembling or shaking
  - shortness of breath or smothering sensation
  - feeling of choking
  - chest pain/discomfort
  - nausea or abdominal distress
  - feeling dizzy, unsteady, lightheaded or faint
  - derealization or depersonalization
  - fear of losing control or going crazy
  - fear of dying
  - paresthesias
  - chills or hot flushes
- C. absence of agoraphobia
- D. attacks are not substance induced (e.g. amphetamines, caffeine, EtOH) or due to a GMC (i.e. hyperthyroidism, mitral valve prolapse, hypoglycemia, pheochromocytoma)

## Treatment

- supportive psychotherapy, relaxation techniques (visualization, box-breathing), cognitive behavioural therapy (correct distorted thinking, desensitization/exposure therapy)
- pharmacotherapy
  - benzodiazepines (clonazepam, alprazolam), SSRIs (paroxetine, sertraline)
  - use of benzodiazepines should be short term with a low dose to avoid withdrawal or tolerance - benzodiazepines are primarily used as an immediate temporary therapy until SSRIs take effect
- prognosis 6-10 years post treatment: 30% well, 40-50% improved, 20-30% no change or worse
- clinical course: chronic, but episodic

## PANIC DISORDER WITH AGORAPHOBIA

- diagnosis: panic disorder + agoraphobia
- agoraphobia
  - anxiety about being in places or situations from which escape might be difficult (or embarrassing) or where help may not be available in the event of having an unexpected panic attack
  - fears commonly involve clusters of situations like being out alone, being in a crowd, standing in a line, or travelling on a bus
  - situations are avoided, endured with anxiety or panic, or require companion
- treatment: as per panic disorder
- mnemonic for panic disorder (students fear the 3 C's)
  - Sweating
  - Trembling
  - Unsteadiness
  - Depersonalization, Derealization
  - Excessive heart rate (palpitations)
  - Nausea
  - Tingling (paresthesias)
  - Shortness of Breath

FEAR of dying; of losing control or going crazy

Chest pain, Chills (or hot flushes), Choking

## GENERALIZED ANXIETY DISORDER (GAD)

(includes overanxious disorder of childhood)

### Epidemiology

- most commonly presents in early adulthood
- male:female = 1:2; if consider only those receiving inpatient treatment, ratio is 1:1

### Diagnosis

- excessive anxiety and worry for at least 6 months (chronic) about a number of events and activities (e.g. money, job security, marriage, health)
- difficult to control the worry
- 3 or more of the following 6 symptoms (only 1 for children)
  - restlessness or feeling keyed up or on edge
  - easy fatigability
  - difficulty concentrating or mind going blank
  - irritability
  - muscle tension
  - sleep disturbance
- significant impairment in social, occupational, or other areas of functioning
- not due to a GMC or substance use

### Treatment

- psychotherapy, relaxation, and CBT
- caffeine and EtOH avoidance, sleep hygiene
- pharmacotherapy
  - benzodiazepines (alprazolam)
  - buspirone
  - others: SSRIs, TCAs, beta blockers
  - combinations of above

### Prognosis

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

## PHOBIC DISORDERS

- specific phobia
  - marked and persistent fear cued by presence or anticipation of a specific object or situation
  - types: animal, natural environment (heights, storms), blood/injection/injury, situational (airplane, closed spaces), other (loud noise, clowns)
- social phobia
  - marked and persistent fear of social or performance situations in which person is exposed to unfamiliar people or to possible scrutiny by others; person fears they will act in a way (or show anxiety symptoms) that may be humiliating/embarrassing (e.g. public speaking)
- exposure to stimulus almost invariably provokes an immediate anxiety response; may take form of 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, or there is marked distress
- if person is < 18 years, duration is at least 6 months
- complications: substance abuse, depression
- treatment
  - specific phobia
    - exposure therapy/desensitization
    - ?beta blockers
  - social phobia
    - behavioural and cognitive psychotherapy
    - pharmacotherapy – beta blockers (propranolol), MAOIs (phenelzine), ?alprazolam, ?clonazepam, ?SSRIs (sertraline, paroxetine)
    - social skills training

- other
  - insight oriented psychotherapy
  - ?hypnosis, supportive therapy, family therapy
- prognosis: chronic

### OBSESSIVE-COMPULSIVE DISORDER (OCD)

- epidemiology
  - lifetime prevalence rates 2-3%
  - MZ twins = 75%, DZ = 32%
- diagnosis: either obsessions or compulsions are present
- obsessions
  - recurrent and persistent thoughts, impulses, or images that are intrusive, inappropriate, and cause marked anxiety and distress
  - not simply excessive worry about real life problems
  - attempts made to ignore/neutralize/suppress obsession with other thoughts or actions
  - patient aware obsessions originate from own mind
- compulsions
  - drive to perform repetitive behaviours (hand washing, ordering, checking) or mental acts (praying, counting, word repetition) in response to obsession or in keeping with rigidly applied rules
  - carried out with the goal of reducing distress or preventing dreaded event/situation, although there is no realistic connection between compulsion and anticipated outcome
- recognition that obsessions or compulsions are excessive or unreasonable
- obsessions or compulsions cause distress, are time consuming, or interfere with normal functioning
- not due to GMC/substance use
- treatment
  - CBT - desensitization, flooding, thought stopping, implosion therapy, aversive conditioning
  - medications - clomipramine, SSRIs (higher doses and longer treatment needed, i.e. up to six weeks)
- prognosis: tends to be refractory and chronic

### POST-TRAUMATIC STRESS DISORDER (PTSD)

- diagnosis
  - exposed to a traumatic event in which person experienced, witnessed, or was confronted with a situation that involved death or serious injury to self or others
  - response involved intense fear, helplessness, or horror
  - traumatic event is persistently re-experienced through 1 or more of the following
    - recurrent, distressing recollections (images, thoughts)
    - recurrent, distressing dreams
    - acting or feeling as if event is recurring (flashbacks, illusions, hallucinations)
    - distress at exposure to cues that resemble event
    - physiological reactivity in response to cues
  - 3 of the following: feelings of detachment (emotional numbing), anhedonia, amnesia, restricted affect, avoidance of thoughts or activities that may be a reminder of the event
  - persistent symptoms of increased arousal (2 or more of: insomnia, irritability, difficulty concentrating, hypervigilance, exaggerated startle response)
  - symptoms present for > 1 month
- complications: substance abuse, relationship difficulties
- treatment
  - CBT (systematic desensitization, relaxation techniques, thought stopping)
  - pharmacotherapy:
    - beta-blockers (for autonomic symptoms)
    - benzodiazepines (for acute anxiety)
    - lithium
    - antidepressants (controversial)
- Note: must be wary of malingering - e.g. possibility of financial compensation may result in fabrication of symptoms



## ANXIETY DISORDERS DUE TO A GENERAL MEDICAL CONDITION

### Diagnosis

- may include prominent generalized anxiety symptoms, panic attacks, obsessions, or compulsions

### Differential

- endocrine: hyper- or hypothyroidism, pheochromocytoma, hypoglycemia, hyperadrenalism
- CVS: congestive heart failure, pulmonary embolus, arrhythmia, mitral valve prolapse
- respiratory: COPD, pneumonia, hyperventilation
- metabolic: vitamin B<sub>12</sub> deficiency, porphyria
- neurologic: neoplasm, vestibular dysfunction, encephalitis
- differentiate from substance induced anxiety disorder: drugs of abuse (caffeine, amphetamine, cocaine), medications (benzodiazepine withdrawal), toxins (EtOH withdrawal)

## ADJUSTMENT DISORDER

- diagnosis
  - reaction to psychosocial stressor(s) within 3 months of stressor(s)
  - impairment in occupational/social functioning or marked distress in excess of that expected from exposure to stressor
  - symptoms not due to bereavement
  - symptoms do not meet the criteria for another Axis I disorder and are not an exacerbation of a pre-existing Axis II disorder
  - once stressor is gone, symptoms do not persist for > 6 months
- subtypes: depressed mood, anxiety symptoms, mixed anxiety and depression, disturbance of conduct, mixed disturbance of emotions and conduct, or unspecified
- treatment
  - psychotherapy (group, individual)
  - crisis intervention
  - medications are used to augment not replace psychotherapy (e.g. benzodiazepines may be used for those with anxiety symptoms)

## COGNITIVE DISORDERS

### DELIRIUM

#### Diagnosis

- disturbance of consciousness (i.e. decreased awareness of environment) with reduced ability to focus, maintain or shift attention
- a change in cognition (or new perceptual disturbance that is not better accounted for by pre-existing dementia)
- rapid onset (over hours-days) and fluctuates over the course of the day
- disturbance is due to a GMC or substance use/withdrawal
- common symptoms
  - instability of all mental status findings over time
  - hallucinations
  - misperceptions and illusions
  - impaired attention span
  - disorientation
  - impaired level of consciousness
  - delusional thinking
  - affective symptoms
- epidemiology: incidence in hospitalized patients is 10-15%
- risk factors: childhood and old age, severe illness, pre-existing cognitive impairment or brain pathology, recent anesthesia, substance abusers

- Folstein exam is helpful to gain a baseline of altered mental state – score will improve as symptoms resolve

#### Differential for Delirium

- I - Infectious (encephalitis, meningitis, UTI, pneumonia)
  - W - Withdrawal (alcohol, barbiturates, benzodiazepines)
  - A - Acute metabolic disorder (electrolyte imbalance, hepatic or renal failure)
  - T - Trauma (head injury, postoperative)
  - C - CNS pathology (stroke, hemorrhage, tumour, seizure disorder, Parkinson's)
  - H - Hypoxia (anemia, cardiac failure, pulmonary embolus)
- D - Deficiencies (vitamin B<sub>12</sub>, folic acid, thiamine)
- E - Endocrinopathies (thyroid, glucose, parathyroid, adrenal)
- A - Acute vascular (shock, vasculitis, hypertensive encephalopathy)
- T - Toxins, substance use, medication (alcohol, anesthetics, anticholinergics, narcotics)
- H - Heavy metals (arsenic, lead, mercury)

Note: can classify above causes into 4 categories; intracranial, extracranial, drug use, and drug withdrawal

#### Investigations

- standard: CBC + diff, lytes, calcium, phosphate, magnesium, glucose, ESR, liver/renal tests, urinalysis, ECG
- as indicated: TSH, CT head, toxicology/heavy metal screen, VDRL, LP, LE preparation, B<sub>12</sub> and folic acid levels, EEG (typically abnormal: generalized slowing or fast activity)

#### Management

- identify and treat underlying cause
- stop all non-essential medications
- maintain nutrition, hydration, electrolyte balance and monitor vitals
- psychosocial
  - environment should be quiet and well-lit
  - room should be near a nursing station for closer observation
  - family member should be present for reassurance and re-orientation
- pharmacological - haloperidol, lorazepam; physical restraints if patient becomes violent
- up to 50% 1 year mortality rate after episode of delirium

## DEMENTIA

#### Epidemiology

- prevalence increases with age: 10% in patients over 65 years; 25% in patients over 85
- Alzheimer's dementia comprises > 50% of cases, vascular causes comprise approximately 15% of cases
- 10% of dementia cases potentially curable

#### Diagnosis

- multiple cognitive deficits including impaired memory and 1 or more of
  - aphasia (language disturbance)
  - apraxia (impaired ability to carry out purposeful movement, especially the use of objects, despite normal motor function)
  - agnosia (failure to recognize or identify objects)
  - disturbance in executive function (i.e. planning, organizing, sequencing, abstract thinking)
- deficits result in decline in social/occupational functioning
- disturbance due to a GMC (see differential below)
- main differences from delirium: patients are alert, and symptoms develop gradually (years), do not fluctuate, and worsen over time (chronic disorder)

**Approach to Patient**

- ❑ History - inquire about ADLs (housekeeping, personal care, transferring), IADLs (cooking, shopping, finances), memory problems (e.g. getting lost, misplacing objects, missing appointments, leaving stove on, etc.), PMH, EtOH/substance use
- ❑ must talk to relatives for corroborative information as patient is usually unaware of extent of cognitive impairment
- ❑ Folstein exam shows extent of deficit; additional tests of executive function are helpful (e.g. abstraction with proverbs/similarities, perseveration tests)

**Investigations (rule out reversible causes)**

- ❑ standard: as above in Delirium Section plus TSH, VDRL, B12, folic acid, head CT, albumin
- ❑ as indicated: SPECT
- ❑ indications for CT in dementia: focal neurological deficits, acute change in status, onset within 2 years, anticoagulant use, early incontinence and gait abnormality, previous history of cancer

**Management**

- ❑ maximize function through treatment of medical problems and preventing others
- ❑ orientation cues in environment (e.g. clock, calendar)
- ❑ education and support for patient and family (day programs, respite care, support groups, home care)
- ❑ may need to consider long term care plan (nursing home) and power of attorney/living will
- ❑ may have to inform Ministry of Transportation
- ❑ low-dose neuroleptics (haloperidol) and antidepressants (if behavioural or emotional symptoms prominent); start low and go slow

**Table 1. Comparison of Dementia, Delirium and Pseudodementia of Depression**

	Dementia	Delirium	Depression
onset	gradual or step-wise decline	acute	sub-acute
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	normal
attention	not initially affected, perseveration	decreased (wandering, easy distraction)	difficulty concentrating
orientation	intact initially	impaired (usually to time and place), fluctuates	intact
behaviour	disinhibition, catastrophic reaction 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
delusions	compensatory	nightmarish and poorly formed	nihilistic, somatic
memory	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
hallucinations	variable	visual common	less common, auditory predominates
quality of hallucinations	vacuous/bland	frightening/bizarre	self-deprecatory
medical status	variable	acute illness, drug toxicity	r/o systemic illness, meds

## Primary Degenerative Dementia of the Alzheimer Type

- most common cause of dementia (50-75%)
- in some families: AD with linkage to several chromosomes 21q,14,19
- risk factors: > 60, post menopausal, aluminum exposure
- insidious onset with progressive deterioration
  - mild: memory impairment; can manage independently with support
  - moderate: language deficits; paucity of information, usually significant problem managing in community; behaviour problems such as wandering, safety concerns
  - severe: incontinence with loss of social graces, weight loss, falls, heavy ADL dependence
  - end stage: true focal neurologic deficits, death often associated with aspiration pneumonia
- exclusion of other specific causes
- subtypes: with or without delirium, delusions or depression; with early (< 65) or late onset
- definitive diagnosis requires management of characteristic pathologic changes: senile plaques (amyloid), neurofibrillary tangles, cortical atrophy, granulo-vacuolar degeneration, Hirano bodies
- management (see Dementia Section)
  - proper nutrition, exercise, supervision of daily activities
  - medications
    - cognitive and functional enhancers (cholinesterase inhibitors): donepezil (Aricept) is first line therapy (5-10 mg/d); preferred over tacrine (Cognex) because it does not cause hepatotoxicity
    - antidepressants (SSRIs), antipsychotics and benzodiazepines may be required to treat mood and behavioural symptoms
    - other agents being investigated include: estrogen, NSAIDS, ginkgo biloba, and vitamin E

## Vascular Dementia

- second most common type of dementia
- abrupt onset and stepwise deterioration
- "patchy" distribution of deficits
- same cognitive deficits as Alzheimer's but with focal neurological signs and symptoms (e.g. hyper-reflexia, positive Babinski sign, gait problems, weakness)
- may see imaging evidence of cerebrovascular disease
- patient often has hypertension or atrial fibrillation causing cerebral emboli
- prevention: smoking cessation, control of DM, HTN, and arrhythmias

- ❑ group into 11 classes by DSM-IV
  - alcohol, amphetamines/sympathomimetics, caffeine, cannabis, cocaine, hallucinogens, inhalants, nicotine, opioids, phencyclidine (PCP), sedatives/hypnotics/anxiolytics
- ❑ acute and chronic effects of psychoactive substances classified under two major categories of disorders (substance-use and substance-induced disorders)
- ❑ substance-use disorders
  - substance dependence: maladaptive pattern of substance use interfering with function
  - at least 3 of the following in 12 month period
    - tolerance
    - withdrawal/use to avoid withdrawal
    - taken in larger amount or over longer period than intended
    - persistent desire or unsuccessful efforts to cut down
    - excessive time to procure, use substance, or recover from its effects
    - important interests/activities given up or reduced
    - continued use despite physical/psychological problem caused/exacerbated by substance
  - substance abuse: maladaptive pattern of substance use interfering with function; at least 1 of the following in 12 month period
    - recurrent use resulting in failure to fulfil major role obligation
    - recurrent use in situations in which it is physically hazardous (i.e. driving)
    - recurrent substance-related legal problems
    - continued use despite interference with social or interpersonal function
- ❑ substance-induced disorders
  - substance intoxication: reversible physiological and behavioural changes due to recent exposure to psychoactive substance
  - substance withdrawal: substance specific syndrome that develops following cessation of or reduction in dosage of regularly used substances

## ALCOHOL

### History

- ❑ Screening
  - C - ever felt need to Cut down on drinking
  - A - ever felt Annoyed at criticism of your drinking
  - G - ever feel Guilty about your drinking
  - E - ever need a drink first thing in morning (Eye opener)
  - 2 “yes” responses out of 4 is considered positive for an alcohol problem
  - if positive CAGE then asses further to determine if problem drinker or alcohol dependence (see mnemonic below)
- ❑ Other Important Questions to Ask
  - H - do you ever drink to get High
  - A - do you ever drink Alone
  - L - do you ever Look forward to drinking
  - T - are you Tolerant to alcohol
  
  - B - have you ever had Blackouts
  - U - do you ever use EtOH in an Unplanned way
  - M - do you ever use EtOH for Medicinal reasons
  - P - do you tend to Protect your EtOH supply
  
  - F - any Family history of EtOH problems
  - A - ever been a member of AA
  - T - do you Think you are an alcoholic
  - A - do you ever think about Attempting suicide
  - L - any Legal problems related to EtOH
  
  - D - do you ever drink and Drive
  - T - do you use Tranquilizers to steady your nerves

	Problem Drinker	Alcohol Dependent
withdrawal symptoms	no	often
tolerance	mild	marked
amount consumed	> 14 per week	> 40-60 per week
social / physical / legal consequences	nil or mild	often severe
neglect of major responsibilities	no	yes

**Alcohol Intoxication**

- clinical effects seen when blood alcohol level is above 150 mg/dL
- above 250 mg/dL, coma usually ensues

**Alcohol Withdrawal**

- within 12 to 48 hours after prolonged heavy drinking

Autonomic Symptoms	Sleep Disturbance	Gastrointestinal	Neurological	Psychological
<ul style="list-style-type: none"> <li>• tachycardia</li> <li>• hypertension</li> <li>• diaphoresis</li> <li>• tremor</li> <li>• fever</li> <li>• respiratory distress</li> </ul>	<ul style="list-style-type: none"> <li>• sleep latency insomnia</li> <li>• increased REM sleep</li> <li>• decreased deep sleep</li> </ul>	<ul style="list-style-type: none"> <li>• anorexia</li> <li>• nausea</li> <li>• vomiting</li> </ul>	<ul style="list-style-type: none"> <li>• generalized tonic - clonic seizures</li> <li>• restlessness</li> </ul>	<ul style="list-style-type: none"> <li>• agitation</li> <li>• anxiety</li> <li>• irritability</li> <li>• distractibility</li> <li>• poor concentration</li> <li>• impaired memory</li> <li>• impaired judgement</li> <li>• hallucinosis</li> </ul>

**Delirium Tremens (DTs)**

- within 2-10 days after cessation of alcohol
- characterized by
  - symptoms of delirium
  - autonomic hyperactivity
  - perceptual distortions (visual or tactile hallucinations)
  - fluctuating levels of psychomotor activity
- course: in young almost completely reversible; elderly often left with cognitive deficits
- mortality rate 20% if untreated
- treatment: chlordiazepoxide or lorazepam, plus supportive environment, +/- haloperidol

**Management of Alcohol Withdrawal**

- basic protocol
  - diazepam 20 mg PO q 1-2 h until symptoms abate; tapering dose not required after load
  - observe for 1-2 h after last dose
  - thiamine 100 mg IM then 100 mg PO for 3 days
  - supportive care (hydration and nutrition)
- history of withdrawal seizures
  - diazepam 20 mg q1h for minimum of three doses
- oral diazepam not tolerated
  - diazepam 2-5 mg IV/min - maximum 10-20 mg q1h; or lorazepam SL
- severe liver disease, severe asthma or respiratory failure
  - lorazepam SL, PO 1-2 mg tid-qid; or oxazepam 15-30 mg PO tid-qid

- hallucinosis
  - haloperidol 2-5 mg IM/PO q 1-4 h – max 5/day
  - 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

#### Wernicke-Korsakoff Syndrome

- alcohol induced amnesic disorders due to thiamine deficiency
- necrotic lesions - mammillary bodies, thalamus, brain stem
- Wernicke's (acute, reversible): ocular (nystagmus, 6th nerve palsy, gaze palsy), ataxia, vestibular dysfunction, delirium
- Korsakoff's (chronic, only 20% recover with treatment): marked short-term memory loss, difficulty in learning new information, anterograde amnesia, confabulations
- management
  - Wernicke's: thiamine 100 mg PO OD X 1-2 weeks
  - Korsakoff's: thiamine 100 mg PO BID/TID X 3-12 months

#### Treatment of Alcohol Dependence

- disulfiram (Antabuse): blocks normal oxidation of EtOH; acetaldehyde accumulates causing tachycardia, vomiting; use 125-250 mg/day
- naltrexone: opioid antagonist, shown to be successful in reducing the "high" obtained from alcohol
- SSRI, buspirone, Li, trazodone, bromocriptine studied
- behaviour modification: hypnosis, relaxation training, aversion therapy, assertiveness training, operant conditioning
- supportive services: half-way houses, detoxification centres, Alcoholics Anonymous
- psychotherapy

#### OPIOIDS

- drugs in this category range from heroin and morphine to nonsteroidal prescription analgesics
- major danger associated with the use of contaminated needles; increased risk of hepatitis B and C, bacterial endocarditis, HIV

#### Acute Intoxification

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

#### Toxic Reaction

- typical syndrome includes shallow respirations, miosis, bradycardia, hypothermia, decreased level of consciousness
- treatment: ABC's; IV glucose; naloxone hydrochloride (Narcan): 0.4 mg up to 2 mg IV and repeat as needed every 2 to 3 minutes to counter respiratory depression; may wear off in 30 to 120 minutes; therefore, need to monitor carefully for up to 48 hours

#### Opioid Withdrawal

- increased sympathetic nervous system activity plus nausea, vomiting, diarrhea
- may include myalgias and arthralgias, restlessness, anxiety, intense craving for opioid
- treatment
  - detoxification performed by re-administering an opioid (methadone often used) until withdrawal symptoms cease then decreasing the dose of opioid
  - clonidine: for alleviating autonomic signs of withdrawal

#### Treatment of Chronic Abuse

- psychosocial treatment (e.g. Narcotics Anonymous); usually emphasize total abstinence
- long term treatment may also include maintenance on methadone (a synthetic opioid, long-acting and produces less euphoria than morphine)
- naltrexone or naloxone (opioid antagonists) may also be used to extinguish drug seeking behaviour



**COCAINE**

- alkaloid extracted from leaves of the coca plant; potentiates the actions of catecholamines
- self-administered by inhalation or intravenous

**Intoxification**

- characterized by elation, euphoria, pressured speech, restlessness; sympathetic stimulation including tachycardia, mydriasis, sweating
- prolonged use may result in paranoia and psychosis

**Overdose**

- medical emergency; cocaine toxicity produces hypertension, tachycardia, tonic-clonic seizures, dyspnea, and ventricular arrhythmias
- treatment with IV diazepam to control seizures and propranolol to manage hypermetabolic state and arrhythmias

**Treatment of Chronic Abuse**

- optimal treatment not established
- psychotherapy, group therapy, and behaviour modification useful in maintaining abstinence
- studies of dopamine agonists to block cravings show inconsistent results

**CANNABIS**

- psychoactive substance delta-9-tetrahydrocannabinol (THC)
- smoking is most common mode of self-administration
- intoxication characterised by tachycardia, muscle relaxation, euphoria, general sense of well-being; impaired performance on psychomotor tasks including driving
- high doses can cause depersonalisation, paranoia, and anxiety
- chronic use associated with tolerance and an apathetic, amotivational state
- cessation does not produce significant withdrawal phenomenon
- treatment of dependence includes behavioural and psychological interventions to maintain abstinent state

**AMPHETAMINES**

- class of drugs structurally related to catecholamine neurotransmitters
- intoxication produces euphoria, improved concentration, sympathetic, and behavioural hyperactivity
- chronic use can produce a paranoid psychosis diagnostically similar to schizophrenia with agitation, paranoia, delusions and hallucinations, antipsychotics useful in treatment of stimulant psychosis
- withdrawal symptoms include dysphoria, fatigue, and restlessness

**HALLUCINOGENS**

- includes LSD, mescaline, psilocybin, and MDMA ("ecstasy")
- LSD is a highly potent drug; intoxication produces tachycardia, hypertension, mydriasis tremour, hyperpyrexia, and variety of perceptual and mood changes
- treatment of agitation and psychosis: support, reassurance, diminished stimulation; benzodiazepines or high potency antipsychotics seldom required
- high doses can cause depersonalisation, paranoia, and anxiety

**PHENCYCLIDINE**

- PCP, "angel dust"
- widely used in veterinary medicine to immobilize large animals; mechanism of action not well understood
- taken orally, smoked, or IV; produces amnestic, euphoric, hallucinatory state; horizontal/vertical nystagmus, myoclonus, ataxia, and autonomic instability common
- effects unpredictable and often include prolonged agitated psychosis; individuals at high risk for suicide or violence towards others
- treatment of toxic reaction: room with minimal stimulation; diazepam IV for muscle spasm/seizures; haloperidol to suppress psychotic behaviour

## General Characteristics

- physical signs and symptoms lacking a known medical basis 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 not the result of malingering or factitious disorder
- types
  - conversion disorder
  - somatization disorder
  - somatoform pain disorder
  - hypochondriasis
  - body dysmorphic disorder

## CONVERSION DISORDER

- 1 or more symptoms or deficits affecting voluntary motor or sensory function that suggest a neurological or GMC (e.g. impaired co-ordination, local paralysis, double vision)
  - psychological factors thought to be etiologically related to the symptom as the initiation of symptoms is preceded by conflicts or other stressors
- primary gain: somatic symptom represents a symbolic resolution of an unconscious psychological conflict; serves to reduce anxiety and conflict
- secondary gain: the sick role; external benefits obtained or unpleasant duties evaded (e.g. work)
- "La belle indifference" – patient's inappropriately cavalier attitude towards a serious symptom

## SOMATIZATION DISORDER

- recurring, multiple, clinically significant physical complaints which result in patient seeking treatment or in impaired functioning
- onset before age 30; extends over a period of years
- at least 8 physical symptoms that have no organic pathology
  - 4 pain symptoms
  - 2 GI symptoms
  - 1 sexual symptom
  - 1 pseudo-neurological symptom
- complications: anxiety, depression, unnecessary medications or surgery
- often a misdiagnosis for an insidious illness so rule out all organic illnesses (e.g. MS)

## SOMATOFORM PAIN DISORDER

- pain is primary symptom and is of sufficient severity to warrant medical attention
- usually no organic pathology but when it exists reaction is excessive

## HYPOCHONDRIASIS

- preoccupation with fear of having, or the idea that one has, a serious disease based on a misinterpretation of physical signs
- evidence does not support diagnosis of a physical disorder
- fear of having a disease despite medical reassurance
- belief is not of delusional intensity (as in delusional disorder, somatic type) as person acknowledges unrealistic interpretation
- duration at least 6 months

## BODY DYSMORPHIC DISORDER

- preoccupation with imagined defect in appearance or excess concern around slight anomaly
- usually face related
- may lead to avoidance of work or social situations

## MANAGEMENT OF SOMATOFORM DISORDERS

- brief frequent visits
- try to be patient's only physician
- focus on psychosocial not physical symptoms
- biofeedback
- psychotherapy - conflict resolution

- minimize psychotropic drugs (anxiolytics in short term only; antidepressants for depressive symptoms)
- minimize medical investigations, co-ordinate necessary investigations

### FACTITIOUS DISORDERS

- not true somatoform disorders since symptoms are intentional
- treatment: psychotherapy (conflict resolution)

#### Factitious Disorder

- intentional production or feigning of physical or psychological signs or symptoms in order to assume the sick role
- external incentives (e.g. economic gain) are absent

#### Malingering

- intentional production of false or grossly exaggerated physical or psychological symptoms motivated by external rewards (e.g. drug seeking, avoiding work, financial incentives)

## DISSOCIATIVE DISORDERS

### DISSOCIATIVE AMNESIA

- diagnosis
  - inability to recall important personal information, usually of traumatic or stressful nature
  - symptoms cause distress or impaired functioning
  - rule out: DID, DF, PTSD, acute stress and somatization disorders, substances, medical condition, HI
- treatment
  - memory recovery: barbiturates (e.g. thiopental, sodium amobarbital), benzodiazepines, hypnosis
  - psychotherapy

### DISSOCIATIVE FUGUE (DF)

- diagnosis
  - sudden, unexpected travel away from home or work
  - inability to recall one's past and identity or assumptions of new identity
  - symptoms cause distress or impaired functioning
  - rule out: DID, substances, medical condition (e.g. TLE)
- usually brief with spontaneous recovery
- treatment: similar to dissociative amnesia

### DISSOCIATIVE IDENTITY DISORDER (DID)

- formerly multiple personality disorder
- diagnosis
  - two or more distinct personality states that recurrently take control of an individual's behaviour
  - amnesia regarding personal history
  - rule out: substance abuse, medical conditions (e.g. complex partial seizures), imaginary playmates in children
- many patients report a history of sexual and/or physical abuse
- treatment: insight oriented psychotherapy, hypnosis, drug assisted interviewing, ?adjuvant antidepressants/anxiolytics/anticonvulsants

### DEPERSONALIZATION DISORDER

- diagnosis
  - persistent or recurrent experiences of feeling detached from one's mental processes or body (i.e. feeling like one is in a dream)
  - normal reality testing
  - symptoms cause distress or impaired functioning
  - rule out: schizophrenia, panic disorder, acute stress, other dissociative disorders, substances, medical condition (e.g. TLE)

## SUICIDE

## Definitions

- suicide – self-inflicted intentional death
- suicide attempt – non-lethal self-inflicted act that has as its intended purpose death or the apparent willingness to die

## Epidemiology

- attempted:complete = 120:1
- gender
  - male:female = 3:1 for completed suicide; 1:4 for attempts
- age
  - rates low in childhood; increase rapidly after age 14
  - second leading cause of death in ages 15-24
  - 8-10% of older adolescents have attempted suicide
  - highest rates of completed suicide in age 65 or over
- ethnicity: suicide rate among Native Canadian on reserves is 2-3x the national average
- marital status: higher rates in divorced or widowed persons
- 94% related to psychiatric illness
  - mood disorders - 15% lifetime risk in depressed patients (higher risk in bipolar versus unipolar)
  - substance abuse - 15% lifetime risk in alcoholic patients
  - schizophrenia - 10-15% lifetime risk for schizophrenics
  - eating disorders - 5% lifetime risk
  - increased risk also in personality (antisocial, borderline), adjustment, conduct, and anxiety disorders (especially panic attacks)

## Suicide Risk Factors

- “Sad Persons” scale for assessment and management of suicidal ideation
  - Sex-male
  - Above 60 years old
  - Depression
  - Previous attempts
  - Ethanol abuse
  - Rational thinking loss (delusion, hallucination, hopelessness)
  - Suicide in family
  - Organized plan
  - No spouse (no support systems)
  - Serious illness, intractable pain
- Score: (Cdn J Dx. Aug 1995)
  - 0-2 consider sending home with family
  - 3-4 close follow up, consider hospitalization
  - 5-6 strongly consider hospitalization
  - 7-10 hospitalize

	Suicide	Self Harm (Parasuicide)
prevalence	15/100 000	10x more common
sex	male	female
age	age 60 or over	age 35 or under
method	high lethality (guns, hanging)	low lethality (self-laceration, overdose)
setting	private, isolated	public, easily discovered
context	depression, substance abuse, psychosis	interpersonal conflict, intolerance of affect
style	premeditated	impulsive

Emergency Management of Suicide Attempt

- do not leave patient alone; remove potentially dangerous objects from room
- assessment
  - planned or impulsive attempt
  - lethality of attempt
  - chance of discovery
  - reaction to being saved (intent)
  - triggers for attempt (stressors)
  - MSE – may reveal psychiatric disorder (e.g. depression), perception disturbance (e.g. command hallucination), poor insight/judgement
- management depends on diagnosis
  - depression: if severe, hospitalize; otherwise outpatient treatment with good supports
  - alcohol related: usually resolves with abstinence for a few days; if not, suspect depression
  - personality disorders: crisis intervention/confrontation
  - schizophrenia: ?hospitalization
  - parasuicides/self mutilation: long term psychotherapy with brief crisis intervention when necessary

ISSUES SPECIFIC TO SUICIDE IN CHILDREN/ADOLESCENTS

- most adolescents show warning signs
- children less frequently choose violent methods
- drug OD is more common: diazepam, barbiturates, antidepressants, ASA
- impulsive behaviour, personality disorders, substance abuse, and conduct disorder all increase the risk of suicide when they co-exist with depression
- precipitants in adolescents
  - arguments between or with parents
  - loss of parent/divorce
  - current or threatened loss of close relationship (especially for completed suicide in males)
  - failing grades
  - loss of interest/boredom
  - ? peer solidarity (e.g. Native populations)
- assessment of child/adolescent
  - same as above
- assessment of family
  - appreciation of adolescent’s mental status
  - ability to monitor adolescent and participate in crisis treatment plan (social support)
  - family psychiatric history (affective disorder, suicide, substance abuse)

- treatment
  - crisis plan - hospitalize if high risk
  - if possible, adolescent remains with family at home and has crisis treatment as outpatient
  - under age 16 - potential child welfare situation

**OTHER PSYCHIATRIC EMERGENCIES**

- acute withdrawal (see Emergency Medicine Notes)
- acute intoxication (see Emergency Medicine Notes)
- delirium (see Delirium section)
- psychiatric medication side effects or toxicity (see Psychiatric Medications Section)
- violent or assaultive behaviour (see Emergency Medicine Notes)
- irrational, bizarre or psychotic behaviour
  - assess risk of suicide, other self-harm, violence toward others, ability to care for self

**LEGAL ISSUES**

Table 5. 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 their will (Form 42 to patient)	Any MD	within 7 days after examination	<ul style="list-style-type: none"> <li>• 72 hours after hospitalization</li> <li>• void if not implemented within 7 days</li> </ul>	no	<ul style="list-style-type: none"> <li>• Form 3</li> <li>• voluntary admission</li> <li>• send home +/- follow-up</li> </ul>
Form 2: order for hospitalization and medical examination against their will by Justice of the Peace	Justice of the Peace	no statutory time restriction	<ul style="list-style-type: none"> <li>• 7 days from when filled out</li> <li>• purpose of form is complete once patient brought to hospital</li> </ul>	no	<ul style="list-style-type: none"> <li>• Form 1</li> <li>• send home +/- follow-up</li> </ul>
Form 3: certificate of involuntary admission (Form 30 to patient, notice to rights advisor)	Attending MD (different than MD who completed Form 1)	<ul style="list-style-type: none"> <li>• before expiration of Form 1</li> <li>• any time to change status of an informal patient</li> </ul>	2 weeks	yes (within 48 hours)	<ul style="list-style-type: none"> <li>• Form 4</li> <li>• Form 5</li> </ul>
Form 4: certificate of renewal of involuntary admission (Form 30 to patient, notice to rights advisor)	Attending MD following patient on Form 3	prior to expiration of Form 3	first: 1 month second: 2 months third: 3 months	yes (within 48 hours)	<ul style="list-style-type: none"> <li>• Form 4</li> <li>• Form 5</li> </ul>
Form 5: change to informal/voluntary status	Attending MD following patient on Form 3/4	whenever deemed appropriate	N/A	N/A	N/A

## CONSENT

### Definition

- the voluntary agreement to what another person proposes
- in medical care, consent is geared toward making the patient a partner in a joint enterprise based on expectation that the physician is pursuing their best interests

### Health Care Consent Act (HCCA), 1996

- covers consent to treatment (cosmetic, diagnostic, palliative, preventive, or therapeutic), admission to care facility, and personal assistance services (i.e. care outside of hospital) proposed by health practitioners
- consent to treatment will be the focus in this section

### Valid Consent to treatment - 5 criteria

- specific - detailed treatment plan (a person may be capable to consent/refuse one treatment but incapable for another)
- informed - receives information about their medical condition, nature of treatment, risks and benefits, side effects, alternative options, consequences of not having treatment
- voluntary - of the patient's own will
- honest - on the part of the practitioner proposing the treatment
- capacity standards (see below)

### Capacity Assessment

- HCCA requires MD to assess patient's ability to consent (decision making capacity)
- formal capacity assessment is not necessary - in most cases capacity can be presumed unless there are reasonable grounds to believe the person is incapable
- a patient is capable if they can understand the information relevant to making a decision and appreciate the reasonably foreseeable consequences of a decision or lack thereof
- MD should screen for psychiatric symptoms that may affect capacity (e.g. denial of illness, fear of procedure, cognitive disorder such as delirium/dementia, severe depression)

### Treatment of the Incapable Patient

- document opinion in chart
- notify patient of determination by Form 33 (for psychiatric treatment in a psychiatric facility) and contact rights advisor
- obtain consent from substitute decision maker (SDM) using the following hierarchy
  - court appointed guardian
  - power of attorney for personal care
  - capacity and control board appointed representative
  - spouse/partner
  - child > 16 or custodial parent
  - sibling
  - other relative
  - public guardian and trustee
- SDM must be > 16 unless they are parents deciding for a child
- begin treatment unless patient wishes to appeal the decision to the Consent and Capacity Board (CCB)

### Principles SDM Must follow when deciding to Give Consent

- act in accordance to wishes expressed previously by the patient, applicable to the circumstances, while capable
- if above unknown, SDM must act in the patient's best interests and take the following into consideration:
  - values and beliefs held by the patient while capable
  - whether medical condition/well-being is likely to improve with vs. without treatment
  - whether the benefit expected by the treatment outweighs the risk of harm to the patient
  - whether a less intrusive treatment would be as beneficial as the one proposed
- the final decision of the SDM should be made in consultation with MD; if MD feels the SDM is not acting in the patient's best interests, then they can apply to the CCB for another SDM



Can an Incapable Patient be Forced to Stay in Hospital to Receive Treatment?

- no - HCCA does not address the issue of detaining incapable patients
- an incapable patient can only be detained against their will to receive treatment if they meet the criteria for certification under the mental health act (Form 1 or 3)
- to apply the above, the hospital in question must be a schedule 1 facility

What about Treatment of an Incapable Patient in an Emergency Situation?

- emergency treatment may be administered without consent if the physician believes the incapable patient is:
  - apparently experiencing severe suffering
  - at risk of sustaining serious bodily harm if treatment is not administered promptly
- MD must document reasons for incapacity and why situation is emergent
- since the SDM is not usually immediately available, MD can treat without consent until the SDM is available or the situation is no longer an emergency

Pediatric Aspects of Capacity Covered by the HCCA

- no age of consent - consent depends on one's decision making ability (capacity)
- this causes a dilemma with patients who are infants or children - adolescents are usually treated as adults
- it is assumed that infants and children lack mature decision-making capacity for consent but they should still be involved (e.g. be provided the information appropriate to their comprehension level)
- most likely SDM in hierarchy is a parent or legal guardian
- support for the family and patient is essential and can involve the attending physician, nurses, chaplains, etc.
- in the event that the physician believes the SDM is not acting in the child's best interest, an appeal can be made to the provincial child welfare authorities

Other Types of Capacity Not Covered by the HCCA

- testamentary (ability to make a will)
- fitness (ability to stand trial)
- financial (ability to manage property -Form 21 of the MHA)
- personal (ability to care for oneself)
- areas of capacity are independent - a person may be incapable in some areas but capable in others

Criteria for Financial Competence

- covered by the *Mental Health Act* (section 54) and *Substitute Decision Act* (section 16,27)
- patient must
  - appreciate importance of financial capability and reason for exam
  - have realistic appreciation of own strengths/weaknesses in managing finances
  - understand nature and extent of assets, liabilities, income, and expenses
  - have recently demonstrated ability to make sound reasonable financial decisions and be expected to do so in future
  - have appropriately used available resources, and indicate willingness to do so in future
- if MD determines the patient is incapable of managing property, a Form 21 is completed and the Public Guardian and Trustee becomes the temporary guardian until a substitute can be found; those eligible as substitute guardians are the patient's spouse/partner, relative, or attorney
- Form 21 can only be filled out if the patient is an inpatient of a psychiatric facility

- orientation (born with) vs. gender identity (learned)
- gender identity is set at about 3 years of age

### GENDER IDENTITY DISORDER

#### Diagnosis

- strong and persistent cross gender identification
- manifested by repeated stated desire or insistence that one is of the opposite sex
- children believe they will grow up to be the opposite sex
  - cross-dressing, cross sex roles in play
- significant distress or impairment in functioning
- treatment: sexual reassignment surgery, psychotherapy

### PARAPHILIAS

- diagnosis: sexual arousal, fantasies, sexual urges or behaviour involving non-human objects, suffering or humiliation of oneself or one's partner, children or other nonconsenting person
- person usually has more than one paraphilia
- subtypes: exhibitionism, fetishism, frotteurism, voyeurism, pedophilia, sexual masochism, sexual sadism, transvestic fetishism and NOS
- course
  - begins in childhood or early adolescence; more defined later
  - chronic, decreases with advancing age
  - may increase with psychosocial stressors
- almost never diagnosed in women, except sexual masochism
- treatment: anti-androgen drugs, behaviour modification, psychotherapy
  - rarely self-referred; come to medical attention through interpersonal or legal conflict

### SEXUAL DYSFUNCTION

- involves both physical and psychological factors
- physical factors present in 33% of men and 10% of women
- medications are among the commonest causes of sexual dysfunction
- classified according to disturbance in sexual response cycle (desire, arousal, orgasm), pain, or medical conditions causing dysfunction

#### Lowered Desire

- greatest increase of any sexual dysfunction over the past decade
- rule out medications, chronic disease, endocrine disorders, and menopausal decrease in hormones
- individual psychological factors: history of incest, assault, other "secret"
- couple factors: consider relationship stress, changes in life stages
- treatment: 30% overall success rate; manage medical conditions and medications; individual therapy for "survivors" (e.g. of incest, other abuse); couple therapy

#### Male Erectile Disorder

- more than 50% of erectile problems have physical causes
- medications account for 25% of these (e.g. antihypertensives, sedatives)
- rule out medications, medical conditions (vascular, neurological, endocrine)
- individual factors: acuteness of onset, presence of waking or masturbatory erections, global vs. situational dysfunction; these help distinguish organic from psychological
- couple factors: relationship stress, performance anxiety
- treatment
  - manage medical conditions and medications
  - medical/ surgical: oral yohimbine, papaverine and PG injections, implants, sildenafil (Viagra)
  - psychotherapy as applicable for psychiatric conditions (anxiety, depression, other); couple therapy to address anxiety issues, marital counseling

### Female Sexual Arousal Disorder - Decreased Lubrication

- usually presents as dyspareunia
- rule out organic causes: vaginitis (atrophic, infectious, other), episiotomy, etc... (creates cycle of: initial pain → anxiety → decreased lubrication → more pain)
- psychological causes: expectations that intercourse will hurt (self-fulfilling prophecy), traumatic abusive experiences, difficulties in forming trusting, intimate relationships; other relationship difficulties
- treatment
  - medication for vaginitis (plus warning that lubrication may be decreased for a few weeks as mucosa heals) and alternative sexual behaviour to intercourse
  - psychotherapy for individual factors, couple therapy, sex education - counsel longer foreplay

### Female Orgasmic Disorder - Preorgasmia

- 1 in 7 women believe they have never had an orgasm
- physical factors rare: denervation of lumbosacral spine
- psychological: not yet "learned how to have an orgasm" (social conditioning, unrealistic expectations of partner)
- treatment: 95% success rate
  - individual, couple, group therapies
  - "permission" to explore own body

### Male Orgasmic Disorder - Delayed Ejaculation

- primary organic: congenital, neurological, endocrine
- secondary organic: trauma, cord lesions, medication side effects (phenothiazines, sympatholytics)
- psychological: most delayed ejaculation is situational; causes include rigid conservative sexual upbringing, fear of pregnancy, hostility to women, repressed homosexuality, poor partnership factors
- treatment: limited success rate
  - rule out medication and organic conditions
  - sufficient stimulation in relaxed environment
  - gradual involvement of partner

### Premature Ejaculation

- most common male sexual dysfunction: 33% affected
- medical causes unknown
- psychological: usually secondary to performance anxiety caused by interrupted sexual experiences, intimacy fears, relationship difficulties
- treatment: 90% success rate
  - goal: decrease performance anxiety
  - exercises to focus on experience vs. performance
  - increasing stimulation and control exercises
  - gradual partner involvement

### Coital Pain Disorders - Dyspareunia and Vaginismus

- vaginismus (a diagnosis of exclusion for dyspareunia) = sharp pain in anterior vagina, worst during attempted penetration
- 32% of patients have associated physical factors
- psychological: belief that intercourse is painful, abusive relationships (past, present), other factors involving decreased trust
- treatment
  - interventions: lubricating creams/jellies, change of positions, sex education materials, permission, reassurance
  - pelvic anatomy review i.e. pubococcygeus muscle, teaching how to gain control of pelvic floor muscles

- criteria for diagnosis:
  - causes significant distress or impairment in functioning
  - not due to medications, drugs, or a medical condition

## PRIMARY INSOMNIA

- difficulty initiating/maintaining sleep, or non-restorative sleep, for at least 1 month
- psychophysiological (transient or persistent)
  - treatment – sleep hygiene, short-acting benzodiazepines (for less than 1 month)
- differential diagnosis: substance abuse, mood, anxiety or psychotic disorders – treat underlying cause

## SLEEP APNEA

- most common cause of hypersomnolence in sleep disorder clinics
- more than 30 episodes of apnea lasting greater than 10 seconds in one night
- types - central (decreased respiratory center output), obstructive (upper airway obstruction), mixed
- symptoms: loud snoring, thrashing of limbs in sleep, excessive daytime sleepiness, hypertension, morning headache, intellectual deterioration, decreased libido
- aggravated by hypnotics and alcohol
- treatment: continuous positive airway pressure (CPAP) via nose mask, weight loss, respiratory stimulants (e.g. acetazolamide [Diamox]); rarely surgical treatment (see Respiriology Notes)

## NOCTURNAL MYOCLONUS

- middle-age and elderly
- myoclonic jerks every 20-40 seconds
- bed partner complains
- treatment: benzodiazepines (clonazepam, nitrazepam)

## NARCOLEPSY

- irresistible sleep attacks (up to 30 minutes) and persistent daytime drowsiness occurring daily for at least 3 months
- cataplexy (sudden temporary episodes of paralysis with loss of muscle tone)
- sleep paralysis
- hypnagogic/hypnopompic hallucinations
- incidence 4:10 000 cases (more common than MS)
- treatment: stimulants methylphenidate, D-amphetamine, TCAs

# EATING DISORDERS

## Epidemiology

- prevalence
  - AN - 1% of adolescent and young adult females
  - BN - 1-3% of adolescent and young adult females
- female:male = 10:1
- onset: AN - 13-20 years old; BN - 16.5-18 years old
- mortality 5-10%

## Etiology

- multifactorial
- individual: perfectionism and insistence on control when little control in other life areas, history of sexual abuse
- familial: maintenance of equilibrium in dysfunctional family
- cultural factors: prevalent in industrialized societies, idealization of thinness created by media
- genetic factors

## Risk Factors

- women who by career choice are expected to be thin
- family history (mood disorders, eating disorders, substance abuse)
- psychiatric illness

- obesity
- chronic medical illness, especially diabetes mellitus
- history of sexual abuse
- gay men
- competitive athletes

### ANOREXIA NERVOSA (AN)

#### Diagnosis

- refusal to maintain above 85% of expected weight for age and height
- fear of becoming obese, even though underweight
- abnormal perception of body image (weight, size, shape)
- in females, absence of > 3 consecutive menstrual cycles
- type
  - restricting - no binge eating or purging
  - binge eating/purging during episode of AN

### BULIMIA NERVOSA (BN)

#### Diagnosis

- recurrent binge-eating characterized by both
  - A. eating in a discrete period of time (e.g. < 2 hours) an amount of food that is definitely larger than most people would eat
  - B. loss of control over eating behaviour during binges
- inappropriate compensatory behaviour to prevent weight gain: self-induced vomiting, ipecac, laxatives, diuretics, amphetamines, caffeine, dieting, vigorous exercise etc.
- frequency: both bingeing and compensatory behaviour occur at least twice a week for 3 months
- self image unduly influenced by body shape and weight
- not exclusively during episodes of AN

#### Treatment

- biological
  - reversal of starvation effects
  - antidepressants (SSRIs) in BN
- psychological
  - reality-oriented feedback
  - recognition of risk and perpetuating factors
  - education
  - develop trusting relationship with therapist
- social
  - challenge destructive societal views of women
  - family therapy
  - use of hospital to provide external controls for disordered eating behaviour

#### Prognosis

- few recover without recurrence
- good prognosis associated with onset before age 15, weight gain within 2 years after treatment
- poor prognosis associated with later age of onset, previous hospitalizations, greater individual and familial disturbance

System	Starvation	Binge - Purge
General	low BP, low HR, low T	vomiting • Russell's sign (knuckle hypopigmentation) • parotid gland enlargement • perioral skin irritation • periocular petechiae • loss of dental enamel • hematemesis • aspiration pneumonia • metabolic alkalosis (↓K)
Endocrine	amenorrhea, ↓T <sub>3</sub> /T <sub>4</sub>	
Neurology	grand mal seizure (↓Ca, Mg, PO <sub>4</sub> )	
Dermatology	dry skin, lanugo hair, hair loss or thinning, brittle nails, yellow skin from high carotene	
GI	constipation, impaired taste, delayed gastric emptying	acute gastric dilation/rupture, pancreatitis
CV	arrhythmias, CHF	arrhythmias, cardiomyopathy (from use of ipecac), sudden cardiac death (↓K)
MSK	osteoporosis	
Renal	pre-renal failure (hypovolemia), renal calculi	renal failure
Hematology	anemia (↓glucose)	
Extremities	pedal edema (↓albumin)	pedal edema (↓albumin)

Increased	Decreased
BUN (dehydration)	Na, K, Cl (vomiting, laxatives)
amylase (vomiting)	LH, FSH, estrogen (starvation)
cholesterol (starvation)	testosterone (starvation)
GH (starvation)	H <sup>+</sup> (vomiting)
H <sup>+</sup> (laxatives)	RBCs (starvation)
	WBCs (starvation)

**PERSONALITY DISORDERS (PD)**

**GENERAL DIAGNOSTIC CRITERIA**

- ❑ an enduring pattern of inner experience and behaviour that deviates markedly from the expectations of the individual's culture; manifested in > 2 of: cognition, affect, interpersonal functioning, impulse control
- ❑ inflexible and pervasive across a range of situations
- ❑ causes distress or impaired functioning
- ❑ usually age 18 for diagnosis but pattern well established by adolescence or early adulthood
- ❑ personality traits are only considered disorders when they meet first two criteria
- ❑ prevalence of the common PD's (% population affected)
  - borderline PD 1-2%
  - histrionic PD 1.3-3%
  - schizotypal PD 3-5.6%
  - dependent PD 1.6-6.7%

**Table 8. Classification of the Personality Disorders**

Diagnosis	Core Traits
<b>CLUSTER A "MAD"</b>  1. Paranoid PD 2. Schizoid PD 3. Schizotypal PD	<ul style="list-style-type: none"> <li>• appear odd or eccentric</li> <li>• common defense mechanisms: projection, fantasy</li> </ul>
<b>CLUSTER B "BAD"</b>  1. Borderline PD 2. Antisocial PD 3. Narcissistic PD 4. Histrionic PD	<ul style="list-style-type: none"> <li>• dramatic, emotional, erratic behavior</li> <li>• common defense mechanisms: denial, acting out, dissociation (HPD), splitting (BPD)</li> </ul>
<b>CLUSTER C "SAD"</b>  1. Avoidant PD 2. Dependent PD 3. Obsessive-Compulsive PD	<ul style="list-style-type: none"> <li>• anxiety, fearfulness, constriction</li> <li>• common defense mechanisms: isolation, avoidance, hypochondriasis</li> </ul>

*adapted from: Med N Am, April 1994*

**Table 9. Diagnosing the Personality Disorders**

PD	Diagnosis	Treatment
paranoid PD	<ul style="list-style-type: none"> <li>• suspects others are exploiting, harming, or deceiving him/her</li> <li>• doubts trustworthiness of others</li> <li>• fears information given to others will be used against him/her</li> <li>• interprets benign remarks/events as demeaning</li> <li>• bears grudges</li> <li>• quick to react angrily or counterattack</li> <li>• repeatedly questions fidelity of partner</li> </ul>	<ul style="list-style-type: none"> <li>• psychotherapy (but difficult to establish trust, so poor prognosis)</li> </ul>
schizoid PD	<ul style="list-style-type: none"> <li>• does not desire close relationships</li> <li>• chooses solitary activities</li> <li>• little interest in sexual experiences</li> <li>• takes pleasure in few activities</li> <li>• no close friends except first-degree relatives</li> <li>• indifferent to praise or criticism</li> <li>• emotional detachment</li> </ul>	<ul style="list-style-type: none"> <li>• individual psychotherapy</li> </ul>
schizotypal PD	<ul style="list-style-type: none"> <li>• ideas of reference</li> <li>• odd beliefs or magical thinking (e.g. superstitiousness)</li> <li>• unusual perceptual experiences</li> <li>• odd thinking and speech</li> <li>• paranoid ideation</li> <li>• inappropriate or constricted affect</li> <li>• odd, eccentric behavior</li> <li>• no close friends except first-degree relatives</li> <li>• excessive social anxiety</li> </ul>	<ul style="list-style-type: none"> <li>• psychotherapy</li> <li>• social skills training</li> <li>• low-dose antipsychotics may be helpful</li> </ul>
borderline PD	<ul style="list-style-type: none"> <li>• frantic efforts to avoid real or imagined abandonment</li> <li>• unstable and intense relationships</li> <li>• unstable sense of self</li> <li>• impulsivity that is potentially self-damaging (e.g. spending, promiscuity, reckless driving)</li> <li>• affective instability</li> <li>• chronic feelings of emptiness</li> <li>• difficulty controlling anger</li> <li>• transient dissociative symptoms</li> </ul>	<ul style="list-style-type: none"> <li>• psychotherapy (individual and/or group)</li> <li>• cognitive behavioural therapy</li> </ul>
antisocial PD	<ul style="list-style-type: none"> <li>• repeated unlawful activity</li> <li>• deceitfulness</li> <li>• impulsivity</li> <li>• irritability and aggressiveness</li> <li>• reckless disregard for safety of self and others</li> <li>• consistent irresponsibility</li> <li>• lack of remorse</li> <li>• symptoms of conduct disorder before age 15 (see Child Psychiatry Section)</li> </ul>	<ul style="list-style-type: none"> <li>• control of behaviour (hospitalization, imprisonment)</li> <li>• control of substance abuse</li> </ul>



Table 9. Diagnosing the Personality Disorders (continued)		
PD	Diagnosis	Treatment
narcissistic PD	<ul style="list-style-type: none"> <li>• exaggerated sense of self-importance</li> <li>• preoccupied with fantasies of unlimited success, power, beauty, love</li> <li>• believes he/she is "special" and should associate with other special people</li> <li>• requires excessive admiration</li> <li>• sense of entitlement</li> <li>• takes advantage of others</li> <li>• lacks empathy</li> <li>• often envious of others or believes that others are envious of him/her</li> <li>• arrogant attitudes</li> </ul>	<ul style="list-style-type: none"> <li>• psychotherapy</li> </ul>
histrionic PD	<ul style="list-style-type: none"> <li>• not comfortable unless center of attention</li> <li>• inappropriately sexually seductive</li> <li>• rapidly shifting and shallow expression of emotions</li> <li>• uses physical appearance to attract attention</li> <li>• speech is excessively impressionistic</li> <li>• dramatic and exaggerated expression of emotion</li> <li>• easily influenced by others</li> <li>• considers relationships to be more intimate than they really are</li> </ul>	<ul style="list-style-type: none"> <li>• insight-oriented psychotherapy</li> </ul>
avoidant PD	<ul style="list-style-type: none"> <li>• avoids significant interpersonal contact due to fear of criticism or rejection</li> <li>• unwilling to get involved with people unless certain to be liked</li> <li>• restrained in intimate relationships</li> <li>• preoccupied with being rejected in social situations</li> <li>• inhibited in new interpersonal situations due to feelings of inadequacy</li> <li>• views him or herself as inferior to others</li> <li>• reluctant to engage in new activities due to embarrassment</li> </ul>	<ul style="list-style-type: none"> <li>• assertiveness training</li> <li>• systemic desensitization</li> <li>• cognitive therapy</li> </ul>
dependent PD	<ul style="list-style-type: none"> <li>• difficulty making everyday decisions without excessive advice</li> <li>• needs others to assume responsibility</li> <li>• difficulty expressing disagreement, fear of loss of approval</li> <li>• difficulty initiating projects due to lack of self-confidence</li> <li>• goes to excessive lengths to obtain support</li> <li>• uncomfortable when alone due to fears of being unable to care for self</li> <li>• urgently seeks another source of care when relationship ends</li> </ul>	<ul style="list-style-type: none"> <li>• insight-oriented psychotherapy</li> <li>• assertiveness training</li> <li>• social skills training</li> </ul>
obsessive-compulsive PD	<ul style="list-style-type: none"> <li>• preoccupied with details so that major point of activity is lost</li> <li>• perfectionism interferes with task completion</li> <li>• excessively devoted to work</li> <li>• inflexible about morality</li> <li>• unable to discard worthless objects</li> <li>• reluctant to delegate tasks to others</li> <li>• miserly spending</li> <li>• rigidity and stubbornness</li> </ul>	<ul style="list-style-type: none"> <li>• psychotherapy</li> <li>• behavioural therapy</li> </ul>

- ❑ mnemonic for borderline personality disorder
  - Paranoid ideas
  - Relationship instability
  - Abandonment fears, Anger outbursts, Affective instability
  - Impulsion, Identity disturbance
  - Suicidal behavior
  - Emptiness

## DEVELOPMENTAL CONCEPTS

Table 10. Developmental Stages

Freud	Erikson	Piaget
oral	trust/mistrust (0 - 1 years)	sensorimotor (0 - 2 years)
anal	autonomy/shame, doubt (1 - 3 years old)	object permanence (15 months) object constancy (18 months)
oedipal	initiative/guilt (4 - 6 years old)	preoperational (2 - 7 years)
latency	industry/inferiority (6 - 12 years old)	concrete operations (7 - 11 years)
	identity/role confusion (adolescence)	formal operations (11 + years)

- Erikson stages continue throughout life: intimacy/isolation (young adult); generativity/stagnation (middle age); integrity/despair (later life)
- Margaret Mahler described separation individuation process and its impact on personality development
- stranger anxiety (8 months) - infants cry at approach of stranger
- separation anxiety (10-18 months) - separation from primary/attachment figure results in anxiety
- object constancy - (Margaret Mahler) - 2-3 years. Child becomes comfortable with mother's absence by internalizing her image and the knowledge she will return
- object permanence - (Piaget) - objects exist even when not visible
- attachment - (John Bowlby) - special relationship between child and primary caretaker(s). Develops during first 4 years
- temperament - innate psychophysiological behavioural characteristics of child. Nine behavioral dimensions exist
- parental fit - the "fit" between parenting style and child's temperament
- adolescence - most adolescents negotiate development well. If signs of "turmoil" present (e.g. extreme rebelliousness), consider psychiatric diagnosis

## ATTENTION DEFICIT AND DISRUPTIVE BEHAVIOUR DISORDERS

- cannot adequately evaluate one without investigating the presence of others

## Attention-Deficit Hyperactivity Disorder (ADHD)

- prevalence: 3-5% school age children
  - prepubertal M:F 3.5:1
  - pubertal M:F = 3.5:1
  - girls tend to have more inattentive symptoms; boys more impulsive symptoms
- etiology
  - genetic - MZ twins > DZ twins
  - runs in families
  - minimal brain damage
  - neurotransmitter (catecholamine)/neuroanatomical hypothesis
  - child/family factors i.e. difficult child temperament, chaotic
- diagnosis
  - short attention span, impulsivity, hyperactivity (not an absolute condition)
  - interference with academic, family and social functioning
  - onset before 7 years old
- comorbid disorders - learning disorders (particularly reading), CD, ODD, substance abuse, anxiety, affective disorders
- course
  - average onset 3 years old
  - identification at school entry
  - remission prior to age 12

- 70-80% continue into adolescence, 65% into adulthood
- adult outcome - ASPD, ADHD, poor educational and employment performance
- ☐ treatment
  - non-pharmacological: multimodal treatment planning, parent/child education, parent management training, family/individual psychotherapy, specialized education, school/teacher education, social skills training, exercise routines
  - pharmacologic
    - psychostimulants (methylphenidate [Ritalin], pemoline, dextroamphetamine)
    - other (dependent on comorbid symptoms): TCA, neuroleptics, clonidine, lithium, MAOI, carbamazepine
  - work towards COPE not CURE
- ☐ monitor with behavioural checklists

### Conduct Disorder (CD)

- ☐ prevalence
  - males: 6-16%, females 2-9%
  - male:female = 4-12:1
- ☐ etiology
  - parental/family factors
  - parental psychopathology (e.g. ASPD, substance abuse)
  - child rearing practices (e.g. child abuse, discipline)
  - low SES, family violence
  - child factors – difficult temperament, ODD, learning problems, neurobiology
- ☐ diagnosis: persistent behavioural pattern in which other's basic rights/societal norms are violated
- ☐ categories of violation
  - aggression to people/animals
  - property destruction
  - deceitfulness/theft
  - serious rule violation
- ☐ diagnostic types (associated features)
  - childhood onset - ODD, aggressive, impulsive, poor prognosis
  - adolescent onset - less aggressive, gang-related delinquency, better prognosis
- ☐ comorbid disorders - learning disorders, ADHD, major depressive disorder, bipolar affective disorder, substance abuse
- ☐ risk factors for poor prognosis: early age onset, high frequency and variety of behaviours, pervasive vs. situational disorder, comorbid ADHD, early sexual activity/substance abuse
  - 50% of CD children become adult ASPD
- ☐ treatment
  - early intervention necessary and more effective
  - parent management training, cognitive-behavioral therapy, family therapy, education/employment programs, anger management, social skills training, meds for aggressivity (carbamazepine) or comorbid disorder

### Oppositional Defiant Disorder (ODD)

- ☐ diagnosis: negativistic, hostile, defiant, disobedient behaviour towards parental/authority figures over a 6 month period
- ☐ violation of minor rules, argumentative, temper tantrums, stubborn
- ☐ features that typically differentiate ODD from transient developmental stage: onset at 8 years old; chronic duration (> 6 months); frequent intrusive behaviour
- ☐ comorbid disorders – ADHD, learning disorders, communication disorders
- ☐ impact of behaviour: poor school performance, few friends, strained parent/child relationships
- ☐ course: may progress to conduct disorder
- ☐ treatment (goal is to establish generational boundary): parent management training, individual/family psychotherapy

**TIC DISORDERS**

- ❑ tics: involuntary, sudden, rapid, recurrent, nonrhythmic, stereotyped motor movements or vocalizations
  - simple tics - eye blinking, nose twitching, coughing
  - complex tics - facial gestures, hitting self, coprolalia,
- ❑ types: Tourette's disorder, chronic motor/vocal tic disorder, transient tic disorder, drug induced tics

**Tourette's Disorder**

- ❑ prevalence
  - 4-5 per 10,000
  - male:female = 3:1
- ❑ onset: motor - age 7, vocal - age 11
- ❑ etiology
  - genetic
  - MZ > DZ twins, autosomal dominant
  - Tourette's and chronic tic disorder aggregate within same families
  - dopamine serotonin dysregulation
- ❑ clinical features
  - multiple motor and vocal tics
  - most common initial tic = eyeblinking, followed by head tic or facial grimace
  - tics may have aggressive/sexual component
  - associated with ADHD, OCD
  - severe cases - medical complications (e.g. retinal detachment, orthopedic)
- ❑ course: chronic, life-long with periods of remission and exacerbations
- ❑ treatment
  - behavioural therapy, psychotherapy; both family and individual; important to address relation of stress to the disorder
  - for tics - atypical neuroleptics,  $\alpha$ -2 agonists, traditional non-tricyclic neuroleptics
  - for OCD - SSRI, clomipramine

**LEARNING DISORDERS**

- ❑ prevalence: 2-10%
- ❑ categorized by
  1. individual scores on achievement tests (WISC III, WRAT) significantly below (> 2 SD) that expected for age, education, and IQ
  2. impact on educational achievement and ADLs
- ❑ types: reading, mathematics, disorders of written expression
- ❑ associated features
  - low self esteem, poor social skills
  - 40% school drop out rate
  - do not outgrow disorder
- ❑ psychiatric comorbidity = 10-25%: conduct disorder, depressive disorder, ODD, ADHD
- ❑ other conditions affecting academic achievement
  - developmental coordination disorder
  - communication disorders: expressive, mixed expressive receptive, phonological, stuttering

**PERVASIVE DEVELOPMENTAL DISORDER (PDD)**

- ❑ severe and pervasive impairment in reciprocal social interaction and communication skills, and the presence of stereotyped behaviour, interests and activities
- ❑ often associated with some degree of mental retardation (Axis II) and/or a general medical condition (i.e. chromosomal abnormality) (Axis III)
- ❑ includes Autistic disorder, Rett's disorder, Childhood Disintegrative disorder, Asperger's disorder and PDD not otherwise specified

**Autistic Disorder**

- ❑ epidemiology
  - 2-5:10 000 population; male:female = 4:1
  - onset prior to age 3
- ❑ diagnosis: at least 6 items from the following

- ❑ social
  - impaired nonverbal behaviours
  - failure to develop peer relations
  - no shared enjoyment or interests with others
  - lack of social or emotional reciprocity
- ❑ communication
  - limited language development
  - stereotyped, repetitive speech
  - unable to sustain conversation
  - lack of make believe or social imitative play
- ❑ activity/interests
  - stereotyped body movements
  - preoccupation with parts of objects
  - persistence in routines/compulsions
  - restricted interests
- ❑ associated medical conditions: PKU, Fragile X, maternal rubella, birth anoxia, encephalitis, tuberous sclerosis
- ❑ differential diagnosis
  - deafness, mental retardation (75%), childhood schizophrenia, elective mutism, degenerative neurological disease, language disorders, other PDD
- ❑ prognosis
  - general chronic course
  - better if language development and IQ above 60
  - 1/3 achieve partial independence
  - up to 50% develop convulsive disorder by teens/early adulthood
- ❑ treatment
  - no specific treatment
  - early intervention important (2-4 years)
  - family support, education on nature of illness
  - behaviour modification
  - consistency, security, limit setting
  - specialized education and therapeutic settings for young children; sheltered workshops and community group homes for teens/adults
  - pharmacological treatments: aim only to control targeted behaviors
    - haloperidol - hyperactivity, aggression, stereotypies
    - methylphenidate - hyperactivity
    - clomipramine - compulsive and perseveration behaviors
    - naltrexone - withdrawal, self-injurious behaviors

#### Rett's Disorder

- ❑ epidemiology: only in females, less common than autism
- ❑ onset before age 4, generally lifelong course
- ❑ diagnosis: characterized by normal development after birth which is interrupted by specific developmental deficits such as
  - loss of hand skills with development of stereotypies (e.g. hand washing/wringing)
  - head growth decelerations
  - loss of social engagement
  - gait/truncal incoordination
  - severe language impairment

#### Childhood Disintegrative Disorder

- ❑ epidemiology: more common in males, less common than autism
- ❑ diagnosis: appropriate development until age 2 followed by deteriorating development in at least two areas: language, social skills, toileting, motor skills, play
- ❑ associated with severe MR, seizures, neurological disorders

#### Asperger's Disorder

- ❑ epidemiology: more common in males
- ❑ diagnosis: impaired social interaction
  - restricted repetitive stereotyped patterns of behaviour, interests, and activities causing social impairment
  - no clinical impairment in language or cognitive development

## MENTAL RETARDATION (MR)

### Epidemiology

- 1% of general population
- male:female = 1.5:1
- highest incidence: ages 10-14

### Etiology

- genetic: Down syndrome, Fragile X, PKU
- prenatal: rubella, fetal alcohol syndrome, prenatal exposure to heroin, cocaine, HIV; maternal DM; toxemia; maternal malnutrition; cerebral hypoxia due to delivery complications
- perinatal: prematurity, low birth weight, cerebral ischemia, maternal deprivation
- childhood: infection, trauma
- psychosocial factors: mild MR associated with low SES, limited parental education, parental neglect, FTI, teen pregnancy, family instability, limited stimulation of children

### Diagnosis

- subaverage general intellectual functioning as defined by an IQ of approximately 70 or below
- deficits in adaptive functioning in at least 2 of:
  - communication, self-care, home-living, social skills, self-direction, academic skills, work, leisure, health, safety
- onset before 18 years of age

Table 11. Classification of Mental Retardation

Severity	% of MR	IQ	Diagnosis
mild	85%	50-70	late
moderate	10%	35-49	late
severe	3-4%	20-34	early
profound	1-2%	<20	early

- although IQ does not change over time, changes in adaptive abilities do occur which may alter diagnostic labeling
- psychiatric comorbidity
  - 3-4 times greater vs. general population
  - ADHD, mood disorders, PDD, stereotypic movement disorders

### Treatment

- main objective: enhance adaptive functioning level
- emphasize community based treatment vs. institutionalization
- education: life skills, vocational training, communication skills, family education
- therapy: individual/family therapy; behaviour modification (to decrease aggressive/distracting behaviors)

## CHILDHOOD SCHIZOPHRENIA

- prevalence
  - 1/2000 in childhood
  - increases after puberty to reach adult rates in late adolescence
- diagnostic criteria same as in adults
- < 6 years old may present in similar fashion to Autistic disorder prior to onset of core symptoms
- prognosis grave as cognitive, language, social and personality development are disrupted but no different from adult outcomes
- treatment: psychotherapy, family education, low dose antipsychotics for target behaviors, hospitalization, residential placement

## ADOLESCENT MOOD DISORDERS

### Depressive Disorder

- prevalence
  - prepuberty 1-2%
  - postpuberty 8-10%
  - 2.5% in teenage boys; 7.2% in teenage girls

- ❑ clinical picture
  - more cognitive and less vegetative symptoms than adults
  - boredom, irritability, anhedonia
  - discouragement, helplessness, low self-esteem
  - deterioration in academic performance
  - hypersomnia, somatic complaints
  - social withdrawal, lack of motivation
  - substance abuse
  - significant increased risk of suicide
  - majority never seek treatment
- ❑ course
  - prolonged, up to 1-2 years
  - adolescent onset predicts chronic mood disorder
  - 2/3 will have another depression within 5 years
- ❑ clinical sequelae
  - negative impact upon peer and family relationships
  - school failure
  - substance abuse
  - comorbid diagnoses of anxiety, ADHD, CD, and eating disorders
- ❑ treatment
  - individual/family psychotherapy
  - antidepressants; SSRIs are safest

#### Bipolar Affective Disorder

- ❑ prevalence estimates vary but probably similar to adults (0.8%)
- ❑ complicated clinical picture often suggestive of psychotic disorder
- ❑ more likely to have Bipolar II or rapid-cycling particularly if early onset
- ❑ often comorbid or pre-existing ADHD/conduct disorder
- ❑ unipolar depression may be early sign of adult bipolar disorder
  - predicted by rapid onset of depression, psychomotor retardation, mood-congruent psychosis, affective illness in family, pharmacologically induced mania
- ❑ treatment
  - atypical neuroleptics
  - lithium, divalproex

#### ANXIETY DISORDERS

- ❑ childhood prevalence 2-15%
- ❑ postpubertal females > postpubertal males

#### Separation Anxiety Disorder

- ❑ prevalence: 4% of children/teens
- ❑ on average 7.5 years old at onset, 10 years old at presentation
- ❑ common for mother to have an anxiety or depressive disorder
- ❑ diagnosis
  - school refusal (75%)
  - excessive and developmentally inappropriate anxiety on separation from primary caregiver with physical or emotional distress for at least two weeks
  - persistent worry, school refusal, refusal to go to sleep, clinging, nightmares, somatic symptoms
- ❑ comorbid major depression common (66%)
- ❑ differential diagnosis: simple or social phobia, depression, learning disorder, truancy, conduct disorder, school related problems (e.g. bullying)
- ❑ course
  - symptoms may wax and wane
  - if inadequately treated early on may present later in a more severe form
  - may develop into panic disorder with/without agoraphobia
- ❑ treatment
  - accurate diagnosis
  - primary objective: child returning to school
  - coordinated effort by school/family/physician
  - family and individual psychotherapy
  - behaviour modification techniques, stress reduction
  - TCAs (inconsistent results), SSRIs (positive though small studies), clonazepam/buspirone (case reports)



## Other Anxiety Disorders Seen in Children

(criteria same as adults)

- Post-Traumatic Stress Disorder
  - examples of trauma include: sexual/physical abuse, witnessing extreme family violence, natural disasters
  - treatment: individual and group psychotherapy; parental education
- Obsessive-Compulsive Disorder
  - 0.3-1% of children/teenagers
  - treatment: clomipramine, fluoxetine; parent education; behaviour modification; psychotherapy
- Panic Disorder
  - genetic/parental modeling/identification hypothesized as cause
  - often parent with panic or depressive disorder
  - treatment: clonazepam; parental education; family/individual psychotherapy; behaviour techniques

## ELIMINATION DISORDERS (see Pediatrics Notes)

## CHRONIC RECURRENT ABDOMINAL PAIN (see Pediatrics Notes)

## SLEEP DISTURBANCES

## Nightmares

- prevalence: common in boys, 4-7 years old
- associated with REM sleep anytime at night
- upon awakening, child is alert and clearly recalls frightening dream
- may be associated with stress/anxiety
- treatment: TCAs, benzodiazepines may help (REM suppressants)

## Night Terrors

- prevalence: 15% of children have occasional episode
- abrupt sitting up, eyes open, screaming
- panic and signs of autonomic arousal
- early hours of sleep, NREM, stage 4 of sleep
- no memory of event, parents unable to calm child
- stress/anxiety can aggravate them
- course: remits spontaneously at puberty
- treatment: diazepam is effective

Table 12. Comparison of Nightmares and Night Terrors

	Nightmare	Night Terrors
stage	REM	NREM, stage 4
motor	-	+
brain	+	-
memory for event	+	-
onset	early morning	first 2 hours of sleep
associated	stress/anxiety	hyperarousal state
treatment	TCA, psychotherapy	diazepam, reassurance

## CHILD ABUSE

- physical, sexual, emotional, neglect
- in Canada, provincial legislation requires physicians (and other professionals) to report suspicion of abuse to child welfare authorities

## Risk Factors

- child characteristics: prematurity, MR, physical handicaps, hyperactivity, difficult to discipline
- parental characteristics: substance abuse, psychiatric conditions, abusive childhood
- environmental characteristics: poverty, overcrowding, social isolation, parental unemployment

## Physical Abuse

- be suspicious if
  - inadequately explained injuries
  - symmetrical pattern of injuries
  - injury in shape of instrument
  - multiple fractures
  - retinal hemorrhages in babies
  - multiple bruises above waist
  - multiple visits to different hospitals

## Sexual Abuse

- epidemiology
  - females - 1 in 4; males - 1 in 10;
  - male sexual abuse shows increasing trend
  - peak ages at 2-6 and 12-16 years
  - low reporting rate
  - most perpetrators are known to child
- incest: sexual relations between family members
  - most common perpetrators are fathers, stepfathers, uncles
  - 75% of reported cases are father/daughter
- clinical indicators
  - genital injury; STD in prepubertal children; teen pregnancy
  - sexually aggressive behaviour; sexual knowledge beyond child's developmental stage
- psychological sequelae
  - in childhood: PTSD, dissociation, depression, low self esteem, sexual disturbances (sexually aggressive behaviour, compulsive masturbation, promiscuity)
  - in adult survivors: PTSD, depression, low self esteem, borderline personality disorder, dissociative identity disorder, sexual dysfunction, substance abuse, eating disorders

## Neglect

- clinical indications: FTT, malnutrition, chronic infections, poor hygiene/dress, socially unresponsive, no stranger anxiety

## Assessment Issues in Child Abuse

- interview child alone and with family; interview parents separately
- tape record sessions, do not use leading questions
- physical examination
- evaluate risk (parenting ability, parental psychopathology, risk if child and sibs remain in the home)
- report to Children's Aid Society; inform family of report

## Treatment

- individual/family/group therapy
- close co-operation with social worker
- removal of parent or child depending on circumstances

## PSYCHODYNAMIC THERAPIES

- assumption: present shaped by past
- attention to unconscious psychological forces
- insight gained allows change in personality and behaviour
- conflict - 3 stages of symptoms
  - unresolvable conflict
  - attempt to repress
  - return of conflict in disguised form (symptom or character trait)
- emphasis on early development with caregiver
- sources of information
  - past and present experiences and relationships
  - relationship with therapist
  - transference: unconscious; re-enact early interpersonal patterns in relationship with therapist
  - countertransference: therapist's transference to patient
  - resistance: elements in the patient which oppose treatment
- techniques
  - free association: patient says whatever comes to mind
  - dream analysis

## VARIETIES OF PSYCHODYNAMIC THERAPY

- psychoanalysis (exploratory psychotherapy)
  - original therapy developed by Freud
  - emphasis on early childhood experiences
  - 4-5x/week for 3-5 years, use of couch
  - for individuals who can tolerate ambiguity (healthier end of spectrum)
- supportive psychotherapy
  - goal is not insight but lessening of anxiety
  - strengthen defense mechanisms to assist day-to-day functioning
- short term/brief psychotherapy
  - resolution of particular emotional problem, acute crisis
  - number of sessions agreed at outset (6-20)
- interpersonal psychotherapy
  - short-term treatment containing supportive principles
  - focus on personal social roles and relationships to help deal with problem in current functioning

## BEHAVIOUR THERAPY

- modification of internal or external events which precipitate or maintain emotional distress
- systematic desensitization - mastering anxiety provoking situations by approaching them gradually and in a relaxed state that inhibits anxiety
- flooding - confront 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 responding to it
- punishment (aversion therapy) - causing a behaviour to diminish by applying a noxious stimulus
- used for anxiety disorders, substance abuse, paraphilias

## COGNITIVE THERAPY

- assumption: moods and feelings influenced by thoughts
- psychiatric disturbances are frequently caused by habitual errors in thinking
- goal is to help patient become aware of automatic thoughts and correct assumptions with more balanced view
- useful for depression, anxiety disorders, self-esteem problems

**OTHER THERAPIES**

- ❑ group psychotherapy
  - goals: self-understanding, acceptance, social skills
- ❑ family therapy
  - family system considered more influential than individual
  - structural focus
    - here and now
    - re-establish parental authority
    - strengthen normal boundaries
    - re-arrange alliances
- ❑ hypnosis
  - good for pain, phobias, anxiety, smoking

**MEDICATIONS/THERAPEUTICS**

**ANTIPSYCHOTICS**

- ❑ indications: schizophrenia and other psychotic disorders, mood disorders with psychosis, violent behaviour, autism, organic mental disorders, Tourette's, somatoform disorders (low dose), symptoms of dementia, OCD
- ❑ onset: immediate calming effect and decrease in agitation; thought disorder responds in 2-4 weeks
- ❑ mechanism of action
  - "typical" - block D2 receptors (dopamine); treats only positive symptoms
  - "atypical" - block D2 and/or D1, 5-HT receptors (dopamine + serotonin); treats both positive and negative symptoms
- ❑ classification of typical antipsychotics
  - low potency (e.g. chlorpromazine): very sedating; +++ cardiovascular, anticholinergic and antiadrenergic side effects
  - mid potency (e.g. perphenazine): few side effects
  - high potency (e.g. haloperidol): ++ risk of movement disorder side effects and neuroleptic malignant syndrome

Table 13. Common Antipsychotics

	Starting Dose	Maintenance	Maximum
Typicals (in order of potency)			
CPZ (Largactil)	10-15 mg PO b/t/qid	400 mg/d	1000 mg/d
thioridazine (Mellaril)	25-100 mg PO tid	100-400 mg PO bid	800 mg/d
methylthiraprazine (Nozinan)	2-8 mg PO tid	based on clinical effect	1000+ mg/d
loxapine HCL (Loxitane)	10 mg PO tid	60-100 mg/d	250 mg/d
perphenazine (Trilafon)	8-16 mg PO b/tid	4-8 mg PO t-qid	64 mg/d
trifluoperazine (Stelazine)	2-10 mg PO b/tid (1-2 mg IM q4-6h)	15-20 mg/d	10 mg IM/d
fluphenazine enanthate (Moditen)	2.5-10 mg/d	1-5 mg PO qhs	20 mg/d
haloperidol (Haldol)	2-5 mg IM q4-8h 0.5-5 mg PO bid/tid	based on clinical effect	100 mg/d
pimozide (Orap)	0.5-1 mg PO bid	2-12 mg/d	20 mg/d 0.2 mg/kg/d
Atypicals			
clozapine (Clozaril)	25 mg od/bid	300-600 mg/d	900 mg/d
risperidone (Risperidal)	1-2 mg od/bid	4-8 mg/d	
olanzapine (Zyprexa)	5 mg/d	10-20 mg/d	

Rational Use of Antipsychotics

- no reason to combine antipsychotics (see Figure 3)
- choosing an antipsychotic
  - all antipsychotics (except clozapine) are equally effective
  - choice depends on side effect profile
  - choose a drug patient responded to in the past or was used successfully in a family member
  - route: PO (pills or elixir); short-acting or long-acting depot IM injections (i.e. Haldol LA, Modecate, Imap, Clopixol)
  - clozapine is used in refractory cases (risk of agranulocytosis and cost hinder routine use, but has a low incidence of EPS)
- minimum 6 months, usually for life

Atypical Antipsychotics

- fewer EPS than typicals
- speculation that they do not cause tardive dyskinesia or dystonia, though they have not been in use long enough to know this for sure

Clozapine (Clozaril)

- a dibenzodiazepine
- blocks a spectrum of receptors, including D1-D4, 5-HT<sub>2</sub>, 5-HT<sub>3</sub>, muscarinic, histaminic
- indications
  - treatment-resistant schizophrenia
  - severe neurological side effects (i.e. tardive dyskinesia) limiting use of other agents (clozapine does not worsen tardive symptoms; it may actually treat them)
- about 50% of patients benefit, especially paranoid patients and those with onset after 20 years old
- side effects: agranulocytosis (1-2%), drowsiness, hypersalivation, tachycardia, sedation, orthostatic hypotension, nausea, vomiting, atropinic side effects, weight gain, extrapyramidal, fever, seizure, NMS, drooling
- weekly blood counts for at least 1 month, then q 2 weeks, due to risk of agranulocytosis
- do not use with carbamazepine because of agranulocytosis risk

Risperidone (Risperidal)

- a benzisoxazole
- blocks 5-HT<sub>2</sub> and D<sub>2</sub>
- low incidence of EPS
- indications
  - schizophrenia
  - negative symptoms
  - intolerance to side effects of conventional neuroleptics
- advantages limited to a narrow dose range: 4-8 mg/day only
- side effects: sedation, hypotension, weight gain, impairment of ejaculation/orgasm, increased prolactin levels, hypersalivation, insomnia, agitation, headache, anxiety, rhinitis

Olanzapine (Zyprexa)

- blocks 5-HT<sub>2.3.6</sub>, D1-D4, muscarinic, adrenergic, histaminergic
- overall efficacy is superior to Haldol; well tolerated; comparable to risperidone
- not for use in treatment resistant schizophrenia
- incidence of EPS much less than traditional neuroleptics i.e. Haldol
- favourable tardive dyskinesia profile but may not be as good as clozapine
- side effects: mild sedation, minimal anticholinergic, mild dizziness, sexual dysfunction, AST and ALT elevation early in some, weight gain, restlessness

System/Syndrome	Side Effects
anticholinergic	dry mucous membranes blurred vision; acute glaucoma constipation urinary retention sweating delayed/retrograde ejaculation
cardiovascular (anti-alpha 1 adrenergic)	orthostatic hypotension dizziness fainting tachycardia
CNS	weight gain sedation confusion decreased seizure threshold movement disorders (see next section)
endocrine (due to dopamine blockage which increases Prl)	men: decreased libido gynecomastia women: breast engorgement lactation amenorrhea menstrual irregularities changes in libido
ocular	lenticular pigmentation pigmentary retinopathy (thioridazine >800 mg/day)
hypersensitivity reactions	liver problems blood dyscrasias (e.g. agranulocytosis) skin rashes/indurations neuroleptic malignant syndrome (see next section)
altered temperature regulation	hypo or hyperthermia

**Neuroleptic Malignant Syndrome**

- due to massive dopamine blockage; increased incidence with high potency and depot neuroleptics
- risk factors
  - sudden increase in dosage, or starting a new drug
  - medical illness
  - dehydration
  - exhaustion
  - poor nutrition
  - external heat load
  - sex: male
  - age: young adults
- symptoms
  - classic 4 symptoms
    - autonomic changes (i.e. increased HR/BP, sweating)
    - fever
    - rigidity
    - mental status changes (i.e. confusion)
  - develops over 24-72 hours
- labs: increased CPK, leukocytosis, myoglobinuria
- treatment: discontinue drug, hydration, cooling blankets, dantrolene, bromocriptine
- mortality: 5%

**Extrapyramidal Side Effects of Antipsychotics**

- incidence related to increased dose and potency
- acute vs. tardive

**Table 15. Extrapyrarnidal Side Effects**

	Dystonia	Akathisia	Pseudoparkinsonism	Dyskinesia
acute or tardive	• both	• both	• acute	• tardive
risk group	• acute: young Asian males	• acute: elderly females	• elderly females	• elderly females
presentation	• sustained abnormal posture • torsions, twisting, contraction of muscle groups, muscle spasms (e.g. oculogyric crisis, laryngospasm, torticollis)	• motor restlessness; can't sit down • crawling sensation in legs relieved by walking	• tremor • rigidity/cogwheeling • akinesia • postural instability (decreased/absent arm swing, stooped posture, shuffling gait, decreased stride, difficulty pivoting)	• purposeless constant movements usually 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: lorazepam or benztropine	• acute: lorazepam, propranolol or diphenhydramine; reduce or change neuroleptic to lower potency	• acute: benztropine (or benzodiazepine if XS 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)**

- do not always prescribe with neuroleptics; give only if at high risk for EPS
- do not give these for tardive syndromes; they worsen the condition
- types
  - benztropine (Cogentin) 2 mg PO, IM or IV od (~1-6 mg)
  - procyclidine (Kemadrin) 15 mg PO od (~5-30 mg)
  - biperiden (Akineton) 2 mg PO, IM or IV bid (2-10 mg)
  - amantadine (Symmetrel) 100 mg PO bid (100-400 mg)
  - trihexyphenidyl (Artane) 1 mg-15 mg PO od
  - diphenhydramine (Benedryl) 25-50 mg PO/IM qid

**ANTIDEPRESSANTS**

- onset of effect
  - neurovegetative symptoms – 1-3 weeks
  - emotional/cognitive symptoms – 2-6 weeks
  - therefore, there is a “suicide window” in which the patient may still be depressed, but has enough energy to carry out suicide
- indications - depression, depressive phase of bipolar disorder, dysthymia, anxiety disorders, obsessive-compulsive disorders (clomipramine), chronic pain, enuresis, bulimia, cocaine withdrawal
- ALL: metabolism - liver, excretion - kidney



Class	Drug	Starting Dose (mg)	Therapeutic Dose (mg)
TCA (3° Amines)	amitriptyline (Elavil)	25-75	150-300
	imipramine (Tofranil)	25-75	150-300
	doxepin (Sinequan)	25-75	150-300
TCA (2° Amines)	nortriptyline (Aventyl)	20-50	75-150
	desipramine (Norpramin)	25-75	150-300
MAOI	phenelzine (Nardil)	15	45-90
	tranylcypromine(Parnate)	10	10-90
	isocarboxazid (Marplan)	10	10-30
RIMA	moclobemide (Manerix)	150	150-600
SSRI	fluoxetine (Prozac)	20	20-80
	fluvoxamine (Luvox)	50-100	150-300
	paroxetine (Paxil)	10	20-60
	sertraline (Zoloft)	50	50-200
SNRI	venlafaxine (Effexor)	20	75-225
SDRI	bupropion (Wellbutrin)	200	300-450
Other cyclics	nefazodone (Serzone)	100	100-600

Rational Use of Antidepressants

- taper TCAs slowly (over weeks-months) because they can cause withdrawal reactions; MAOIs and SSRIs can be tapered over 1 week (see Figure 2)
- patient education regarding drug effects

Table 17. Antidepressants

	TCA	SSRI	MAOI	RIMA	Nefazodone	SNRI
specific indications	<ul style="list-style-type: none"> <li>• kids</li> </ul>	<ul style="list-style-type: none"> <li>• anxiety states, BN (fluoxetine), OCD, seasonal depression, atypical depression</li> </ul>	<ul style="list-style-type: none"> <li>• atypical depression (e.g. in elderly, coexisting anxiety or panic, hypochondriacal symptoms, reversed functional shift, increased sleep/food intake, insomnia)</li> <li>• treatment refractory depression</li> </ul>	<ul style="list-style-type: none"> <li>• outpatient management of depression</li> </ul>	<ul style="list-style-type: none"> <li>• depression</li> </ul>	<ul style="list-style-type: none"> <li>• melancholic depression</li> </ul>
MOA	<ul style="list-style-type: none"> <li>• block NE and serotonin reuptake</li> </ul>	<ul style="list-style-type: none"> <li>• block serotonin reuptake only</li> </ul>	<ul style="list-style-type: none"> <li>• irreversible inhibition of monoamine oxidase A and B</li> <li>• leads to increased norepinephrine and serotonin</li> </ul>	<ul style="list-style-type: none"> <li>• reversible inhibition of MAO A only</li> </ul>	<ul style="list-style-type: none"> <li>• block serotonin reuptake</li> <li>• post-synaptic receptor antagonist</li> </ul>	<ul style="list-style-type: none"> <li>• block NE and serotonin reuptake</li> </ul>
side effects	<ul style="list-style-type: none"> <li>• anticholinergic: dry mouth, blurry vision, acute glaucoma, constipation, urinary retention, delirium</li> <li>• alpha 1 adrenergic: orthostatic hypotension</li> <li>• antihistamine: sedation, weight gain</li> <li>• CVS: increased HR, conduction delay</li> <li>• Neuro: sedation, stimulation, decreased seizure threshold</li> </ul>	<ul style="list-style-type: none"> <li>• fewer than TCA, therefore increased compliance</li> <li>• GI: N/V, diarrhea, ab. cramps, weight loss</li> <li>• CNS: restlessness, tremor, insomnia, headache, drowsiness</li> <li>• sexual dysfunction (impotence, anorgasmia)</li> <li>• EPS</li> </ul>	<ul style="list-style-type: none"> <li>• hypertensive crises: with tyramine rich food (get headache, flushes, palpitations, N/V, photophobia)</li> <li>• anti-alpha 1 adrenergic: orthostatic hypotension</li> <li>• weight gain</li> <li>• energizing</li> <li>• minimal anticholinergic and antihistamine effects</li> </ul>	<ul style="list-style-type: none"> <li>• rare to have hypertensive crises because MAO B is not affected; however, wise to avoid tyramine rich food anyway</li> <li>• well tolerated</li> <li>• nausea, dizziness, insomnia</li> </ul>	<ul style="list-style-type: none"> <li>• well tolerated; mild side effects</li> <li>• some antichol. effects</li> <li>• orthostatic hypotension may occur</li> <li>• sexual dysfunction uncommon</li> </ul>	<ul style="list-style-type: none"> <li>• nausea</li> <li>• insomnia</li> <li>• dizziness</li> <li>• nervousness</li> <li>• somnolence</li> <li>• anorgasmia</li> <li>• tremor</li> <li>• sweating</li> <li>• increased BP</li> </ul>
risk in OD	<ul style="list-style-type: none"> <li>• toxic in OD</li> <li>• 3 X's therapeutic dose is lethal</li> <li>• presentation: Ach effects, CNS stimulation then depression, then seizures</li> <li>• EKG: prolonged QRS (duration reflects OD severity)</li> <li>• treatment: activated charcoal, cathartics, supportive treatment, IV diazepam for seizure, physostigmine salicylate for coma</li> <li>• do NOT give ipecac, as can cause rapid neurologic deterioration and seizures</li> </ul>	<ul style="list-style-type: none"> <li>• very safe; hard to OD on them</li> </ul>	<ul style="list-style-type: none"> <li>• toxic in OD, but wider margin of safety than TCA</li> </ul>			
drug interactions	<ul style="list-style-type: none"> <li>• MAOI, SSRI</li> <li>• EtOH</li> </ul>	<ul style="list-style-type: none"> <li>• SSRIs inhibit P450 enzymes; therefore will increase levels of drugs metabolized by P450 system</li> <li>• serotonin syndrome with MAOI: nausea, diarrhea, palpitations, hyperthermia, chills, neuromuscular irritability, altered consciousness</li> </ul>	<ul style="list-style-type: none"> <li>• EtOH</li> <li>• hypertensive crises with noradrenergic medications (e.g. TCA, decongestants, amphetamines)</li> <li>• serotonin syndrome with serotonergic drugs (e.g. SSRI, tryptophan, dextromethorphan)</li> </ul>			

**ELECTROCONVULSIVE THERAPY (ECT)**

- ❑ induction of a grand mal seizure using an electrical pulse through brain under general anesthesia
- ❑ indications
  - depression refractory to “adequate” pharmacological trial
  - 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 (negativism)
  - marked vegetative features
  - acute schizophrenia
  - mania unresponsive to meds
- ❑ side effects: risk of anesthesia; memory loss (may be retrograde and/or anterograde, tends to resolve by 6 to 9 months, permanent impairment controversial); headaches; muscle aches
- ❑ some evidence that unilateral ECT causes less memory loss than bilateral but may not be consistently as effective
- ❑ contraindications: increased ICP

**MOOD STABILIZERS**

**Rational Use of Mood Stabilizers**

- ❑ before initiating lithium: screen for pregnancy, thyroid disease, seizure disorder, other neurological disease, renal disease, cardiovascular
- ❑ get baseline: CBC, ECG (if patient > 45 years old or cardiovascular risk), urinalysis, BUN, Cr, lytes, TSH
- ❑ use lithium or valproic acid first (plus or minus an antipsychotic); use carbamazepine in non-responders and rapid cyclers (> 4 episodes per year)
- ❑ a clinical trial of lithium lasts 3 weeks at therapeutic blood levels; a trial of carbamazepine or valproic acid lasts 3 weeks (blood levels do not correlate well)
- ❑ give lithium as a single dose at bedtime, others 2-3x per day
- ❑ can combine lithium and carbamazepine or valproic acid safely in lithium non-responders
- ❑ clonazepam is also a mood stabilizer; use it in combination with other mood stabilizers, never alone; also has a sedation effect

**Table 18. Mood Stabilizers**

	Lithium	Carbamazepine (Tegretol)	Valproic Acid (Epival)
indications	<ul style="list-style-type: none"> <li>• prophylaxis of BAD</li> <li>• treatment of acute mania</li> <li>• augmentation of antidepressants in MDE and OCD</li> <li>• schizoaffective disorder</li> <li>• chronic aggression and antisocial behavior</li> <li>• recurrent depression</li> <li>• less common: mental retardation, borderline PD, EtOHism</li> </ul>	<ul style="list-style-type: none"> <li>• prophylaxis of BAD</li> <li>• treatment of acute mania</li> <li>• rapid cycling BAD</li> </ul>	<ul style="list-style-type: none"> <li>• prophylaxis of BAD</li> <li>• treatment of acute mania</li> <li>• rapid cycling BAD</li> </ul>
MOA	<ul style="list-style-type: none"> <li>• unknown</li> </ul>	<ul style="list-style-type: none"> <li>• depresses synaptic transmission</li> <li>• raises seizure threshold</li> </ul>	<ul style="list-style-type: none"> <li>• depresses synaptic transmission</li> <li>• raises seizure threshold</li> </ul>
dosage	<ul style="list-style-type: none"> <li>• adult - 600-1500 mg/day</li> <li>• geriatric - 150-600 mg/day</li> <li>• usually OD dosing</li> </ul>	<ul style="list-style-type: none"> <li>• 750-3000 mg/day</li> <li>• usually tid dosing</li> </ul>	<ul style="list-style-type: none"> <li>• 300-1600 mg/day</li> <li>• usually bid dosing</li> </ul>
therapeutic level	<ul style="list-style-type: none"> <li>• adult - 0.5-1.2 mmol/L</li> <li>• geriatric - 0.3-0.8 mmol/L</li> </ul>	<ul style="list-style-type: none"> <li>• 350-700 µmol/L</li> </ul>	<ul style="list-style-type: none"> <li>• 17-50 mmol/L</li> </ul>
monitoring	<ul style="list-style-type: none"> <li>• monitor serum levels (always wait 12 hours after dose) until therapeutic; then biweekly or monthly until a steady state is reached, then q 2 months</li> <li>• also monitor thyroid function q 6 months, Cr q 6 months, urinalysis q 1 year</li> </ul>	<ul style="list-style-type: none"> <li>• weekly blood counts for first month, due to risk of agranulocytosis</li> <li>• also watch for signs of blood dyscrasias: fever, rash, sore throat, easy bruising</li> </ul>	<ul style="list-style-type: none"> <li>• LFTs weekly X 1 month, then monthly, due to risk of liver dysfunction</li> <li>• also watch for signs of liver dysfunction: nausea, edema, malaise</li> </ul>
side effects	<ul style="list-style-type: none"> <li>• GI: N/V, diarrhea</li> <li>• GU: polyuria, polydipsia, GN, renal failure, nephrogenic DI</li> <li>• CNS: tremor, lethargy, fatigue, headache</li> <li>• Hematologic: reversible leukocytosis</li> <li>• Other: teratogenic, weight gain, edema, psoriasis, hypothyroidism, hair thinning, muscle weakness</li> </ul>	<ul style="list-style-type: none"> <li>• Hematologic: transient leukopenia, agranulocytosis</li> <li>• CNS: ataxia, dizziness, slurred speech, drowsiness, confusion, nystagmus, diplopia</li> <li>• Skin: rash (5% risk; should d/c drug because of risk of Steven-Johnson syndrome)</li> <li>• GI: N/V, diarrhea</li> </ul>	<ul style="list-style-type: none"> <li>• GI: liver disease (can be fatal), N/V, diarrhea</li> <li>• CNS: tremor, sedation, ataxia, drowsiness</li> <li>• Other: hair loss, weight gain, transient thrombocytopenia</li> </ul>
interactions	<ul style="list-style-type: none"> <li>• NSAIDS decrease clearance</li> </ul>		

Lithium Toxicity

- is a CLINICAL diagnosis, as toxicity can occur at therapeutic levels
- presentation
  - GI: severe N/V and diarrhea
  - cerebellar: ataxia, slurred speech, incoordination
  - cerebral: myoclonus, choreiform or Parkinsonian movements, UMN signs, seizures, delirium, coma
- management
  - discontinue Lithium
  - serum Li levels, BUN, lytes
  - saline infusions
  - hemodialysis if Li > 2 mmol/L, coma, shock, severe dehydration, failure to respond to treatment after 24 hours, or deterioration

ANXIOLYTICS

- types: benzodiazepines, azapirones (e.g. buspirone, zopiclone)
- indications
  - anxiety disorders, insomnia, alcohol withdrawal (especially DT), barbiturate withdrawal, organic brain syndrome (agitation in dementia), akathisia due to antipsychotics, seizure disorders, musculoskeletal disorders
- relative contraindications
  - major depression (except as an adjunct to other treatment), history of drug/alcohol abuse, pregnancy, breast feeding
- mechanism of action
  - benzodiazepines: potentiate binding of GABA to its receptors; results in decreased neuronal activity
  - buspirone: partial agonist of 5-HT type 1A receptors
- metabolism: liver; excretion: kidney

Rational Use of Anxiolytics

- anxiolytics mask or alleviate symptoms, they do not cure
- benzodiazepines
  - should be used for limited periods (weeks-months) to avoid dependence
  - have similar efficacy, so choice depends on half-life, metabolites and route of administration
  - give once or twice a day
  - taper slowly over weeks-months because they can cause withdrawal reactions
    - low dose withdrawal: tachycardia, hypertension, panic, insomnia, anxiety, impaired memory and concentration, perceptual disturbances
    - high dose withdrawal: hyperpyrexia, seizures, psychosis, death
  - avoid alcohol because of potentiation of CNS depression
  - other uses: sedative, muscle relaxants, EtOH withdrawal, catatonia, narcoanalysis
  - side effects
    - CNS: drowsiness, cognitive impairment, reduced motor coordination, memory impairment
    - physical dependence, tolerance develops
  - commonly used drug in overdose
    - overdose is rarely fatal
    - in combination with other drugs is more dangerous and may cause death
- buspirone
  - nonsedating; therefore, may be preferred over benzodiazepines
  - does not alter seizure threshold
  - does not interact with EtOH
  - not a muscle relaxant
  - primary use: GAD
  - onset: 2 weeks
  - side effects: restlessness, nervousness, extrapyramidal

Class	Drug	Dose Range (mg/day)	Appropriate Use	
Benzodiazepines	• Long-acting	clonazepam (Rivotril)	1.5-2.0	akathisia, generalized anxiety seizure prevention, panic disorder
		diazepam (Valium)	5-40	
	• Short-acting	flurazepam (Dalmane)	15-30	sleep
		alprazolam (Xanax)	1-4	panic disorder; sublingual available for very rapid action
		lorazepam (Ativan)	2-6	sleep, generalized anxiety
		oxazepam (Serax)	30-120	sleep, generalized anxiety
		temazepam (Restoril)	15-30	sleep
		triazolam (Halcion)	0.125-0.5	shortest t <sub>1/2</sub> , rapid sleep but rebound insomnia
Azapirone	buspirone (Buspar)	20-60	generalized anxiety	
	zopiclone (Imovane)	7.5	sleep	

**Benzodiazepine Antagonist - Flumazenil (Anexate)**

- use for suspected benzodiazepine overdose
- mechanism of action: a competitive benzodiazepine antagonist

**PSYCHOSTIMULANTS**

- methylphenidate (Ritalin) -1st line, 75% respond
- dextroamphetamine (Dexedrine)
- magnesium pemoline (Cyclert)
- relative contraindications – Tourette’s, tics, substance abuse, weight/growth retardation, impaired liver function (Pemoline), psychosis, cardiac illness
- side effects - insomnia, anorexia, nausea, abdominal pain, irritability, paradoxical worsening of behaviour, increased heart rate

**TREATMENT ALGORITHMS**

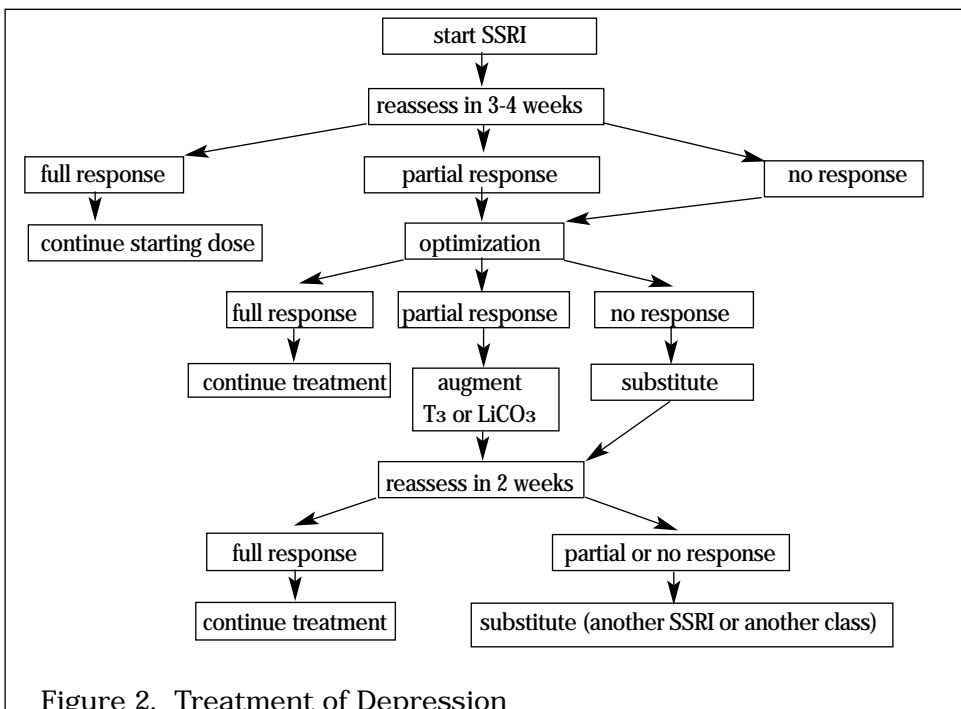


Figure 2. Treatment of Depression

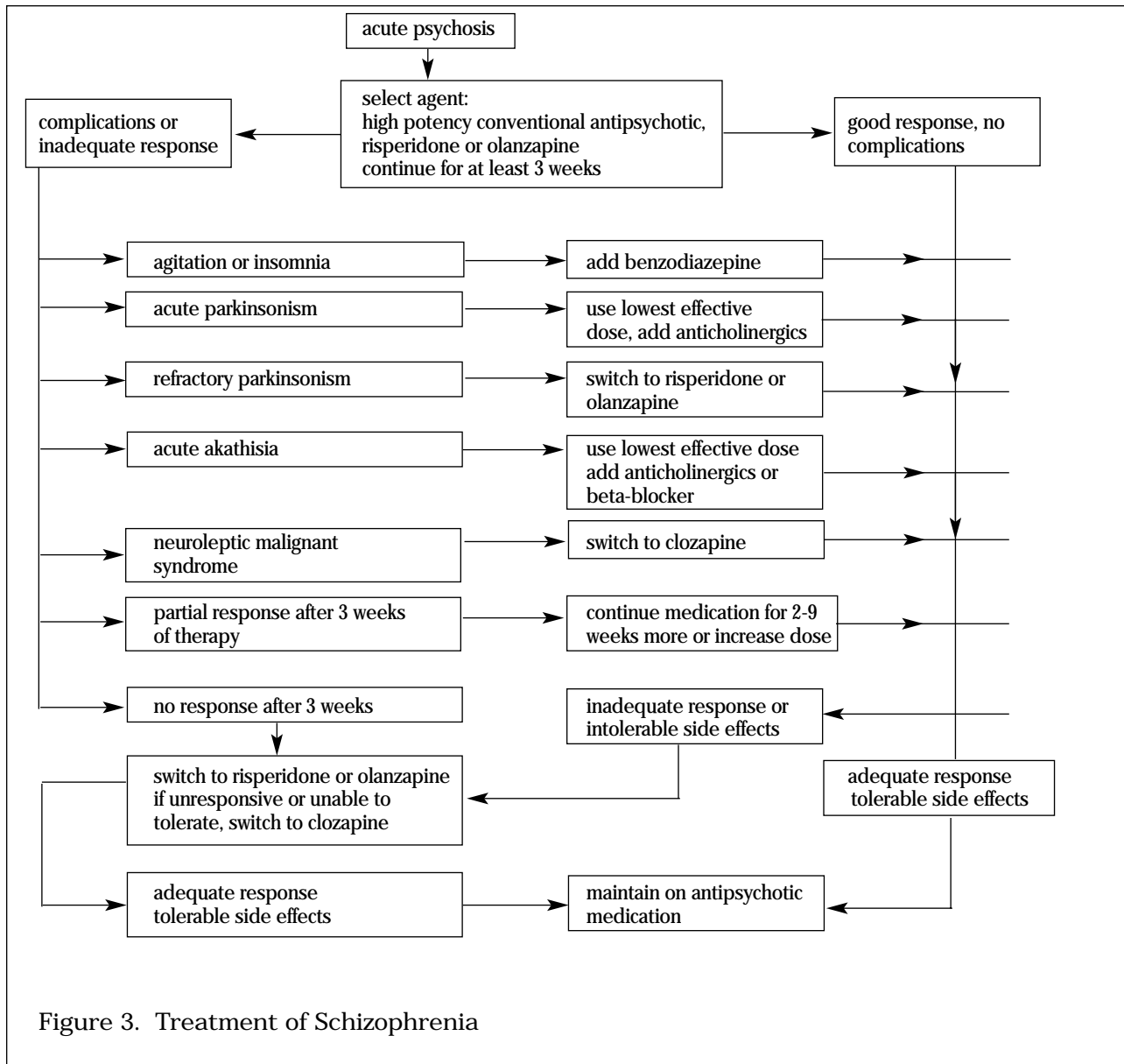


Figure 3. Treatment of Schizophrenia