

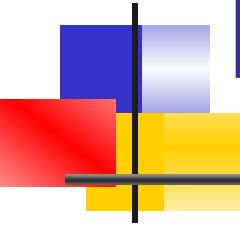


سايكولوجي (علم السلوكيات)

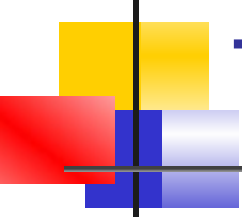
تجميع سلايدات الدكتور مهند حمدان

إعداد زميلتكم رحيق أبو عودة
-فريق كل ما يخص الطب-





Defense Mechanisms



FRUED

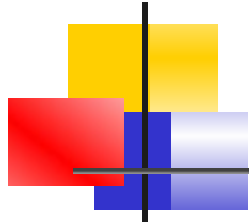
TOPOGRAPHICAL MODEL

■ Freud's first model concerning levels of Mind described in *The Interpretation of Dreams*:

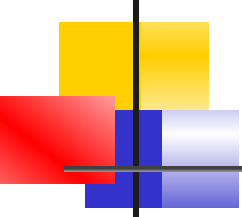
■ Conscious:

Awareness of external and internal perceptions:

- involves secondary process thinking
- governed by the reality principle (involves delayed gratification and is the result of external reality)
- content is readily accessible



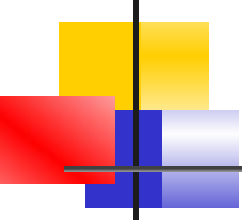
	Primary process thinking	Secondary process thinking
<i>Time</i>	Timelessness	Linear forward flow of time
<i>Organization</i>	Lacking	Systematized
<i>Reality</i>	Disregard of conscious world reality	Regard for external reality
<i>Logical connections</i>	Disregarded	Regarded and respected
<i>Contradictions</i>	Not recognized	Acknowledged but not always accepted
<i>Tolerance for inconsistency</i>	High	Low
<i>Governing principle</i>	Pleasure	Reality



■ Pre-conscious:

Holds information which person may be unaware of at any particular moment but can call up at will if necessary through selective attention,

- e.g. the layout of their house, colour of their car etc.
- Develops during childhood (parallel to the development of the Ego).
- Like the conscious Mind, involves secondary process thinking and is governed by reality principle

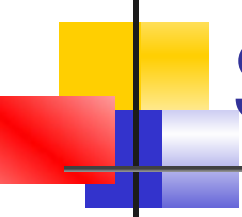


■ Unconscious:

All mental processes outside of consciousness.

Repressed ideas, memories, feelings and urges:

- entails primary process thinking
- governed by the pleasure principle (largely innate and involves seeking pleasure and avoiding pain leading to wish fulfilment)
- information is only accessible when pre-conscious is bypassed or compromised, e.g. dreaming, drugs/ alcohol, hypnosis, psychological stress.



FRUED STRUCTURAL MODEL

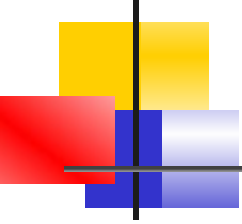
■ Id:

-- entirely unconscious reserve of impulses, drives, instincts.

These basic drives concerning aggression, survival, sex etc.

influence thinking (primary process) in accordance with the pleasure principle.

It is non-verbal, illogical and has the following components:



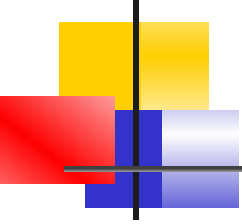
■ Ego:

the Ego is the integrator; that part of the personality that mediates with the external world.

Fulfills its executive function through negotiating the demands of the Id, the Super-Ego and external reality.

Functions at conscious, preconscious and unconscious levels, adapting through use of defences.

The Ego-ideal is what the individual aspires to (mental parental images)



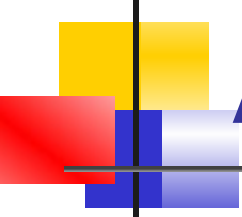
■ Super-Ego:

the censor of the personality; an individual's morals, values and ethics

as derived from their parents (tells an individual what not to do).

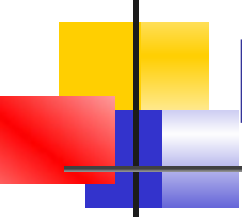
Conscious component is termed conscience (individual is aware of their morality but not the processes that generate or sustain it).

Develops in the second year of life, established by 5years.



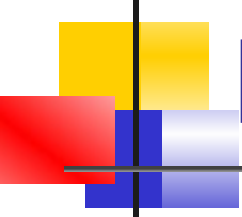
ANNA FREUD (1892–1982)

- Daughter of Sigmund Freud.
- Important figure in the development of child analysis.
- further developed the theory of defense mechanisms
- the unconscious filters and modifiers of unacceptable thoughts/ aspects of oneself.
- Defenses are generally a normal, healthy aspect of psychological functioning



DEFENSE MECHANISMS

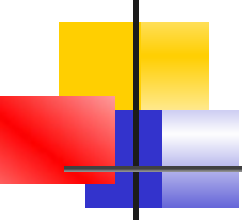
- Defenses are the primary tools of the ego used to manage the internal conflicts between the id and superego.
- They are the means by which the ego controls instinctive urges and unpleasant effects (emotions).
 - All defenses are unconscious, with one exception: suppression.
 - Defenses change over time; we are only aware of our defenses in retrospect.
 - Defenses are adaptive as well as maladaptive.



Narcissistic Defenses

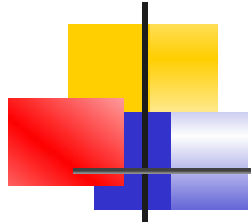
1) Projection

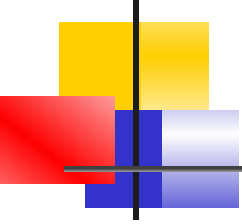
- is when a person attributes his own wishes, desires, thoughts, or emotions to someone else.
- Internal states are perceived as a part of someone else or of the world in general.
- • A cheating spouse accuses partner of cheating.
- This is the main defense mechanism seen in paranoid personality disorder.
- Paranoia results from the use of projection.



2) Denial

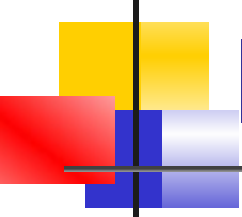
- is not allowing reality to penetrate to avoid acknowledgment of a painful aspect of reality.
- • After surviving a heart attack, a patient insists on continuing his lifestyle as if nothing had happened.
- • A woman prepares dinner for her husband expecting him to come home, even though he died a month earlier.
- • Substance users are often “in denial,” claiming that they are not addicted





3) Splitting

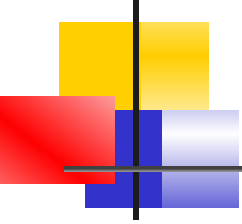
- is when people and things in the world are idealized (all good) or devalued (all bad).
 - “This doctor is a miracle worker, but that doctor is totally incompetent.”
 - “He’s just so perfect and wonderful,” says a teenage girl in love.
- This is the main defense mechanism seen in borderline personality disorder.
- Prejudice and behavioral stereotypes are also a result of splitting.



Immature Defenses

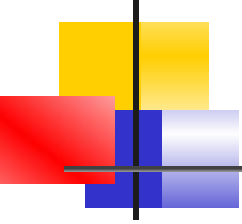
1) Blocking

- is a temporary, or transient, block in thinking or an inability to remember.
- A student is unable to recall the fact needed to answer the exam question, although he recalls it as he walks out of the exam.
- In the middle of a conversation, a woman pauses, looks confused, and asks what she was just talking about.
- In a conversation you forget someone's name.
- Blocking often happens in embarrassing moments.



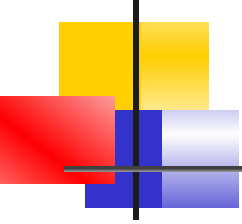
2) Regression

- is returning to an earlier stage of development you have already completed (unconscious childish behavior in an adult).
- A husband speaks to his wife in “baby talk” when he is sick.
- A man assumes a fetal position after a traumatic event.
- A previously toilet trained child wets the bed following the birth of a new sibling.



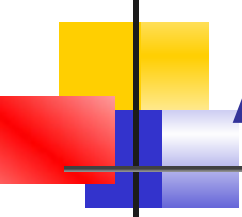
3) Somatization

- is when psychological conflict is converted into bodily symptoms.
 - A student gets a headache while taking an exam.
 - A man who witnesses a traumatic event becomes blind. (conversion not somatization)
- This is the main defense mechanism of somatic symptom disorders.



4) Introjection (identification)

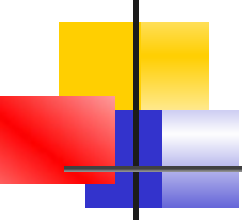
- is when we acquire characteristics of others as our own.
- Introjection is the opposite of projection.
 - A resident dresses and acts like the attending physician.
 - A child scolds her friend out loud in the same manner that she was scolded by her mother.
 - A teenager adopts the style and mannerisms of a rock star.
- This defense mechanism is used in psychotherapy.



Anxiety Defenses

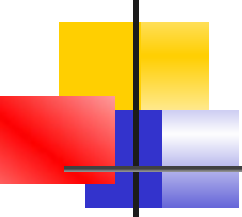
1) Displacement

- is when the target of an emotion or drive changes to a substitute target.
- A recently disciplined employee yells at his wife instead of his boss.
- In family therapy, one child in a family is often singled out and blamed for all the family's problems, i.e., treated as a scapegoat.
- This is the defense mechanism seen in phobias.



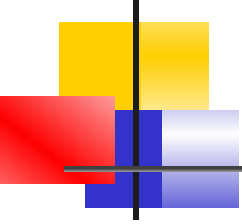
2) Repression

- is when an idea or feeling is withheld from consciousness.
- It is also called unconscious forgetting.
 - A child who was abused by her mother and treated for the abuse now has no memory of any mistreatment by her mother.
 - A man who survived 6 months as a hostage cannot recall anything about his life during that time period.
- This is one of the most basic defense mechanisms.



3) Isolation of affect

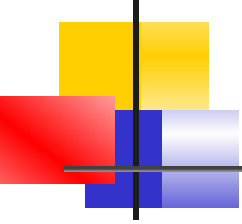
- is the separation of an idea or event from the emotions (affect) that accompany it.
- A child who has been beaten discusses the beatings without any display of emotion.
- A patient who recently severed his finger in an accident describes the incident to his physician with no emotional reaction.
- This is an important adaptive defense mechanism for self-preservation.



4) Intellectualization

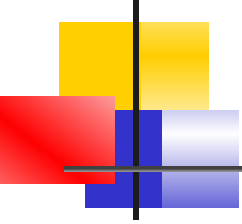
is when facts and logic are used to avoid confronting emotions.

- A medical student speaks excessively about medical details in order to avoid the emotional content of a bad diagnosis.
- Physicians who are too concerned with the technical aspects of the profession and not enough with the patient may well be using intellectualization.



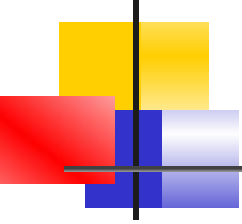
5) Acting out

- is when an emotional or behavioral outburst masks underlying feelings or ideas.
- A child throws temper tantrum when abandoned
- New-onset drug use in an adolescent boy after parents' divorce
- “Whistling in the dark” to hide underlying fear
- This is a defense mechanism that can be seen in borderline and antisocial personality disorders.



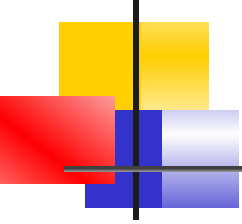
6) Rationalization

- is when rational explanations are used to justify attitudes, beliefs, or behaviors that are unacceptable.
- A murderer saying, “Yes, I believe killing is wrong but I killed him because he really deserved it.”
- An alcoholic man tells his wife that he drinks because of stress at work.
- This defense mechanism is seen in substance use disorders.



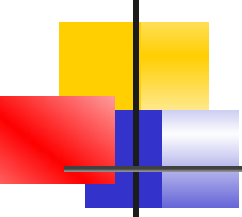
7) Reaction formation

- is when an unacceptable impulse is transformed into its opposite.
- A student who always wanted to be a physician expresses relief and says, “This is the best news I’ve ever heard,” after not being accepted into medical school.
- Two coworkers fight all the time because they are actually very attracted to each other.
- This defense mechanism is commonly seen in obsessive-compulsive disorder and anxiety disorders.



8) Undoing

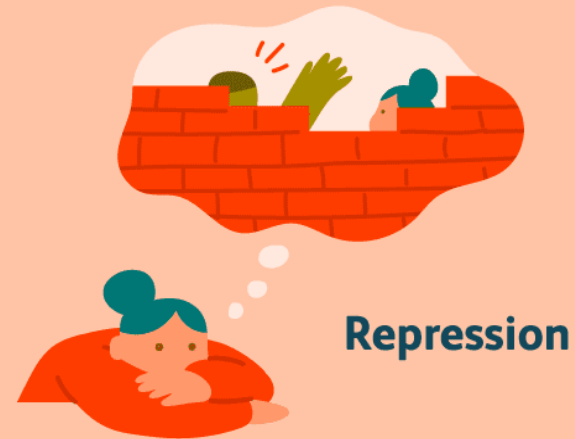
- is performing an act to undo a previous unacceptable act or thought.
- A man who is sexually aroused by a woman he meets immediately leaves and buys his wife flowers.
- Can include superstitions such as throwing salt over your shoulder to avoid bad luck.
- A man repeatedly checks to make sure the burners on the stove are turned off before leaving the house because he is fearful the house will burn down.
- This defense mechanism is seen in obsessive-compulsive disorder.

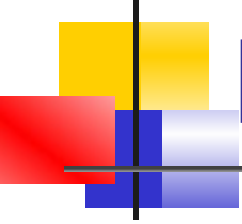


9) Passive-aggression

- is when hostility is expressed covertly.
- A patient angry with her physician shows up late for appointments.
- A student agrees to share class notes with classmates but goes home without sharing them after they upset her in class.
- The feelings of hostility are unconscious, and the person using the defense is generally unaware of. If you consciously set someone up, it is not a defense.
- This defense mechanism is seen in borderline
- personality disorders and young children.

Common Defense Mechanisms

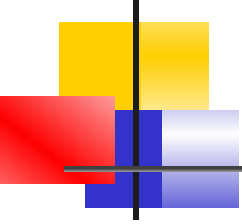




Mature Defenses

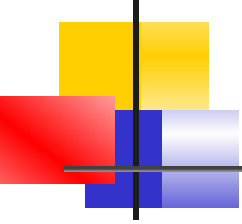
1) Humor

- permits the overt expression of feelings and thoughts without personal discomfort.
- An overweight comedian makes jokes about being fat.
- Laughter covers the pain and anxiety



2) Sublimation

- is when impulse gratification is achieved by channeling the unacceptable or unattainable impulse into a socially acceptable direction.
 - Jack the Ripper becomes a surgeon.
 - A patient with exhibitionist fantasies becomes a stripper.
- Many forms of art and literature spring from sublimation, considered by some to be the most mature defense **mechanism**.



3) Suppression

- is the conscious decision to forget or ignore.
 - A student with a pending exam decides to forget about it and go out for the evening.
 - A terminally-ill cancer patient puts aside his anxiety and enjoys a family gathering.
- Suppression is the only conscious defense mechanism.



Human development

- Development occurs along multiple lines: physical, cognitive, intellectual, and social.

Newborns

Newborns have certain preferences:

- Large, bright objects with lots of contrast
 - Moving objects
 - Curves vs. lines
 - Complex vs. simple designs
 - Facial stimuli
- 

Newborn reflexes

Reflex	Features	Onset	Extinction	CNS Origin
Moro (startle)	Arms and legs extend when child is startled	Birth	5 months	Brain stem/vestibular nuclei
Grasp	Fingers curl around object placed in hand	Birth	5 months	Brain stem/vestibular nuclei
Rooting	Baby turns face toward direction of touch	Birth	5 months	Brain stem/trigeminal
Babinski	• Not pathological in newborns • Stroking bottom of foot causes the toe to move upward (dorsiflexion) instead of downward (hallux flexion); normal in adults	Birth	1 year	Spinal cord

Milestones

Skills achieved by a certain age are called milestones, which are normative markers at median ages.

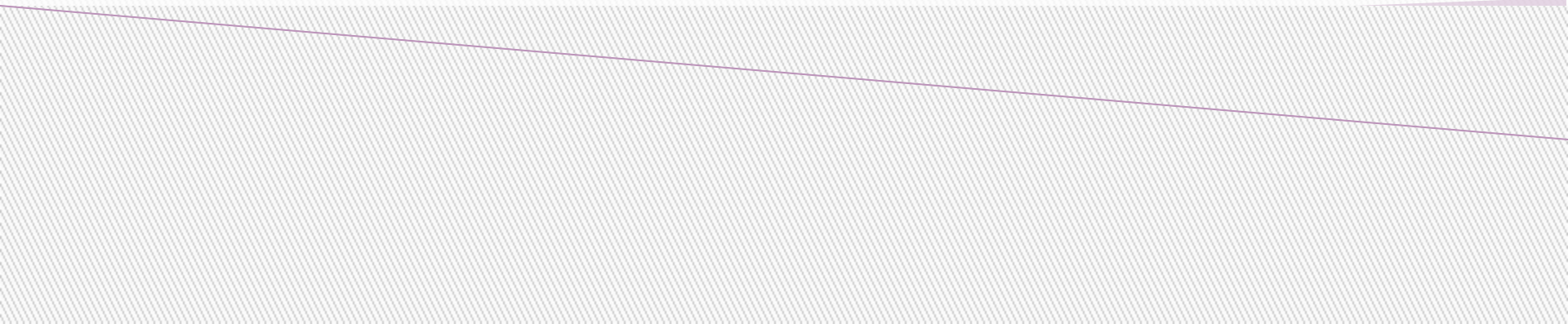
Figure Copied	Approximate Age
○ Circle	3
✚ Cross	4
▭ Rectangle	4½

Figure Copied	Approximate Age
□ Square	5
△ Triangle	6
◇ Diamond	7

Figure 9-1. Figures Copied and Approximate Ages

- Some children develop milestones more slowly while others develop more quickly
- Milestones are approximate and do not have to occur concomitantly.
- A child may match the milestones for cognitive development but show slower growth in the social area.

Physical & motor developmental milestones according to age



First year of life

- Puts everything in mouth
- Sits with support (4 mo)
- Stands with help (8 mo)
- Crawls, fear of falling (9 mo)
- Pincer grasp (10 mo)
- Follows objects to midline (4 wk)
- One-handed approach/grasp of toy
- Feet in mouth (5 mo)
- Bang and rattle stage
- Changes hands with toy (6 mo)

One year age

- Walks alone (13 mo)
- Climbs stairs alone (18 mo)
- Emergence of hand preference (18 mo)
- Kicks ball, throws ball
- Pats pictures in book
- Stacks 3 cubes (18 mo)

Two years age

- High activity level
- Walks backwards
- Can turn doorknob, unscrew jar lid
- Scribbles with crayon
- Stacks 6 cubes (24 mo)
- Stands on tiptoes (30 mo)
- Able to aim thrown ball

Three years age

- Rides tricycle
- Stacks 9 cubes (36 mo)
- Alternates feet going up stairs
- Bowel and bladder control (toilet training)
- Draws recognizable figures
- Catches ball with arms
- Cuts paper with scissors
- Unbuttons buttons

Four years age

- Alternates feet going down stairs
 - Hops on one foot
 - Grooms self (brushes teeth)
 - Counts fingers on hand
- 

Five years age

- Complete sphincter control
- Brain at 75% of adult weight
- Draws recognizable man with head, body, and limbs
- Dresses and undresses self
- Catches ball with 2 hands

Stranger anxiety

is distress in the presence of unfamiliar people

- Peaks at age eight months
- Can last until age one year

Separation anxiety

is distress following separation from a caretaker

- Onset at age eight months
- Can last until age two years

Theories of development

PIAGET (COGNITIVE MODEL)

Jean Piaget (1896–1980)

having observed his own children, proposed that a child's cognitive development is dependent upon interaction with the environment and progresses at varying rates through specific stages.



According to Jean Piaget, Intelligence involves understanding and inventing new ways of interacting with the environment.

- **Schema:** cognitive structure or pattern of behaviour/knowledge.
- **Assimilation:** incorporation of new or novel information into existing thought patterns (i.e. schemas).
- **Accommodation:** adjustment or modification of existing schemas to facilitate comprehension of new information.

Stages of development

Sensorimotor stage (0–2 years):

Does not understand temporal relationships and exhibits **egocentrism**

- 4 months **discriminatory smiling**
- 12 months: begins to develop **object permanence** (i.e. hidden object still exists).

Pre-operational stage (2–7 years):

- **Animism:** characteristics of life are attributed to all objects
- **authoritarian Morality:** rules are sacrosanct, bad-doing should inevitably be punished
- **Precausal Logic:** non-scientific, based on child's internal world
- **Egocentrism**
- **See death as reversible**

Concrete operational stage (7–11 years):

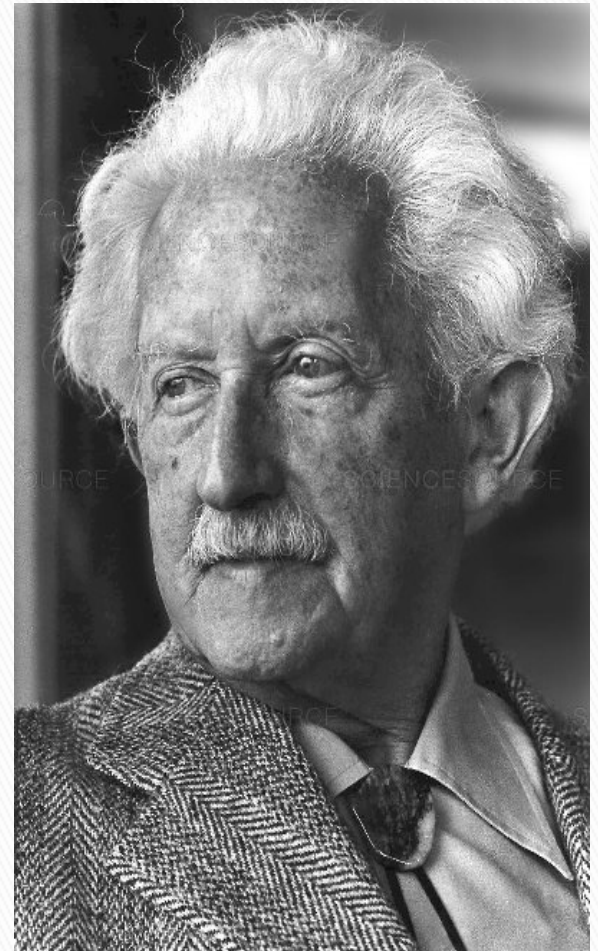
- Children lose animism, authoritarianism and egocentrism.
- Able to perform operations such as those involved in comprehending the **laws of conservation**.
- Operations (mental manipulation of thoughts)
- Group activity/cooperation
- **See death as irreversible**

Formal operational stage (11 years and upwards):

- Abstract (propositional) thought
 - Belief systems
 - Conceptualization
 - Deductive reasoning.
- 

ERIK ERIKSON (PSYCHOSOCIAL DEVELOPMENT)

- Extends into adulthood requires the successful resolution of a crisis at each phase of development.
- Divided according to age to the following stages.



Birth–2 years

Trust vs. mistrust

- Develop feeling of trust that their wants will be satisfied
- If parent is not attentive, will learn to mistrust

2–4 years

Autonomy vs. shame/doubt

- Have sense of mastery over themselves and their drives; can be cooperative or stubborn
- Gain a sense of separateness from others
- Lack of appropriate autonomy can cause shame/doubt to undermine free will

4–6 years

Initiative vs. guilt

- Initiate both motor and intellectual activity
 - Start to become sexually curious
 - Start to develop sibling rivalry
 - Guilt is present over the drive for conquest and anxiety over failure
- 

6–12 years

Industry vs. inferiority

- Enter programs of learning; able to work and acquire adult skills
- Learn they are able to master and complete a task

Teenage years

Identity vs. role confusion

- Develop group identity
- Develop preoccupation with appearances
- Begin to deal with morality and ethics
- Experience “identity crisis” at end of this stage

Early adulthood

Intimacy vs. isolation

- Experience intimacy of sexual relations and friendships (all deep associations are present)
- Develop an ability to care and share with others without fear of losing self

Middle adulthood

Generativity vs. stagnation

- Have and raise children, as well as other interests outside the home
- If have no children, develop sense of altruism and creativity
- Stagnation can take the form of escapism such as mid-life crisis or substance abuse issues

Late adulthood

Integrity vs. despair

- Experience sense of satisfaction with one's life; allows for an acceptance of one's place in life cycle
- Despair involves deep disgust of the external world and other persons to mask a fear of death

Age

Crisis

0–18 months

Trust/mistrust

18–36 months

Autonomy/doubt

3–6 years

Initiative/guilt

6–12 years

Competence/inferiority

12–adulthood (adolescence)

Identity/confusion

Adulthood

Intimacy/isolation

Middle-age

Generativity/stagnation

Maturity

Integrity/despair

KOHLBERG (MORAL DEVELOPMENT)

- Kohlberg proposed six stages of moral development
- grouped in three levels derived from posing moral dilemmas to a variety of subjects.



Level I: pre-conventional morality

- stage 1: punishment
- stage 2: reward

Level II: conventional morality

- stage 3: approval/disapproval
- stage 4: authority

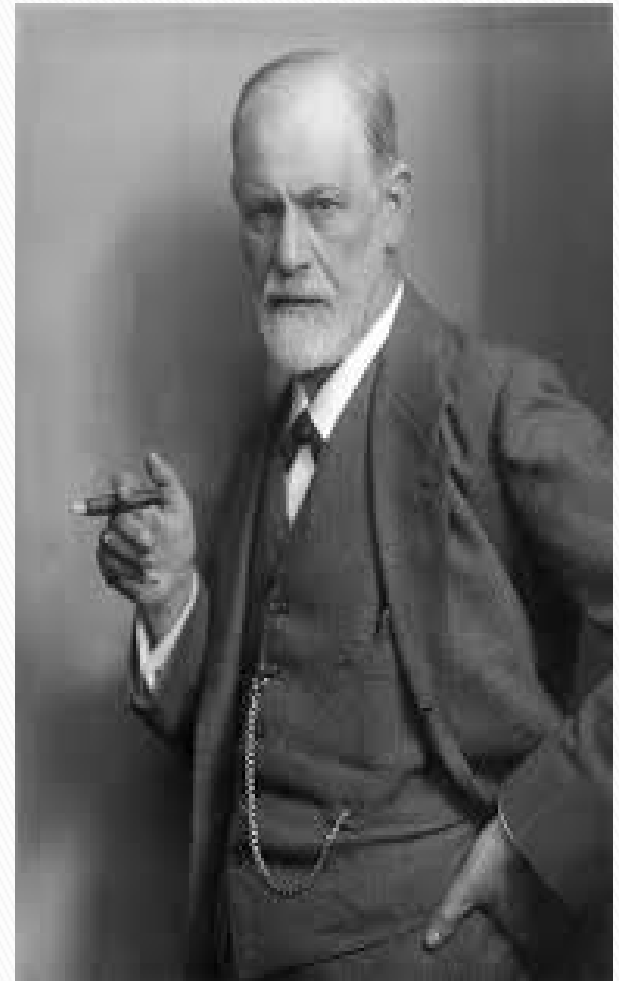
Level III: post-conventional morality

- stage 5: social contract
 - stage 6: personal principles/ethics
- 

- Though there is some correlation between age and morality, many adults may not reach level III.
- **Social perspective-taking** is the ability to adopt 'another person's point of view and It is a precursor of empathy and moral reasoning

Freud PSYCHOSEXUAL DEVELOPMENT

- Sigmund Freud developed the psychosexual developmental theory
- He staged the psychosexual development through five levels



0–18 months

Oral phase:

pleasure is derived from oral activity and there is a preoccupation with feeding.

18–36 months

Anal phase:

Attention is focused on excretory processes.

If harsh toilet training, may become “anally fixated” (obsessive-compulsive personality disorder)

3–6 years

Phallic phase: increasing focus on genitalia; libido directed towards others.

Involves **castration anxiety**, penis envy,

Oedipal* complex in males and Electra† complex in females (attachment to opposite-sex parent and aggression towards same-sex parent)

6–12 years Latency:

lasts until onset of puberty. Involves the recognition, acknowledgement and acceptance of reality.

Sublimation of sexual energy into energetic learning and play activities

GENITAL PHASE

- 12 years–adult

Acquisition of sexual maturity

Increasing identification with same-sex parent.

sexuality

Gender identity

is a child's sense of maleness or femaleness. It is established by age 3.

Sexual identity

is determined by secondary sexual characteristics.

Gender dysphoria

is a "disconnect" between gender identity and sexual identity.

Gender role

is determined by behaviors exhibited by a child. It can be congruent or incongruent to the child's gender identity (usually congruent).

Sexual orientation

Homosexuality: same gender identity

Heterosexuality: opposite gender identity

Bisexuality: either gender identity

Asexuality: neither gender identity

Masturbation is normal at all ages and equal in both genders. When it interferes with normal functioning, it is pathological.

Tanner stages of development

	Female	Both	Male
Stage	Breast	Pubic hair	Genitalia
I	Preadolescent	None	Childhood size
II	Breast bud	Sparse, long, straight	Enlargement of scrotum, testes
III	Areolar diameter enlarges	Darker, curling, increased amount	Penis grows in length; testes continue to enlarge
IV	Secondary mound; separation of contours	Coarse, curly, adult type	Penis grows in length/breadth; scrotum darkens, testes enlarge
V	Mature female	Adult, extends to thighs	Adult shape/size

Aging

The human body undergoes significant changes with age that have both medical and psychological implications for your patients.

The leading causes of death for patients age >65 include:

- Heart disease
- Malignancy
- Cerebrovascular disease
- Chronic lower respiratory disease

preventive care and primary or secondary prevention becomes crucial to patient health, improved quality of life, and survival.

Some factors can be modified by behavioral change:

- Smoking = smoking cessation
- Poor diet = low sodium diet (CHF), low cholesterol diet (ACS), low sugar diet (DM)
- Physical inactivity = exercise

Preventive care

may include aspirin therapy and lipid management

Vaccinations

Illness is usually associated with higher morbidity and mortality with older patients, so it is important they receive certain vaccinations.

- Tetanus
- Diphtheria
- Pneumococcus
- Influenza
- Varicella/zoster

Screening

the 2 main areas of screening are cancer and abdominal aortic aneurysm.

Breast cancer: women age >40

Colorectal cancer: men and women age >50

Abdominal aortic aneurysm screening: men age 65–75

Psychiatric

- Depression screening
 - Age >65 is a risk factor for suicide.
 - Screening appropriate especially when patients have a terminal or debilitating illness.

Physiological

- Sexuality

- Sexual interest and activity does not decline significantly with aging
- Best predictor of sexual activity in the elderly is availability of a partner
- Changes in men: slower erection, longer refractory period, more stimulation needed
- Changes in women: vaginal dryness and thinning

- Sleep

- Early morning wakefulness
- Less deep sleep
- REM sleep does not significantly decrease until age >85

Financial

Several factors contribute to financial instability in the elderly:

- Inadequate fixed income
- (typically the spouse who was a homemaker)
- High medical costs
- Low financial literacy: elderly can be exploited by unscrupulous investment advisors and sometimes family members

End-of-Life Care

Talking about life expectancy and end-of-life treatment and expectations is important.

- Patients should be asked about DNR (do not resuscitate) status.
- Patients may have a living will or assign a health power of attorney in the event they can no longer make decisions themselves.
- You have an obligation to tell the patient everything.

- Do not give false hope to patients, but recognize that they might hope for things other than a cure: quality of life, less pain, a painless death.
- Allow patients to talk about their feelings.
- Encourage patients to avoid social isolation and stay engaged in different activities.

Hospice care

Is care for terminally-ill patients with a life expectancy ≤ 6 months.

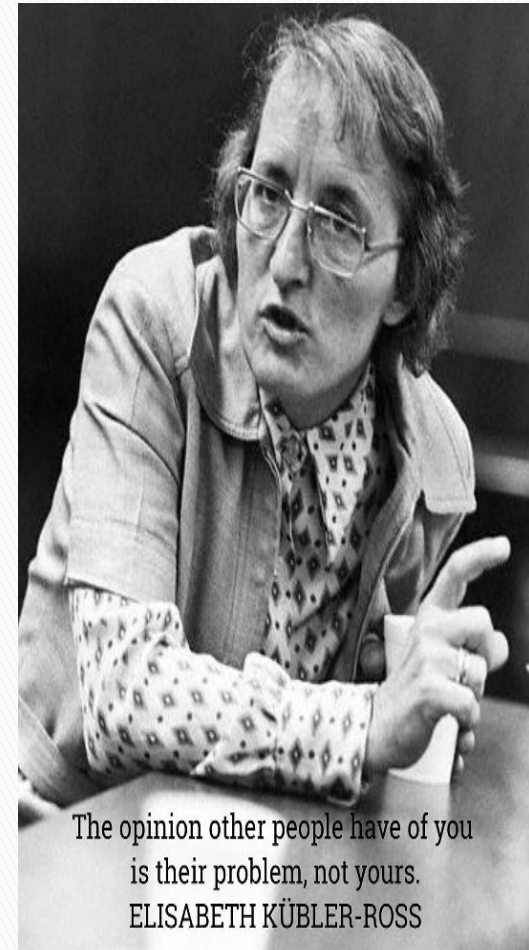
- It provides care and support for patients (and their families) with advanced disease; the goal is to help dying patients with peace, comfort, and dignity.
- Hospice care consists of medical care, psychological support, and spiritual support.
- It may be delivered at specialized facilities or at home.



Death & bereavement

Patients may cycle through the Kubler-Ross stages of adjustment. The stages need not occur in order.

- Denial
- Anger
- Bargaining
- Depression
- Acceptance



The opinion other people have of you
is their problem, not yours.
ELISABETH KÜBLER-ROSS

Kübler-Ross Grief Cycle

Denial

Avoidance
Confusion
Elation
Shock
Fear

Anger

Frustration
Irritation
Anxiety

Bargaining

Struggling to find meaning
Reaching out to others
Telling one's story

Depression

Overwhelmed
Helplessness
Hostility
Flight

Acceptance

Exploring options
New plan in place
Moving on

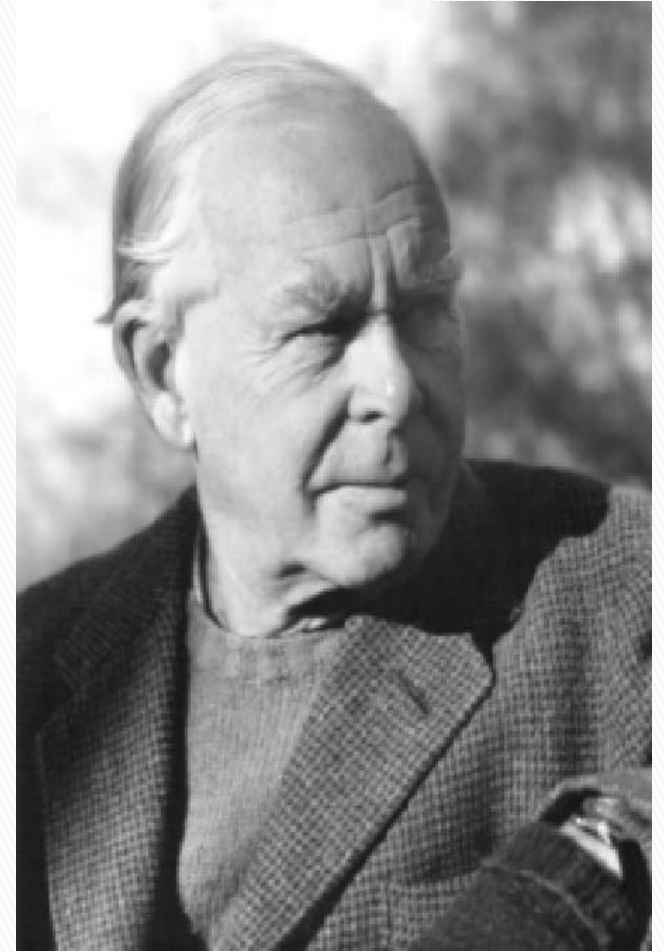
Information and
Communication

Emotional
Support

Guidance and
Direction

Attachment

- John Bowlby coined the term '**attachment**' to describe a child's connection to its mother
- **Bonding** is mother's connection to child



- **Attachment behaviour** is that displayed by the infant towards the attachment figure (the focus of such behaviour), from whom affection, comfort and warmth are sought.

Bowlby described four phases to normal (healthy) attachment:

- **Pre-attachment (0–2 months):** preference for human rather than environmental comfort
- **Attachment in the making (2–8 months):** infant increasingly responds to primary caregiver only.

- **Clear-cut attachment (8–24 months):** uses caregiver as base and protests at their departure.
- **Goal-directed partnership (from 2–3 years):** begins to understand caregiver's goals/ motives and Learns trust (caregiver is reliable), reciprocity (relationships are two-way)

Attachment and Loss in Children

Protest (usually seen during short-term separation, e.g., up to two weeks)

- Crying, screaming, and clinging when parents leave
- Anger toward parent upon return

• **Despair**

- Protesting stops
- sadness
- Child appears calmer but may be withdrawn

• **Detachment**

- If separation continues, the child will start to engage with others but will reject caregiver and remain angry
- Indifference upon caregiver's return

suicide

Suicide: facts and figures

Suicide is the **second**

leading cause of death among

15-29

year-olds



There are more deaths from **suicide** than from war and homicide together

Close to **800 000**

people die by **suicide** every year

1 death every **40**

seconds



56%

High-income countries

78%

of **suicides** occur in low- and middle-income countries



Pesticides, hanging and firearms

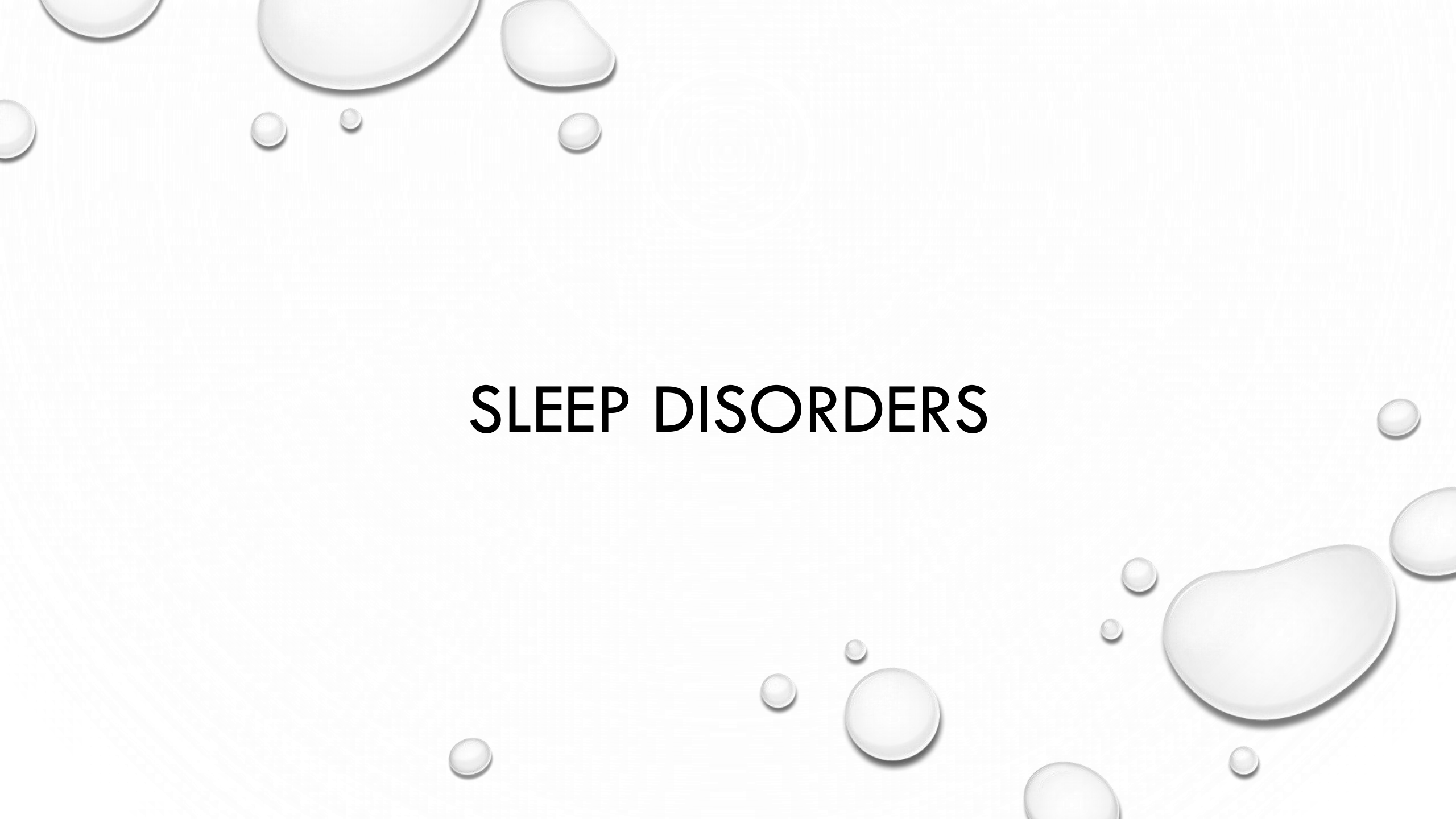
are the most common methods used globally

Suicide

- Is the 10th leading cause of death in the United States.
- Men > women; however, women attempt suicide more often (pills/poison).
- Elderly are most successful and attempt less frequently.
- Adolescents attempt more frequently.
- Firearms account for >50% of all suicides.
- 50% have seen a physician in the past month.

High risk factors for suicide include:

- Previous suicide attempt
 - Age
 - Gender
 - Middle & low socioeconomic status (SES)
 - Unemployed
 - Medical/psychiatric comorbidities
 - Hopelessness
 - Isolation
 - Initiation of antidepressant pharmacotherapy (suicide window)
- 

The background is a light gray gradient. It features several realistic water droplets of various sizes, some with highlights and shadows, scattered across the frame. Faint, concentric circles are visible in the background, suggesting ripples on a surface.

SLEEP DISORDERS



SLEEP STATISTICS

- WE SPEND ABOUT 1 / 3 OF OUR LIVES ASLEEP.
- AVERAGE 3,000 HOURS OF SLEEP PER YEAR.
- MOST PEOPLE DO NOT GET ENOUGH SLEEP.
- EFFECTS OF SLEEP DEPRIVATION: PROBLEMS WITH HEALTH, MOOD, CONCENTRATION, MEMORY, EMOTIONAL STABILITY

FUNCTION OF SLEEP

- RESTORATIVE/HOMEOSTATIC
- THERMOREGULATION/ENERGY CONSERVATION
- CONSOLIDATION OF LEARNING AND MEMORY
- PROGRAMMING OF SPECIES-SPECIFIC BEHAVIORS

THE TWO MAJOR COMPONENTS OF THE SLEEP CYCLE ARE:

- REM (RAPID EYE MOVEMENT)
- NREM (NON RAPID EYE MOVEMENT)

NON-REM PHYSIOLOGICAL CHANGES

- REDUCED PHYSIOLOGICAL ACTIVITY
- AUTONOMIC SLOWING
- SLOWING OF THE EEG RHYTHMS
- EPISODIC, INVOLUNTARY MOVEMENTS
- FEW RAPID-EYE MOVEMENTS
- FEW PENILE ERECTIONS (LITTLE VAGINAL LUBRICATION)
- REDUCED BLOOD FLOW

REM PHYSIOLOGICAL CHANGES

- INCREASED PHYSIOLOGICAL ACTIVITY
- AUTONOMIC ACTIVATION
- ALTERED THERMOREGULATION
- PARTIAL OR FULL PENILE ERECTIONS (SIGNIFICANT VAGINAL LUBRICATION)
- SKELETAL MUSCLE PARALYSIS
- RAPID-EYE MOVEMENTS

Cycles of Sleep

DREAMITALLL

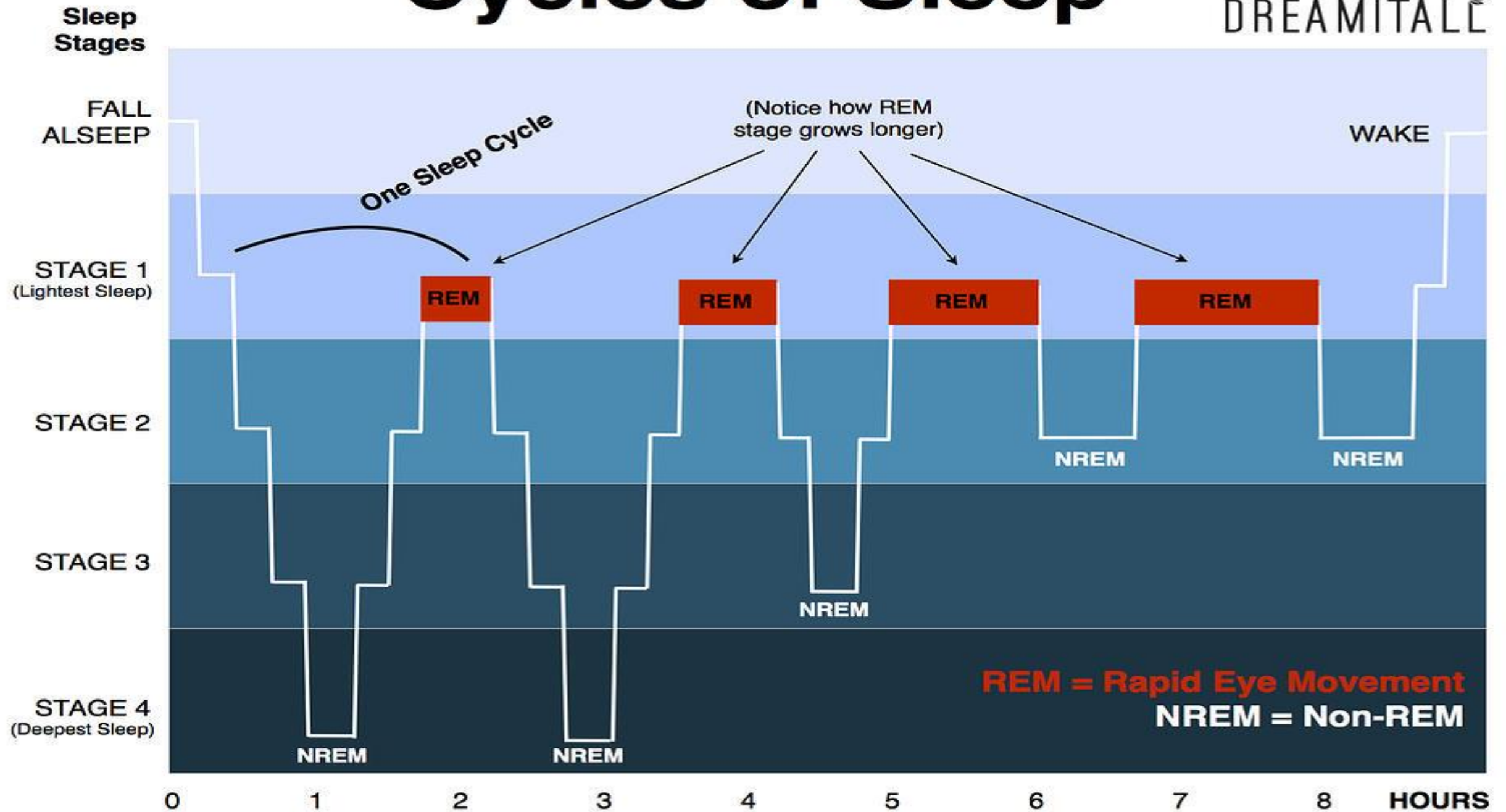


Table 8-1. Sleep Facts

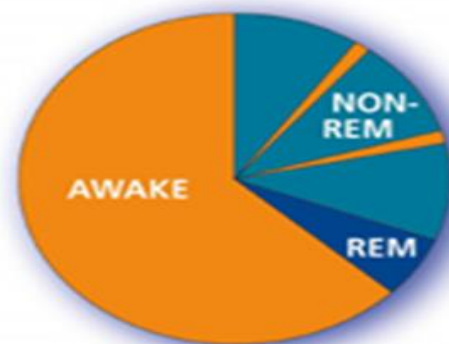
Stage 2	Longest stage of sleep
Stage 3	• Deepest stage of sleep; delta sleep is restorative • Tends to decrease in the elderly
Sleep latency	About 5–15 min from time one goes to bed and falls asleep
REM latency	About 90 min from time one falls asleep to first REM period
REM	• First REM period of night is 5–15 min and last one is 20–40 min • REM increases as night goes on • Greater amounts in second half of night • Easiest to arouse • Memories are consolidated by hippocampus
NREM	Greater amounts in first half of night



Infancy



Maturity



Old Age

NEUROTRANSMITTERS

- SEROTONIN HELPS TO INITIATE SLEEP.
- ACETYLCHOLINE (ACH) IS HIGHER DURING REM
- NOREPINEPHRINE (NE) IS LOWER DURING REM SLEEP.
- DOPAMINE PRODUCES AROUSAL AND WAKEFULNESS.
- DOPAMINE LEVELS RISE UPON WAKING.
- PINEAL GLAND (MELATONIN) SLEEP INITIATION

-
- OREXIN (OR HYPOCRETIN) IS A NEUROTRANSMITTER THAT REGULATES AROUSAL, WAKEFULNESS, AND APPETITE. ACTIVATION OF OREXIN TRIGGERS WAKEFULNESS.
 - A DEFICIENCY OF OREXIN RESULTS IN SLEEPSTATE INSTABILITY, LEADING TO SLEEP DISORDERS LIKE NARCOLEPSY.

-
- MELATONIN IS CONVERTED FROM SEROTONIN IN THE PINEAL GLAND IN THE BRAIN UNDER DIRECTIONS FROM THE BODY'S INTERNAL CIRCADIAN CLOCK.
 - MELATONIN PRODUCTION IS INHIBITED BY ACTIVATION OF PHOTORECEPTORS CELLS IN THE RETINA.
 - MELATONIN PRODUCTION INCREASES IN THE EVENING, CAUSING DROWSINESS.
 - BRIGHT ENVIRONMENTAL LIGHT, CAPABLE OF SUPPRESSING HUMAN MELATONIN, REVERSES THE WINTER DEPRESSIVE SYMPTOMS OF PATIENTS WITH SEASONAL AFFECTIVE DISORDER (SAD).

DRUGS THAT ALTER SLEEP

- DOPAMINE INCREASES WAKEFULNESS. DOPAMINE BLOCKERS (E.G., ANTIPSYCHOTICS) INCREASE SLEEP.
- BENZODIAZEPINES CAUSE LIMITED DECREASE IN REM AND STAGE 4 SLEEP. IF USED CHRONICALLY AND THEN STOPPED, SLEEP LATENCY WILL INCREASE.
- MODERATE ALCOHOL CONSUMPTION LEADS TO EARLY SLEEP ONSET AND INCREASED WAKEFULNESS DURING THE SECOND HALF OF THE NIGHT. INTOXICATION DECREASES REM; REM REBOUND (WITH NIGHTMARES) OCCURS DURING WITHDRAWAL.

-
- BARBITURATES DECREASE REM; REM REBOUND, INCLUDING NIGHTMARES, OCCURS IN WITHDRAWAL.
 - MAJOR DEPRESSION INCREASES REM, DECREASES REM LATENCY (45 RATHER THAN 90 MINUTES), AND DECREASES STAGES 3 AND 4 SLEEP. IT ALSO LEADS TO EARLY MORNING WAKING AND MULTIPLE AWAKENINGS DURING THE NIGHT.

DYSSOMNIAS

- THE SLEEP ITSELF IS PRETTY NORMAL.
- BUT THE CLIENT SLEEPS TOO LITTLE, TOO MUCH, OR AT THE WRONG TIME.
- SO, THE PROBLEM IS WITH THE AMOUNT (QUANTITY), OR WITH ITS TIMING, AND SOMETIMES WITH THE QUALITY OF SLEEP.

PARASOMNIAS

- SOMETHING ABNORMAL OCCURS DURING SLEEP ITSELF, OR DURING THE TIMES WHEN THE CLIENT IS FALLING ASLEEP OR WAKING UP (E.G., BAD DREAMS.
- THE QUALITY, QUANTITY, AND TIMING OF THE SLEEP ARE ESSENTIALLY NORMAL.

I. DYSSMONIAS

INSOMNIA

- IS CHARACTERIZED BY DIFFICULTY INITIATING AND MAINTAINING SLEEP (DIMS).
- **PRIMARY INSOMNIA**
- **SECONDARY INSOMNIA (MOST COMMON) IS CAUSED BY MEDICAL PROBLEMS, PSYCHIATRIC PROBLEMS, MEDICATIONS, ETC.**
- SYMPTOMS OF INSOMNIA INCLUDE SLEEPINESS DURING THE DAY, GENERAL TIREDNESS, IRRITABILITY, AND PROBLEMS WITH CONCENTRATION OR MEMORY.



DON'T RUSH TO MEDICATIONS • TTT



A. PRIMARY INSOMNIA (TOO LITTLE SLEEP)

TREATMENT

SLEEP HYAGINE

- VIGOROUS DAYTIME EXERCISE, NOT EXERCISING BEFORE SLEEP
- RELAXATION EXERCISES, PRACTICE REGULARLY BUT CONDENSED TO 5 MINUTES
- DECREASE STIMULATION AND INCREASE SOOTHING ENVIRONMENTS, SUCH AS EAR PLUGS OR CALM READING
- PRACTICE GOOD SLEEP HABITS

PHARMACOLOGICAL TREATMENT OF INSOMNIA:

- BENZODIAZEPINES (NOT MORE THAN TWO WEEKS)
- NON BENZODIAZEPINE HYPNOTICS EG. (ZOLPIDEM, ESZOPICLONE, ZALEPLON)
- MELATONIN AGONIST
- ANTIHISTAMINICS

DYSSOMNIAS

C. NARCOLEPSY (SLEEPING AT THE WRONG TIME)

CHARACTERISTICS

- SLEEP INTRUDES INTO WAKEFULNESS, CAUSING CLIENTS TO FALL ASLEEP ALMOST INSTANTLY WITH REM INTRUSION
- SLEEP IS BRIEF (10 – 20 MIN) BUT REFRESHING
- MAY ALSO HAVE SLEEP PARALYSIS, SUDDEN LOSS OF STRENGTH (CATAPLEXY), AND HALLUCINATIONS AS FALL ASLEEP (HYPNAGOGIC) OR AWAKEN (HYPNOPOMPIC).
- LOW HYPOCRETIN LEVEL IN CSF
- POLYSOMNOGRAPHY SHOWS REM LATENCY LESS THAN 15 MIN



TREATMENT:

- **NO CURE EXISTS FOR NARCOLEPSY.**
- **A REGIMEN OF FORCED NAPS AT A REGULAR TIME OF DAY OCCASIONALLY HELPS PATIENTS.**
- **MODAFINIL, AN A1-ADRENERGIC RECEPTOR AGONIST, HAS BEEN APPROVED BY THE FDA TO REDUCE THE NUMBER OF SLEEP ATTACKS AND TO IMPROVE PSYCHOMOTOR PERFORMANCE.**
- **STIMULANTS.**
- **ANTIDEPRESSANTS DECREASES CATAPLEXY ATTACKS.**

DYSSOMNIAS

D. SLEEP APNEA

CHARACTERISTICS

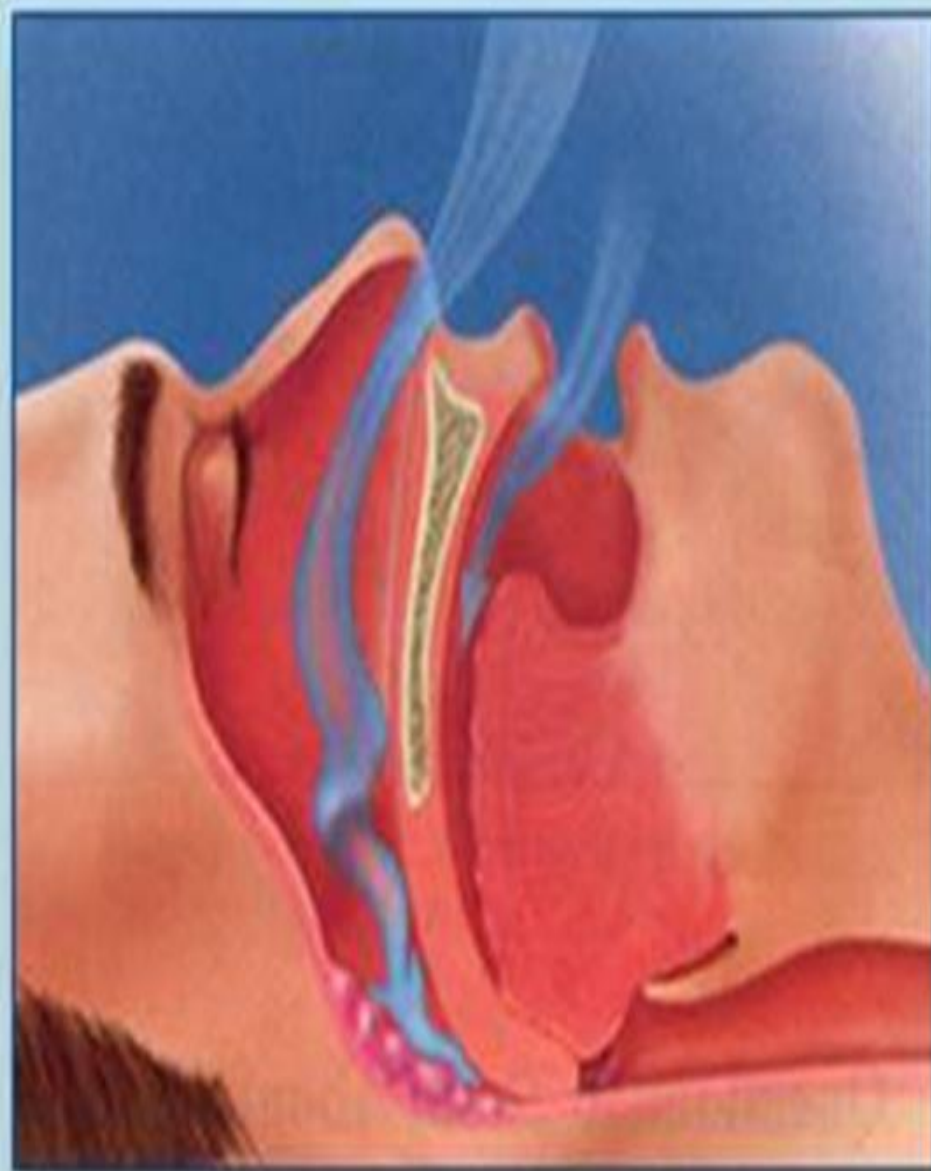
- SLEEP DISRUPTION
 - DUE TO SLEEP-RELATED BREATHING CONDITION

SYMPTOMS

EXCESSIVE SLEEPINESS, SNORING, OBESITY, RESTLESS SLEEP, NOCTURNAL AWAKENINGS WITH CHOKING OR GASPING FOR BREATH, MORNING DRY MOUTH, MORNING HEADACHES, AND HEAVY NOCTURNAL SWEATING

TYPES

- OBSTRUCTIVE OR UPPER AIRWAY SLEEP APNEA: AIRWAY COLLAPSES OR BECOMES BLOCKED DURING SLEEP
- CENTRAL SLEEP APNEA: AREA OF THE BRAIN THAT CONTROLS BREATHING DOES NOT SEND THE CORRECT SIGNALS TO THE BREATHING MUSCLES; OFTEN ASSOCIATED WITH MEDICAL PROBLEMS
- MIXED SLEEP APNEA: PATIENTS EXPERIENCE BOTH OBSTRUCTIVE AND CENTRAL SLEEP APNEA



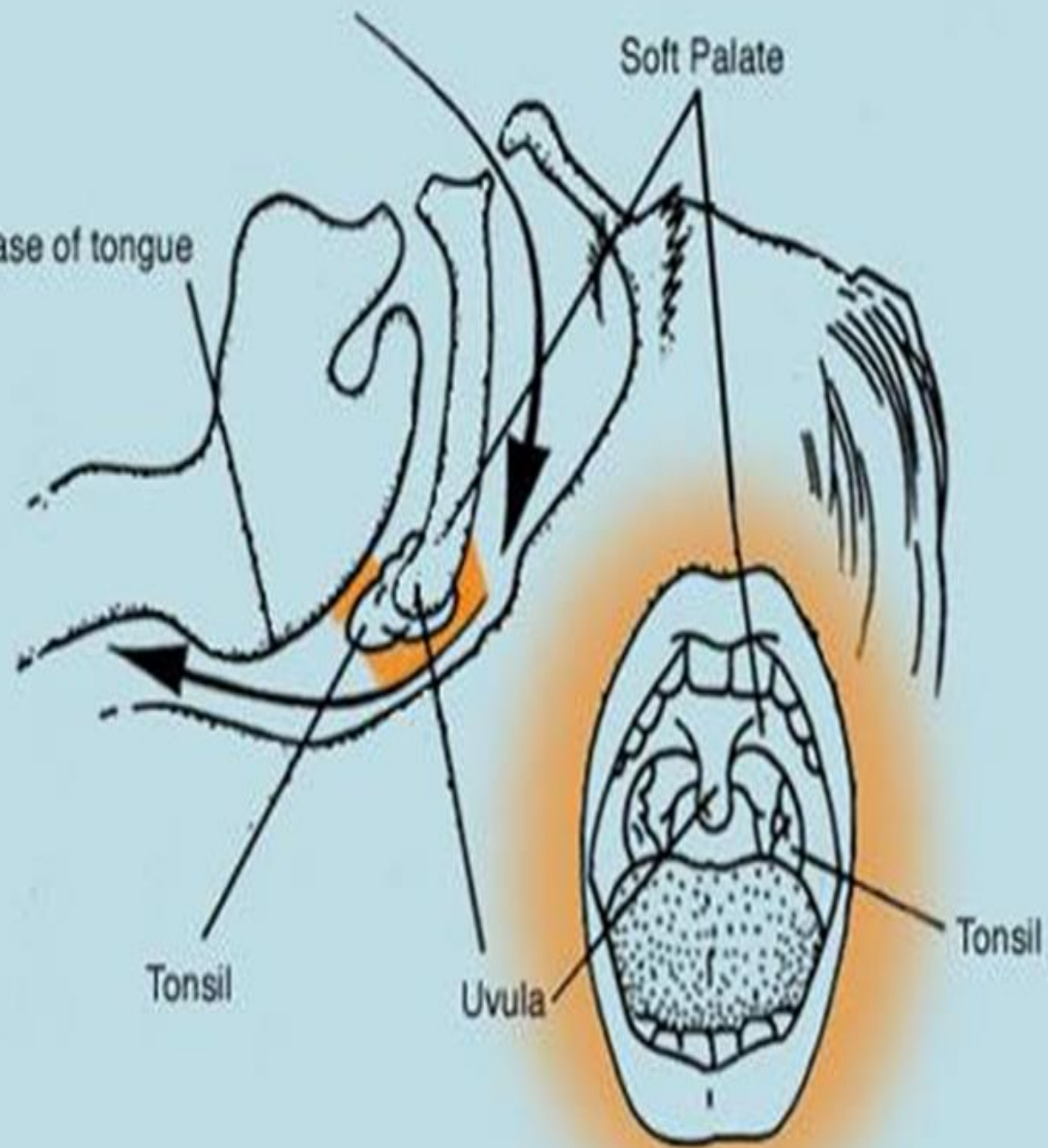
Base of tongue

Soft Palate

Tonsil

Uvula

Tonsil



I. PRIMARY SLEEP DISORDERS

- **DYSSOMNIAS**

D. BREATHING-RELATED SLEEP DISORDER

TREATMENT

- IN MILD CASES: WEIGHT LOSS, SLEEPING ON ONE'S SIDE, AND AVOIDING HYPNOTICS AND ALCOHOL
- IN MORE SERIOUS CASES: A MACHINE THAT PROVIDES CONTINUOUS POSITIVE AIRWAY PRESSURE
- SURGERY: FEW BENEFITS

I. PRIMARY SLEEP DISORDERS

- **DYSSOMNIAS**

E. CIRCADIAN RHYTHM SLEEP DISORDER

CHARACTERISTICS

- **PERSISTENT OR RECURRENT PATTERN OF SLEEP DISRUPTION LEADING TO EXCESSIVE SLEEPINESS OR INSOMNIA, DUE TO MISMATCH BETWEEN SLEEP-WAKE SCHEDULE REQUIRED BY A PERSON'S ENVIRONMENT AND HIS/HER CIRCADIAN SLEEP-WAKE PATTERN (E.G., SHIFT WORK, JET LAG).**

I. PRIMARY SLEEP DISORDERS

- PARASOMNIAS

A. NIGHTMARE DISORDER

CHARACTERISTICS:

- ❖ REPEATED AWAKENINGS FROM BAD DREAMS
- ❖ WHEN AWAKENED CLIENT BECOMES ORIENTED AND ALERT
- ❖ OCCURS IN REM SLEEP
- ❖ TREATMENT: REASSURANCE & TREAT UNDERLING CONDITION EG. PTSD

I. PRIMARY SLEEP DISORDERS

PARASOMNIAS

SLEEP TERROR DISORDER

CHARACTERISTICS:

(1) ABRUPT AWAKENING FROM SLEEP, USUALLY
OR CRY.

BEGINNING WITH A PANICKY SCREAM

(2) INTENSE FEAR AND SIGNS OF AUTONOMIC
AROUSAL

(3) UNRESPONSIVE TO EFFORTS FROM OTHER TO CALM
CLIENT

(4) NO DETAILED DREAM RECALLED

(5) AMNESIA FOR EPISODE

I. PRIMARY SLEEP DISORDERS

- PARASOMNIAS

B. SLEEP TERROR DISORDER

USUALLY ONLY CHILDREN HAVE SLEEP TERROR DISORDER.

OCCURS IN NONREM SLEEP

THE EYES ARE OPEN, SCREAMS.

USUALLY HAPPENS IN EARLY EVENING.

TREATMENT:

REASSURANCE

I. PRIMARY SLEEP DISORDERS

- PARASOMNIAS

C. SLEEPWALKING DISORDER

CHARACTERISTICS:

- (1) RISING FROM BED DURING SLEEP AND WALKING ABOUT.
- (2) USUALLY OCCURS EARLY IN THE NIGHT.
- (3) OCCURS AT NONREM SLEEP
- (4) ON AWAKENING, THE PERSON HAS AMNESIA FOR EPISODE

Sleep walking is often triggered by disruption in regular sleep patterns or fever



I. PRIMARY SLEEP DISORDERS

- ---

PARASOMNIAS

C. SLEEPWALKING DISORDER

TREATMENT:

REASSURANCE

HYPNOTICS RARELY

MAY NEED TO SLEEP ON THE GROUND FLOOR, HAVE OUTSIDE DOORS SECURELY LOCKED, SECURE PLACE

I. PRIMARY SLEEP DISORDERS

- PARASOMNIAS

D. PARASOMNIA NOS

EXAMPLES

BRUXISM (TEETH GRINDING)

TREATMENT

TEETH GUARDS

SLEEP PARALYSIS

- IS A PHENOMENON IN WHICH AN INDIVIDUAL, TEMPORARILY EXPERIENCES AN INABILITY TO MOVE, SPEAK, OR REACT.
- IT IS A TRANSITIONAL STATE BETWEEN WAKEFULNESS AND SLEEP, CHARACTERIZED BY AN INABILITY TO MOVE MUSCLES. IT IS OFTEN ACCOMPANIED BY TERRIFYING HALLUCINATIONS, AND PHYSICAL EXPERIENCES.
- OCCURS IN 7 TO 8 PERCENT OF YOUNG ADULTS, AT LEAST ONE EXPERIENCE OF SLEEP PARALYSIS DURING THE LIFETIME RANGE FROM 25 TO 50 PERCENT.

**YOU WILL NEVER
KNOW TRUE FEAR**



**UNTIL YOU
EXPERIENCE SLEEP PARALYSIS**

SLEEP HYGIENE

- ESTABLISH A SET BEDTIME ROUTINE
- SET A REGULAR SLEEP AND WAKE TIME
- GO TO BED WHEN TIRED & GET OUT OF BED IF UNABLE TO SLEEP WITHIN 15 MINUTES
- REDUCE NOISE, LIGHT, STIMULATION, & TEMPERATURE IN BEDROOM
- RESTRICT ACTIVITIES IN BED
- AVOID USING CAFFEINE & NICOTINE 6 HOURS BEFORE BEDTIME

-
- LIMIT USE OF ALCOHOL OR TOBACCO
 - DO NOT EXERCISE OR PARTICIPATE IN VIGOROUS ACTIVITIES IN THE EVENING
 - EXERCISE DURING THE DAY
 - EAT A BALANCED DIET
 - INCREASE EXPOSURE TO NATURAL AND BRIGHT LIGHT DURING THE DAY
 - EDUCATE SELF ABOUT NORMAL SLEEP AND SLEEP BEHAVIOR





Psychiatric (DSM-5) disorders

Neurodevelopmental Disorders



- Autism Spectrum Disorder (ASD)
- Learning disabilities
- Attention Deficit Disorder (ADHD)

ASD: Symptoms

- Social communication and social interaction deficits manifested in:
 1. Social-emotional reciprocity
 2. Nonverbal communication behaviors used for social interaction
 3. Developing, maintaining, and understanding relationships
 4. Pronoun reversal

- 
- Restricted, repetitive behaviors, interests, or activities manifested in:
 1. Stereotyped or repetitive movements, use of objects, or speech
 2. Insistence on sameness
 3. Fixated interests
 4. Hyper- or hypo-reactivity to sensory input
 - Preference for inanimate objects

ASD: Rates and Risks

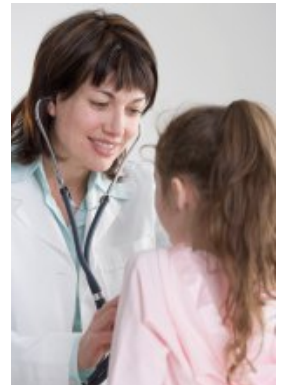
- 1 percent of child/adolescent population
- Usually by age 3 years
- Male to female ration of 4:1
- Genetic
 - 15 percent of cases associated with genetic mutations
 - Multiple genes most likely involved

General Intervention Aims

- Reduce unsafe behaviors
- Improve self-regulation skills
- Increase positive social interactions
- Increase parent/guardian management skills
- Acquire adequate community supports to sustain post-discharge

ASD: Treatment

- No known “standard” of treatment
- Combination of behavioral therapy, educational interventions and, when warranted, medication to treat specific symptoms such as sleeping difficulties or anxiety

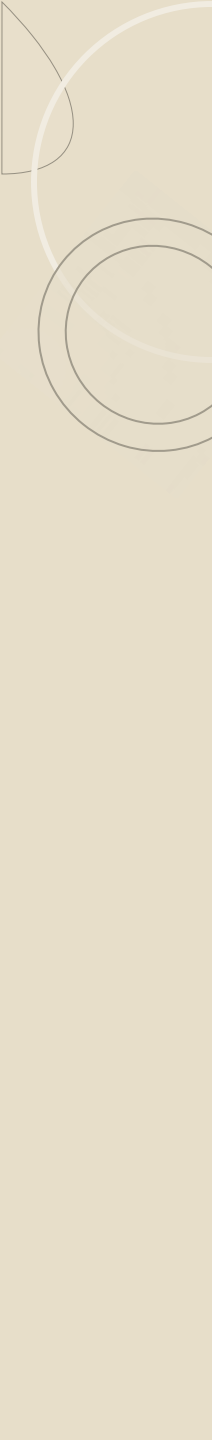


Course & Prognosis

- Autism spectrum disorder is typically a lifelong with a highly variable severity and prognosis.
- Children with autism spectrum disorder and IQs above 70 with average adaptive skills, who develop communicative language by ages 5 to 7 years, have the best prognoses.

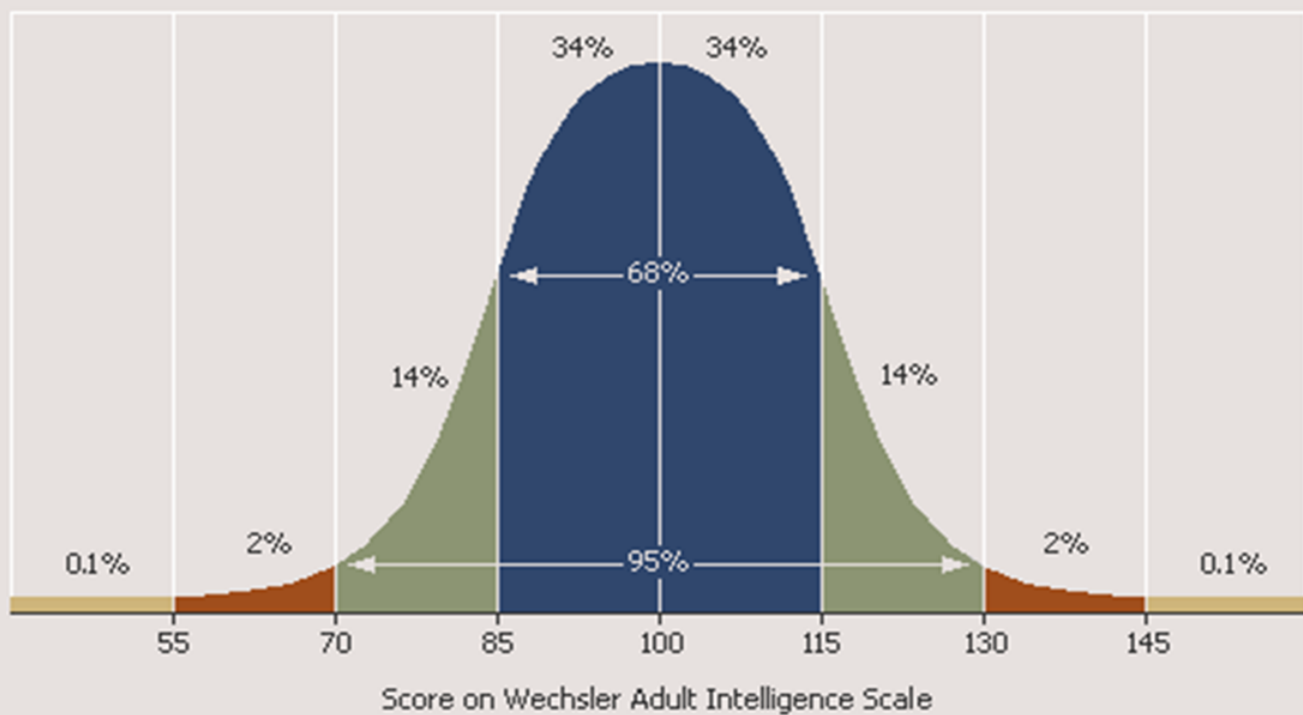


Intellectual Disabilities



The most common known cause of intellectual disability is fetal alcohol syndrome (FAS), while the most common genetic causes are Down and fragile- X syndromes.

Number of scores



DSM IV-TR

Levels of Mental Retardation

- Mild MR
 - 55-70 IQ
- Moderate MR
 - 35-54 IQ
- Severe MR
 - 20-34 IQ
- Profound MR
 - Below 20 IQ

How to deal with

Table 9-1. Intellectual Disability Levels

Level	Functioning
Mild (85% of intellectually disabled; 2:1 male:female)	Self-supporting with some guidance; usually diagnosed first year in school
Moderate	Benefits from vocational training but needs supervision; sheltered workshops
Severe	Vocational training not helpful, can learn to communicate and manage basic self-care habits
Profound	Needs highly structured environment with constant nursing care and supervision



Attention deficient hyperactivity disorder

ADHD Statistics

- 3-5% of all U.S. school-age children are estimated to have this disorder.
- Males are 6 to 10 times more likely to have ADHD than are females.

Diagnosing ADHD



Inattentiveness:

Has a minimum of 6 symptoms regularly for the past six months.

Examples of inattentive symptoms

- Lacks attention to detail; makes careless mistakes
- doesn't seem to listen
- often loses items necessary for completing a task
- easily distracted
- is forgetful in daily activities

- **Hyperactivity / Impulsivity**

Has a minimum of 6 symptoms regularly for the past six months.

Examples of hyperactivity symptoms

- runs about/climbs extensively when inappropriate
- has difficulty playing quietly
- often “on the go” or “driven by a motor”
- blurts out answers before question is finished
- cannot await turn

- **Additional Criteria:**

- Symptoms causing impairment present before age 12
- Impairment from symptoms occurs in two or more settings
- Clear evidence of significant impairment (social, academic, etc.)

Treatment

- Counseling of individual and family
- Stimulants (methylphenidate, dextroamphetamine)
- Atomoxetine

Disruptive, Impulse-Control, and Conduct Disorders



- Oppositional Defiant Disorder (ODD)
- Conduct Disorder (CD)

Table 9-2. Conduct vs. Oppositional Defiant Disorder

	Conduct Disorder	Oppositional Defiant Disorder
Age	Until age 18	Preteens—teens
Gender	Boys > girls	Boys > girls (pre-puberty)
		Boys = girls (post-puberty)
Symptoms	• 6 months of aggressive behavior • Violation of rules of society • Destruction of property • Deceitfulness or theft	• 6 months of negative, hostile, and defiant behaviors toward authority figures
Etiology	Genetic	



Tourette syndrome

Tourette syndrome

Tourette syndrome is characterized by multiple motor and vocal tics that occur many times per day or intermittently for >1 year.

Men > women 3:1.

Mean onset is age 7 (onset must be age <18)

Tics can be simple (rapid, repetitive contractions) or complex (appear as more ritualistic and purposeful); simple tics appear first



Evidence of genetic transmission: ~50% concordance in monozygotic twins

- Associated with increased levels of dopamine
- Associated with ADHD and OCD

Treatment is psychotropic's as haloperidol.



Psychotic disorders

Definitions

- Delusions are fixed beliefs that are not amenable to change in light of conflicting evidence & not related to the cultural back ground.
- Hallucinations are perception-like experiences that occur without an external stimulus. They are vivid and clear, with the full force and impact of normal perceptions, and not under voluntary control.

schizophrenia

≥2 symptoms present*, at least one of these must be 1, 2 or 3:

1. Delusions

2. Hallucinations

3. Disorganized speech

4. Disorganized or catatonic behavior

5. Negative symptoms

Lasted more than 6 months and affecting the functioning level



Schizophrenia is seen in 1% of population.

Men = women.

- Age of onset: men age 15–25; women age 25–35 (90% of patients with schizophrenia are age 15–55).
- Persons with schizophrenia have higher mortality rate from accident and natural causes.
- Lifetime prevalence of substance abuse >50%.
- >90% of schizophrenics smoke (nicotine may reduce positive symptoms and improve some cognitive impairments).



There are several theories of schizophrenia:

- Genetic: monozygotic greater than dizygotic
- Viral: more born in winter and early spring
- Social: downward drift and social causation theories
- Neurochemical/biochemical: associated with increased levels of dopamine

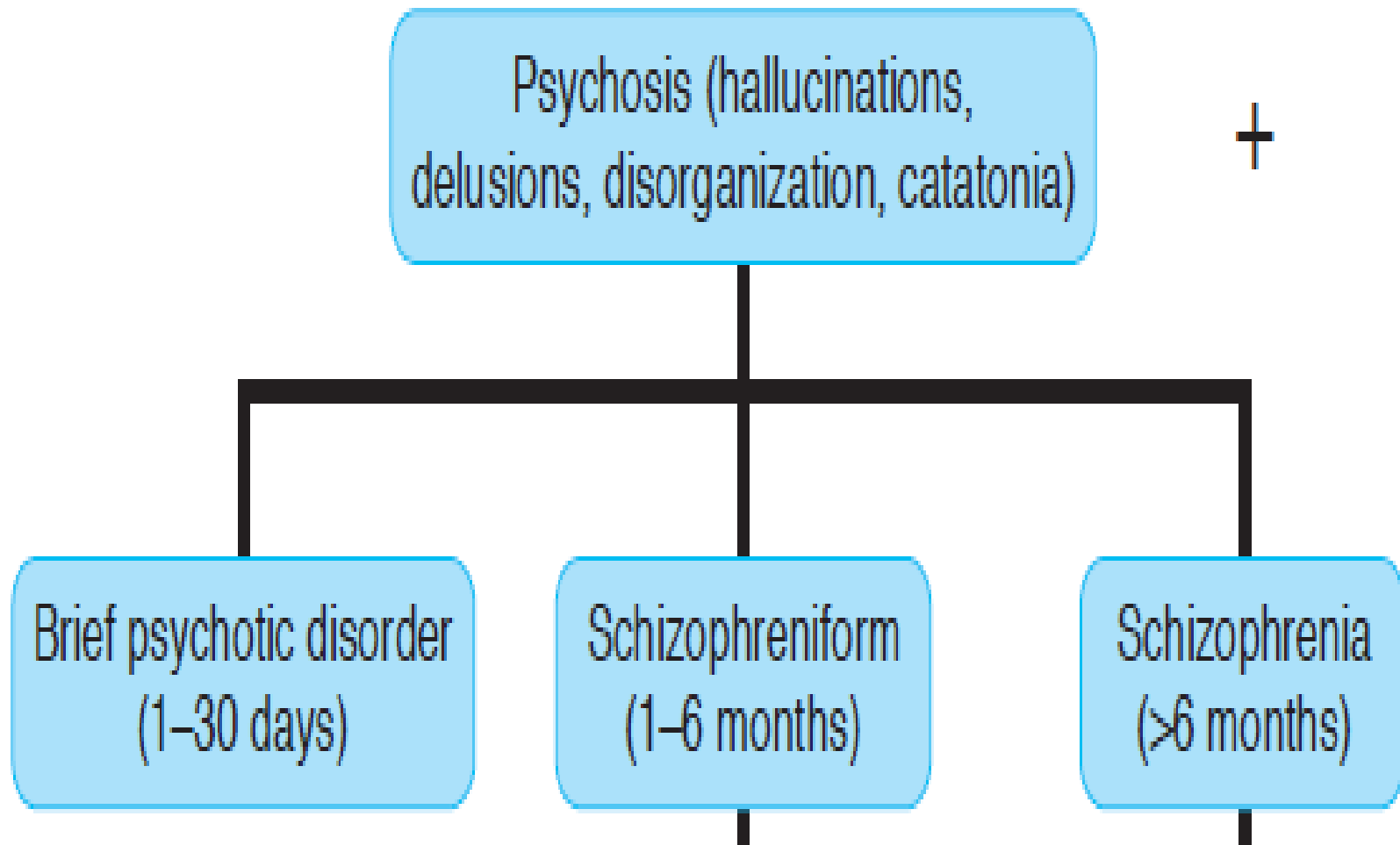
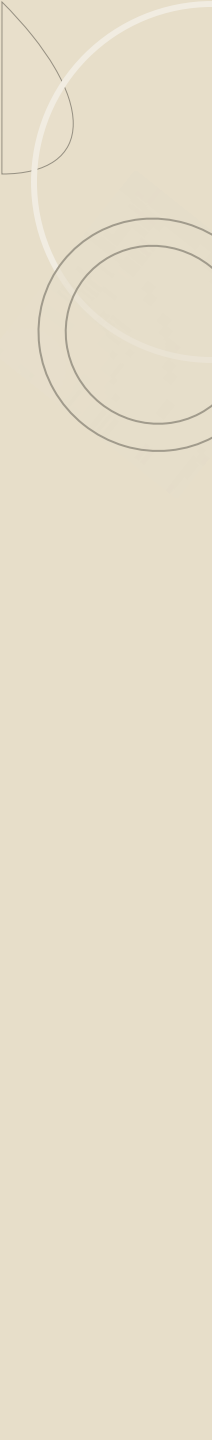


Table 9-3. Classification of Thought Disorders

Diagnosis	Symptoms	Duration of Symptoms	Treatment
Brief psychotic disorder	Hallucinations, delusions, disorganized behavior or thinking	>1 day but <30 days	Antipsychotics
Schizophreniform disorder	Hallucinations, delusions, disorganized behavior or speech	>1 month but <6 months	Antipsychotics
Schizophrenia	Hallucinations, delusions, disorganized behavior or speech, catatonic symptoms, negative symptoms, marked reduction in level of functioning	>6 months	Antipsychotics
Schizoaffective disorder	• Schizophrenia symptoms such as hallucinations and delusions PLUS mood disorder symptoms such as depression and mania • Must have at least 2 weeks of psychotic symptoms in the absence of mood symptoms		Antipsychotics and mood stabilizers if bipolar type or antidepressants if depressed type



MOOD DISORDERS

Major Depressive Disorder

- Women > men
- Symptoms >2 weeks and affect level of functioning (must include depressed mood or anhedonia, plus other symptoms such as low energy, poor concentration, sleeplessness, loss of appetite or libido, suicidal ideation)
- Associated with decreased levels of NE, dopamine, and serotonin
- Suicide rate 15%

Treatment is antidepressants.

A

depressed mood



apathy/loss of interest



one of these required

**weight/
appetite
changes**



sleep disturbances



**psychomotor
AGITATION
or
--
RETARDATION**

fatigue



*four or more
of these
required*

guilt



worthlessness



executive dysfunction

**suicidal
ideation**





Major depressive disorder with seasonal pattern is associated with abnormalities in melatonin.

It is common in the Northern hemisphere during the winter months.

Treatment is bright light therapy (phototherapy).

Persistent Depressive Disorder (Dysthymia)

Persistent depressive disorder is less severe than major depressive disorder.

- Symptoms >2 years; depressive symptoms experienced most days
- Hospitalization not usually needed; functioning not significantly impaired

Treatment is primarily psychotherapy.

Bipolar Disorder

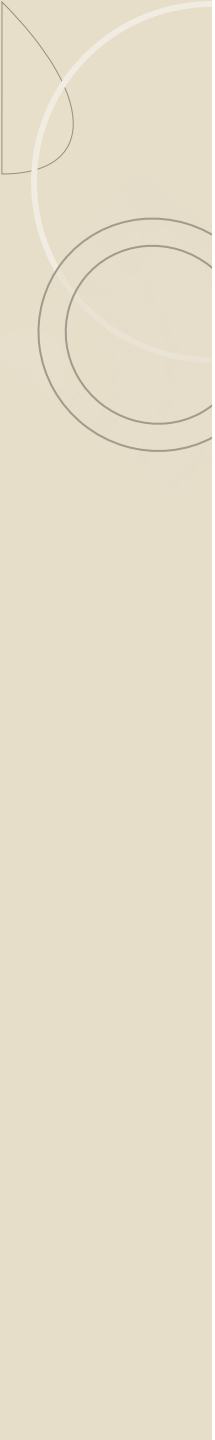
Bipolar disorder is the most genetic of all the psychiatric disorders. Men = women.

- Symptoms of mania >1 week, with loss of functioning.
 - – Manic symptoms include increased energy, decreased sleep, euphoria, delusions of grandeur, increased libido, distractibility, flight of ideas, increased self-esteem.
- Symptoms of major depressive disorder are very common but not necessary for diagnosis.



There are 2 types of bipolar disorder:

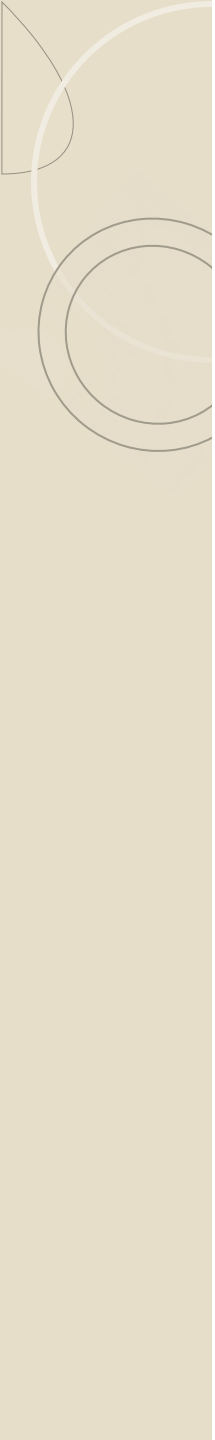
- bipolar I involves mania and depression
- bipolar II involves hypomania and depression

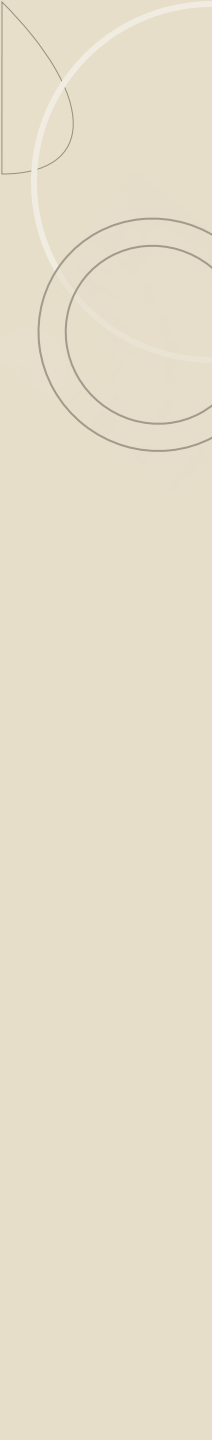


Cyclothymic Disorder

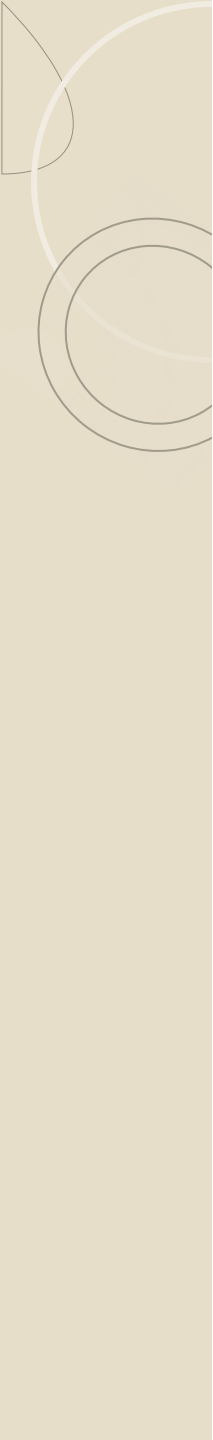
- Symptoms >2 years characterized by:
 - Mood swings
 - Periods of hypomania alternating with periods of milder depression (neither meets criteria for mania or major depressive disorder)

Treatment is primarily psychotherapy.

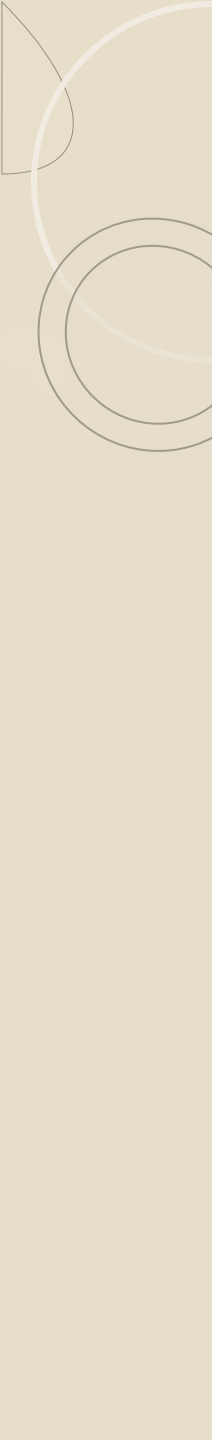




Bipolar 1



Bipolar 2

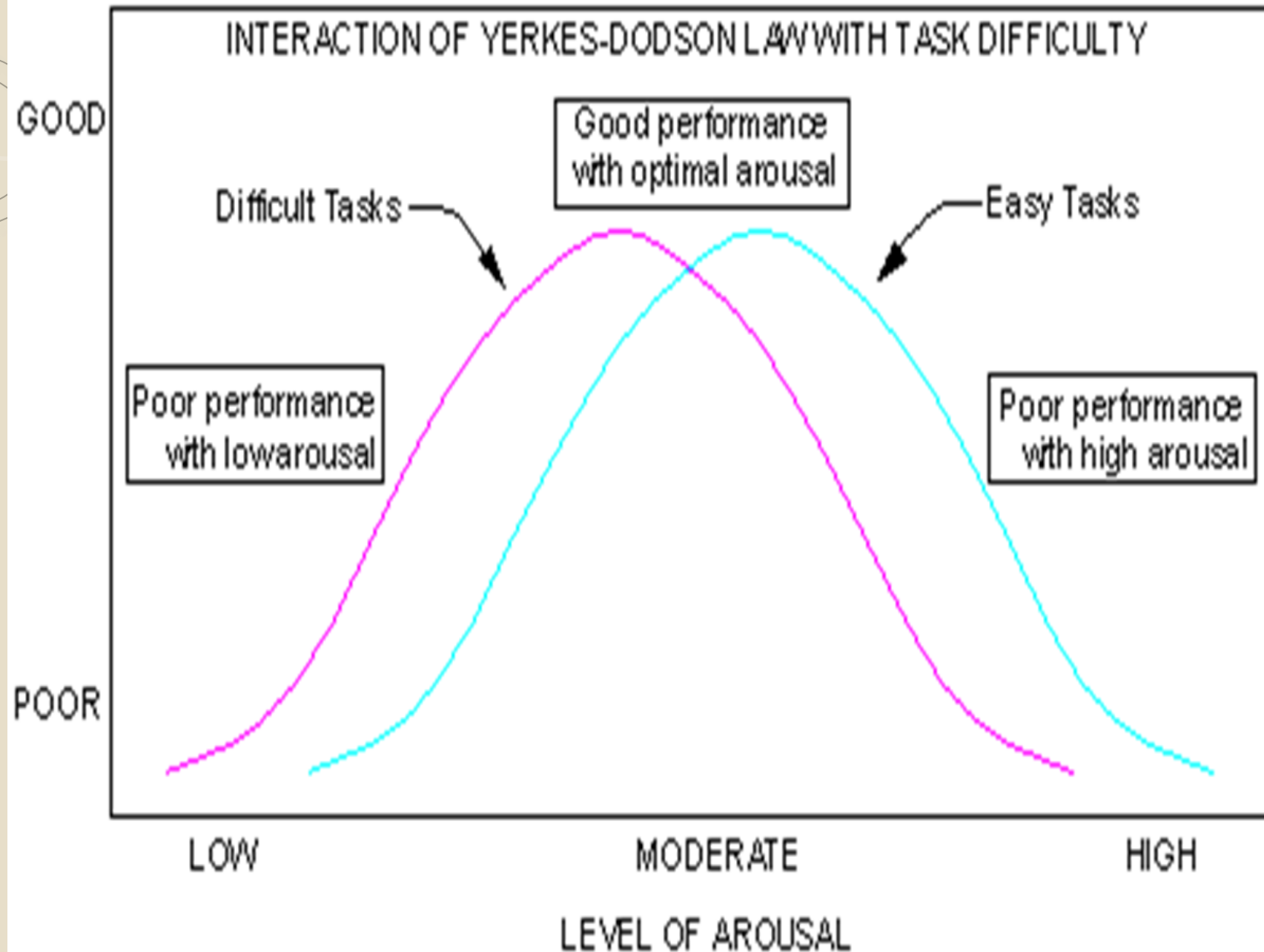


D epression



Anxiety disorders

PERFORMANCE



Panic Disorder

- Presence of panic attacks for >1 month
- Involves worry about having more attacks and significant maladaptive

behavioral changes related to the attack

- Panic attacks are short-lived and out of the blue, with increased autonomic hyperactivity:
 - Increased pulse
 - Hyperventilation
 - Palpitations
 - Tremors
 - Diaphoresis
 - Dissociative symptoms
- __ Fear of losing control or dying



Treatment is benzodiazepines (for panic attack) or SSRIs (for panic disorder).

If hyperventilating, the patient should be instructed to breathe into a paper bag

Generalized Anxiety Disorder

Generalized anxiety disorder is a constant sense of worry for >6 months about things one should not have to worry about.

The anxiety interferes with daily life:

- Problems with sleep, Restlessness
- Decreased concentration, easily fatigued
- Irritability, feeling keyed up or on edge.

Treatment is SSRIs and buspirone.

Phobias

Phobias are irrational fears of things or situations and the need to avoid them.

Specific phobias include fear of things or objects, such as animals, heights, and elevators.

Treatment is a behavioral modification technique such as systematic desensitization or flooding.

Social Anxiety

Social anxiety is fear of being embarrassed or humiliated in a social situation, such as in a public restroom or restaurant, or public speaking
Treatment is antidepressants and beta-blockers.





Psychiatric (DSM5) disorders cont.....



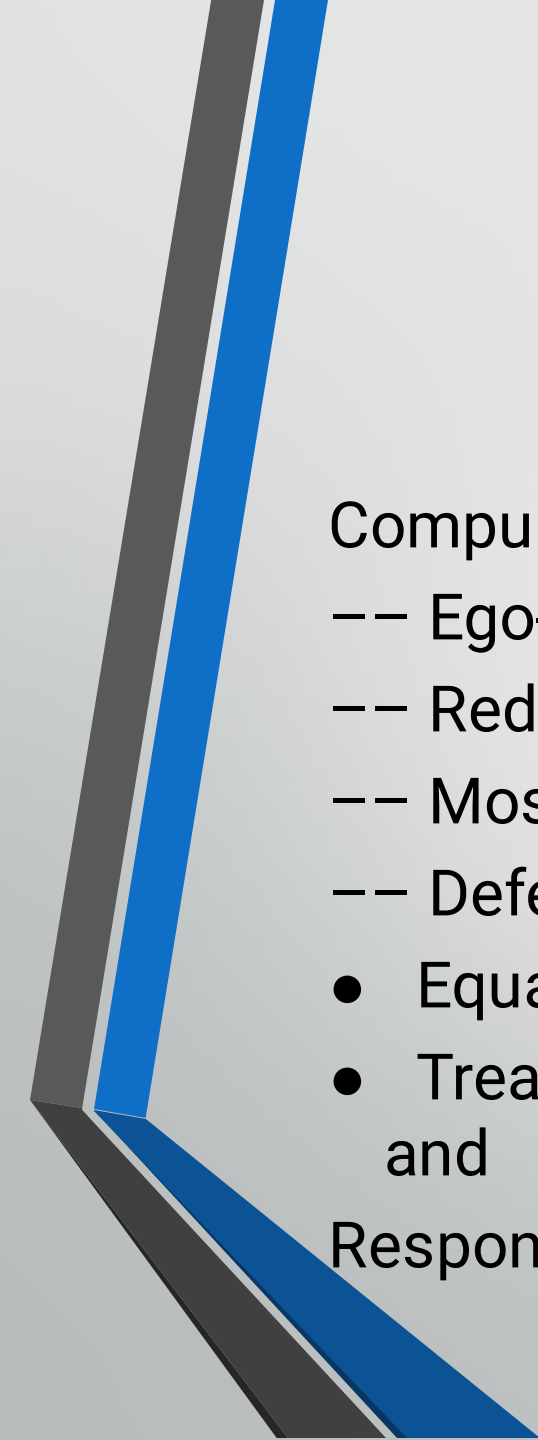
OBSESSIVE-COMPULSIVE DISORDER AND RELATED DISORDERS

Obsessive-Compulsive Disorder

Obsessions:

Thoughts that are intrusive, senseless and time consuming

- Ego-dystonic
- Thoughts are distressing
- Increases anxiety
- Most common thoughts include contamination and doubt
- Defense mechanism: reaction formation



Compulsions: Acts that are repetitive, time consuming

- Ego-dystonic
- Reduces the anxiety associated with the obsessive thoughts
- Most common include washing and checking
- Defense mechanism: undoing
- Equal incidence in men and women
- Treatment is antidepressants and behavioral modification (exposure and Response prevention).

Body Dysmorphic Disorder

Body dysmorphic disorder is belief that some part of one's body is abnormal, defective, or misshapen. It is associated with low serotonin. Treatment is psychotherapy and SSRIs.



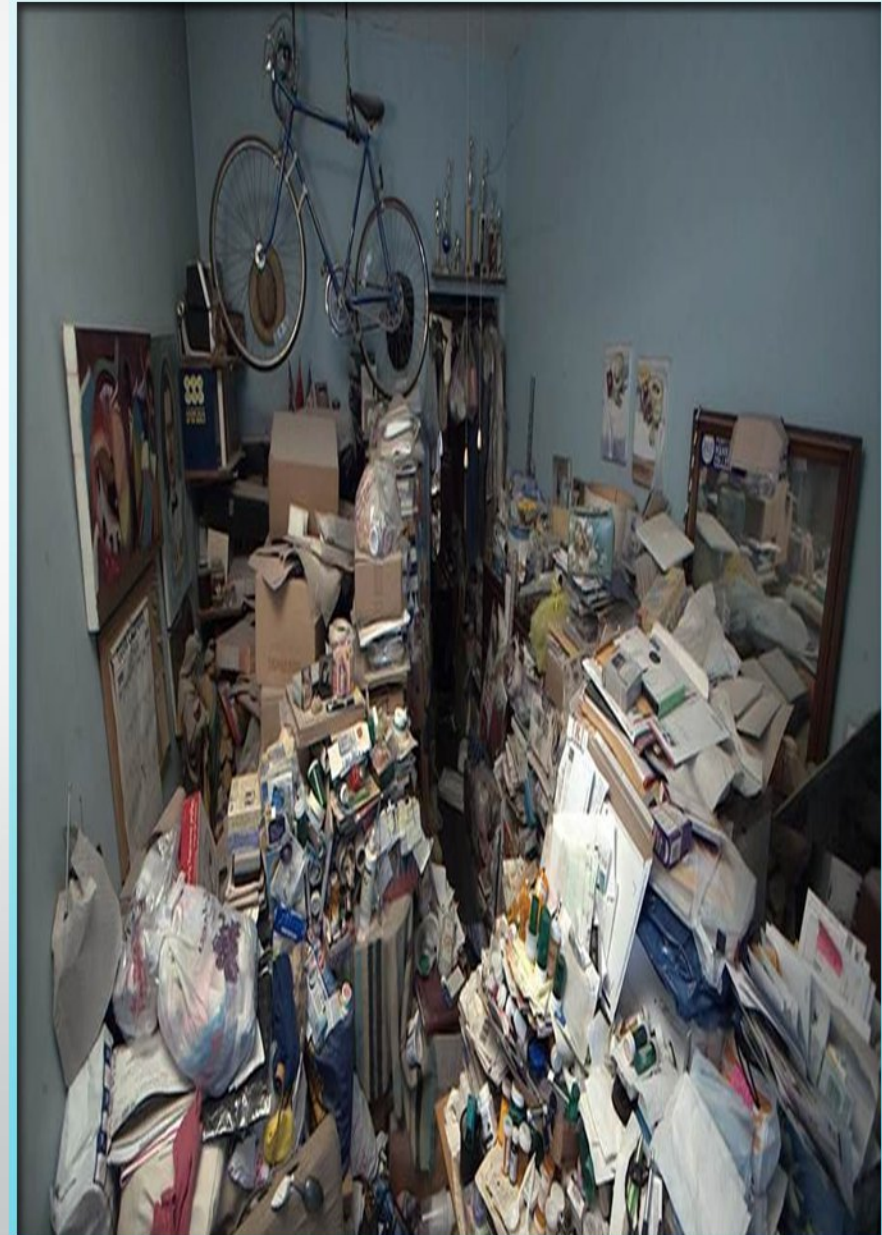
Hoarding Disorder

Persistent difficulty discarding possessions, regardless of their actual value.

This difficulty is due to a perceived need to save the items and to distress associated with discarding them.

This results in the accumulation of possessions that congest active living areas

Treatment is SSRIs and psychotherapy



Trichotillomania

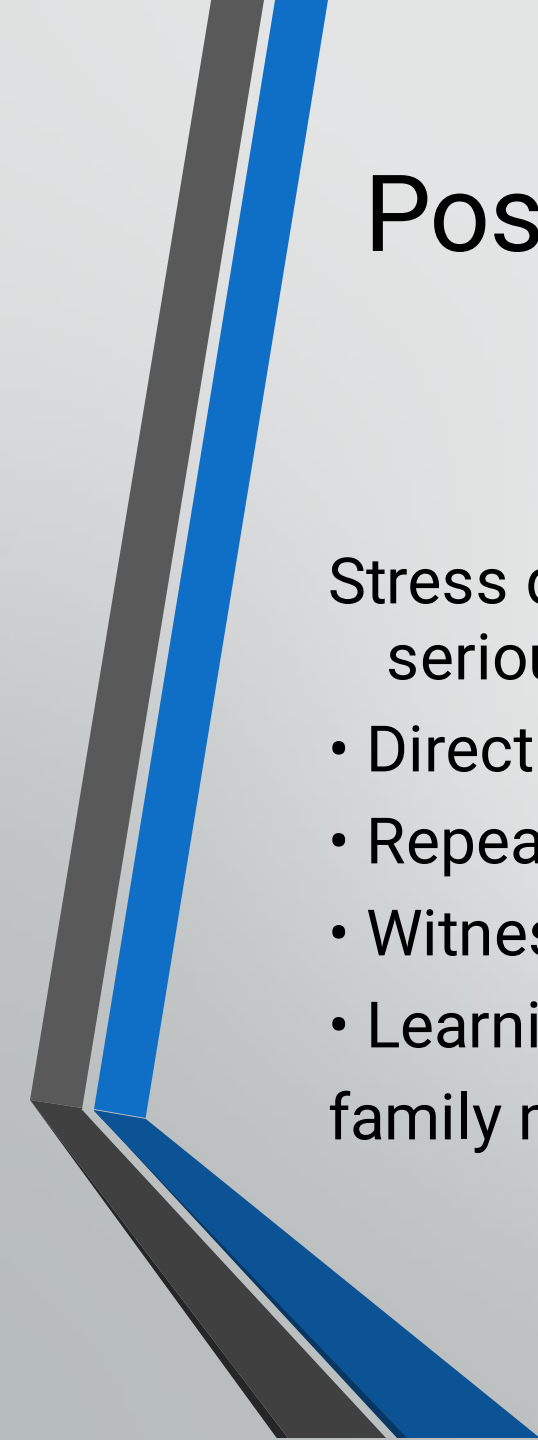
Trichotillomania is an irresistible urge to pull out one's own hair followed by a sense of relief.

Many patients eat or chew the hair. The most common areas of hair pulling are the scalp, eyebrows, eyelashes, beard, and pubic area.





TRAUMA AND STRESSOR- RELATED DISORDERS



Post-Traumatic Stress Disorder and Acute Stress Disorder

Stress disorders result from exposure to actual or threatened death, serious injury, or sexual violation in one of the following ways:

- Direct experience
- Repeated exposure (first responders)
- Witnessing the event
- Learning of violent or accidental traumatic event involving a close family member or friend

Exposure may lead to re-experiencing of symptoms in the form of nightmares or flashbacks. Women > men.

Symptoms include:

- Phobic avoidance
- Hypervigilance
- Increased startle reflex
- Mood instability
- Sleep disturbances
- Dissociative symptoms

Treatment is exposure therapy and SSRIs.

	Post-Traumatic Stress Disorder	Acute Stress Disorder
Onset	Anytime	>3 days, <1 month
Duration	≥1 month	<1 month

Adjustment Disorder

Adjustment disorder is a maladaptive response to an identifiable stressor causing distress in functioning.

- Symptoms must occur within 3 months of stressor
- Symptoms cannot last >6 months in duration
- Treatment is supportive psychotherapy.



EATING DISORDERS

Anorexia Nervosa

Anorexia is characterized by restriction of food intake that leads to >15–20% loss of ideal body weight or BMI <17. It is difficult to treat. Girls > boys.

- Body image disturbance (patients feel fat even though they are very thin)
- Fear of gaining weight • Poor sexual adjustment
- Medical complications include:
 - Abnormal electrolytes -- Lanugo hair -- Abnormal hormones
 - Low blood pressure -- Heart failure -- Osteoporosis

Treatment is hospitalization, behavioral modification, SSRIs, and family therapy.

Bulimia Nervosa

Bulimia nervosa is characterized by binge eating followed by purging.
Weight is normal. Girls > boys.

In bulimia is Characterized by:

- Binge (rapid ingestion of food)
- Purge (compensatory behavior)
 - Vomiting (signs of repetitive emesis include abrasions and callous in fingers/hands, esophageal tears, enlarged parotid glands, and dental cavities)
 - Exercising -- Fasting -- Use of laxatives -- Use of diuretics
- Treatment is behavioral modification and SSRIs.

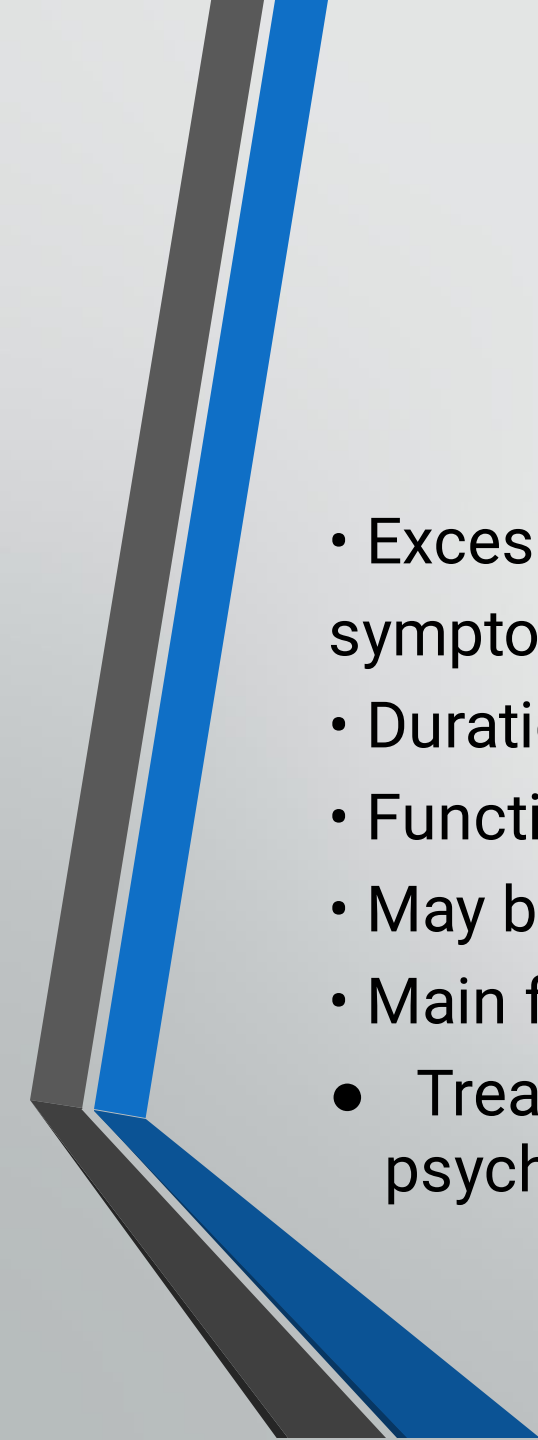


Binge Eating Disorder

- Binge eating disorder is binge eating without the compensatory behavior seen in bulimia nervosa.
- Weight is above normal.
- Treatment is stimulants.



SOMATIC SYMPTOM AND RELATED DISORDERS



Somatic Symptom Disorder

- Excessive thoughts, feelings, and behavior related to the somatic symptoms
- Duration >6 months
- Functioning impaired
- May be only one symptom; could be related to medical illness
- Main focus is how you react to the symptom
- Treatment should be by one identified physician along with psychotherapy.

Illness Anxiety Disorder

Illness anxiety disorder is characterized by the belief that one has an underlying illness, despite constant reassurance.

- Duration >6 months
- Somatic symptoms are not present; if present, mild
- Treatment is psychotherapy.

Conversion Disorder

Conversion disorder is the development of neurological symptoms following a psychological stressor that cannot be medically explained.

- All work-up tests will be negative.
- Patients will be indifferent to symptoms (la belle indifference).
- Treatment is psychotherapy.

Factitious Disorder

Factitious disorder is the conscious production of signs and symptoms of a mental or physical illness.

There are 2 types: imposed on self and imposed on others.

- Unconscious motivation (without knowing why)
- No obvious external gains
- Most patients become angered when confronted, will leave hospital against medical advice
- Treatment is psychotherapy.

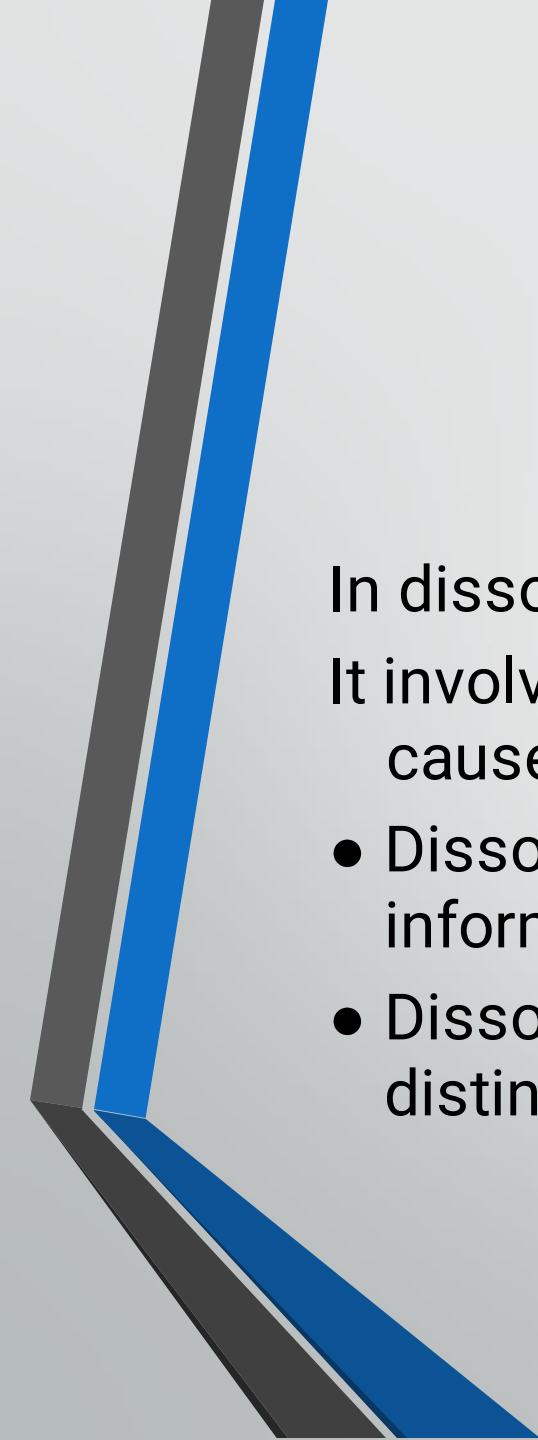
Malingering

Malingering is not a mental illness.

- It is the conscious production of signs and symptoms of a mental or physical illness.
- Conscious motivation
- Obvious external gains: money, avoiding prison, time off from work or school
- Most patients become angered when confronted

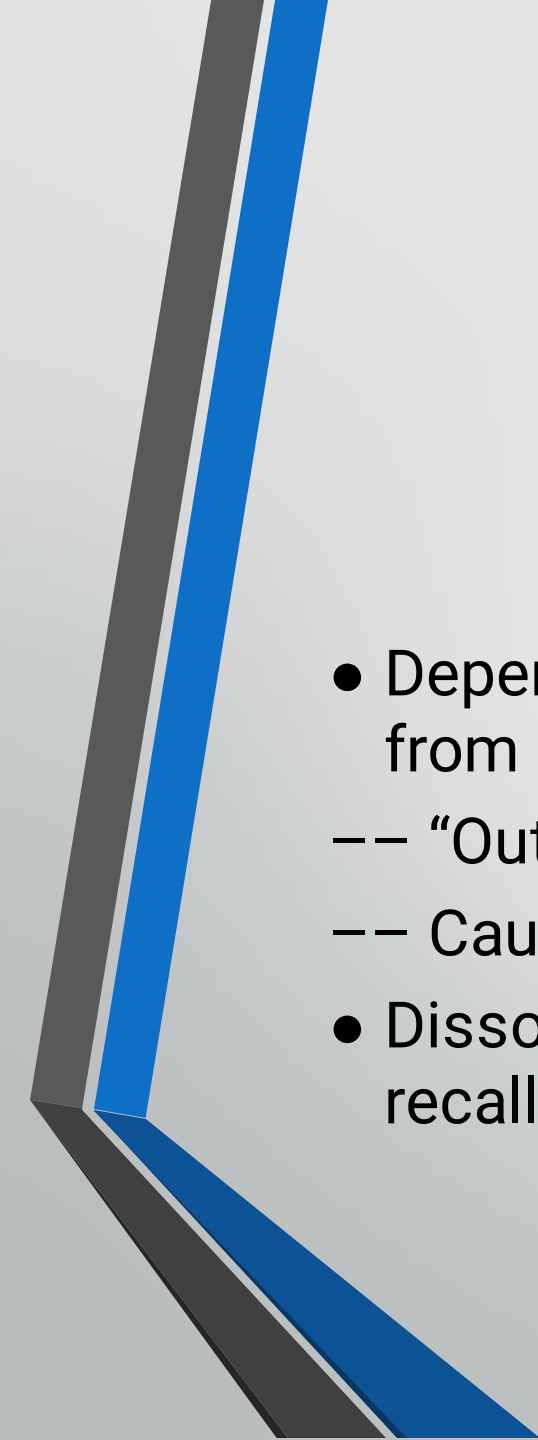


DISSOCIATIVE DISORDERS



In dissociative disorders, the defense mechanism used is dissociation. It involves the splitting off of brain from consciousness, typically caused by traumatic events.

- Dissociative Amnesia: inability to recall important personal information
- Dissociative identity disorder (multiple personality): presence of ≥ 2 distinct identities; will have lapses in memory

- 
- Depersonalization disorder: recurrent experiences of being detached from or outside of one's body
 - "Out of body" experiences -- Reality testing stays intact
 - Causes significant impairment
 - Dissociative Fugue: involves sudden unexpected travel, an inability to recall one's past, or confusion of identity



PERSONALITY DISORDERS

Personality disorders are maladaptive patterns of behavior. They are egosyntonic and lifelong.

Classifying Personality Disorders

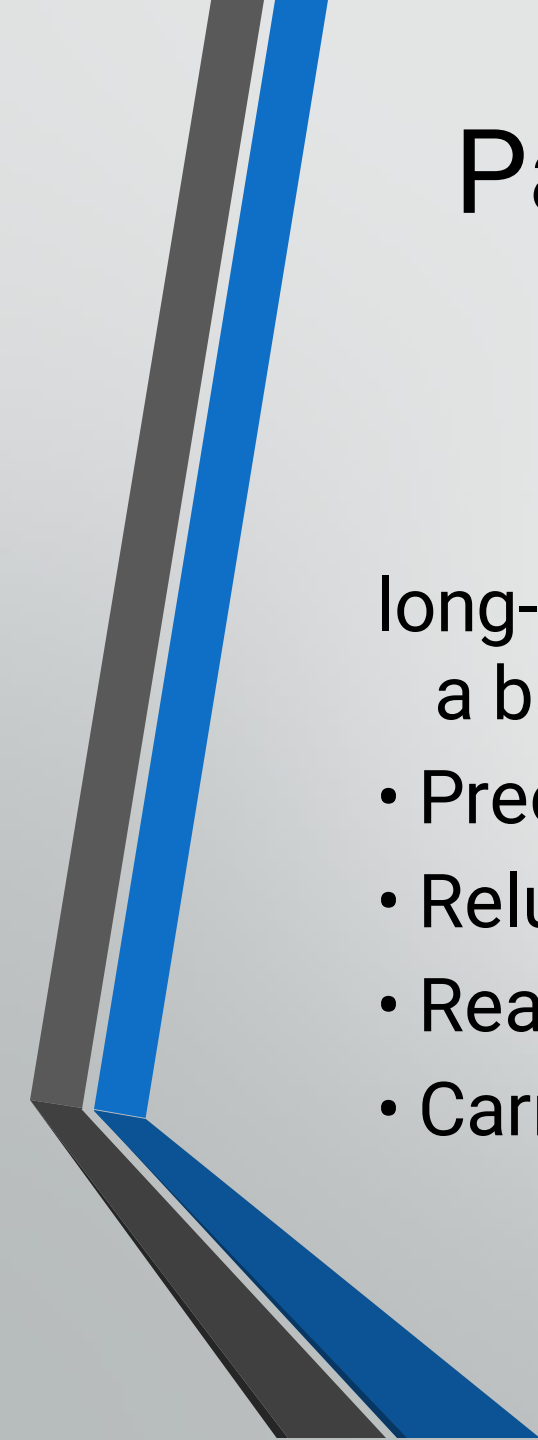
- The DSM-5 identifies ten personality disorders and separates these into three groups or “clusters”:
 - Odd or eccentric behavior
Paranoid, schizoid, and schizotypal
 - Dramatic, emotional, or erratic behavior
Antisocial, borderline, histrionic, and narcissistic
 - Anxious or fearful behavior
Avoidant, dependent, and obsessive-compulsive

Classifying Personality Disorders

Odd or eccentric

Extreme
suspiciousness, social
withdrawal, and
peculiar ways of
thinking and perceiving
things





Paranoid Personality Disorder

long-standing suspiciousness or mistrust of others;
a baseline of mistrust

- Preoccupied with issues of trust
- Reluctant to confide in others
- Reads hidden meaning into comments or events
- Carries grudges

Schizoid Personality Disorder

Schizoid: lifelong pattern of social withdrawal; they like it that way

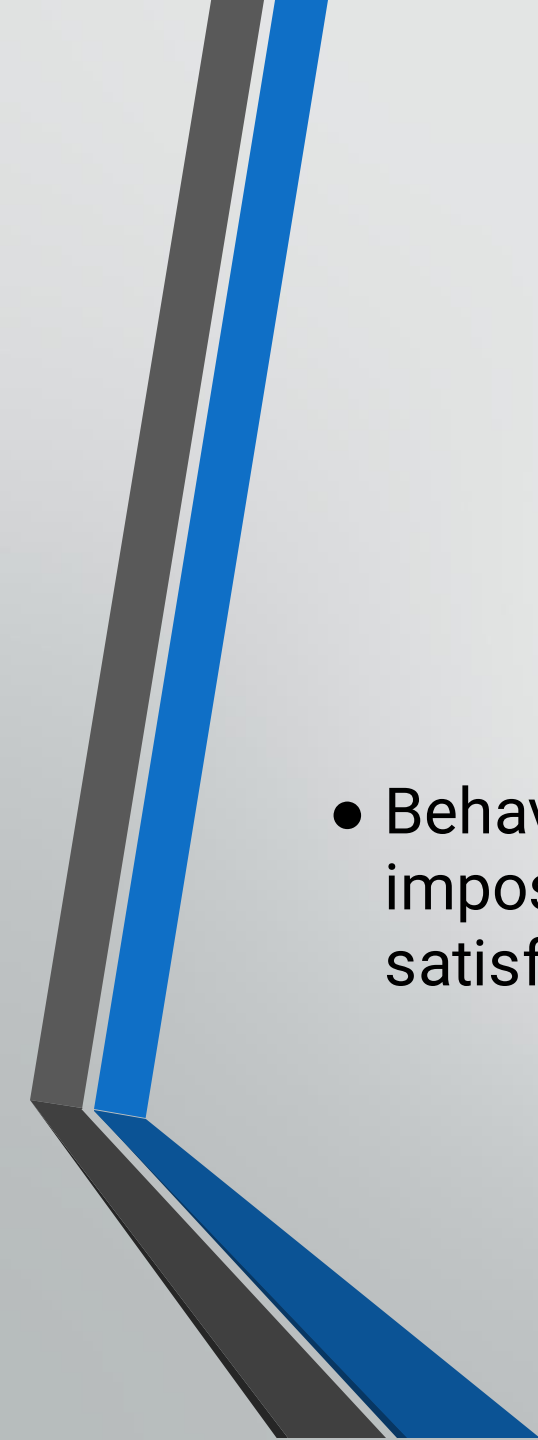
- Seen by others as eccentric, isolated, and withdrawn
- Restricted emotional expression



Schizotypal Personality Disorder

- very odd, strange, weird
- Magical thinking (including telepathy)
- Ideas of reference
- Illusions
- Socially anxious
- Lacks close friends, socially isolated
- Incongruous affect
- Odd speech
- May have short lived psychosis





“Dramatic” Personality Disorders

- Behaviors so dramatic, emotional, or erratic that it is almost impossible for them to have relationships that are truly giving and satisfying

Antisocial Personality Disorder

- unable to conform to rules of society (only personality disorder that requires age 18 for diagnosis)
- Criminal acts: delinquency, theft
- Truancy
- Running away
- Unable to hold a job
- Unable to maintain enduring attachments
- Reckless
- Aggressive
- Show lack of remorse
- Men > women



Borderline Personality Disorder

very unstable affect, behavior, self-image

In constant state of crisis

Impulsivity: promiscuity, gambling, overeating,
substance-related disorders

Unstable but intense interpersonal relationships

Have great difficulty being alone

Self-injurious behavior

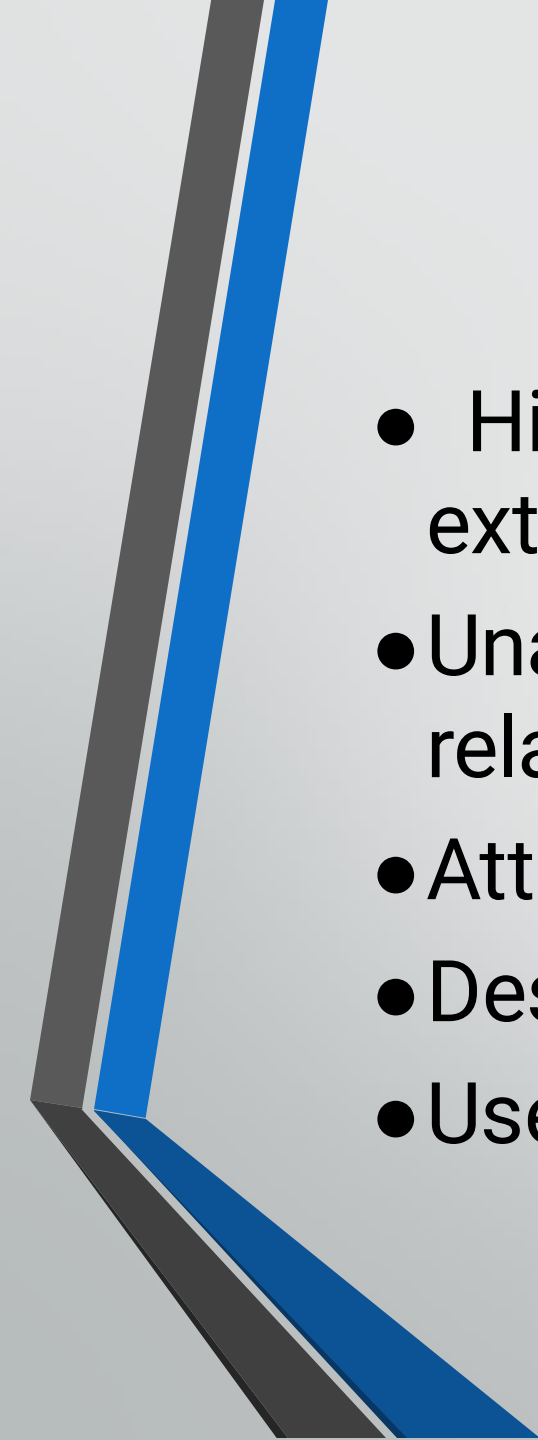
Multiple suicide (parasuicidal) attempts

History of sexual abuse

Defense mechanisms: splitting, passive-
aggression

Women > men 2:1





Histrionic Personality Disorder

- Histrionic: colorful, dramatic, and extroverted
- Unable to maintain long-lasting relationships
- Attention-seeking
- Desires spotlight
- Uses seductive behavior

Narcissistic Personality Disorder

- grandiose sense of self-importance
- Preoccupied with fantasies of unlimited wealth, power, love
- Demands constant attention and admiration
- Has fragile self-esteem
- Prone to depression
- Meets criticism with indifference or rage
- Can be charismatic





“Anxious” Personality Disorders

- People with these disorders typically display anxious and fearful behavior

Avoidant Personality Disorder

Extreme sensitivity to rejection; sees self as socially inept

Excessive shyness, high anxiety levels

Social isolation, but an intense, internal desire for affection and acceptance

Tends to stay in same job, same life, in same relationships



Dependent Personality Disorder

- Gets others to assume responsibility
- Subordinates own needs to others
- Unable to express disagreement
- Greatly fearful of having to care for self
- May be linked to abusive spouse

Obsessive-Compulsive Personality Disorder

characterized by orderliness and perfectionism

- Inflexible
- Control freak
- Loves lists, rules, order
- Does not want change
- Rigid and excessively stubborn
- Wants to keep routine





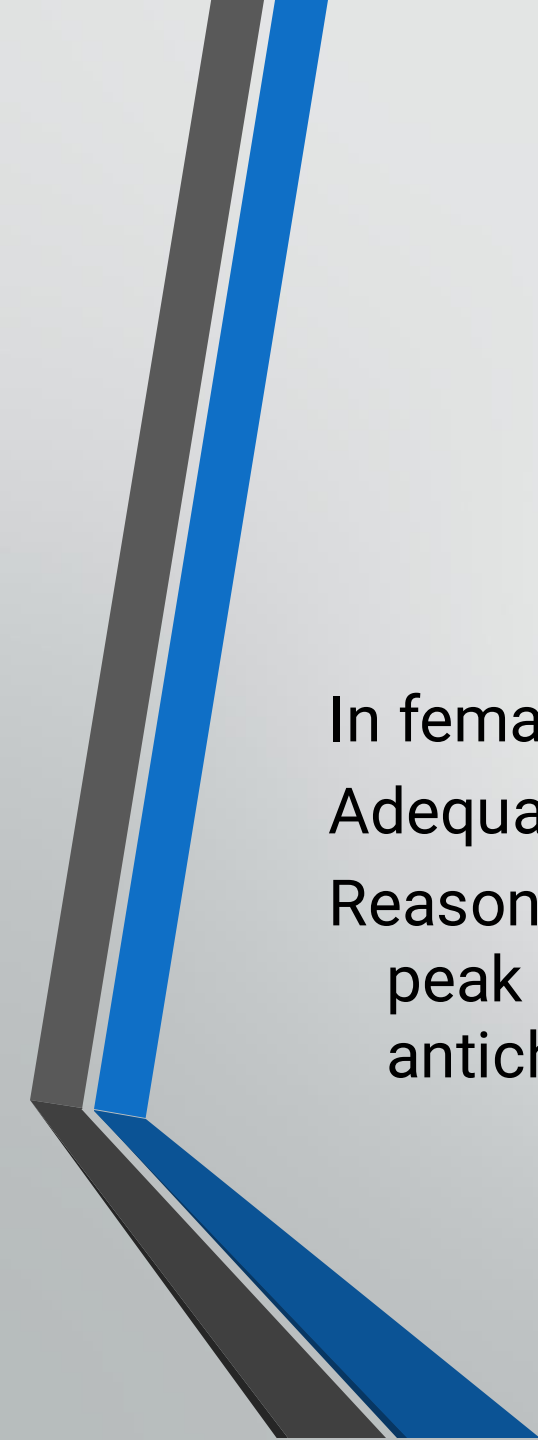
SEXUAL DISORDERS



Sexual Desire Disorders

In male hypoactive sexual desire disorder, men experience a deficiency or absence of fantasies or desires.

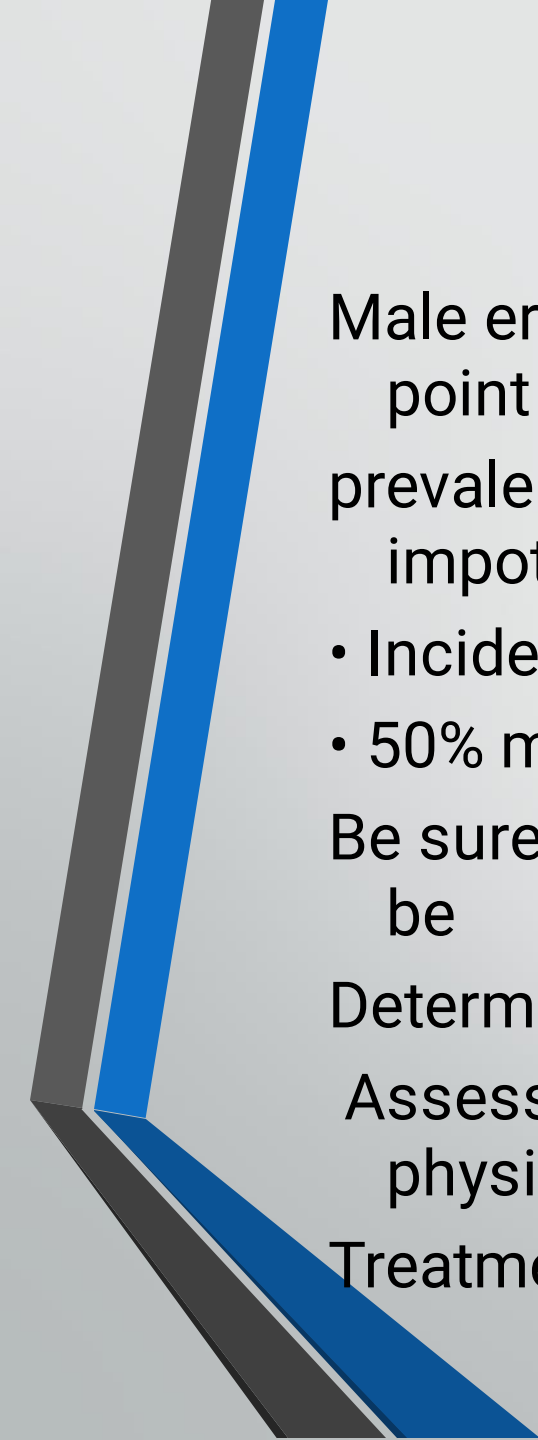
Reasons: low testosterone, CNS depressants, depression, marital discord; common post-surgery.



Sexual Arousal Disorders

In female sexual interest/arousal disorder, women are unable to achieve Adequate vaginal lubrication.

Reasons include possible hormonal connection (many women report peak sexual desire just prior to menses) and antihistamine/anticholinergic medications, which can reduce vaginal lubrication.



Male erectile disorder (impotence) has 10–20% lifetime prevalence;
point

prevalence is 3%. Half of men treated for sexual disorder complain of
impotence.

- Incidence is 8% young adult and 75% men age >80
- 50% more likely in smokers

Be sure to check alcohol usage, diabetes, and marital conflict, as it must
be

Determined whether the cause is organic or psychological.

Assessment is made with the postage stamp test, snap gauge (to test
physiological vs. psychological).

Treatment is sildenafil, vardenafil, and tadalafil.

Orgasm Disorders

- Female orgasm disorder is an inability to achieve orgasm. Overall prevalence

from all causes is 30%.

About 5% of married women age >35 have never achieved orgasm.

Treatment is fantasy, vibrators.

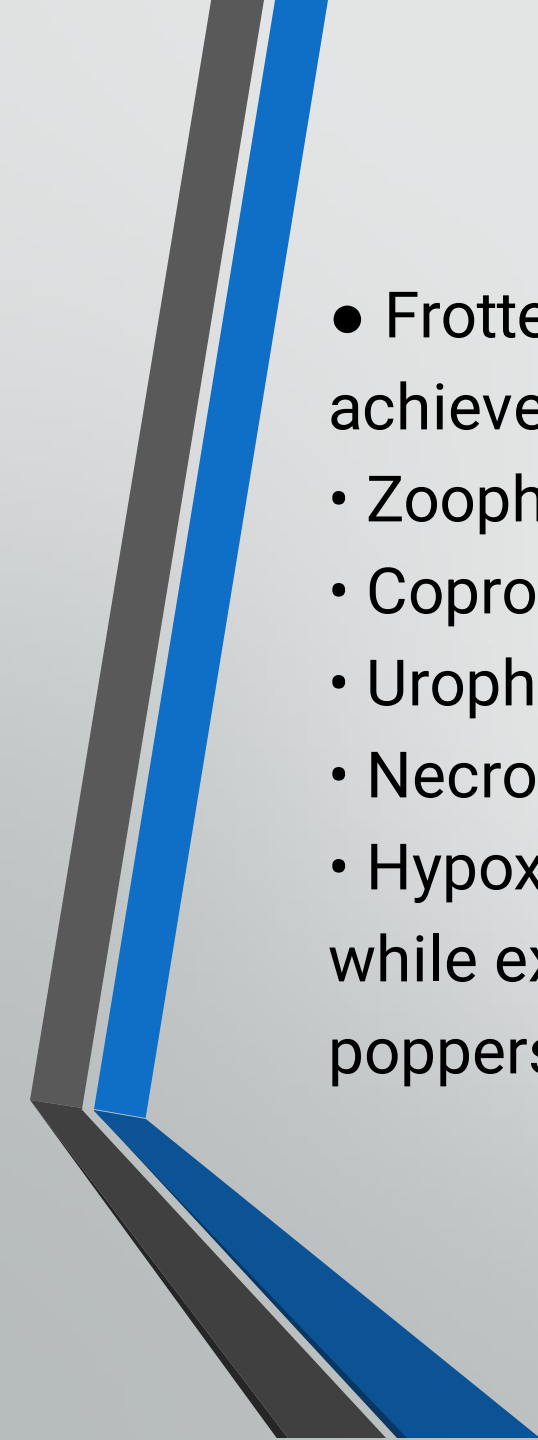
- In premature ejaculation, the man ejaculates before or immediately after entering vagina.

It is more common if anxiety about the sexual act.

Treatment is stop-and-go technique, squeeze technique, and SSRIs.

Paraphilic Disorders

- Pedophilia: sexual urges toward children; most common paraphilia
- Exhibitionism: recurrent desire to expose genitals to stranger
- Voyeurism: sexual pleasure from watching others who are naked, grooming, or having sex; begins early in childhood
- Sadism: sexual pleasure derived from others' pain
- Masochism: sexual pleasure derived from being abused or dominated
- Fetishism: sexual focus on objects, e.g., shoes, stockings; transvestite fetishism involves fantasies or actual dressing by heterosexual men in female clothes for sexual arousal

- 
- Frotteurism: male rubbing of genitals against fully clothed woman to achieve orgasm; subways and buses
 - Zoophilia: animals preferred in sexual fantasies or practices
 - Coprophilia: combining sex and defecation
 - Urophilia: combining sex and urination
 - Necrophilia: preferred sex with cadavers
 - Hypoxyphilia: altered state of consciousness secondary to hypoxia while experiencing orgasm; achieved with autoerotic asphyxiation, poppers, amyl nitrate, nitric oxide

Genito-Pelvic Pain Disorders

Genito-pelvic pain/penetration disorders involve involuntary muscle constriction of the outer third of the vagina, which prevents penile insertion. Psychological in origin, they involve recurrent and persistent pain before, during, or after intercourse.

- •Diagnosed only in women
- Not diagnosed if caused by a medical conditions
- Treatment is relaxation and Hegar dilator.



Theories of Learning and Behavioral Modification

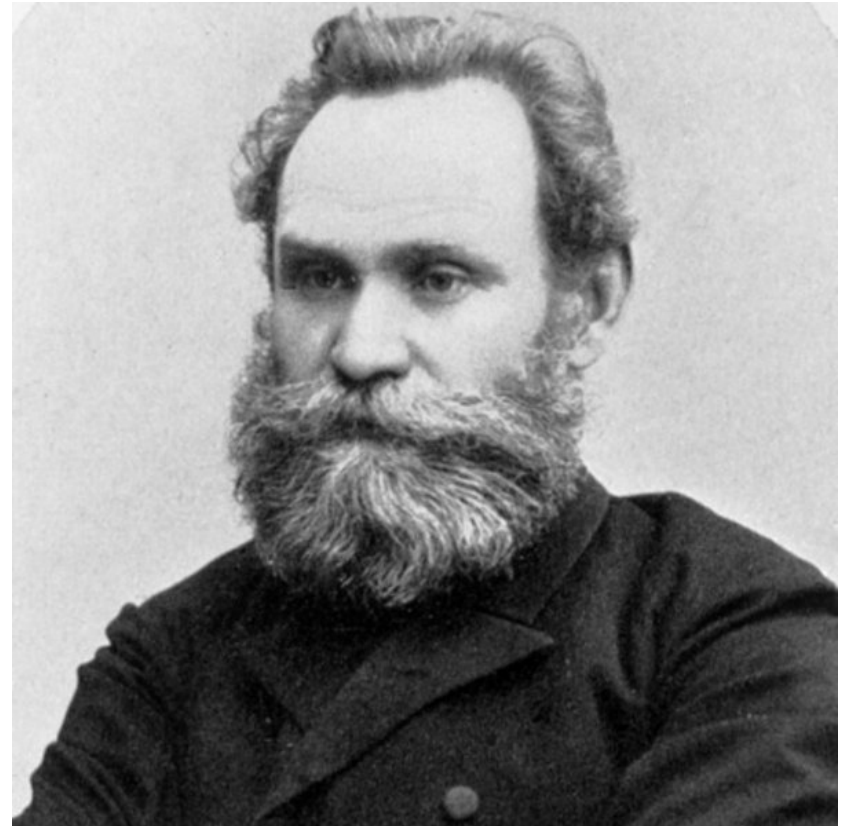
LEARNING THEORIES

Learning is the acquisition of knowledge or skill that is not the result of maturation. It can take place through association, understanding or observation.

- 1 Associative learning includes classical and operant conditioning.
 - 2 Cognitive learning involves understanding and uses cognitive strategies to process information.
 - 3 Observational learning involves modelling.
- 

Associative learning
classical conditioning

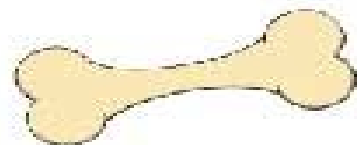
- Described by Pavlov (1849–1936) in 1927, who trained dogs to salivate in response to a light or bell by associating it with food.



Before conditioning

FOOD
(UCS)

SALIVATION
(UCR)



BELL

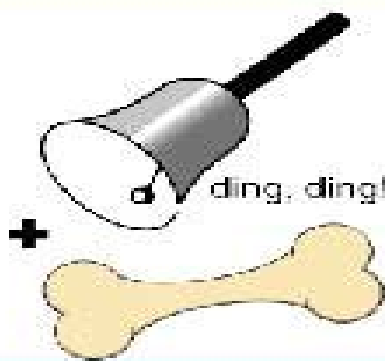
NO RESPONSE



During conditioning

BELL +
FOOD
(UCS)

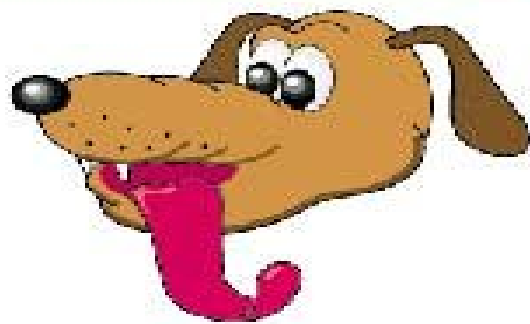
SALIVATION
(UCR)



After conditioning

BELL
(CS)

SALIVATION
(CR)



Classical conditioning involves repeated administration of a new stimulus (bell) together with an **unconditioned stimulus (UCS) (food)**.

The UCS (food) is known to elicit a specific **unconditioned response (UCR) (salivation)**.

Decorative geometric shapes in the bottom left corner, including a grey rectangle with diagonal lines, a light blue triangle, and a black triangle.

This repeated association results in the new stimulus (bell) being able to produce the same response (salivation), eventually without the UCS (food).

The **new stimulus (bell) is the conditioned stimulus (CS)** and the learned response it produces **(salivation) is now termed the conditioned response (CR)**, once the association has been acquired.

The forming of an association is an **automatic behavior (passive process)** and does not require understanding.

The period of pairing required between an UCS and a CS for the association to be learned and the conditioned response to occur is called the **acquisition stage**.



delayed conditioning, in which the start of the CS precedes the start of UCS (optimal delay is less than 1 s) is the best method for learning.

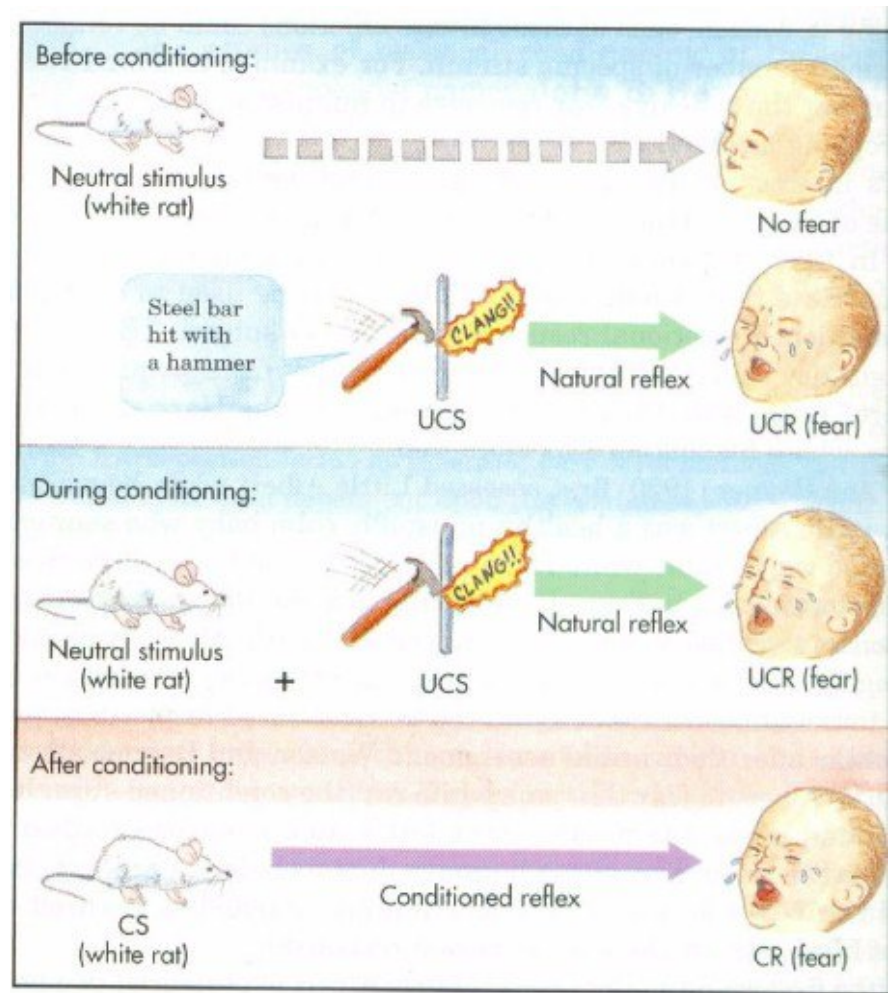
If the CS is repeatedly presented without the UCS then the CR gradually disappears,
This is called **extinction**.



- In 1920, **Watson and Rayner** used classical conditioning to induce a white-rat phobia **in Little Albert** (11-month-old boy)



- They associating a loud noise with every presentation of the rat.
- This was then repeated with a white rabbit, and eventually the boy's fear was generalized to any furry object.



BEHAVIORAL MODIFICATION

Systematic desensitization

usually begins with imagining oneself in a progression of fearful situations and using relaxation strategies that compete with anxiety.

It is often used to treat anxiety and phobias, and is based on the concept of counter-conditioning.

Exposure is treatment by forced exposure to the feared object; maintained until fear response is extinguished

Flooding, or massive exposure, is where patients are exposed to a maximum intensity anxiety-producing situation.



Aversive conditioning occurs when a stimulus that produces undesired behavior is paired with an aversive stimulus.

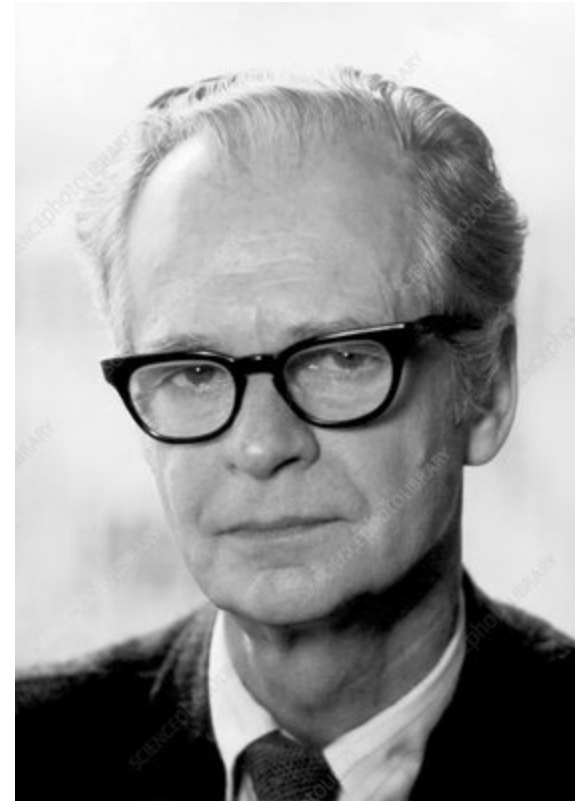


Operant conditioning (OC)

Skinner (1904–1990)
proposed **an associative
learning theory** based on

**Thorndike's (1874–1949) law
of effect**

This states that if a voluntary
behavior (operating on trial
and error) is rewarded it
will be repeated, and vice
versa.



- A hungry rat placed in a Skinner box (contains a lever which releases food pellets)
- The rat learns to press the lever in order to receive food.



In this way the conditioned response (pressing the lever) is reinforced.

Operant conditioning is thus an active form of learning (the rat must act in order for conditioning to occur).

Primary reinforcement rewards basic drives (e.g. nourishment, sex) and is independent of prior learning.

Secondary reinforcement rewards learned drives (e.g. money, praise) and is more subjective.



Reinforcement can be **positive**, whereby a reward reinforces a response and increases the likelihood of its occurrence

or **negative**, whereby an unpleasant condition is removed and again increases the likelihood of the response (e.g. patient-controlled analgesia).



Punishment is an aversive consequence that is intended to reduce the likelihood of recurrence, and is most effective when given promptly. The removal of a punitive measure may allow it to act as a negative re enforcer.

continuous reinforcement every positive response is rewarded.

The behavior is quickly acquired and the response rate is at its maximum.

partial reinforcement only a fraction of the responses are reinforced.

Behaviors learned by this method can be very resistant to extinction

Types of partial reinforcement

fixed interval reinforcement (reward follows a fixed amount of time) is relatively poor at maintaining a CR and the response rate only increases at expected time of reward

fixed ratio reinforcement (reward follows fixed number of responses) is effective in maintaining rapid response rate

variable interval reinforcement (reward follows a continually varying amount of time regardless of the number of responses) is effective in maintaining a CR

variable ratio reinforcement (reward follows a continually varying number of responses) produces a relatively constant rate of response.



Behavioral modification

token economy

- This is often used in behavioral management programs for children
- in which a desired behavior is rewarded with stickers or tokens which can then be swapped for privileges.



Shaping

achieves final target behavior by Reinforcing successive approximations of the desired response.

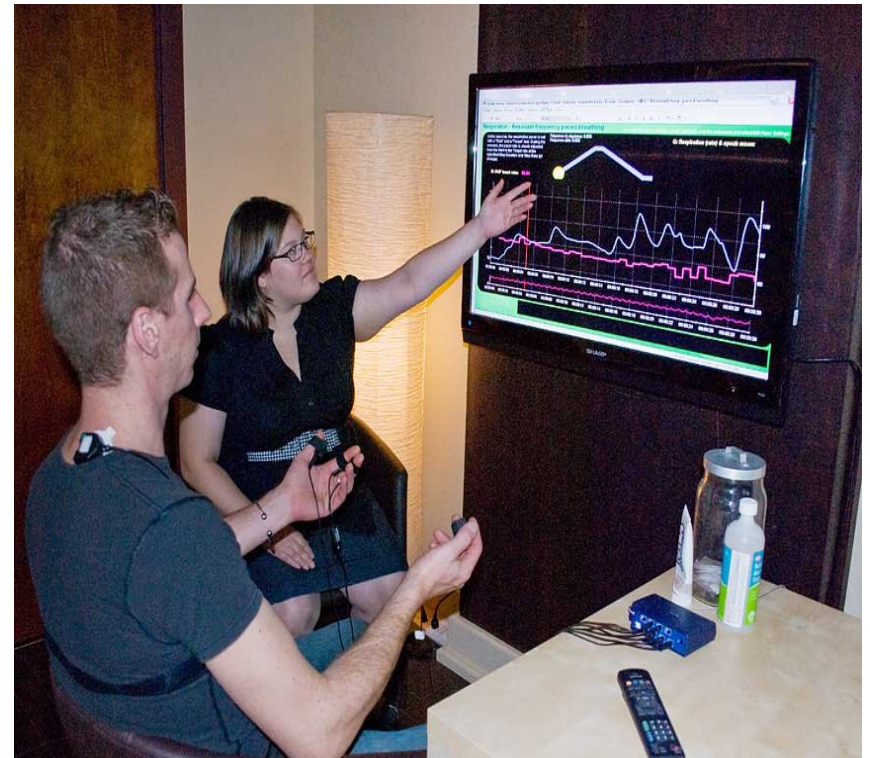
A boy with autism is rewarded when he utters one word and subsequently has to utter more words to obtain the same reward.

Stimulus control is where a stimulus acquires control over behavior.

When this is true, removal of that stimulus can extinguish the response.

Watching TV while eating will increase weight, so in order to lose weight you must stop watching TV.

Biofeedback uses external feedback via instruments to provide usually unperceived biological information subsequently used to modify internal physiologic states.



Certain functions of the autonomic nervous system (pulse, blood pressure, muscle tone, pain perception) can be manipulated through the technique of biofeedback.



Fading

gradually removing the reinforcement without the individual becoming aware of the difference.

Eg

Patients receive pain medication after surgery, but each dose is smaller until discontinuation.

Cognitive learning

This is an active form of learning that involves the creation of cognitive maps and the development of structure and meaning.

Cognitive learning takes place either as **insight learning** (spontaneous cognitive remodeling that provides a sudden insight or solution to a problem)

or **latent learning** (learning occurs but is not immediately apparent).



Observational learning

This is an active form of learning that takes place through observation. there is no direct reinforcement.

Relevant characteristics of those being observed:

- share features with observer (similarity)
- have a high status
- perceived competence
- their behavior is seen to be rewarded.

Behavioral Models of Depression

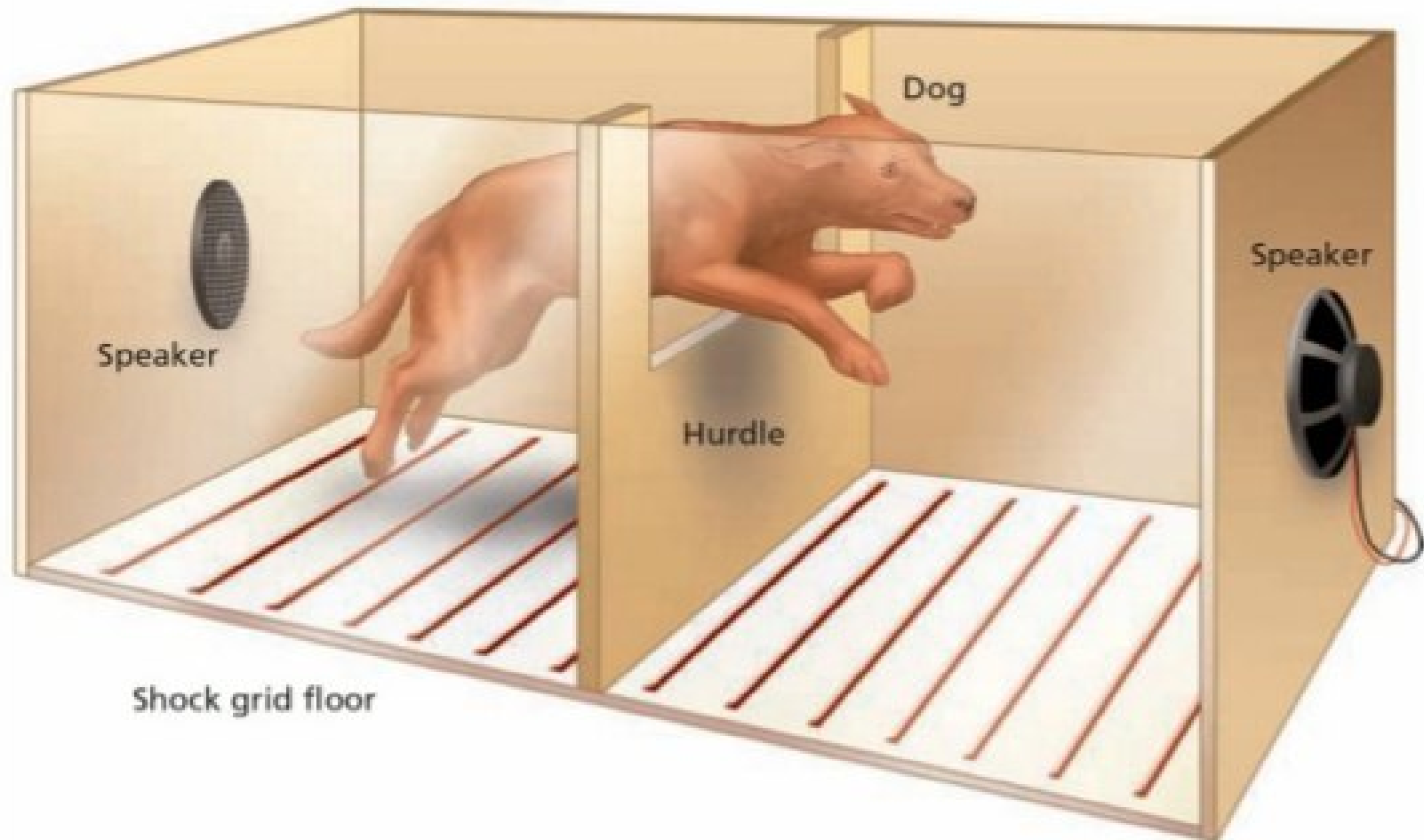
Learned helplessness

where all normal avoidance responses are extinguished.

If a dog is shocked and not allowed to escape, eventually the dog will not take an obvious avoidance route even when it is offered.

Figure 5.11 Seligman's Apparatus

In Seligman's studies of learned helplessness, dogs were placed in a two-sided box. Dogs that had no prior experience with being unable to escape a shock would quickly jump over the hurdle in the center of the box to land on the "safe" side. Dogs that had previously learned that escape was impossible would stay on the side of the box in which the shock occurred, not even trying to go over the hurdle.



Low rate of response-contingent reinforcement is another explanation for depression.

The person receives too little predictable positive reinforcement.

Depression can be seen as a prolonged extinction schedule; it results in passivity.

eg;

A caring and giving father who feels unappreciated by his family might become depressed.

Maslow's (1908–1970) hierarchy of needs

- Maslow's (1908–1970) hierarchy of needs combines extrinsic and intrinsic elements.
- Ordered according to survival value.
- Those that are lower in the hierarchy must be at least partially satisfied before subsequent (higher) needs can be addressed:

7 Self-actualization

intrinsic motivations, altruism

6 Aesthetic

symmetry, beauty, order

5 Cognitive

understanding, exploration, knowledge

4 Esteem

social approval, competence, recognition

3 Belonging and love

affiliations, relationships

2 Safety

protection, security

1 Biological

air, food, water, shelter

Thanks!



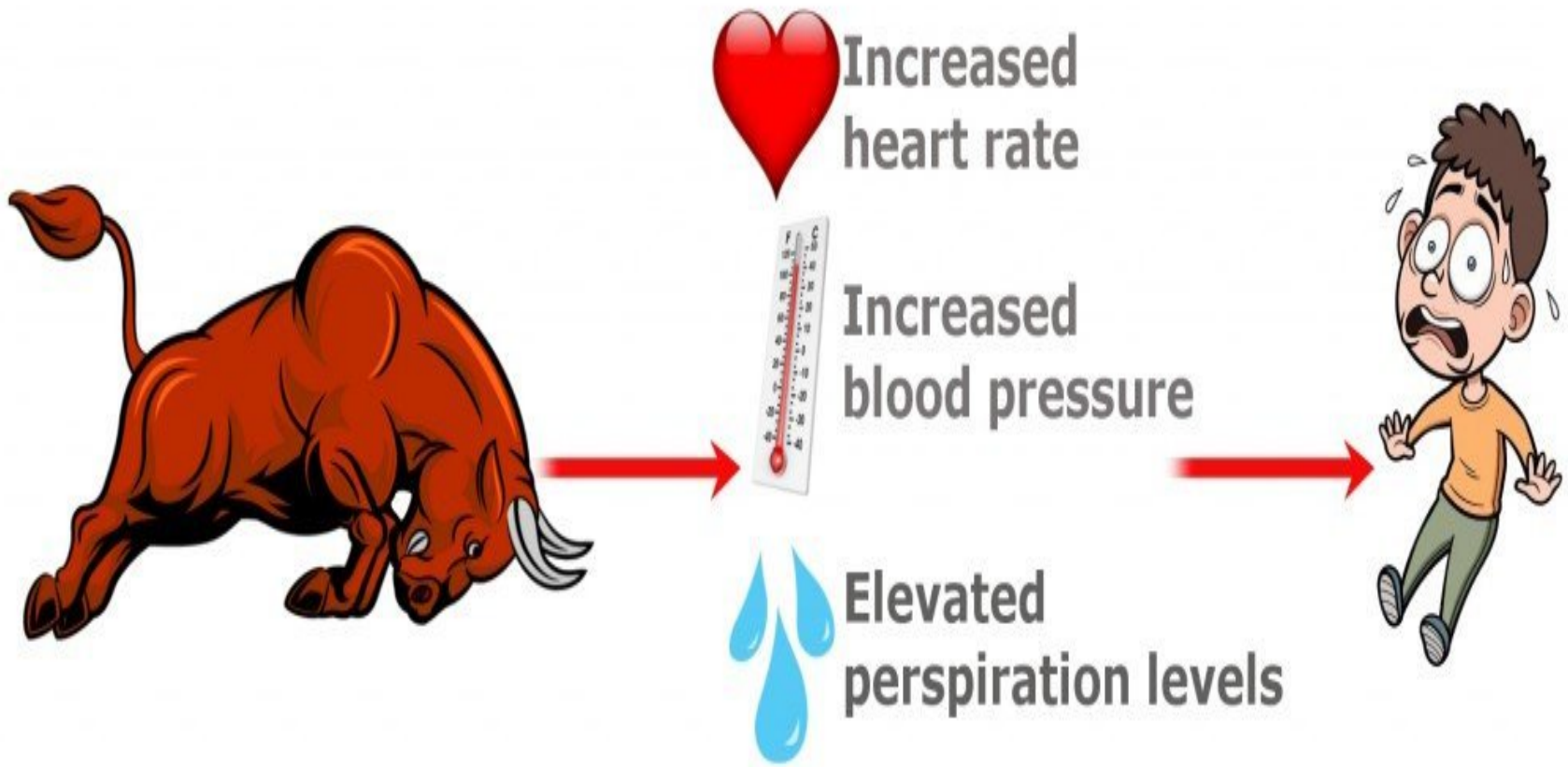
Psychological Health and Testing

Emotions

- A feeling is the experience (i.e. awareness) of a bodily sensation (touch, heat, pain, movement etc.) or an emotion.
- An emotional state can be regarded as a combination of the prevailing physiology, thoughts and behavior.
- Many theories tried to explain the emotional feelings.

JAMES-LANGE THEORY (1922)

- Perception of an emotion-arousing stimulus causes physiological changes which are then mentally interpreted and experienced as the relevant emotion.
- The emotion is therefore secondary to physiological response.



SCHACTER'S COGNITIVE LABELLING THEORY

- Schacter also believed emotions were secondary to physical arousal, but that their nature was determined by cognitive appraisal.
- In other words, physiology merely generates the 'energy' of emotion, which must then be directed (or labelled) by thought.
- Studies have shown that similar circumstances and physiological reactions can be variously emotive according to the cognitive appraisal of the situation

Stimulus
(Growling Dog)



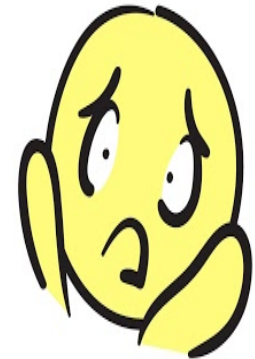
Physiological Arousal
(Increased Heart Rate)



Cognitive Label
("That's scary!")

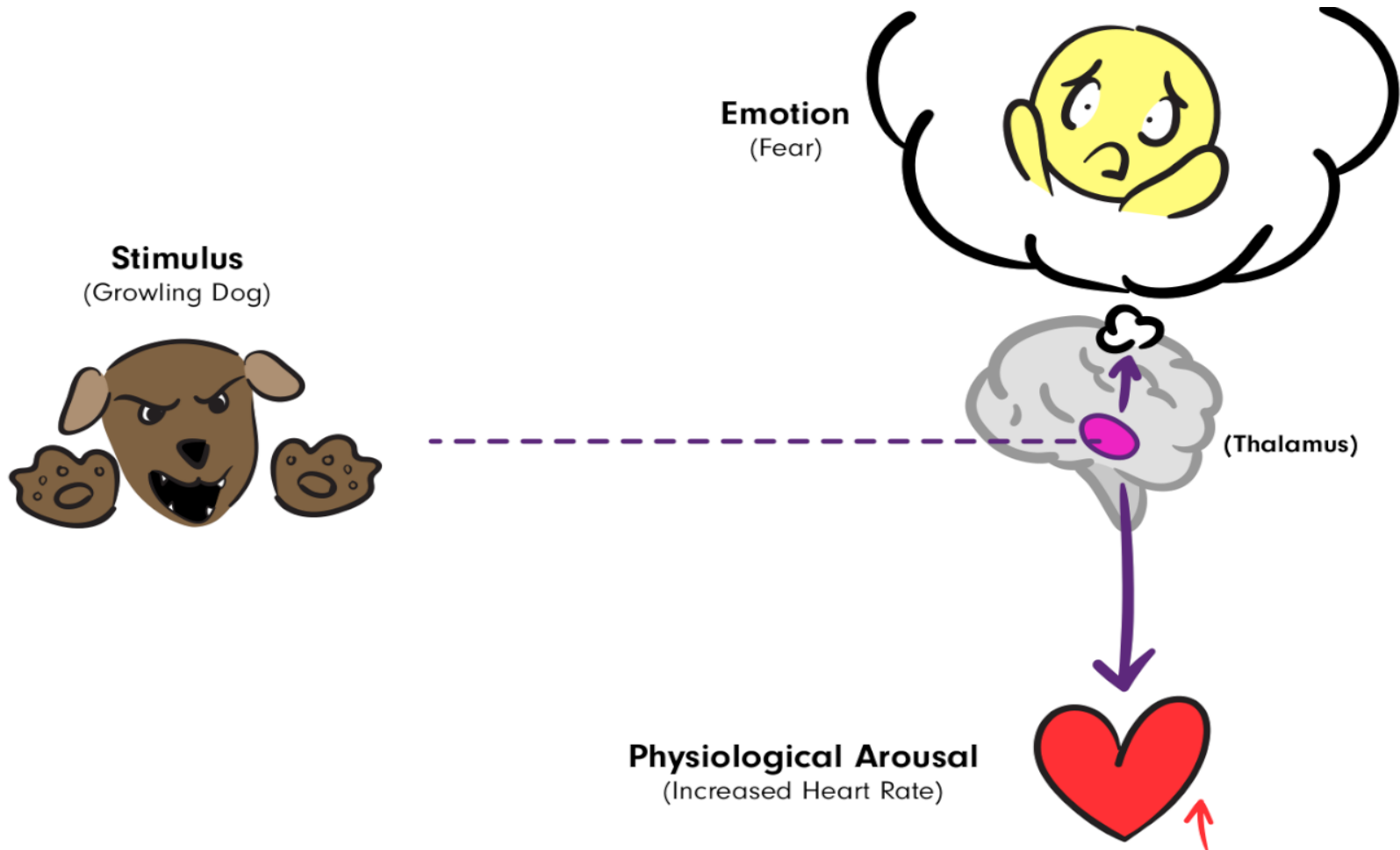


Emotion
(Fear)



CANNON-BARD (THALAMIC) THEORY

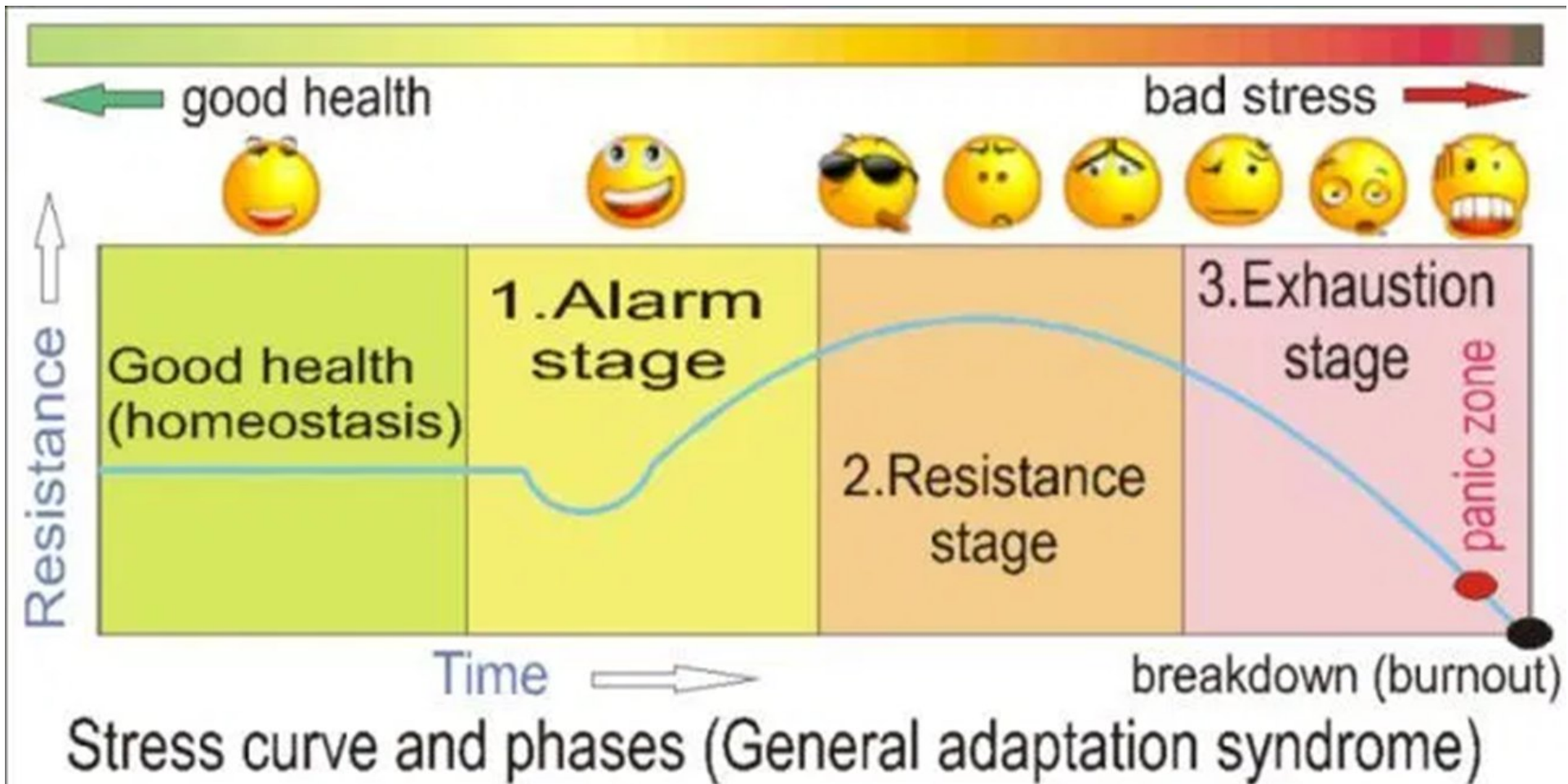
- Perception of an emotion-arousing stimulus leads to the concurrent experience of emotion and physiological response.
- Thalamus controls processing of sensory information and stimulates both the cortex (to produce the appropriate feeling) and the viscera (via hypothalamus, to produce the relevant physical reaction).



Stress

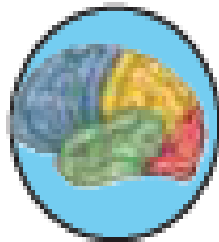
Stress

- Strictly, any activity (physical or mental) which requires significantly more effort than baseline is 'stressful'.
- In human psychology, the term is usually restricted to situations where demands (stressors) exceed resources.
- These two variables are subjective, which is why individuals' stress may differ despite (objectively) similar circumstances.
- Like any emotion, stress comprises feelings, physical changes and cognitions which are a reaction to the situation.

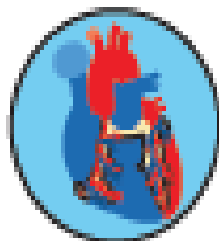


- Described by Hans Selye as the General Adaption Syndrome:
 - initial alarm (fight or flight)
 - resistance (state of increased arousal)
 - exhaustion (with chronic stress).
- Stress can cause or exacerbate many illnesses (e.g. heart disease, peptic ulceration).
- Physical illness may itself be a stressor.

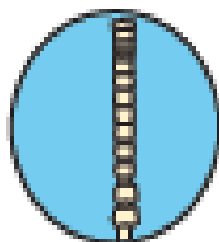
Effect of stress on different body systems



- Mood issues including anger, depression, irritability
- Lack of energy, concentration problems, sleeping issues, headaches
- Mental issues including anxiety disorders and panic attacks



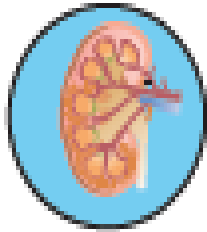
- Increased blood pressure, increased heart rate, higher cholesterol
- Risk of heart attack



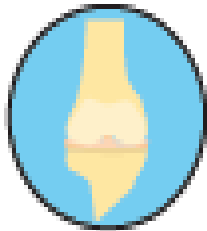
In the immune system, reduced ability to fight and recover from illness



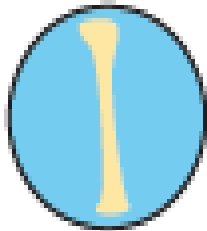
Stomach cramps, reflux, and nausea



- Loss of libido, lower sperm production for men
- Increased period pain for women



Aches and pains in the joint and muscles



Decreased bone density

Types of personality

Type A personality

Common Type A Traits

Impatient



Competitive



Work-obsessed



Achievement-oriented



Aggressive



Stressed



Type A personality is a cluster of behavioral traits that has been associated with increased prevalence and incidence of coronary heart disease.

- Tends to be impatient, competitive, preoccupied with deadlines, and highly involved with work
- Key component of type A behavior: how they handle hostility
- Has increased incidence of coronary heart disease, even after controlling for the major risk factors (systolic blood pressure, cigarette smoking, cholesterol)

Type B personality



- Type B personality lives at lower stress levels. When faced with competition, they do not mind losing.

Stress and Illness

- Mentally healthy individuals do not deteriorate in physical health as quickly as do those in poor mental health.
- Chronic anxiety, depression, and emotional maladjustment predict negative health events later in life.

The Holmes and Rahe scale is used to quantify stressful life events.

- Different life events contribute different weightings to the total score.
- The death of a spouse is weighed as the most stressful event.
- There is a positive correlation between stressful life events and developing illness.

Table 6-1. Holmes and Rahe Life Stress Inventory

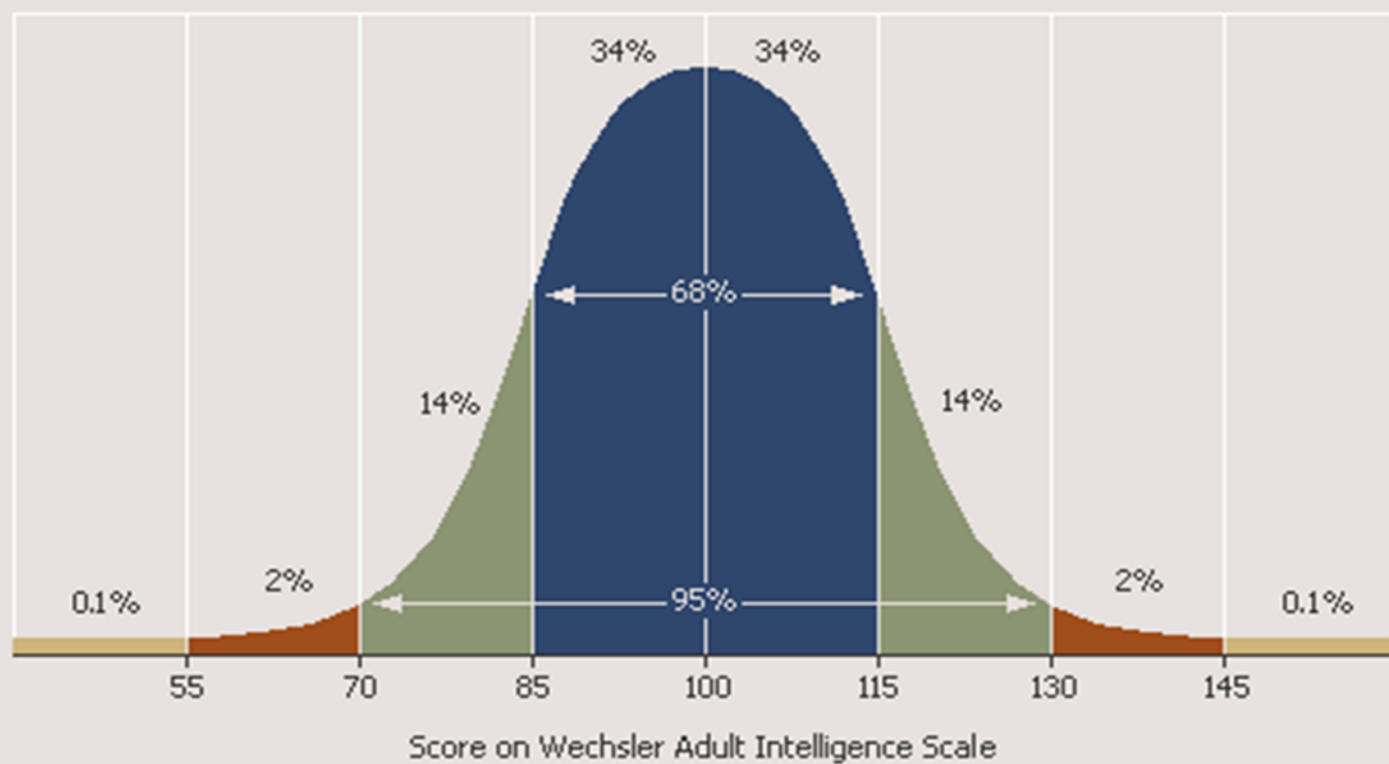
Life Event	Mean Value
Death of spouse	100
Divorce	73
Marital separation from mate	65
Detention in jail or other institution	63
Death of a close family member	63
Major personal injury or illness	53
Marriage	50
Being fired at work	47
Marital reconciliation	45
Retirement from work	45
Major change in the health or behavior of a family member	44
Pregnancy	40

- To find your score, add up all your points:
- <150 points: relatively low amount of life change and low susceptibility to stress-induced health problems
- 150–300 points: 50% chance of a major stress-induced health problem in next 2 years
- >300 points: odds increase to 80% chance of a major stress-induced health problem in next 2 years

Intelligence Testing

- Intelligence quotient (IQ) is a general estimate of the functional capacity of a person; 70% is inherited, with recent studies suggesting it is mostly from the mother. IQ is not an absolute score, but a comparison among people.
- Distribution mean is 100, and standard deviation is 15.
- Intellectual disability <2 SD below the mean

Number of scores



DSM IV-TR

Levels of Mental Retardation

- Mild MR
 - 55-70 IQ
- Moderate MR
 - 35-54 IQ
- Severe MR
 - 20-34 IQ
- Profound MR
 - Below 20 IQ

Table 6-2. Distribution of IQ Scores in the General Population

Range	Label	Distribution
<69	Intellectual disability	About 2.5% of population
70–79	Borderline	
80–89	Low average	
90–109	Average	About 50% of population
110–119	High average	
120–129	Superior	
>130	Very superior	About 2.5% of population



- Wechsler Pre-school and Primary School Intelligence Scale (WPPSI): from 4 to 6 1/2 years. Verbal and non-verbal.
- Wechsler Intelligence Scale for Children from 5 to 15 years. Verbal and non-verbal.
- Wechsler Intelligence Scale for adults above 16 years. Verbal and non-verbal.

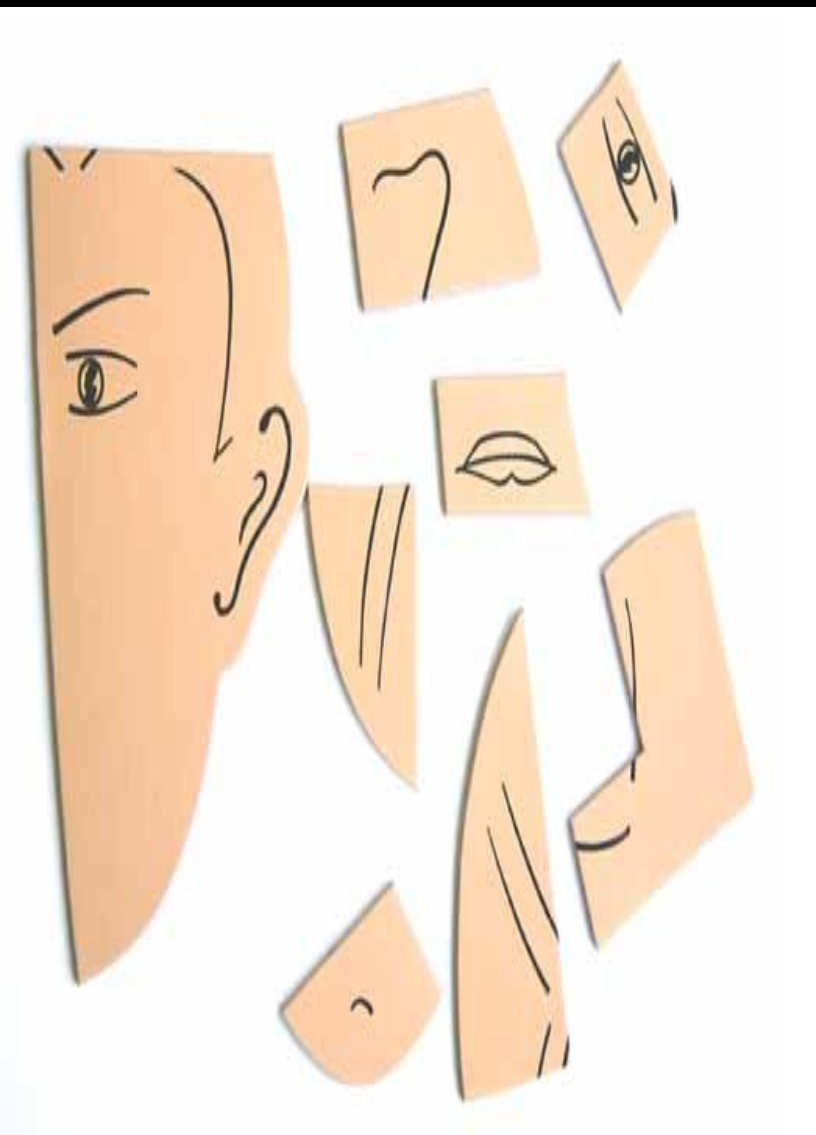


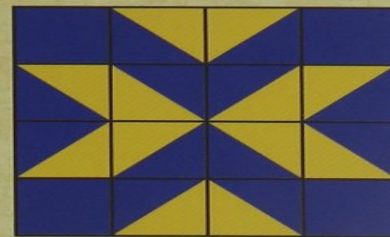
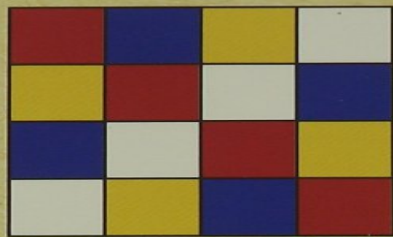
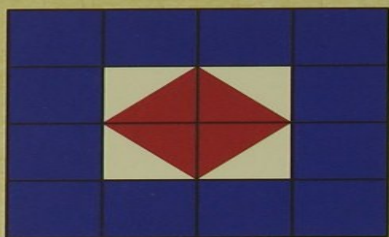
Verbal:

- Similarities
- Arithmetic
- Digit span
- Vocabulary
- Information
- Comprehension

Performance:

- Object assembly
- picture Arrangement
- Block design
- picture Completion
- Digit symbol

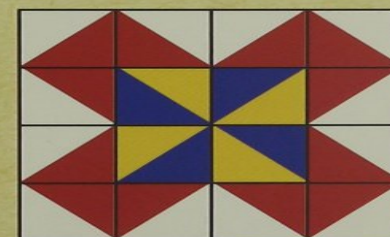
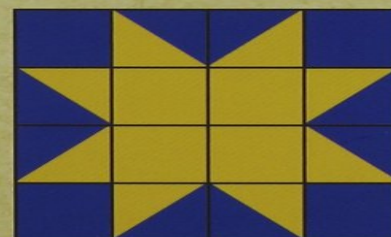
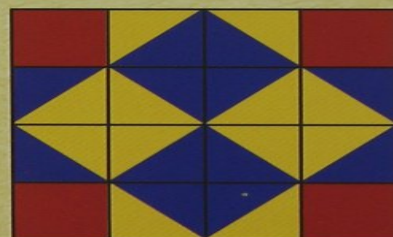
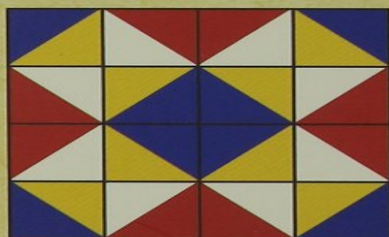
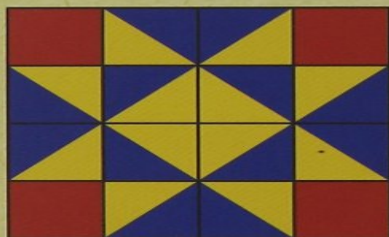
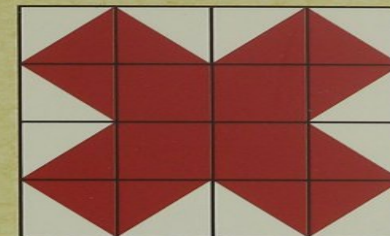




DESIGN BLOCKS

16 Color Cubes

Create Countless Patterns!



Digit:

Symbol:

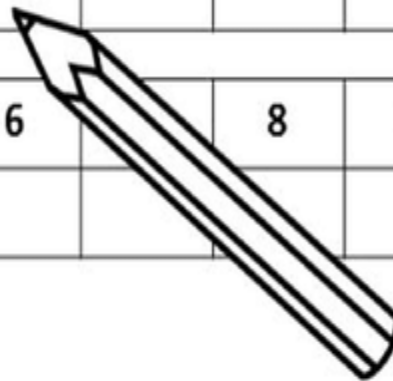
1	2	3	4	5	6	7	8	9
—	⊥	⌊	└	┐	○	△	×	=

Samples

Test

2	5	7	1	2		1	2	9	7	3	5	4
⊥	┐	△	—	⊥								
1	4	3	5	9		6		8	1	2	4	2

...



Adaptive Behavior Assessment

- Adaptive Behavior

- Conceptual Skills:

- communication, functional academics, self-direction,
money concepts

- Social Skills:

- interpersonal skills, self-esteem, naiveté/gullibility, self-governance (obeys rules)

- Practical Skills:

- self-care, domestic skills, work, health & safety

Personality Testing

Objective tests have the following features:

- Utilize simple stimuli (usually questions)
- Have a restricted range of possible responses (choose from provided options)
- Scored mechanistically using scoring key
- Require no clinical experience to score

- In criterion-referenced tests, results are given meaning by comparing them with a preset standard: “Every student who scores above 75% will pass.”
- In norm-referenced tests, results are given meaning by comparing them with a normative group: classic example is Minnesota Multiphasic Personality Inventory (MMPI-2), with >550 T/F questions, a validity scale, and a lie scale.

MMPI-2

by Paulhus and D.C. McNabb
Minnesota Multiphasic
Personality Inventory-2

Profile for Basic Scales

Minnesota Multiphasic Personality Inventory-2
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SPED. 1943 (revised 1975, 1989, This Profile Page 1991)
All rights reserved. Distributed exclusively by NATIONAL COMPUTER SYSTEMS, INC.
under license from The University of Minnesota.

"MMPI-2" and "Minnesota Multiphasic Personality Inventory-2" are trademarks owned by
The University of Minnesota. Printed in the United States of America.

Name Example

Address _____

Occupation _____ Date Tested 1/1

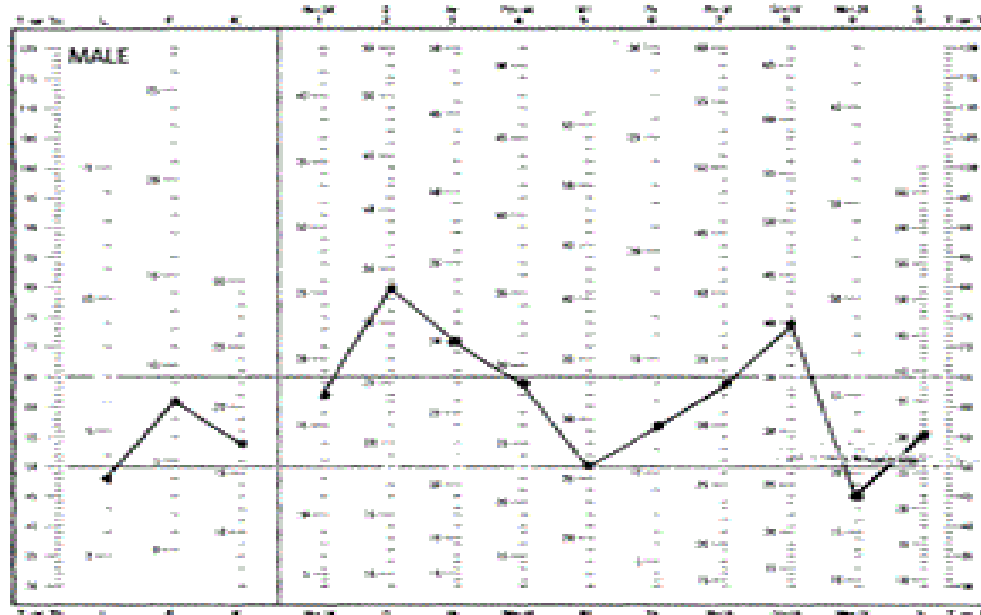
Education _____ Age _____ Marital Status _____

Referred By _____

MMPI-2 Code _____

Scorer's Initials _____

Scale	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Raw Score 17 33 20 26 12 14 12 12 12 20

? Raw Score _____

K to be Added 7

7

12

12

3

Raw Score with K 24

24

24

24

18

NATIONAL
COMPUTER
SYSTEMS

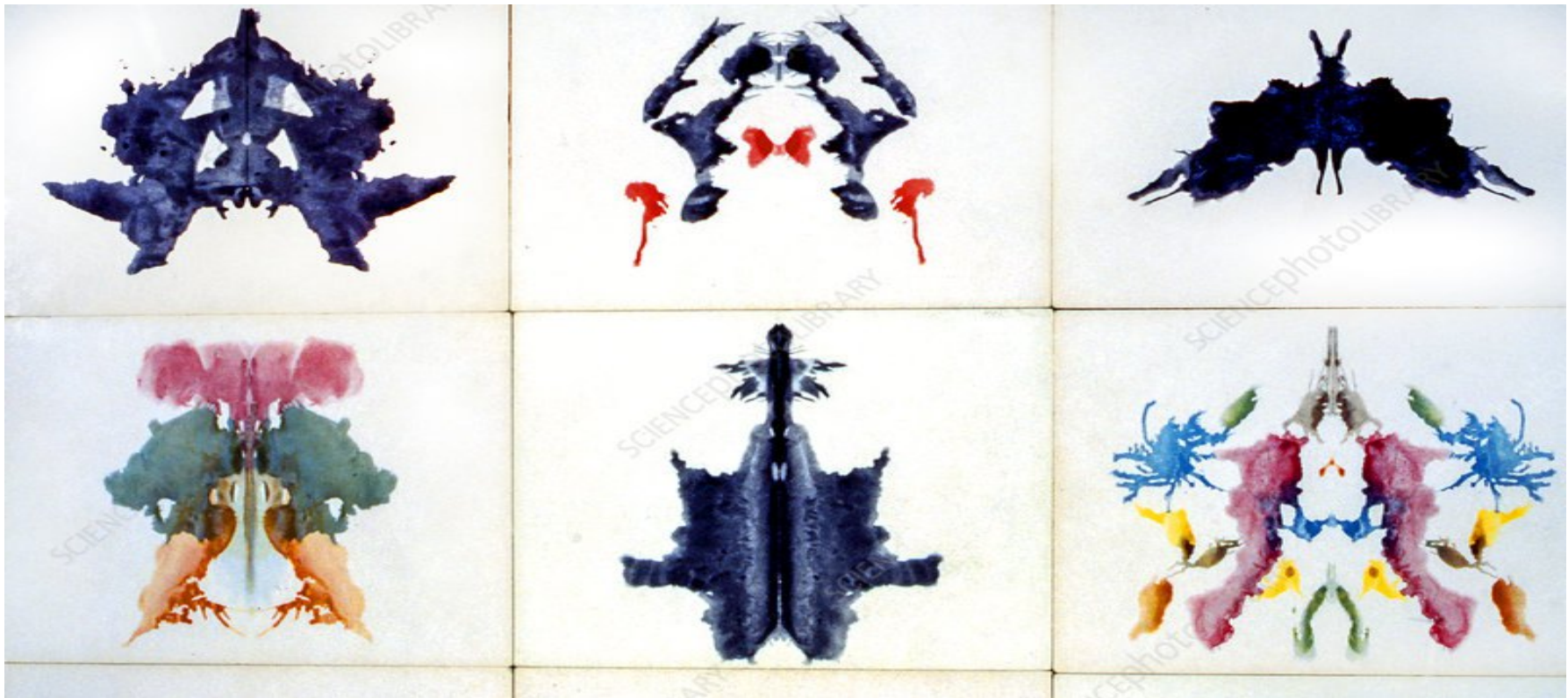


24001

Projective tests utilize ambiguous stimuli and have a wide range of possible responses.

Response meaning is interpreted by clinical correlation between collected cases of responses and personal characteristics (psychopathologies); tests are scored by experienced clinicians using consensual standards.

- Rorschach inkblot test: patient is asked to look at an inkblot and report what is seen



- Thematic apperception test (TAT): patient is asked to tell a story about what is going on in the picture.



- Sentence completion test:
patient is asked to complete a set of
sentence stems with the first thing that
comes to mind

Example:

8. I fear _____.
9. I get angry when _____.
10. Men _____.
11. Tomorrow _____.
12. My best friend _____.

- Projective drawings:
patient is given a sheet of paper and asked to draw a house, a tree, a person, a family, etc. (very useful for children, who are unlikely to be able to realistically complete any other personality test)



Psychopharmacology

ANTIPSYCHOTIC (NEUROLEPTIC) MEDICATIONS

Antipsychotic medications are used to
treat 2 types of conditions:

- Schizophrenia and other psychotic disorders
- Hiccups, Tourette syndrome, and bipolar disorders

The mechanism of action is dopamine blockage at the postsynaptic receptors.

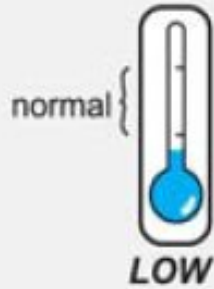
Key dopamine pathways

Mesolimbic Pathway



positive symptoms

Mesocortical Pathway to DLPFC

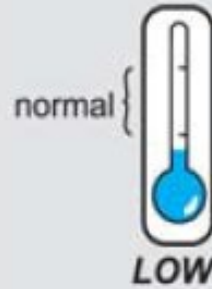


cognitive symptoms



negative symptoms

Mesocortical Pathway to VMPFC

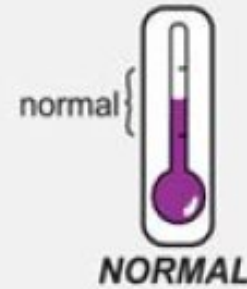


affective symptoms

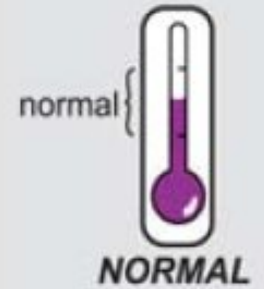


negative symptoms

Nigrostriatal Pathway



Tuberoinfundibular Pathway



Dopamine tracts include:

- Mesolimbic/mesocortical: reduces psychotic symptoms
- Nigrostriatal: increases movement disorder
 - Tuberoinfundibular: increases prolactin (galactorrhea, amenorrhea, gynecomastia)

SIDE EFFECT PROFILE

Receptor	Effects
Histamine	Sedation, weight gain
Muscarine	Anticholinergic (dry mouth, blurry vision, constipation, confusion, etc.)
Alpha 1	Dizziness, hypotension

Table 10-1. Medication Side Effects

Side Effect	Peak	Treatment
Dystonic reaction	Hours to days	Anticholinergics: benztropine, trihexyphenidyl, diphenhydramine
Rigidity	3 weeks	Lower dose or anticholinergics
Tremors	6 weeks	Lower dose or anticholinergics
Akathisia	10 weeks	B-blockers, benzodiazepines; lower dose or switch to atypical
Tardive dyskinesia	>3–6 months	Switch to atypical or clozapine
Neuroleptic malignant syndrome	Any time	May be lethal; dantrolene or bromocriptine

Table 10-2. Typical vs. Atypical Antipsychotics

Typical	Atypical
Dopamine	Dopamine and serotonin
Treats mostly positive symptoms	Treats positive and negative symptoms
More side effects	Fewer side effects

The potency of typical antipsychotic medications is as follows:

Potency	Extrapyramidal Symptoms	Anticholinergic Effects
High (haloperidol)	High	Low
Low (chlorpromazine)	Low	High

Typical antipsychotics have movement and prolactin side effects.

- Haloperidol
- Fluphenazine
- Chlorpromazine
- Thioridazine (additional increased risk of retinitis pigmentosa and retrograde ejaculation)

Extrapyramidal reactions include:

- Choreiform: jerky movements
- Athetoid: slow, continuous movements
- Rhythmic: stereotypical movements

Atypical antipsychotics are known for weight gain, increased risk of diabetes, and metabolic syndrome, but also cause movement and prolactin side effects.

- Clozapine (additional increased risk of agranulocytosis (<1%), seizures, drooling)
 - Risperidone
 - Olanzapine
 - Quetiapine
 - Ziprasidone
- Aripiprazole (partial dopamine agonist)
 - Paliperidone
 - Lurasidone

ANTIDEPRESSANT MEDICATIONS

Antidepressant medications are used to treat depression, anxiety, and pain disorders.

The mechanism of action is on the norepinephrine (NE), serotonin (5-HT), and dopamine receptors











Tricyclic Antidepressants

Tricyclic antidepressants (TCAs) block reuptake of serotonin and norepinephrine, alpha-1 adrenergic receptors, and muscarinic receptors. They cause many side effects and are lethal in overdose.

- Amitriptyline
- Imipramine (monitor levels)
- Nortriptyline (monitor levels)
- Desipramine (monitor levels)
- Clomipramine

Monoamine Oxidase Inhibitors

Monoamine oxidase inhibitors (MAOIs) are the treatment of choice for major depressive disorder with atypical features. The mechanism of action is inhibition of MAO, an enzyme that metabolizes serotonin, epinephrine, and NE.

- Phenelzine
- Tranylcypromine
- Isocarboxazid

MAOI plus tyramine can cause hypertensive crisis. Signs include occipital headache, stiff neck, nausea/vomiting, chest pain, dilated pupils, nosebleed, and elevated blood pressure.

- Problem foods: aged cheese, dried fish, sauerkraut, sausage, chocolate, avocados, red wine

Selective Serotonin Reuptake Inhibitors

Selective serotonin reuptake inhibitors (SSRIs) are the most commonly used antidepressants. The mechanism of action is inhibition of the reuptake of serotonin. They are also used to treat anxiety and sexual disorders.

- Fluoxetine
- Sertraline
- Paroxetine
- Citalopram
- Escitalopram
- Fluvoxamine

Side effects include weight gain, sexual problems, headaches, and GI complaints.

Serotonin syndrome is associated with high doses, MAOI/SSRI combo, and MAOI/synthetic narcotic combination.

Symptoms include general restlessness, sweating, insomnia, nausea, diarrhea, cramps, delirium, and myoclonus.

Treatment is removal of the causative agent, stopping the SSRI, and administering cyproheptadine.

Serotonin Norepinephrine Reuptake Inhibitors

Serotonin norepinephrine reuptake inhibitors (SNRIs) are used to treat depression, anxiety, and pain disorders.

The mechanism of action is inhibition of the reuptake of serotonin and norepinephrine.

- Venlafaxine
- Desvenlafaxine
- Duloxetine

Side effects include increased blood pressure and blurry vision (common).

Other Antidepressants

- Trazodone

- Almost no anticholinergic adverse effects
- May lead to priapism so sometimes used to treat erectile dysfunction
 - Sedation is common side effect

- Mirtazapine

- Stimulates NE and 5-HT release; blocks 5-HT₂ and 5-HT₃ receptors
 - Sedation and weight gain are common side effects

- Bupropion (approved for depression and smoking cessation)
 - Relatively weak inhibitor of the neuronal reuptake of norepinephrine and dopamine; does not inhibit the reuptake of serotonin
 - Not associated with weight gain or sexual side effects
 - Side effect is increased risk of seizures, so it is not used in patients with seizure disorders, eating disorders, or alcohol withdrawal seizures

Note

SSRIs do not affect histamine, alpha, or muscarinic receptors, so their side effect profile is cleaner than the other antidepressants.

MOOD STABILIZER MEDICATIONS

lithium

Lithium is the drug of choice for bipolar disorders.

It is quickly absorbed from the GI tract—not protein-bound or metabolized. Therapeutic index is low, meaning it requires reaching plasma levels very close to toxic levels for full Effect (reached in 10–14 days).

Good kidney function and adequate salt- and fluid-intake are essential with lithium, as 95% is excreted in urine.

- The mechanism of action (hypothesized) is blocking of inositol-1-phosphate (second messenger).
- Monitor blood levels; if >2.5 meq/L, consider dialysis as the treatment of choice.
- Potassium-sparing diuretics have no effect; loop diuretics will produce increased serum levels.

- Side effects include:
 - Tremor, thirst, anorexia, GI distress
 - Polyuria, polydipsia, edema
 - Acne
 - Hypothyroidism
 - Nephrotoxicity
 - Teratogenicity (Ebstein's anomaly affecting the tricuspid valve)
 - Diabetes insipidus
 - If toxic, ataxia, seizures and confusion may be seen.

Valproic Acid

Valproic acid is used to treat bipolar disorders and rapid cycling bipolar disorders.

The mechanism of action involves augmentation of GABA in CNS.

- Side effects include sedation, weight gain, tremors, alopecia, GI distress, and teratogenicity (neural tube defects).
- If toxic, may cause confusion, coma, or cardiac arrest.
 - Monitor blood levels, as it can cause hepatotoxicity (liver function impairment).

Carbamazepine

The mechanism of action involves blocking sodium channels in neurons with action potential; it alters central GABA receptors.

- Side effects include GI distress, rash, mild leukopenia, agranulocytosis, and aplastic anemia.
- If toxic, may cause hypotension, tachycardia, respiratory depression, or coma.
- Monitor blood levels and signs of rash.

Lamotrigine

Lamotrigine is associated with Stevens-Johnson syndrome.

ANTI-ANXIETY MEDICATIONS

Benzodiazepines

Benzodiazepines are used to treat anxiety disorders, sleep disorders, alcohol withdrawal, and seizures.

The mechanism of action is depression of the CNS at the limbic system, RAS, and cortex.

Benzodiazepines bind to GABA-chloride receptors, facilitating the action of GABA.

- All benzodiazepines undergo hepatic microsomal oxidation (except for lorazepam, oxazepam, and temazepam).
- Side effects include sedation, insomnia, addiction, falls (elderly), confusion, and disinhibition.

Buspirone

Buspirone is used for generalized anxiety disorder and other anxiety disorders when possible abuse of benzodiazepines is a concern.

It has no withdrawal effect and is not potentiated by alcohol.

The mechanism of action works on serotonin, not on GABA.

- Full effect is seen >7 days
 - Some sedation is seen
 - Has low-abuse potential



THE END!

Thanks for your
attention.

Brain Structure and Function

The brain

- Most complex organ of the body
- Only weighs 1,300 grams
- Contains billions of neural networks that interact to create human behaviour



Forebrain

- Cerebrum and Cerebral cortex
- Left and Right Hemispheres
- Left hemisphere for most people is the dominant hemisphere- responsible for production of language, mathematical ability, problem solving, logic
- Stroke damage to the left hemisphere is more likely to lead to depression.

- The right hemisphere is dominant in perception, artistic, and visual–spatial tasks.
- It is activated for problem solving.
- Stroke damage to the right hemisphere is more likely to lead to apathy and indifference.

AREAS OF THE BRAIN

Motor Area

- Control of voluntary muscles

Sensory Area

- Skin sensations (temperature, pressure, pain)

Frontal Lobe

- Movement
- Problem solving
- Concentrating, thinking
- Behavior, personality, mood

Broca Area

- Speech control

Temporal Lobe

- Hearing
- Language
- Memory

Brain Stem

- Consciousness
- Breathing

Parietal Lobe

- Sensations
- Language
- Perception
- Body awareness
- Attention

Occipital Lobe

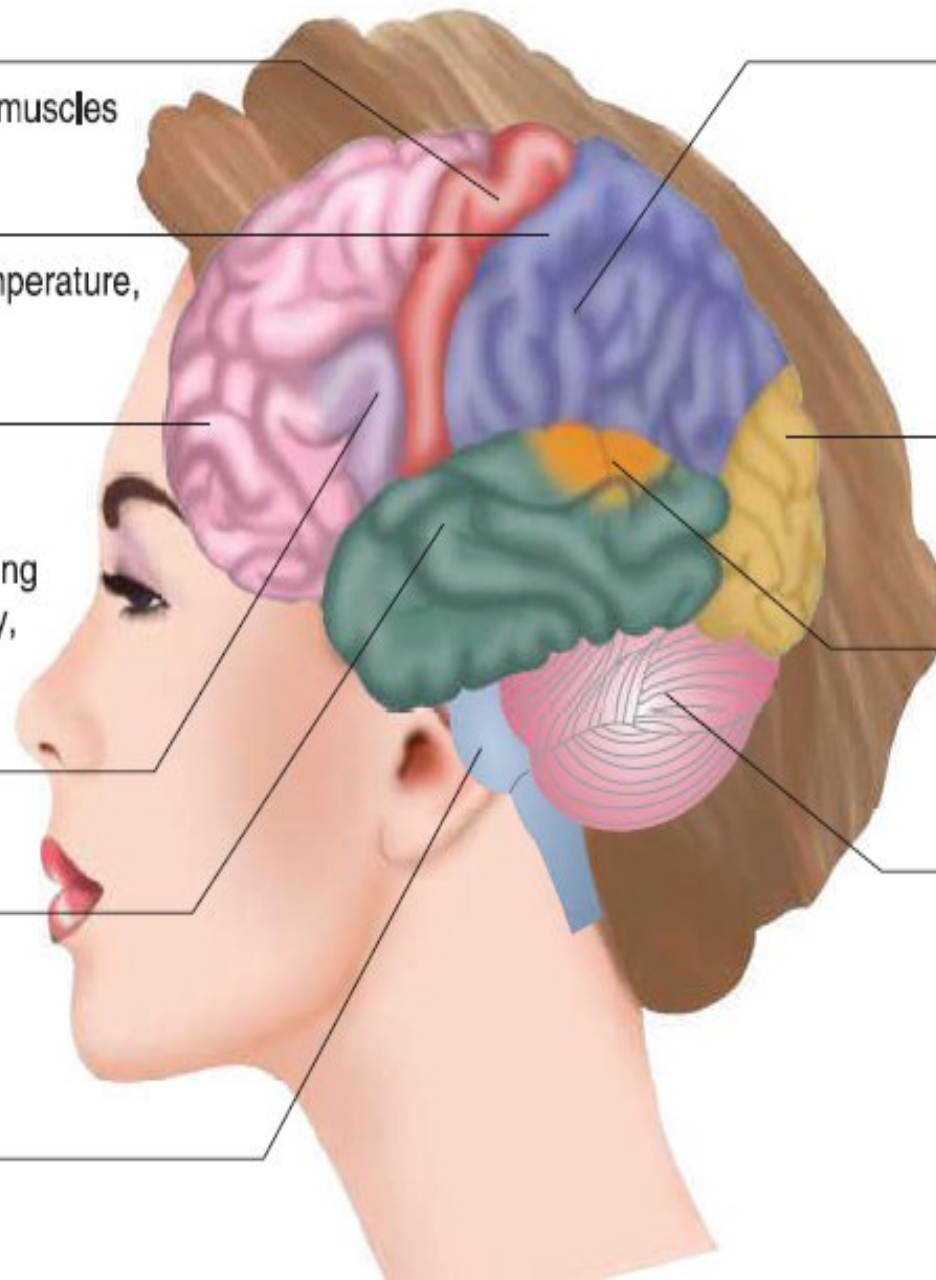
- Vision
- Perception

Wernicke Area

- Language comprehension

Cerebellum

- Posture
- Balance
- Coordination of movement



Frontal Lobe

- Located at the front of both cerebral hemispheres
- Primary motor cortex
- Pre-motor cortex
- Broca's Area- Motor Production of speech
- Complex Functioning- personality, judgement, insight, reasoning, problem solving, abstract thinking and working memory

Frontal lobe damage leads to

- Loss of movement (paralysis)
- Repetition of a single thought
- Unable to focus on a task
- Mood swings, irritability, impulsiveness
- Changes in social behavior and personality
- Difficulty problem solving
- Difficulty with language; cannot get the words out (aphasia)

Parietal lobe

- Located behind frontal lobe
- Somatosensory cortex
- Spatial orientation, perception and comprehension of language function
recognising object by touch
- Links visual and somatosensory information together
- Neglect

Damage to parietal lobe leads to

- Difficulty distinguishing left from right
- Lack of awareness or neglect of certain body parts
- Difficulty with eye-hand coordination
- Problems reading, writing, naming
- Difficulty with mathematics

Temporal Lobes

- Located at each side of the brain
- Involved in receiving and processing auditory information , higher order visual information, complex aspects of memory and language
- Wernicke's Area- Comprehension of speech

Damage to temporal lobe leads to

- Difficulty understanding language and speaking (aphasia)
- Difficulty recognizing faces
- Difficulty identifying/naming objects
- Problems with short- and long-term memory
- Changes in sexual behavior
- Increased aggressive behavior

Occipital lobes

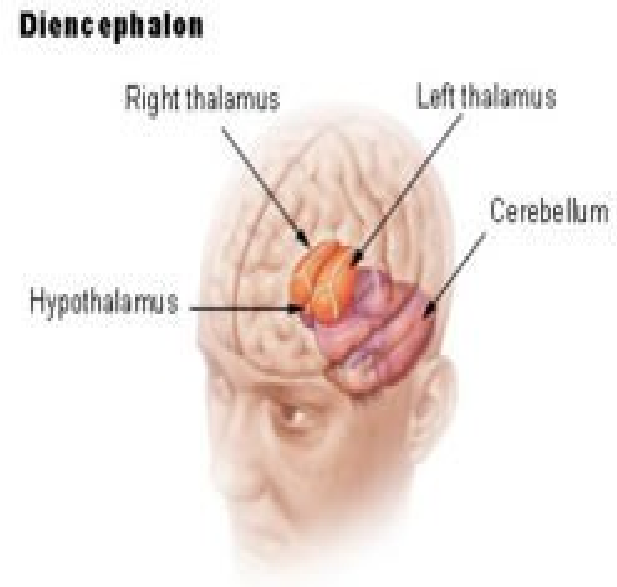
- Rearmost portion of the brain
- Visual processing area

Damage to occipital lobe leads to

- Defects in vision or blind spots
- Blurred vision
- Visual illusions/hallucinations
- Problems reading and writing

Diencephalon

- Thalamus- filters sensory information, controls mood states and body movement associated with emotive states
- Hypothalamus- 'Central control' for pituitary gland. Regulates autonomic, emotional, endocrine and somatic function. Has a direct involvement in stress and mood states.



(http://training.seer.cancer.gov/module_anatomy/unit5_3_nerve_org1_cns.html)

Hindbrain

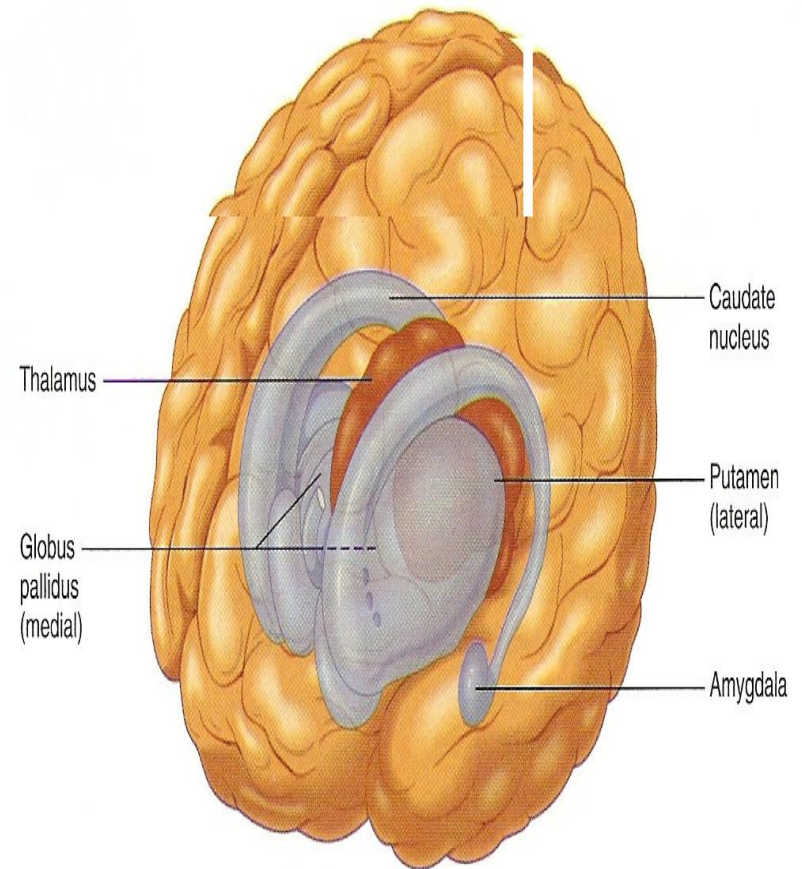
- Cerebellum- regulates equilibrium, muscle tone, postural control, fine movement and coordination of voluntary muscle movement.
- Pons- Relay station between cerebrum and cerebellum

Damage to cerebellum leads to

- Difficulty coordinating fine movements
- Difficulty walking
- Tremors
- Dizziness (vertigo)
- Slurred speech

- Medulla oblongata- Conscious control of skeletal muscles, balance, co-ordination regulating sound impulses in the inner ear, regulation of automatic responses such as heart rate, swallowing, vomiting, coughing and sneezing
- Reticular Formation- Important in arousal and maintaining consciousness, alertness attention and Reticular Activating System which controls all cyclic functions i.e. respiration, circadian rhythm.

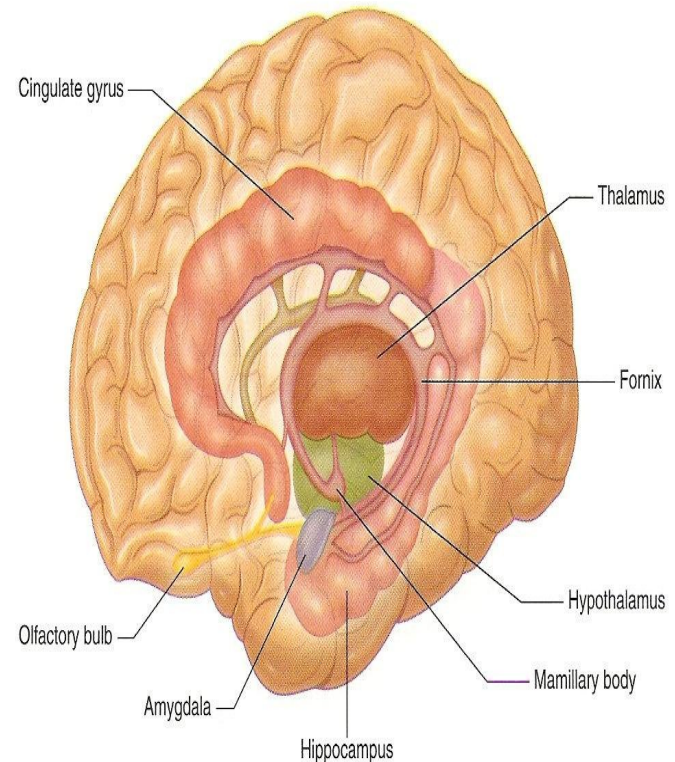
- Basal Ganglia- Control of muscle tone, activity, posture, large muscle movements and inhibit unwanted muscle movements.
- Substantia Nigra- Produces dopamine is connected to the basal ganglia. – EPSE's



(Barlow and Durand , 2005)

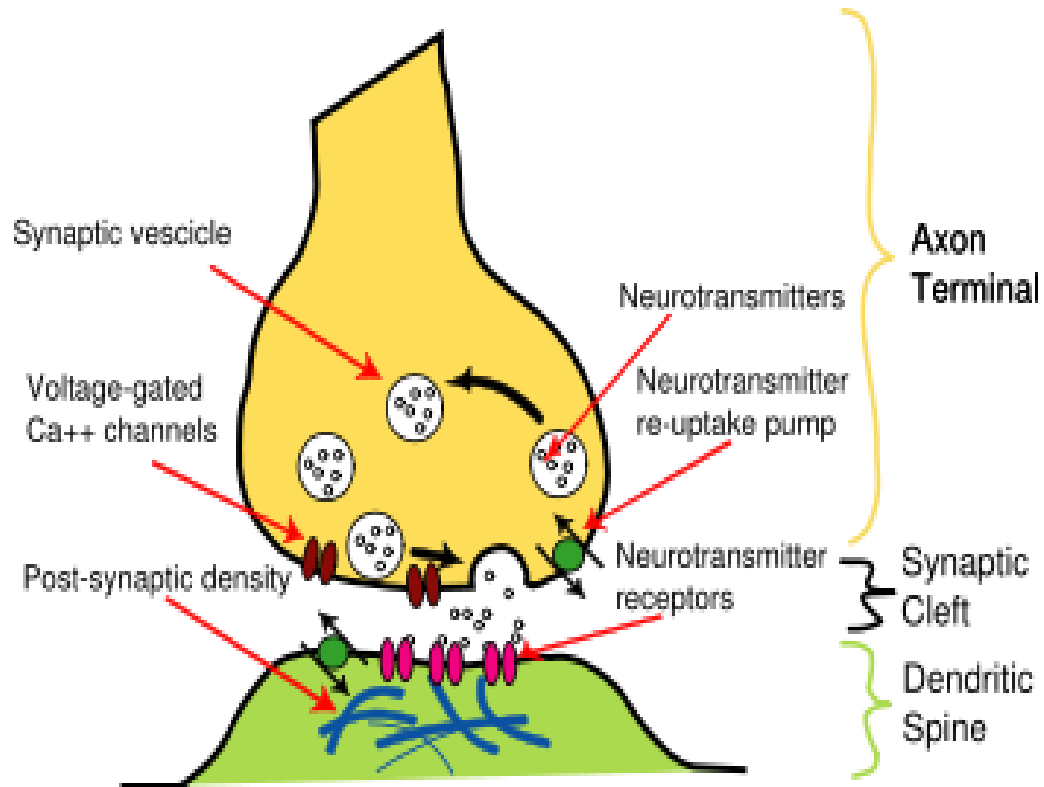
The Limbic system

- Amygdala- mediates and controls major affective mood states such as friendship , love, affection, fear, rage and aggression.
- Hippocampus- Memory, particularly the ability to turn short term memory into long term memory. Alzheimer's disease.



(Barlow and Durand , 2005)

Synaptic transmission



- Calcium ion channels
- Synapse
- Lock and key effect
- reuptake

(This image has been released into the [public domain](#) by its author)

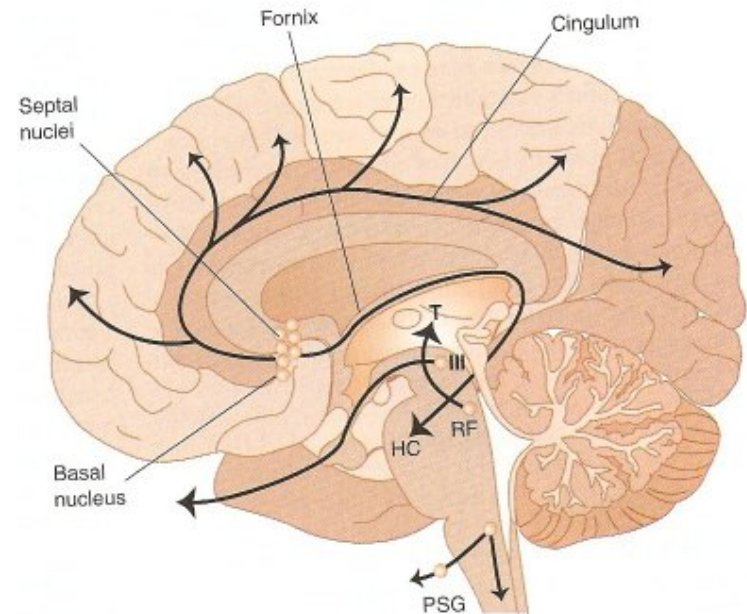
Neurotransmitters

- Acetylcholine (ACh)

Release through the brain via cholinergic pathways. Plays role in:

- cognition (memory)
- sleep/wake cycle
- parasympathetic nervous system
- regulation of heart rate, digestion, production of saliva, bladder function.
- smooth muscle contraction

Difficent in Alzheimer patients



(Boyd, 2002)

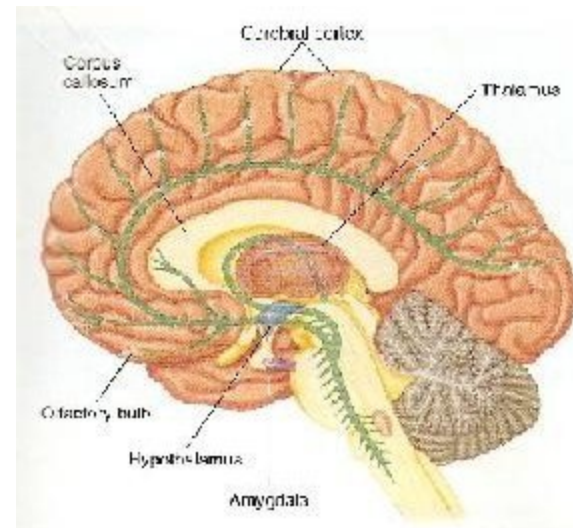
Monoamines

- Norepinephrine (NE)

Found mainly in 3 areas of the brain; the locus coeruleus, the pons and reticular formation. Main role;

- attention, alertness, arousal
- sleep/wake cycle
- regulating mood/anxiety

Depletion leads to depression
and excess leads to mania



(Barlow and Durand ,2005)

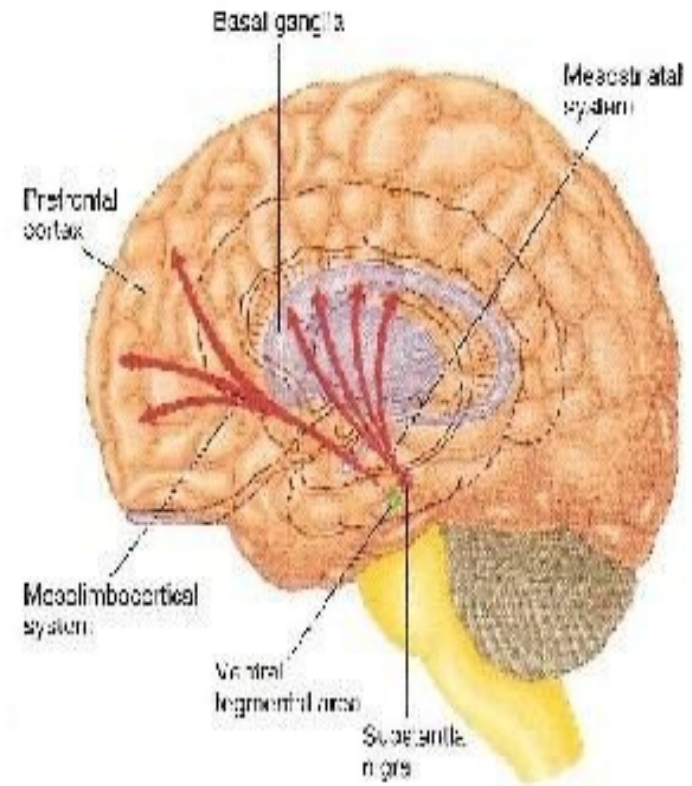
- Dopamine (DA)

Almost a million nerve cells in the brain contain dopamine.

Role in ;

- complex movement
- cognition
- motor control
- emotional responses such as euphoria or pleasure.

Newer antipsychotic medication focus on particular dopaminergic pathways in the brain.



(Barlow and Durand ,2005)

- Serotonin (5HT)

Believed to be one of the great influences on behaviour.

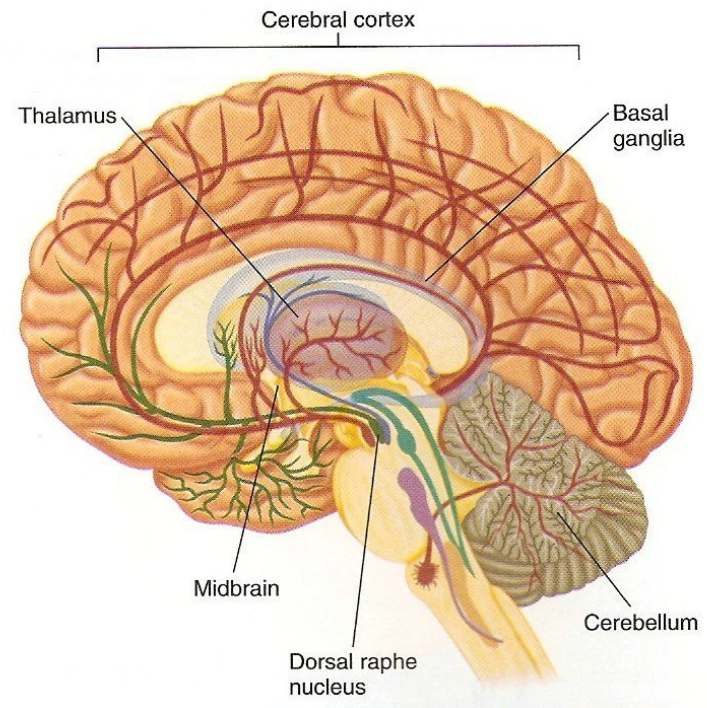
Complex neurotransmitter.

Surprisingly only 2% of serotonin is found in CNS.

Roles include

- Vasoconstriction, gastrointestinal regulation.
- Low serotonin associated with aggression, suicide, impulsive eating, anxiety and low mood.
- regulates general activity of the CNS, particularly sleep.
- some of the negative symptoms of schizophrenia.

located in the raphe nuclei of the brain stem.



(Barlow and Durand ,2005)

Amino Acids

- Glutamate
 - found in all cells
 - controls opening of ion channels
 - blocking glutamate produces psychotic symptoms
 - Over exposure to glutamate causes cell death
- GABA(Gamma-aminobutyric acid)
 - Only found in CNS
 - Inhibitory neurotransmitter
 - controls excitatory neurotransmitters
 - Implicated in anxiety disorders

APHASIA

- Aphasia is an impairment of language affecting one's ability to speak/understand speech, read, or write.
- Dominant (left) parietal lobe dysfunction (in most right-handed and some left-handed patients):
 - Language disorders (aphasia, alexia)
 - Apraxia (inability to perform a motor task)

- Non-dominant (right) parietal lobe dysfunction:
 - Hemispatial neglect
 - Sensory and visual inattention
 - Constructional and dressing apraxia (more severe for right-sided lesions)

NEUROCOGNITIVE DISORDERS

- Delirium is an acute onset of impaired cognitive functioning that is fluctuating, brief, and reversible (mostly organic cause).
- Neurocognitive disorder is a loss of cognitive abilities, impairment of social functioning, loss of memory, and/or change in personality that may be progressive or static.
- It is reversible only 15% of the time.

- Mild neurocognitive disorder is moderate cognitive decline that has minimal interaction with functioning.
- Major neurocognitive disorder is significant cognitive decline that interferes with functioning and independence

Normal Aging Everyone experiences slight cognitive changes during aging

Cognitive Decline
↓

Preclinical

- Silent phase: brain changes without measurable symptoms
- Individual may notice changes, but not detectable on tests
- "A stage where the patient knows, but the doctor doesn't"

MCI

- Cognitive changes are of concern to individual and/or family
- One or more cognitive domains impaired significantly
- Preserved activities of daily living

Mild

Moderate

Moderately Severe

Dementia

- Cognitive impairment severe enough to interfere with everyday abilities
- Severe

Time (Years) →

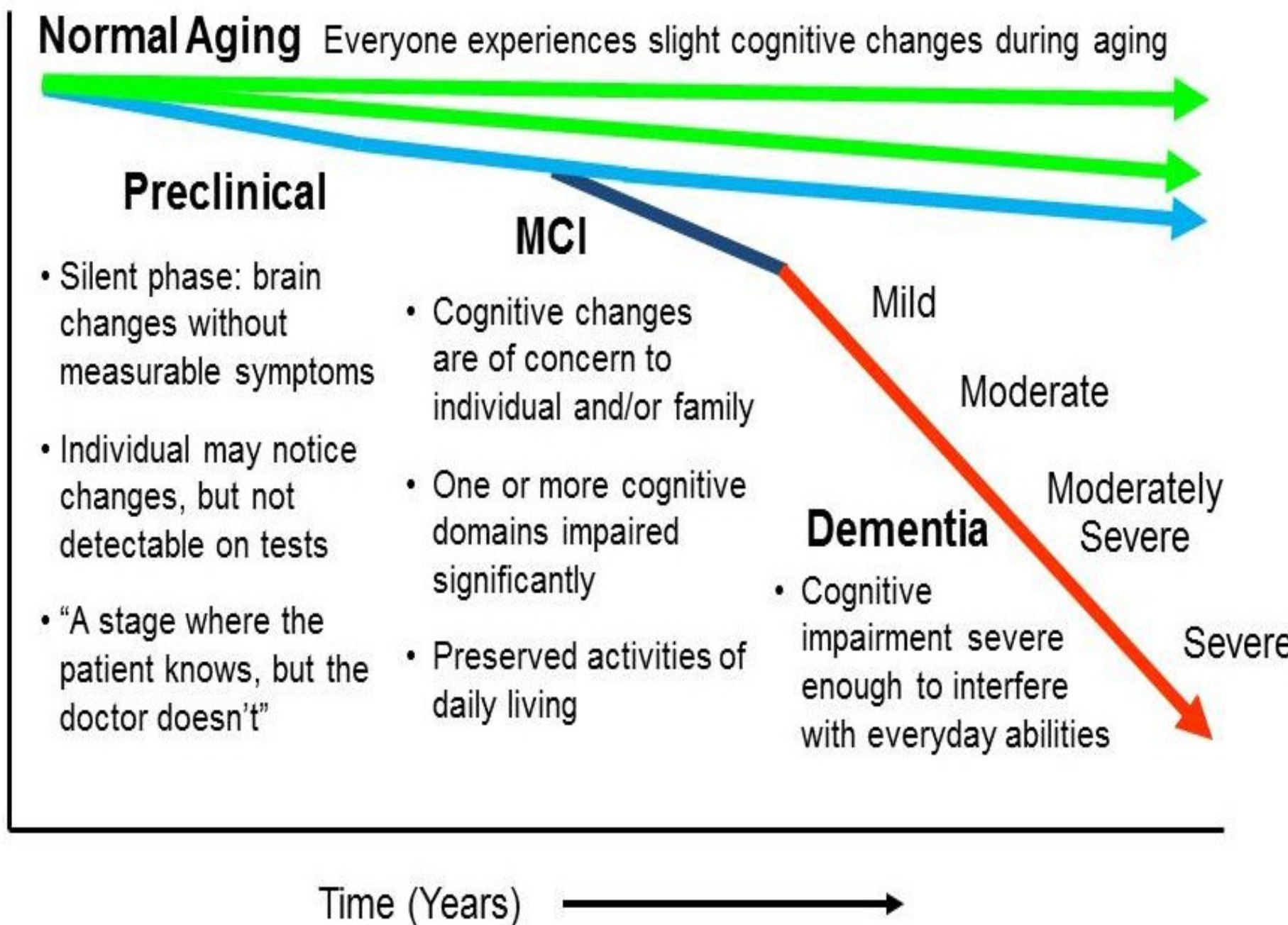


Table 11-2. Delirium vs. Neurocognitive Disorder

Delirium	Neurocognitive Disorder
Acute onset	Insidious onset
Fluctuating course	Chronic course
Lasts days to weeks	Lasts months to years
Recent memory problems	Recent then remote memory problems
Disrupted sleep-wake cycle	Less disorientation at first
Disorientation	Normal sleep-wake cycle
Hallucinations common	Hallucinations, sundowning
Treat underlying condition	Supportive treatment

Neurocognitive Disorder Due to Alzheimer Disease

Neurocognitive disorder due to Alzheimer disease is seen in >50% of nursinghome patients and 50–60% of those with neurocognitive disorder.

- Risk factors: female, family history, head trauma, Down syndrome
- Neuroanatomic findings: cortical atrophy, flattened sulci, enlarged ventricles
- Histopathology: senile plaques (amyloid deposits), neurofibrillary tangles, neuronal loss, synaptic loss
- Associated with chromosome 21 (gene for the amyloid precursor protein)
- Decreased ACh and NE
- Deterioration is gradual; average duration from onset to death ~8 years

- Treatment is long-acting cholinesterase inhibitors such as donepezil, rivastigmine, galantamine, and memantine.
- Antipsychotic medications may be helpful when psychotic symptoms are present but contraindicated to control behavior.

Vascular Neurocognitive Disorder (Multi-Infarct Neurocognitive Disorder)

Vascular neurocognitive disorder is seen in 15–30% of those with neurocognitive disorder.

- Risk factors: male, advanced age, hypertension or other cardiovascular disorders
- Affects small and medium-sized vessels
- MRI may reveal hyperintensities and focal atrophy suggestive of old infarctions
- Deterioration may be stepwise or gradual, depending on underlying pathology
- Focal neurologic symptoms (dysarthria, and dysphagia are most common)

- Treatment is directed toward the underlying condition and lessening cell damage.
- Control of risk factors such as hypertension, smoking, diabetes, hypercholesterolemia, and hyperlipidemia is useful.

Neurocognitive Disorder due to Parkinson Disease

Common, progressive, neurodegenerative disease that involves loss of dopaminergic neurons in the substantia nigra

- Clinical onset ~age 50–65
- Motor symptoms include resting tremor, rigidity, bradykinesia, and gait disturbances
- Neurocognitive disorder occurs in 40% of cases; depressive symptoms common
- Destruction of dopaminergic neurons in the substantia nigra is a key pathogenic component

- Treatment of Parkinson disease involves use of dopamine precursors (e.g., levodopa, carbidopa), dopamine agonists (e.g., bromocriptine), anticholinergic medications (e.g., benztropine, trihexyphenidyl), amantadine, and selegiline.
- Antiparkinsonian medications can produce personality changes, cognitive changes, and psychotic symptoms.

Neurocognitive Disorder with Lewy Bodies

- Hallucinations, parkinsonian features, and extrapyramidal signs
- Antipsychotic medications may worsen behavior
- Patients typically have fluctuating cognition, as well as REM sleep behavior disorder

Frontotemporal Neurocognitive Disorder (Pick Disease)

- Neuroanatomic findings: atrophy in frontal and temporal lobes
- Histopathology: Pick bodies (intraneuronal argentophilic inclusions) and Pick cells (swollen neurons) in affected areas of brain
- Etiology unknown (boxers dementia)
- Most common in men with family history of Pick disease
- Difficult to distinguish from Alzheimer disease

Normal Pressure Hydrocephalus

- Enlarged ventricles
- Normal pressure
- Neurocognitive disorder, urinary incontinence, and gait apraxia
- Treatment is shunt placement.

Pseudodementia

- Typically seen in elderly patients with a depressive disorder who appear to have symptoms of neurocognitive disorder
- Improvement should be seen after treatment with antidepressants



