**M6210 - 2016 Psychiatry Review**
Course Director: *Robert Boland, M.D.*
Monday, May 16, 2015
Marriott Marquis - Imperial Ballroom B

#APAAM2016

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ANNUAL MEETING
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## Faculty

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**Time Schedule/ Agenda:**

| Time | Topic | Faculty |
|---|---|---|
| 9 – 9:10 am | Introduction | Boland<br>Verduin |
| Boland facilitate | | |
| 9:10 – 9:55 am | Psychopathology | Boland<br>Madaan<br>Servis<br>Smith |
| **9:55 - 10:10 am** | **Break** | |
| 10:10 am - 10:45 | Behavioral and Social Sciences<br>Gene x Environment Interactions in Developmental Neuroscience | Rostain |
| **10:45 - 11:00 am** | **Break** | |
| 11:00 am - 12:00 pm | Treatment | Boland<br>Madaan<br>Servis<br>Smith |
| **12:00 – 1:00 pm** | **Lunch (on your own)** | |
| Verduin facilitate | | |
| 1: 00 - 2:30pm | Development<br>Basic Drives and Related Disorders: Sleep, Eating and Sex<br>Diagnostic Procedures<br>Substance Use Disorders | Balon<br>Dingle<br>Gillespie<br>Layde<br>Verduin |
| **2:30 – 2:45pm** | **Break** | |
| 2:45-3:55pm | Forensics & Ethics<br>Special Topics<br>Research & Literature Literacy | Balon<br>Dingle<br>Gillespie<br>Layde<br>Verduin |
| 3:55 – 4pm | Conclusion | Boland<br>Verduin |

**Directors**: Robert Boland, MD, Marcy Verduin MD

**Date**: May 16, 2016

**Time:** 9am to 4pm

**Location:** Marriott Marquis

**Educational Objectives:**

At the completion of this session participants will be able to:

- identify gaps in knowledge in psychiatry as part of an exercise in lifelong learning;
- analyze multiple-choice questions pertinent to clinical topics;
- identify preparation strategies for lifelong learning;
- be able to search the clinical literature to prepare for lifelong learning; and
- demonstrate a working knowledge of the various topical areas likely to be encountered during lifelong learning activities.

**Presentations:**

Essential psychiatric topics will be reviewed and discussed using multiple-choice questions (MCQ) and other interactive formats

Participants will review and answer MCQs using an audience response system in various formats

Faculty members will lead and facilitate a review and discussion of the topics covered by the MCQs

The questions will be grouped by the topics listed below and will cover a number of core subjects in each area

- Psychopathology
- Psychiatric Treatment
- Diagnostic Procedures
- Development
- Behavioral & Social Sciences
- Research & Literature Literacy
- Forensics & Ethics
- Special Topics

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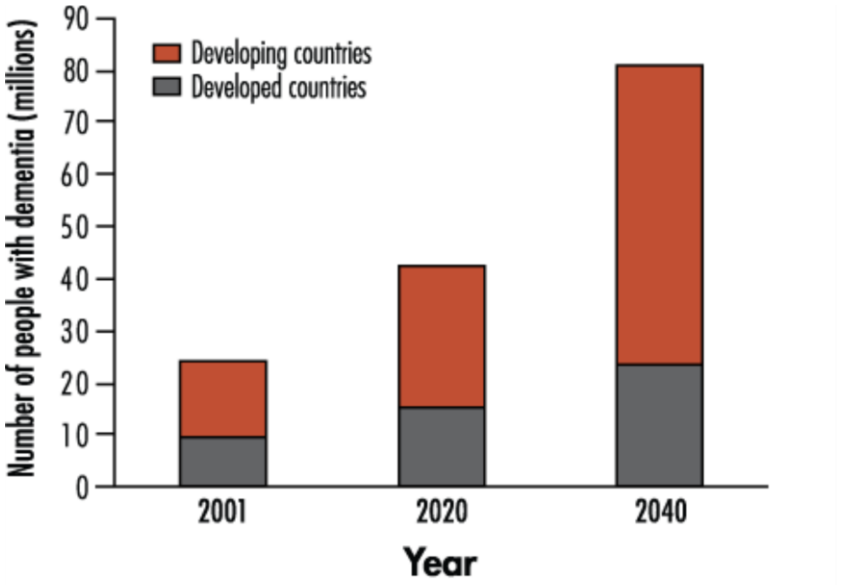
## From: Chapter 13. Dementia and Milder Cognitive Syndromes

The American Psychiatric Publishing Textbook of Geriatric Psychiatry, 4th Edition, 2009

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### Figure Legend:

**FIGURE 13–1. Projected prevalence of dementia worldwide.**
**Source. Adapted from Ferri CP, Prince M, Brayne C, et al.: "Global Prevalence of Dementia: A Delphi Consensus Study." Lancet 366:2112–2117, 2005.**

Date of download: 2/10/2014

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# Key Elements of Treating Dementia

1. Reversing disease development or delaying its progression
2. Management of the symptoms
3. Supportive care to patients
4. Supportive care to caregivers

(Lyketsos et al 2006)

# Delirium Risk Factors

- More than three new medications begun
- Benzodiazepines >2 mg lorazepam equivalents
- Corticosteroids >15 mg dexamethasone equivalents
- Opioids >90 mg morphine equivalents

# Top 4 Causes of Dementia
# … and clinical features to tell them apart

# #1. Dementia of the Alzheimer Type

- Hallmark: Anterograde amnesia for recent events
- Early problems: Language, visuospatial skills
- “Cortical” pattern: Agnosia, apraxia, executive dysfunction
- Later: Behavioral problems, neuropsychiatric symptoms

- Course: progressive, avg 8 yrs until death

# #2. Vascular Dementia

- Clinical presentation related to location of lesions
- Classically “subcortical” symptoms
  - Focal motor signs (e.g. increased DTRs)
  - Gait disturbance
  - Personality changes, abulia, apathy
- Memory impairment may be mild

- Course: stepwise or progressive

# #3. Dementia with Lewy Bodies

- Early feature: executive dysfunction, visualspatial deficits, poor attention
- Core clinical features:
  - Fluctuations
  - Visual hallucinations
  - Parkinsonism
- Associated features:
  - Neuroleptic sensitivity
  - REM sleep disorder

# #4. Frontotemporal Dementia

- Presenting symptoms:
  - Usually change in personality or behavior
  - Less commonly, progressive aphasia
- Early problems: executive dysfunction, judgment, attention
- Later problems: memory and visuospatial skills

- Age of onset: 50s-60s (mean 58)
- Course: slowly progressive

Arden D Dingle

# Development

## Definition of Development

- Continuum of abilities & behaviors
- Orderly progression
- Considerable variation
  - innate capabilities
  - activity levels
  - Environment
- Level & type of stimulation

## Types

- Physical (Biological)
- Cognitive
- Emotional
- Social
- Gender/ Sexuality

## Context

- Difficult to assess developmental status independent of environment
- Different environments may reinforce different skills and aspects
- Wide range of 'typical' (AKA normal)
- Complicated, ongoing interaction between biology and experience/ environment
- Outcome related to individual's risk factors and resilience

## Risk

- Exposure to factor that increases likelihood of maladaptive outcome
- Biological
- Environmental
- Individual, personal
- Cumulative
- Rarely absolute

## Resilience

- Dynamic process –adaptation in context of significant adversity
- Outcome better than expected given risks exposed to
- Identified factors
  - Temperament, attachment, intelligence
- Probabilistic not deterministic

## Theories

- Assume normality
- Based on observations
- Vary in inclusiveness
- Describe maximum expectable capabilities at any given age
- Generally organized by stages, tasks or process

## Selected Theories

- Physical (Biological)
  - Neurodevelopment
- Cognitive
  - Piaget
  - Learning
- Emotional/ Social
  - Freud
  - Erikson

## Difficulties

- May be influenced by culture, historical context, SES factors or other environmental conditions
- May not match a particular individual
- May not be flexible enough to incorporate new knowledge
- May only describe/ explain a limited aspect of development

## Neurodevelopment Gross Changes

- Brain volume increases 4 times from birth to 6 years
- By 6 years, brain is 90% of adult size
- Brain volume = accurate indicator of brain growth

## Neurodevelopment

- Regions mature at different rates and times, more efficient over time, girls before boys
- Generally overall cortical development/ maturation occurs from back to front
- Prefrontal region is one of the last regions to mature
  - important for integrating/processing information, making decisions, impulse control (self regulation)
- Superior temporal cortex which integrates information matures even later

## Neurodevelopment Gray Matter

- Increases in childhood then decreases
- 2 processes
  - Overproduction/arborization/ proliferation
    - 1st 18months of life
    - just before puberty, ~11 years of age
  - Pruning/competitive elimination
    - Especially prominent during adolescence

## Neurodevelopment White Matter

- Increases throughout childhood
  - Most major fiber tracts by age 3 yrs
  - Myelination continues to increase throughout adolescence and early adulthood, especially in frontal lobes

## Neurodevelopment

- Genetic code instructions
- CNS active – latter part of gestation
  - Growth in number of synaptic connections
- Early infancy
  - Strengthening/ expansion of functional synaptic contacts
- Neuronal connections made throughout life
  - Greatest change – infancy & adolescence
  - Require neuronal activity
- Interaction with environment
  - Gene activity/ repression
  - Critical periods

## Neurodevelopment

Mind/brain/environmental interactions

- Genes/ their protein products
  - determine neuronal connections and functioning
- Learning
  - produces gene expression alterations
- Altered gene expression
  - changes neuronal connections that contribute to maintaining behavior
- Organization of circuitry
  - Long term potentiation
  - Repeated experiences
- Plasticity/ Neural regeneration

## Piaget/ NeoPiagetian

- Thought arises from action
- Factors that influence cognitive development
  - Nervous system maturation
  - Experience
  - Social transmission or teaching
  - Equilibration – moving toward more complex and stable levels of organization

## Piaget

- Schema
  - Set of mental operations developed from organized patterns of behavior that are repeatable and generalizable
  - Applied to objects, beliefs, thoughts
  - Structures that structure understanding
  - More complex as develop
  - As develop, coordinate/ combine schema into more elaborate, complex actions, thoughts

## Piaget

- Adaptation
  - Achieving equilibrium with environment
- Acquired through
  - Assimilation
    - Fit new experience into current schema
  - Accommodation
    - Adjusts existing schema to fit environment

## Piagetian Stages

- Sensorimotor (Birth – 2 years)
- Preoperational (2-7 years)
- Concrete operational (7-11 years)
- Formal operational (> 12 years)

## Piaget

- Sensorimotor
  - Reflex activity, 0-1 month
    - Reflexive innate behaviors
    - Spontaneous rhythmic activity
    - Mostly assimilative behavior
  - Primary circular reactions, 1-4 ½ months
    - Reflexes or motor responses
    - Circular (repeated by child)
    - Centered on infant's body

## Piaget

- Sensorimotor
  - Secondary circular reactions, 4 – 9 months
    - Focus on objects rather than own body
    - Make things happen (hit hanging toy)
    - Change environment intentionally
  - Coordination of secondary circular reactions, 9-12 months
    - Combine schema to achieve goals/solve problems (hit barrier to reach toy)

## Piaget

- Sensorimotor
  - Tertiary circular reactions, 12-18 months
    - Use action trial & error to learn about objects
    - Explore environment
    - Deliberately act to cause certain reaction (drop object to get parent to pick up)
  - Internal representation, 18-24 months
    - Start representing objects symbolically
      - Object permanence
    - Observe & imitate behavior
    - Use mental trial & error

## Piaget

- Preoperational
  - Pre-conceptual, 2-4 years
    - Development of symbolic thought
    - Thought shapes language
    - Egocentrism – universe centered on self
  - Intuitive, 4-7 year
    - Internal operations of ordering, classifying, quantifying more systematically
    - Unaware of underlying principles

## Piaget

- Concrete Operations (7-12 years)
  - Reality based – logical, others
  - Application of logical thought to real objects & situations
  - Cause & effect
  - Cognitive abilities
    - Conservation
    - Seriation
    - Reversibility
    - Classification
    - Decentration

## Piaget

- Formal Operations
  - Hypothetical
  - Inclusive
  - Future
  - Abstract thinking
    - Understand concepts independent of experience/ physical reality
    - Logical reasoning to figure things out
    - Think about own thoughts/ explain own reasoning
    - More complicated, complex thinking
    - Separate theoretical/ realistic

## Learning

- Individuals learn from experiences
  - Their own
  - Observation of others
- Behaviors reinforced and thus reoccur
- Behaviors can change environment

## Learning

- Classical (respondent)
  - Repeated pairing of neutral (conditioned) stimulus with one that evokes a response (unconditioned stimulus)
  - Neutral stimulus eventually evokes response
  - Pavlov's dogs

## Learning

- Operant (instrumental)
  - Learning consequence of action
  - Behavior receives reinforcing stimuli (reward)
  - Behavior repeated
  - Fixed or variable reinforcement

## Social Learning

- Learn from environmental experiences
- Operant
  - Behaviors occur, reinforced so reoccur
- Classical
  - Reflex behaviors, reinforced, generalize
- Modeling
  - Observe others and imitate

## Freud

- Impact of early life experience
  - Physiological/ anatomical/ psychological changes
- Importance of thought/ belief processes not conscious of
  - Defense mechanisms
- Importance of relationships for navigating/ negotiating life

## Freud

- Oral (0-18 months)
- Anal (18-36 months)
- Phallic (3-6 years)
- Latency (6-11 years)
- Genital (11plus years)

## Freud

- Oral (0-18 months)
  - Source of pleasure
  - Method of exploration
  - Dependence on caretakers
  - Develop sense of trust
    - World safe place, needs met
  - Delay in needs being met
    - Stimulate infant interest in own abilities

## Freud

- Anal (18-36 months)
  - Focus of interest/ pleasure
  - Produce products others interested in
  - Development of control
  - Acquisition of mastery & autonomy
  - Some degree of independence
  - Saying no

## Freud

- Phallic (3-6 years)
  - Genitals – focus, source of pleasure
  - Sexual & gender identity
  - Negotiating dyadic & triangular relationships
  - Development of superego

## Freud

- Latency (6-11 years)
  - Relative quiescence of sexual drive
  - Channeled into more appropriate drives
  - Formation of superego
  - Identification with parents but increased peer interaction

## Freud

- Genital (11plus years)
  - Final stage
  - Begins with puberty
  - Develop capacity for true intimacy
  - More socially mature defense mechanisms
  - Increased self-evaluation/ introspection

## Erikson

- Basic Trust vs Mistrust (0-18 mos)
- Autonomy vs Shame/Doubt (18-36 mos)
- Initiative vs Guilt (3 - 5 years)
- Industry vs Inferiority (5 -12 years)
- Identity vs Role Confusion ( 13-21 years )
- Intimacy vs Isolation (21-40 years)
- Generativity vs Stagnation (40-60 years)
- Ego integrity vs Despair/ Disgust (60+years)

## Erikson

Trust vs Mistrust (0-18 months)
- World – safe, predictable, nurturing
- Basic needs met

Autonomy vs Shame/ Doubt (18-36 mos)
- Pleasure in own activities & power
- Learn to say no

Initiative vs Guilt (3-5 years)
- Confident of ability to act
- Able to please self & others

## Erikson

Industry vs Inferiority (5-12 years)
- Mastery
- Productivity
- Competition

Identity vs Role Confusion (13-21 years)
- Identity
- Consolidation
- Intimacy

## Erikson

Intimacy vs Isolation (21-40 years)
- Initiate/ maintain intimate relationships
- Adult identity

Generativity vs Stagnation (40-60 years)
- Mentoring/ parenting
- Competent & productive

Ego Integrity vs Despair/Disgust (≥60yrs)
- Positive perspective on life
- Come to terms with decisions/ choices

## Mahler

- Normal autistic phase (0-1 mo)
- Normal synthesis (2-5 mos)
- Differentiation (5-7 mos)
- Practicing (7-16 mos)
- Rapprochement (16-24 mos)
- Object constancy (24-36 mos)

## Attachment

- Various theorists
  - Bowlby
  - Ainsworth
  - Main
- Early parent-child relationship
  - Process by which infant connects to primary caretaker
  - Specific & preferential
- Influences/ mediates development
- Universal
- Protective
- Environmental

## Attachment

- Functions
  - Providing sense of security
  - Regulation of affect & arousal
  - Expression of feelings & communication
  - Base for exploration

## Attachment

- Internal working model
  - Expectations how relationships work
  - What can expect from others
  - Model of self: effectiveness, value, worth
  - Guide for behavior towards others, in relationships
  - Variability in continuity/ stability
  - Responsive to change/ environment

## Attachment

- Important characteristics
  - Caretaker responsiveness/ sensitivity
  - Infant reactions to separation
  - Cultural variations
- Classification
  - Secure
  - Insecure-avoidant
  - Insecure – ambivalent/ resistant
  - Insecure – disorganized/ disoriented

## Attachment

- Secure
  - Mothers: responsive, emotionally available & loving
  - Infants respond positively to soothing
  - Infants express feelings openly/ confident in parent
- Later development
  - More confident exploration
  - More open to learning
  - Generalize to other relationships

## Attachment

- Avoidant
  - Infants no reactions/ no seeking of mother
  - Mothers: ignore, reject, negative
- Later Development
  - More aggressive, hostile
  - Negative relationships
  - Emotionally distant
  - Withdraw when distressed

## Attachment

- Ambivalent/ Resistant
  - Infants - intense reaction to separation, no comfort seeking
  - Mother – inconsistently responsive
- Later development
  - Preoccupied with parent mood/ behavior
  - Separation worries
  - Inhibited & unassertive
  - Poor peer relationships

## Attachment

- Disorganized/ Disoriented
  - Infants lack organized structure to gain attention
  - Parents often frightening
- Later development
  - Controlling behavior
  - Aggression
  - Poor self-esteem/ academic achievement

## Temperament

- Theorists
  - Chess & Thomas
  - Kagan
- Infant characteristics
  - Biologically based personality traits
  - Affect orientation to & interaction with world
  - Need to consider in context of environment, caretakers (goodness of fit)

## Temperament

Chess & Thomas

- Dimensions of temperament
  - Activity level
  - Regularity
  - Adaptability to change in routine
  - Response to new situations
  - Level of sensory threshold
  - Intensity of response
  - Positive or negative mood
  - Distractibility
  - Persistence & attention span

## Temperament

Chess & Thomas

- Easy
  - Positive, moderate activity
  - Regular patterns, adaptable
  - Good attention span & persistence
  - Mild to moderate intensity & sensitivity
  - Positive to new experiences

## Temperament

Chess & Thomas

- Difficult
  - Negative moods
  - Very active, negatively persistent
  - Overly sensitive, intensely reactive
  - Irregular rhythms
  - Resistant to change
  - Withdrew in new situations

## Temperament

Chess & Thomas

- Slow to warm up (behaviorally inhibited)
  - Less reactive
  - Less overtly emotional or intense
  - Less active
  - Inhibited in novel situations (cautious & shy)
  - Often participate with time & reassurance

## Temperament

Kagan

- Longitudinal study
- Low/ high reactive
- Consistent over time
- Higher risk for psychopathology
  - High reactive

## Language

- Code in which sounds/ thoughts are used to encode meaning
- Not fully understood how acquired
- Some degree of innate programming
- Interactions key to develop meaning
- Essential for a number of abilities
  - Memory
  - Communication
  - Academic achievement
  - Social interactions

## Language

- Autobiographical memory
- Integration into social/ cultural context
- Capacity for self-awareness/ emotional organization
- Capacity to view interpersonal situations from multiple perspectives
- Capacity to see self as having multiple dimensions

## Theory of Mind

- Understanding that others have minds
- May have different views/ interpretations of world (mental representations)
- Behavior based on feelings, beliefs, desires
  - False beliefs
  - Differences between mental states/external reality
  - Relationship between seeing & knowing
  - Distinction between appearance/ reality
  - Prediction of behavior

## Gender/ Sexual Development

- Significant genetic/ environmental factors
- Process by which children learn to view self and others in terms of gender
- Gender identity
  - Female or male
- Gender roles
  - Significant cultural and societal influence
- Sexual orientation
  - Heterosexual, homosexual, bisexual, transgender
  - Significant evidence that biologically driven

## Moral Development (Kohlberg)

Preconventional – level I
- Physical consequences of an action determine if good or bad

Conventional - level II
- Doing one's duty, respect for authority, maintaining social order

Postcoventional - level III
- Self standards and correct behavior defined in terms of standards agreed upon by society
- Ethical principles self-chosen based on universal and abstract concepts rather than concrete rules

Boys; abstract justice principles

## Moral Development (Gilligan)

- Response to Kohlberg's work
- Includes emotion (i.e. compassion) in model
- Study both girls & boys, using Kohlberg's situations; boys higher levels than matched girls
- Hypothesized that girls conceptualize morality differently with emphasis on relationships, compassion, responsibilities (to people)
- Defined alternate stages using compassion and caring as endpoints

## Classifications

- Age Categories
  - Pregnancy
  - Infancy (0 to 12 months)
  - Toddler/preschool (1 to 4 years)
  - School aged (5 to 12 years)
  - Adolescent (13 to 19 years)
  - Adult (20 plus)

## Pregnancy

- Identification of the fetus as a part of the self (First Trimester)
- Development of the awareness of the fetus as an individual (Second Trimester)
- Preparation for infant (Third Trimester)

## Infancy

- Erikson – Trust vs. mistrust
  - Nurturance – making sure that the world is predictably a safe place to be
- Freud – Oral
  - Nutrition
  - Everything explored in the mouth
- Piaget – Sensorimotor
  - Learning from movement and sensation

## Infancy - Physical

- Newborn
  - Sensory capabilities
  - Behavioral states
    - Quiet sleep, active sleep, drowsy, quiet alert, active alert, crying
  - Temperament
- Rapid growth
- Radial palmar grasp – 6 months
- Sit without support – 6-8 months
- Pincer grasp – 9 months
- Creep or crawl – 9-10 months
- Pull to stand -- ~ 10 months
- Walk with support -- ~ 12 months
- " Neat" pincer – 12 months

## Infancy – Cognitive

- Increasing interest in / awareness of/ interactions with others/ world
- Manipulate objects
- Object permanence – 12-15 months
- Imitative movements
  - Pat-a-cake and bye-bye – 9-12 months

## Infancy—Language

- Interactive vowel sounds (cooing) – 12 weeks
- Laugh out loud – 4 months
- Babble – 6 months – monosyllabic at first (ma-ma, da-da), then polysyllabic
- First meaningful words -- ~ 1 year

## Infancy— Social/ Emotional

- Social smile – 6-8 weeks
- Preferences for primary caretaker – 6 months
- Stranger anxiety – 8-10 months – sometimes called 8th month anxiety

## Infancy - Sexual

- Genital manipulation/ stimulation
- General interest in own bodies

## Infancy
## Common Behavior Issues

- "Colic"
- Feeding problems
- Sleep problems
- Pacifiers, thumb sucking
- "Spoiling"
- Attachment
- Relationships

## Toddler 12-36 months

- Piaget
  - Sensorimotor (12-24months)
    - Trial & error/ exploration/ deliberate
    - Symbolic representation (object permanency)
  - Preoperational (18+months)
    - Preconceptual – symbolic thought/ egocentric
- Freud – Anal
  - Control/ mastery/ autonomy/ say no
- Erikson – Autonomy vs. Shame/ Doubt
  - Pleasure – own activities, power/ say no

## Toddler – Physical

- Decreased rate of growth
- Walk – 12-18 months
- Run – 2 years
- Climb stairs
- Ride tricycle – 3 years
- Use pencil/ utensils – 18ms+

## Toddler – Language/ Cognition

- 1 year – 2-3 words
- 2 years – 200-300 words and putting words together into two word sentences
- Increasing complexity
- More understandable
- Colors, objects, letters, numbers

## Toddler Emotional/ Social

- Separation from parents
- Increasing autonomy/ independence
- Increasing self-control
- Beginning control of anger/aggression
- Achievement of toilet training
- Parallel play

## Preschool - 3 to 5 years

- Piaget
  - Preoperational
    - Preconceptual
    - Intuitive, 4+ years
      - Internal operations for organization
- Freud – Phallic
  - Sexual/ gender identity
  - Dyadic/ triangular relationships
  - Superego
- Erikson – Initiative vs. guilt
  - Confidence in ability to act
  - Able to please self & others

## Preschool - Physical

- Slower rate of growth
- Continued development of gross motor skills culminating in bike riding by 5 or 6
- Fine motor – marked development during preschool period
  - 3 years – copy circle
  - 4 years – copy cross
  - 4 ½ years – copy Square
  - 5 years – copy triangle

## Preschool – Cognitive/ Language

- 2000 words by age 5
- Increasingly complex sentences
- More reciprocal
- Paragraphs/ narratives
- Improved memory
- Time concepts

## Preschool - Social

- Continued separation/individuation
- Sexual identity/body image
  - Lots of questions
  - Exploring, touching genitals (masturbation)
  - Triangular relationship with parents
- Identification with same sex parent
- Cooperative play

## Preschool - Emotional

- Beginning development of conscience
  - Parental disapproval >>> some guilt
  - Child begins to retain some rules inside him/herself
  - Fear and guilt
- Parenting issues
  - Consistent discipline – MOST IMPORTANT
  - Avoid overemphasis on guilt
  - Communicate confidence that child can control behavior

## Toddler/ Preschool - Sexual

- Gender identity
- Gender stability
- Sex differences
- Continued masturbation
- Genital interest
- Sex play

## Toddler/ Preschool Common Behavioral Issues

- Concerns over body integrity
- Sleep problems
- Oppositional behavior
- Adjustment to school
- Fears – animals and monsters
- Developmental Delays

## School Age (5-12 years)

- Freud – Latency
  - Increased peer interactions
  - Relative quiescence of sex drive
  - Superego
- Erickson – Industry vs Inferiority
  - Mastery, productivity, competition
- Piaget – Concrete Operations
  - Reality based logical thinking
  - Improved cognitive abilities

## School Age

- K through 7th grade
- Better communicative skills
- Better self regulation
- More self-sufficiency/ independence
- More reality based
- Better coordination & strength
- Remain interested in adult attention

## School Age – Physical

- Steady growth
- Slower rate
- Boys > Girls
- Motor skill consolidation
- Brain development

## School Age - Cognitive

- Logical, reality based
- Core intellectual activities
- More complex & comprehensive
- Multiple attributes & other views
- Ability to compare past & present
- Memory
- Executive functioning

## School Age - Language

- Syntax & grammar
- Increasing vocabulary
- Express thoughts
- Coherent narratives
- Improved communication
  - Listen and respond
  - Response based on perceptions
  - Consensual meanings

## School Age - Emotional

- Identification/ integration of emotions
- Concern about fairness & justice
- Better sense of self
- Increased use/understanding of humor
- Characteristic fears
  - self/caretakers: conflict, illness, death,
  - specific animals/people/monsters
  - performance
  - acceptance: peers, parents

## School Age - Social

- Increasing awareness of environment
- More cooperative & collaborative play
  - more interest in peers, same sex
  - greater portion of activities with peers
  - interest in & concern with peer views
  - increasing interest in romance & sex
- Less idolization of adults

## School Age - Sexual

- Gender stereotyping
- Gender identity not external
- Sexual/ genital interest/ exploration
- Masturbation
- Heterosexual/ homosexual play

## School Age
## Common Behavioral Issues

- Attention and activity levels
- Learning issues
- Anxiety
- Peer relationships
- Self-esteem

## Adolescence (13-19 years)

- Freud - Genital
  - Begins with puberty
  - Capacity for true intimacy
  - Increased introspection
- Erickson - Identity vs Role Confusion
  - Consolidation – identity, intimacy
- Piaget – Formal Operations
  - Hypothetical, abstract
  - Think about own thoughts/ reasoning

## Overview - Adolescence

- 8th - 12th grade
- Period of
  - Transition into adulthood/ formation as adult
  - Early/ late
- Tasks
  - Personal & sexual identity
  - Personal values
  - Occupational direction
  - Emancipation

## Adolescence - Physical

- Puberty
  - girls earlier than boys; average 2 years
- Increased concern about appearance
- Eating
- Sleeping
- Brain Development

## Adolescence - Cognitive

- Emergence of hypothetical thinking
  - problem solve multiple combinations
  - future planning/ increased creativity
- Sense of continuity
  - past experiences & current motivations
- Greater tolerance of ambiguity
  - construct individual standards & morals

## Adolescence - Emotional

- Better ability to identify, discuss, deal with emotions of self & others
- More balanced/ integrated views
- Humor
- Appears less interested in adults
- Empathy
- Characteristic fears
  - future; failing; peers; identity

## Adolescence - Social

- Broader view of environment
- Most activities with peers
- Very concerned with peers
- Emphasis on fitting in
- Development of romantic/sexual interests & relationships

## Adolescence - Sexual

- Increased interest in sex
- Masturbation
- Sexual orientation
- Activity influenced by culture, religion, society
- Boys earlier than girls

## Adolescence Common Behavioral Issues

- Oppositional, argumentative
- Mood
- Anxiety
- Eating
- Peer relationships, esp romantic
- Poor decision making
- Risky behaviors

## Medical Issues

- Understanding varies with developmental status
- Others often making decisions
- Tendency to shield/ not involve child
- Potential to interfere with mastery of developmental tasks
- Developmental concerns may be more stressful than illness issues

## Adult Development

- Differences between child and adult development
  - Less clear stages
  - Growth vs. aging

## Adult Development

- Young adulthood - the separation from the family of origin with new adult tasks
  - Develop adult friendships
  - Develop capacity for intimacy (spouse?)
  - Establish adult work identity
  - Develop adult forms of play
  - Deal with first signs of aging

## Adult Development

- Middle adulthood - increased awareness of attachment and loss
  - Accept the aging body
  - Accept limitations of time and death
  - Reappraise relationships and maintain intimacy
  - Become a generative mentor and plan for retirement

## Adult Development

- Late Adulthood - the shift from being left to leaving and the desire to connect with loved ones/community
  - Deal with retirement and redundancy
  - Handle aging and illness
  - Handle the impact of the deaths of relatives and friends
  - Accept the nearness of death

## References


- Most of major psychiatry textbooks have sections on development; the big Kaplan has a fairly comprehensive overview
- Davies, D. (2011). Child Development: A Practitioner's Guide, 3rd edition. New York, The Guildford Press. (infancy-school age)
- Gemelli, R. (1996). Normal Child and Adolescent Development. Washington DC, American Psychiatric Press. (infancy-adolescence)

Arden D Dingle, MD

# Development

# Neurodevelopment

- Regions mature at different rates and times, more efficient over time, girls before boys
- Generally overall cortical development/ maturation occurs from back to front
- Prefrontal region is one of the last regions to mature
  - important for integrating/processing information, making decisions, impulse control (self regulation)
- Superior temporal cortex which integrates information matures even later

# Neurodevelopment

Mind/brain/environmental interactions

- Genes/ their protein products
  - determine neuronal connections and functioning
- Learning
  - produces gene expression alterations
- Altered gene expression
  - changes neuronal connections that contribute to maintaining behavior
- Organization of circuitry
  - Long term potentiation
  - Repeated experiences
- Plasticity/ Neural regeneration

# Piagetian Stages (Cognitive)

- Sensorimotor (Birth – 2 years)
- Preoperational (2-7 years)
- Concrete operational (7-11 years)
- Formal operational (> 12 years)

# Learning

- Individuals learn from experiences
  - Their own
  - Observation of others
- Behaviors reinforced and thus reoccur
- Behaviors can change environment

# Freud

- Impact of early life experience
  - Physiological/ anatomical/ psychological changes
- Importance of thought/ belief processes not conscious of
  - Defense mechanisms
- Importance of relationships for navigating/ negotiating life

# Erikson

- Basic Trust vs Mistrust (0-18 mos)
- Autonomy vs Shame/Doubt (18-36 mos)
- Initiative vs Guilt (3 - 5 years)
- Industry vs Inferiority (5 -12 years)
- Identity vs Role Confusion ( 13-21 years )
- Intimacy vs Isolation (21-40 years)
- Generativity vs Stagnation (40-60 years)
- Ego integrity vs Despair/ Disgust (60+years)

# Mahler

- Normal autistic phase (0-1 mo)
- Normal synthesis (2-5 mos)
- Differentiation (5-7 mos)
- Practicing (7-16 mos)
- Rapprochement (16-24 mos)
- Object constancy (24-36 mos)

# Attachment

- Various theorists
  - Bowlby
  - Ainsworth
  - Main
- Early parent-child relationship
  - Process by which infant connects to primary caretaker
  - Specific & preferential
- Influences/ mediates development
- Universal
- Protective
- Environmental

# Attachment

- Important characteristics
  - Caretaker responsiveness/ sensitivity
  - Infant reactions to separation
  - Cultural variations
- Classification
  - Secure
  - Insecure-avoidant
  - Insecure – ambivalent/ resistant
  - Insecure – disorganized/ disoriented

# Temperament

- Theorists
  - Chess & Thomas
  - Kagan
- Infant characteristics
  - Biologically based personality traits
  - Affect orientation to & interaction with world
  - Need to consider in context of environment, caretakers (goodness of fit)

# Language

- Code in which sounds/ thoughts are used to encode meaning
- Not fully understood how acquired
- Some degree of innate programming
- Interactions key to develop meaning
- Essential for a number of abilities
  - Memory
  - Communication
  - Academic achievement
  - Social interactions

# Language

- Autobiographical memory
- Integration into social/ cultural context
- Capacity for self-awareness/ emotional organization
- Capacity to view interpersonal situations from multiple perspectives
- Capacity to see self as having multiple dimensions

# Theory of Mind

- Understanding that others have minds
- May have different views/ interpretations of world (mental representations)
- Behavior based on feelings, beliefs, desires
  - False beliefs
  - Differences between mental states/external reality
  - Relationship between seeing & knowing
  - Distinction between appearance/ reality
  - Prediction of behavior

# Gender/ Sexual Development

- Significant genetic/ environmental factors
- Process by which children learn to view self and others in terms of gender
- Gender identity
  - Female or male
  - Being discrepant from biological gender NO LONGER is pathology (transgender)
- Gender roles
  - Significant cultural and societal influence
- Sexual orientation
  - Heterosexual, homosexual, bisexual
  - Significant evidence that biologically driven

Marcy Verduin, MD

# Diagnostic Issues & Substance Use Disorders

# Interviewing

- Always do interview & MSE before ordering labs, studies, etc.
- In "best response" questions, keep in mind:
  - Assessing for "safe & competent" practice
  - Consider underlying principle rather than how it "sounds"

# Psychological Testing

- Keep in mind primacy of interview & MSE
- Different tests depending on purpose:
  - Intellectual Functioning
  - Attention & Concentration
  - Memory & Language
  - Visuospatial-Constructional
  - Motor
  - Executive Functioning
  - Personality

# Intellectual Functioning

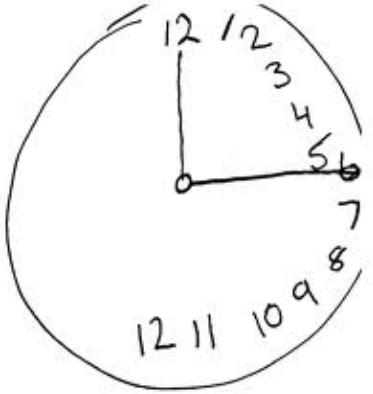
- Wechsler Adult Intelligence Scale (WAIS-III)
  - Age norms from 16 – 89 years old
  - Yields Verbal IQ, Performance IQ, & Full Scale IQ
  - Provides info re: long-standing abilities & current functioning
  - Tests of long-standing knowledge (vocabulary, gen info) help to estimate premorbid functioning

# Attention, Memory, Language

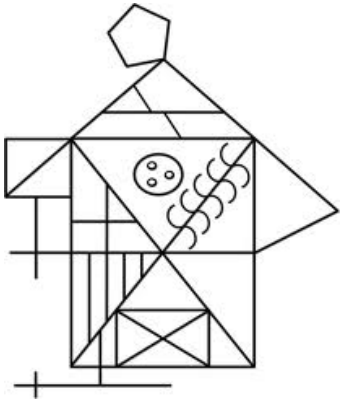
- Digit span – forward (simple span attention) & backward (cognitive manipulation)
- Wechsler Memory Scale III
  - Attention, encoding, retrieval, & recognition
  - Immediate recall & delayed retention
  - Normative data up to age 89
- Boston Naming Test
  - Word-finding difficulty
- Verbal Fluency Test
  - Word generation within semantic categories
  - Ex: words that start with F; animals

# Visuospatial-Constructional

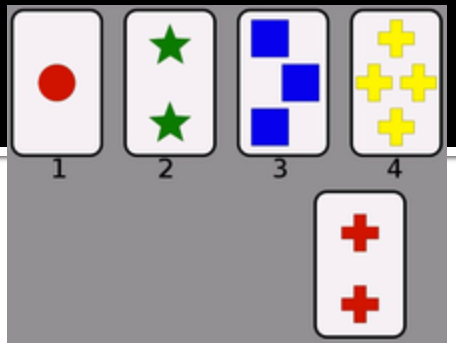
- Clock Drawing
  - Assesses organization, planning, construction



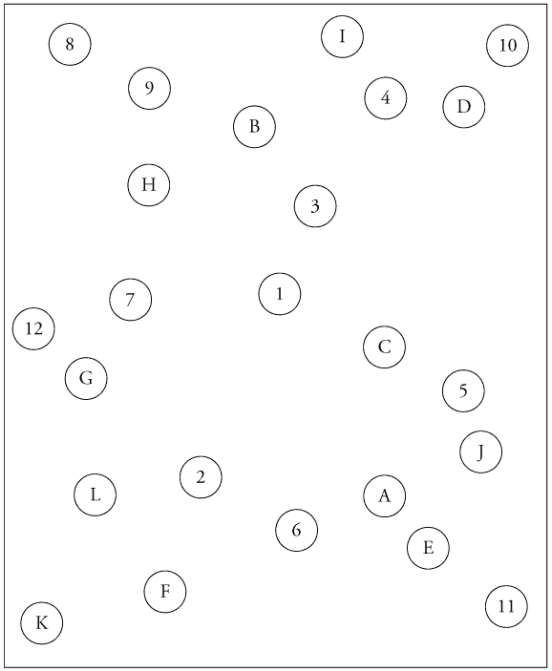

- Rey-Osterreith Complex Figure Test
  - Assesses ability to draw and recall complex geometric figure



# Executive Function




- Wisconsin Card Sorting Test
  - Ability to generate alternative strategies in response to feedback
- Trail-Making Test
  - A – connect all numbers sequentially
  - B – alternate numbers & letters (1, A, 2, B, 3…)



# Personality – Objective Tests

- Minnesota Multiphasic Personality Inventory (MMPI-2)
  - Quantifies self-reported symptoms & compares to known populations
  - Includes validity scales (social desirability, over-reporting, under-reporting)

# Personality – Projective Tests

- Rorschach Test
  - 10 standard inkblots
  - Most common, best studied
- Thematic Apperception Test (TAT)
  - 20 standardized, ambiguous scenes
- Sentence Completion Test
  - Fill-in-the-blank
  - Ex: "I secretly wish _____"

# Substance Use Disorders

- Intoxication opposite of withdrawal
- 3 withdrawal syndromes potentially lethal
  - EtOH
  - Barbiturates
  - Sedatives-hypnotics
- Familiarity with toxidromes

# Laboratory Testing – Alcohol

- ɣ-glutamyltransferase (GGT)
  - Liver enzyme
  - ↑ may be indicative of EtOH use
  - Not specific to EtOH
  - Not very sensitive to relapse
- Ethylglucuronide (EtG)
  - Byproduct excreted in urine
  - EtG detects EtOH use much longer than blood/breath
  - Detects ANY drinking (not just heavy) – 48-72 hrs

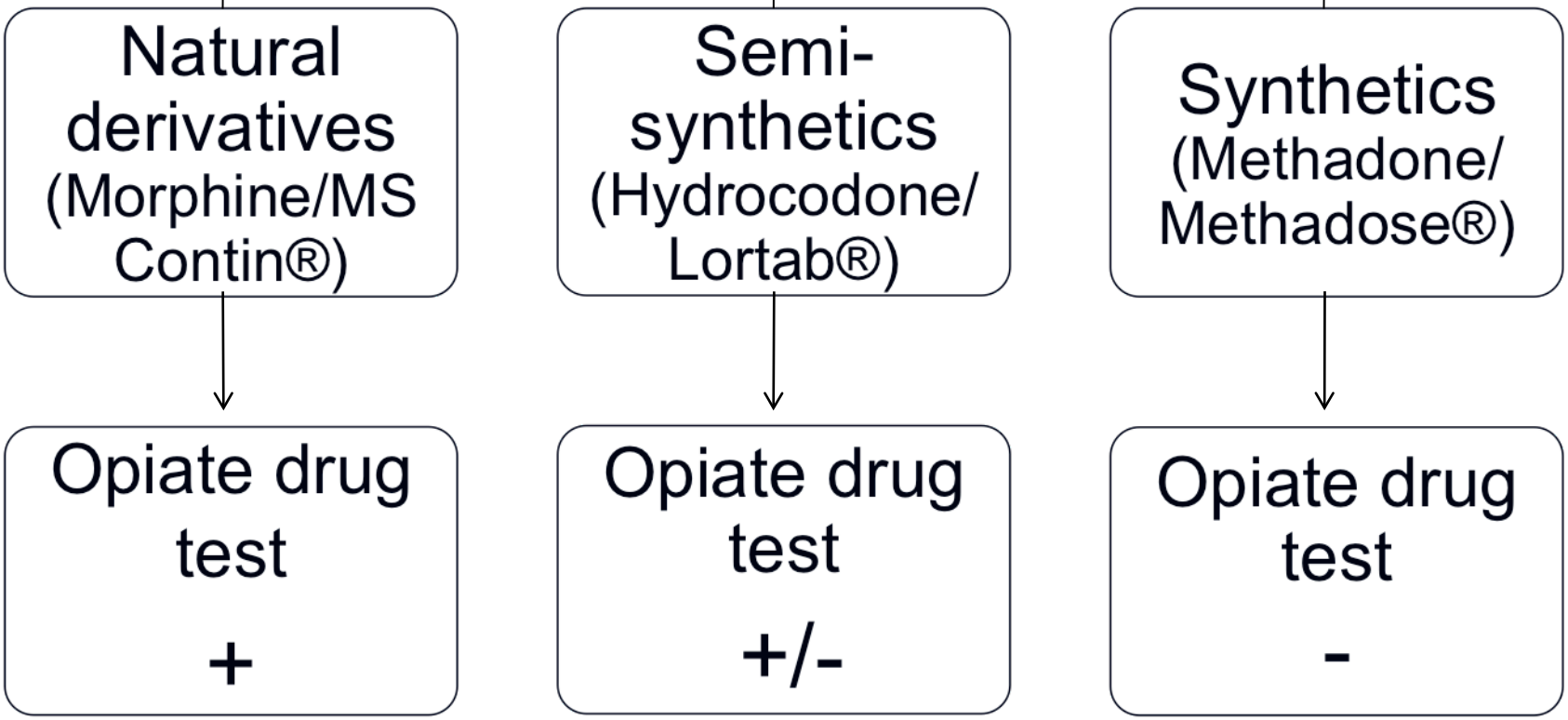
# Laboratory Testing – Alcohol (cont'd)

- Carbohydrate-deficient transferrin (%CDT)
  - Heavy EtOH impairs glycosylation of transferrin
  - Better test for **recent** heavy drinking (e.g., **relapse**)
- To detect problem drinking, use **GGT + %CDT**

# Laboratory Testing – UDS

- UDS – know detection window plus:
  - Beware certain benzos and opiates not commonly tested
  - Semi-synthetics & synthetics may need specific test

# OPIOIDS:
## related to opium

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# Psychopharmacology for Relapse Prevention

- EtOH
  - Naltrexone – monitor LFTs
  - Acamprosate – excreted by kidney; some GI distress
  - Disulfiram – monitor LFTs; risk of severe reaction
- Opiates
  - Naltrexone – relapse prevention
  - Methadone – maintenance
  - Buprenorphine/naloxone – maintenance

# Psychotherapy

- Motivational Enhancement
  - Express empathy, develop discrepancy, roll with resistance, support self-efficacy
- CBT – Relapse Prevention
  - Identifying high risk situations, urge surfing, seemingly irrelevant decisions, coping skills training
- Twelve-Step Facilitation
  - Strategies for engaging in AA/NA
- Contingency Management
  - Earn rewards/money for abstinence

Joseph B. Layde, MD, JD

# Review of Psychiatric Ethics and Forensic Psychiatry

# Important Bioethical Principles

- Autonomy—respect for persons
- Beneficence
- Nonmaleficence
- Justice

# Helpful Psychiatric Ethics Resource

**American Psychiatric Association**
**The Principles of Medical Ethics**
**With Annotations Especially**
**Applicable to Psychiatry**
**2013 Edition**

http://www.psych.org/File%20Library/Practice/Ethics%20Documents/principles2013--final.pdf

Based on American Medical Association
*Principles of Medical Ethics*

# Participation in Coerced Treatment

- "The psychiatrist may permit his or her certification to be used for the involuntary treatment of any person only following his or her personal examination of that person. To do so, he or she must find that the person, because of mental illness, cannot form a judgment as to what is in his/her own best interests and that, without such treatment, substantial impairment is likely to occur to the person or others." *APA Ethics Section 7.4*

# Boundary Issues with Patients

- Inequality of treatment relationship important
- "Sexual activity with a current or former patient is unethical." *APA Ethics Section 2.1*
- Financial and other exploitation also forbidden

# Boundary Issues with Trainees

- "Sexual involvement between a faculty member or supervisor and a trainee or student, in those situations in which an abuse of power can occur, often takes advantage of inequalities in the working relationship and may be unethical because:

  a. Any treatment of a patient being supervised may be deleteriously affected.

  b. It may damage the trust relationship between teacher and student.

  c. Teachers are important professional role models for their trainees and affect their trainees' future professional behavior." *APA Ethics Section 4.14*

# Confidentiality

- Right of disclosure of information belongs to patient
- Governed by HIPAA and (regarding substance use disorders) 42 CFR Part 2
- "Elevator talk" included

# Diagnosing Celebrities

- "On occasion psychiatrists are asked for an opinion about an individual who is in the light of public attention or who has disclosed information about himself/herself through public media. In such circumstances, a psychiatrist may share with the public his or her expertise about psychiatric issues in general. However, it is unethical for a psychiatrist to offer a professional opinion unless he or she has conducted an examination and has been granted proper authorization for such a statement." *APA Ethics Section 7.4*

# Fee Splitting

- "An arrangement in which a psychiatrist provides supervision or administration to other physicians or nonmedical persons for a percentage of their fees or gross income is not acceptable; this would constitute fee splitting. In a team of practitioners, or a multidisciplinary team, it is ethical for the psychiatrist to receive income for administration, research, education, or consultation. This should be based on a mutually agreed-upon and set fee or salary, open to renegotiation when a change in the time demand occurs." *APA Ethics Section 2.7*

# Torture

- "Psychiatrists shall not participate in torture."
  *APA Ethics Section 7.5*

# APA Ethics Committee

- Assists district branches in dealing with ethics complaints
- Issues opinions—collected in

**Opinions of the Ethics Committee on The Principles of Medical Ethics**

http://www.psych.org/File%20Library/Practice/Ethics%20Documents/Ethics-Opinions-Document.pdf

# Forensic Psychiatry

# Treatment Requirements

- *Wyatt v. Stickney*, 344 F. Supp. 373 (1972)—Federal district court required Alabama to provide a humane psychological and physical environment, qualified staff, and individualized treatment plans for involuntarily confined patients

- *Youngberg v. Romeo*, 457 U.S. 307 (1982)—U.S. Supreme Court required institutions to provide involuntarily confined patients with "reasonable care and safety, reasonably nonrestrictive confinement conditions, and such training as may be required by these interests"

# Civil Commitment

- Formerly based on principle of *parens patriae*—the government acting as the good parent caring for its wayward children
- Now based on police powers of government—the obligation to maintain an orderly society
- *Lessard v. Schmidt*, 349 F. Supp. 1078 (E.D. Wis. 1972)—provided for strict due process protections to insure commitment only of treatable, dangerous mentally ill persons in Wisconsin
- *O'Connor v. Donaldson*, 422 U.S. 563 (1975)—"In short, a State cannot constitutionally confine without more a non-dangerous individual who is capable of surviving safely in freedom by himself or with the help of willing and responsible family members or friends."

# Competency to Stand Trial

- Accused must be capable of rationally and factually understanding their legal proceedings and rationally assisting in their own defense—*Dusky v. United States*, 363 U.S. 402 (1960)

- Involuntary hospitalization to regain competency must be time-limited—*Jackson v. Indiana*, 406 U.S. 715 (1972)

# Criminal Responsibility

- Insanity defense allowed in federal system and in most states—not in Idaho, Kansas, Montana, or Utah

- Tests for insanity vary:
  - McNaughton Rule: insane if didn't know the nature and quality of the act or that it was wrong
  - American Law Institute (ALI) Rule: insane if lacked substantial capacity either to appreciate criminality of conduct or unable to conform conduct to requirements of law

# Duty to Protect

- *Tarasoff v. Regents of University of California*, 17 Cal. 3d 425, 551 P.2d 334, 131 Cal. Rptr. 14 (1976)—(a.k.a. *Tarasoff II*)—found duty by mental health providers to protect identifiable third parties from their patients' foreseeable acts of violence

- Third parties not required to be identifiable in some states (e.g., Wisconsin)

# Testamentary Capacity

- Understanding of the nature and extent of property
- Understanding of relationship to "natural objects of bounty"
- Understanding of act of writing a will

# References

Roberts LW, Hoop JG: Professionalism and Ethics: Q & A Self-Study Guide for Mental Health Professionals, American Psychiatric Publishing, Inc., Washington, 2008.

Appelbaum PS, Gutheil TG: Clinical Handbook of Psychiatry and the Law, Fourth Edition, Lippincott Williams & Wilkins, Philadelphia, 2007.

# Gene x Environment Interactions in Developmental Neuroscience: Clues to the Etiology of Psychopathology


Anthony L. Rostain, M.D., M.A.

Professor of Psychiatry and Pediatrics

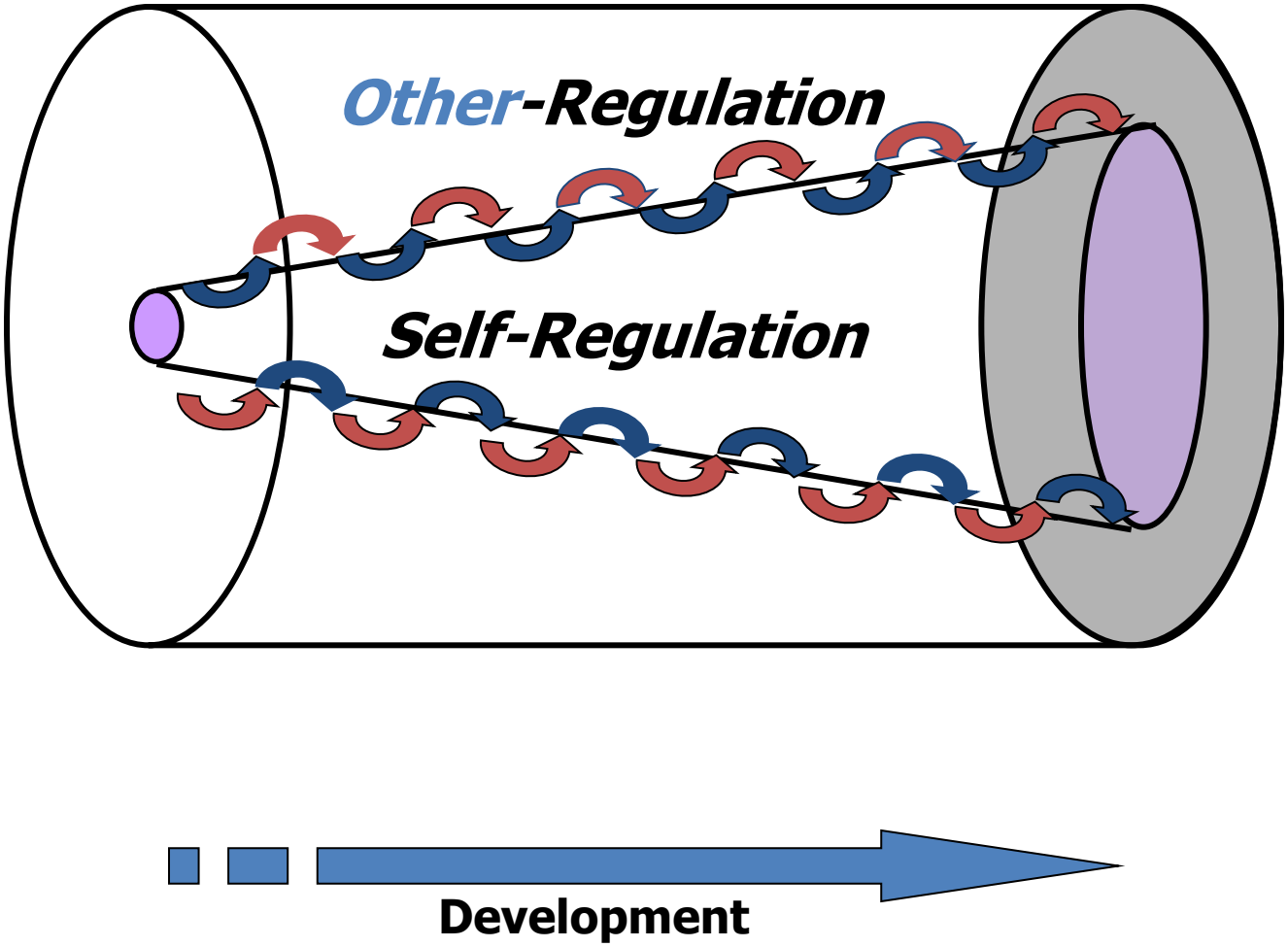
Perelman School of Medicine

University of Pennsylvania

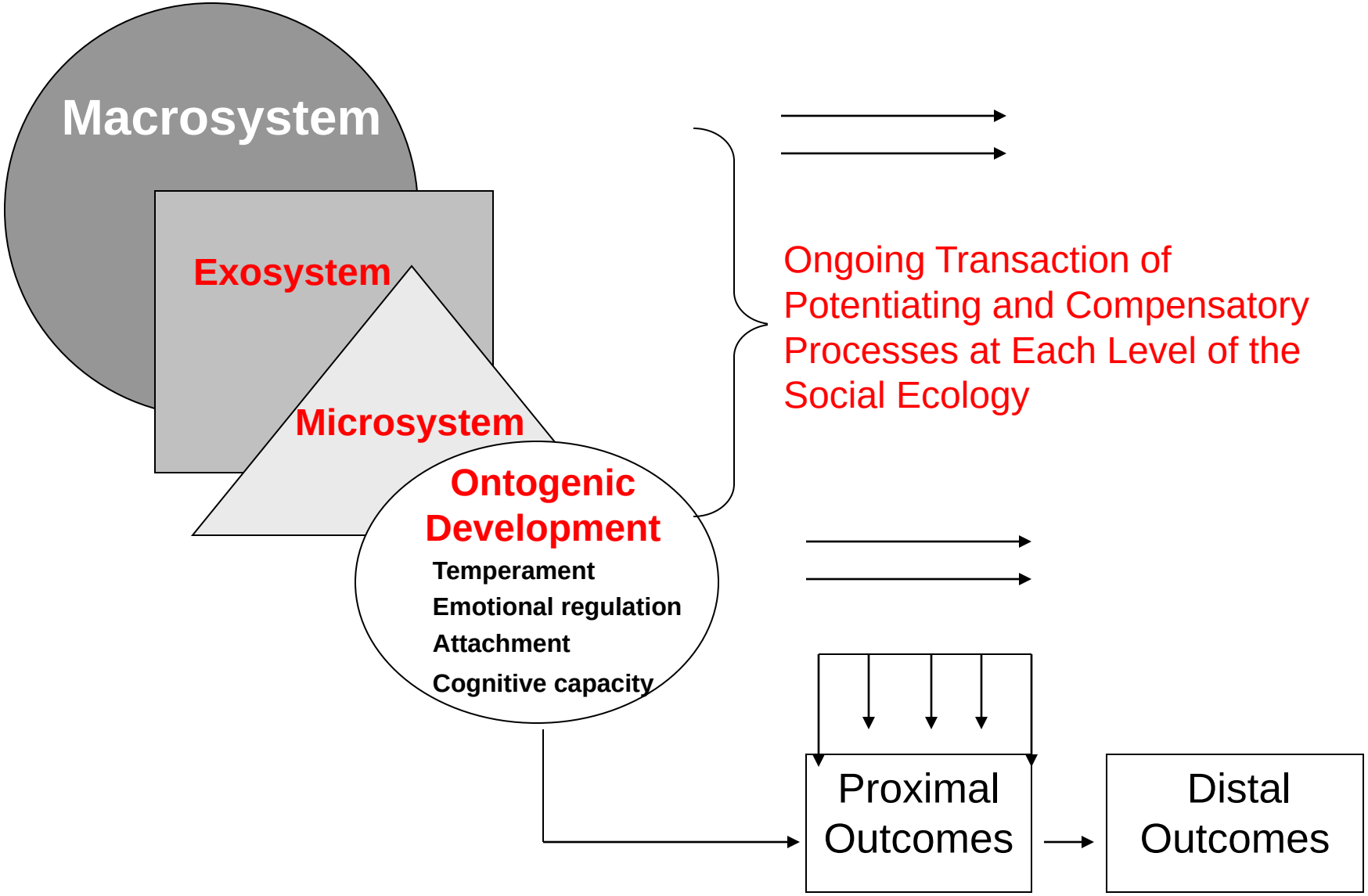
# Developmental Psychopathology

- Viewed as a “macro-paradigm”
- Emphasizes the critical importance and central role of developmental processes as mediators of psychopathology: risks and protective factors
- Provides a framework for integrating biological, behavioral, cognitive, emotional, evolutionary and family systems processes to understand the etiology of psychopathology

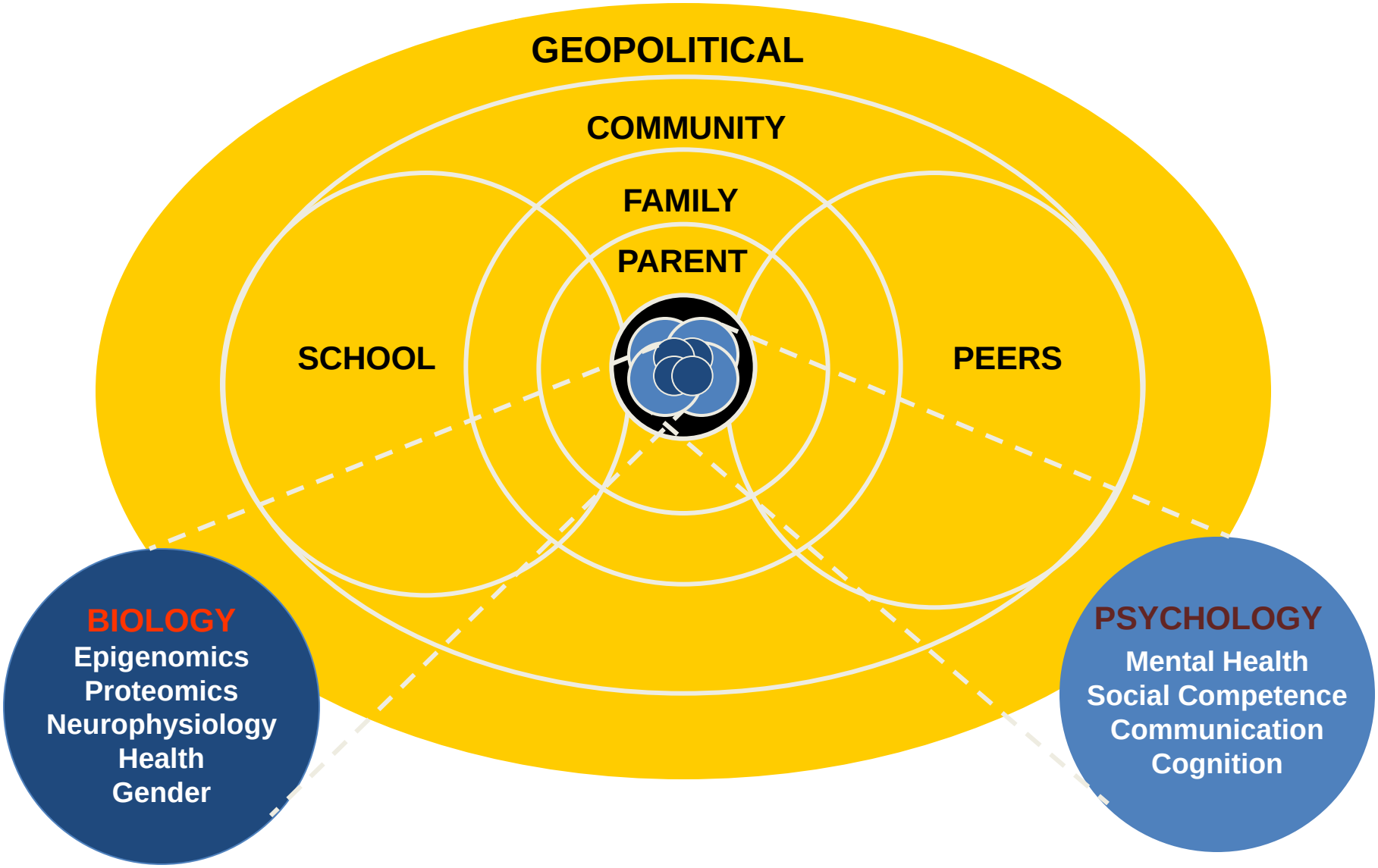
# Transactional Regulatory Model



# Developmental psychopathology model



# *Biopsycho**Social Ecological** System*

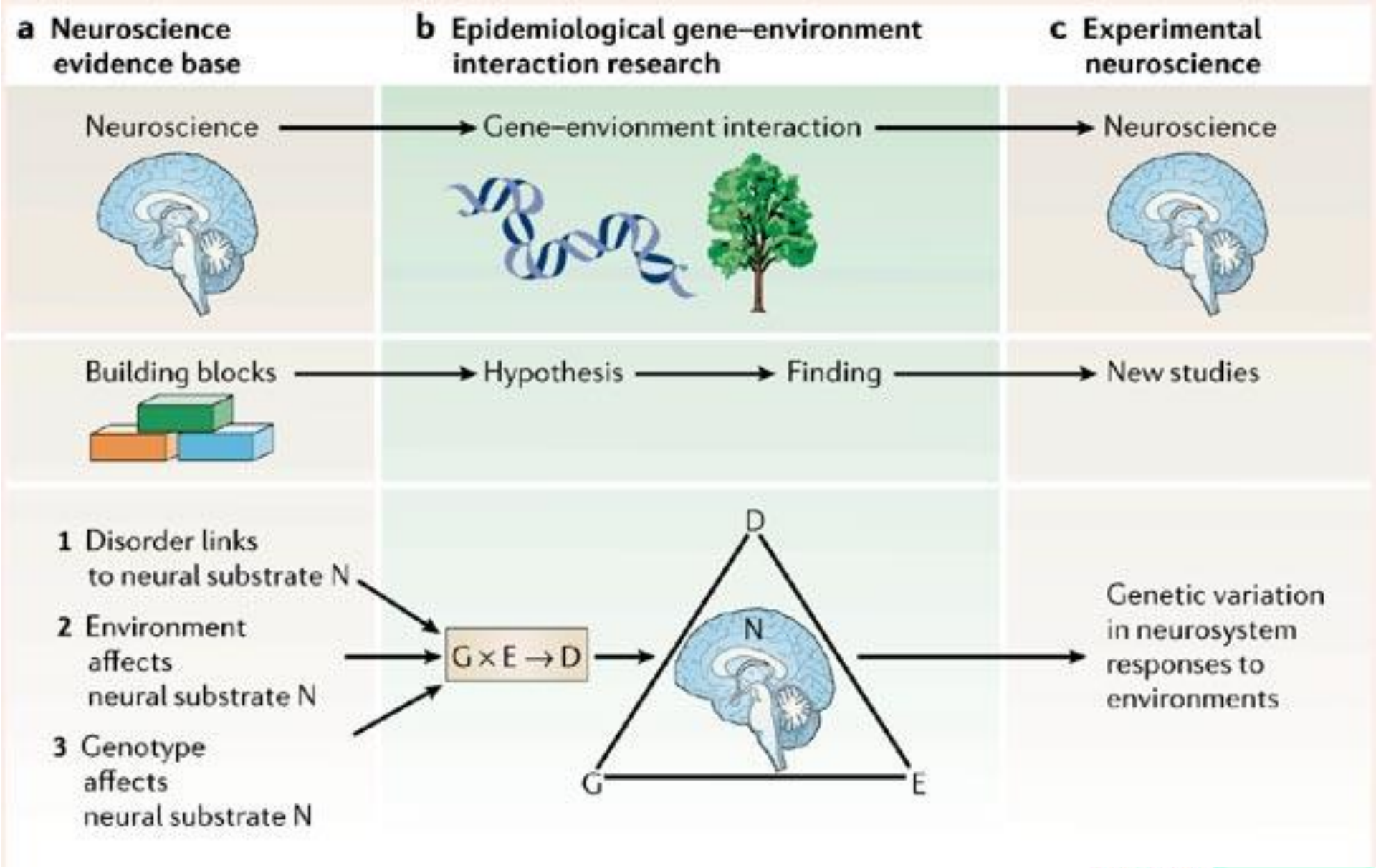


# “Gene–environment interactions in psychiatry: joining forces with neuroscience”

*Caspi A and Moffitt TE (2006)* NATURE REVIEWS | **NEUROSCIENCE, p. 583-590**

- Gene–environment interaction research in psychiatry is paradigm for studying the mechanisms underlying psychopathology
- Mental disorders have known environmental causes, but there is much heterogeneity in the response to each causal factor
- Epidemiology has demonstrated gene–environment interactions exist in nature and affect a significant fraction of disease cases.
- Experimental neuroscience is now studying gene–environment hypotheses and investigating underlying neural mechanisms.
- Major focus of research is on learning which gene-environment interactions are the most salient determinants of psychopathology

# Integrating neuroscience and G x E interaction research




Caspi *et al. Nature Reviews Neuroscience* **7**, 583–590 (July 2006) | doi:10.1038/nrn1925

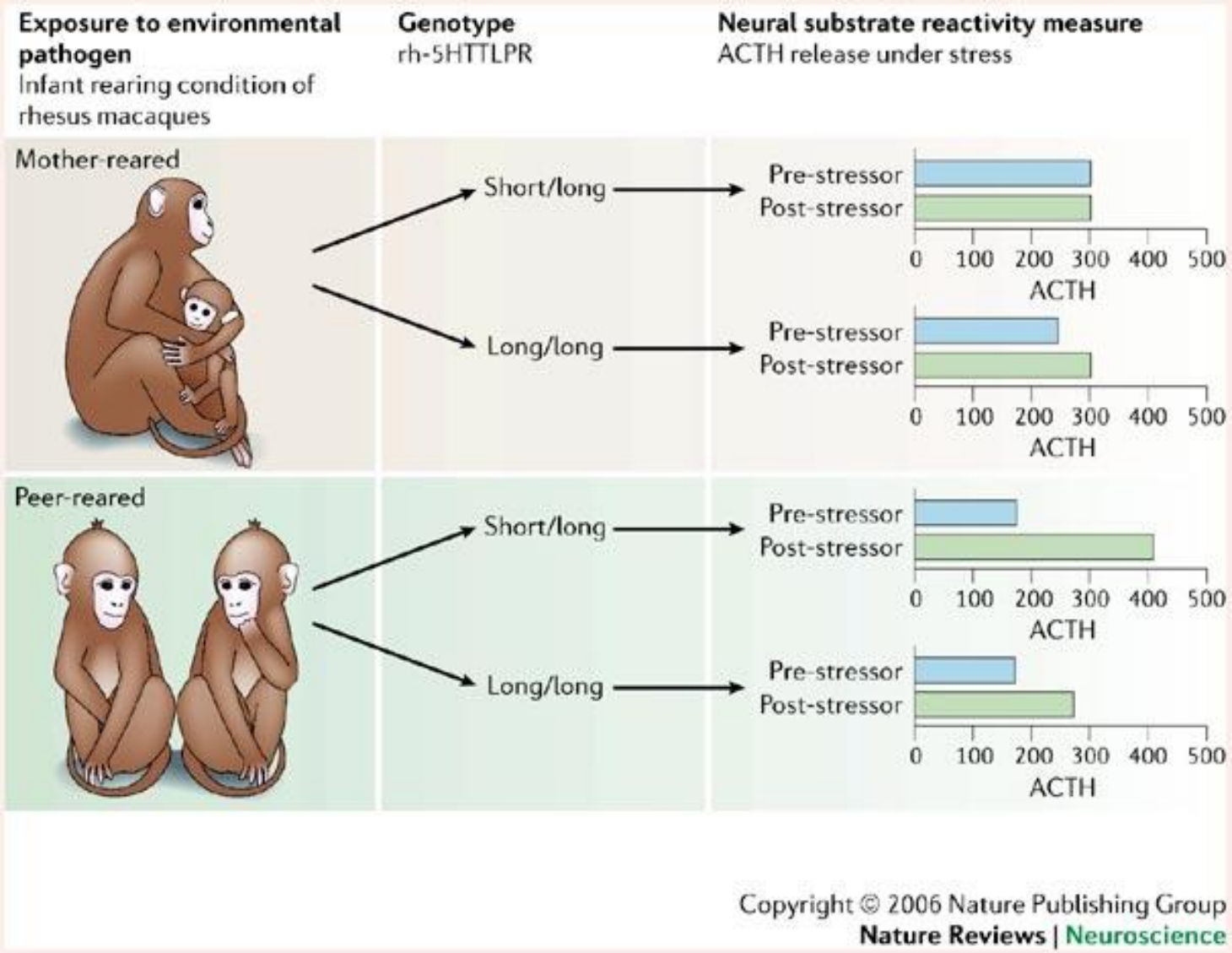
nature REVIEWS NEUROSCIENCE

# Gene x Environment Interactions: Evidence from Primate Research

# Individual Variations in Rhesus Monkey Temperament and in Monkey Mother-Child Interactions

S Suomi, NIH

# Exposure to adverse rearing, genotype and ACTH levels



# Poorly Nurtured Rhesus Monkey Infants

## Developmental Outcomes

- Increased anxiety and depression as adults
- Excessive alcohol consumption
- Impulse aggression and violent behavior
- Females tend to be poor mothers
- Highest risk in those genetically predisposed to high cortisol levels during development

# Poorly Nurtured Rhesus Monkey Infants

## Biological Changes

- High cortisol levels in response to mild stress
- Chronic deficits in serotonin metabolism
- Disrupted circadian rhythms from cortisol imbalance

# Gene–environment interactions in developmental psychopathology: Selective literature review

## Illustrative Studies

- Observational
  - Polymorphism in the MAO-A gene might contribute to aggression and violence in maltreated children
  - Variation in the promoter of the 5-HTT gene shapes depressogenic responses to life stress
  - Polymorphism of the COMT gene may moderate effects of cannabis use and alter the onset of adult psychosis
- Hypothesis testing
  - Interactions between DRD4 and DAT polymorphisms and maternal smoking alters the risk for offspring to develop ADHD

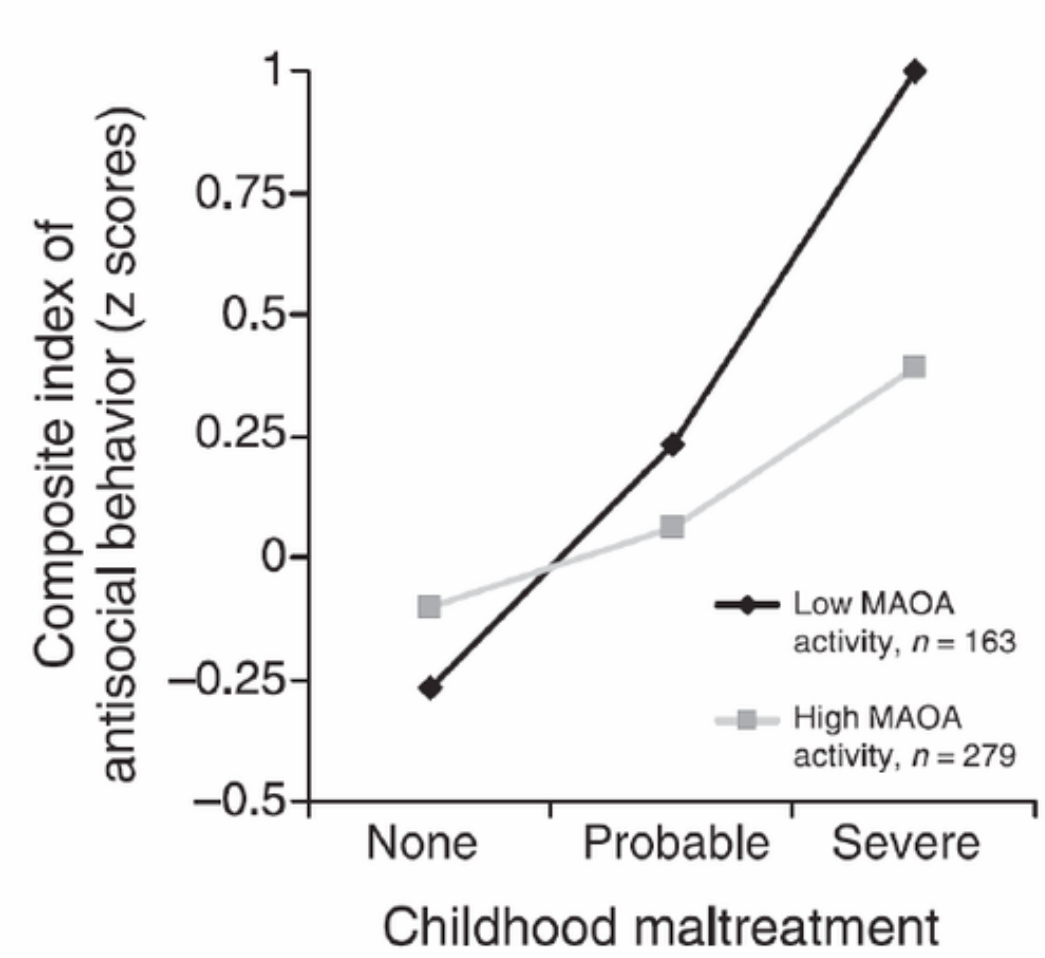
# Role of phenotype in the cycle of violence in maltreated children

Caspi A, McClay J, et al, *Science* 2002

- Caspi and colleagues studied a representative birth cohort of 1037 Australian children (52% male) over a period of more than 25 years (Dunnedin study)
- Subjects were assessed at ages 3, 5, 7, 9, 11, 13, 15, 18, and 21; the study cohort was virtually intact (96%) at age 26 years
- Caspi and colleagues identified a functional polymorphism in the promoter region of the Monoamine Oxidase A (MAO-A) gene that was found to moderate the effects of childhood maltreatment
  - Maltreated children with a genotype conferring high levels of MAOA expression were less likely to develop antisocial problems

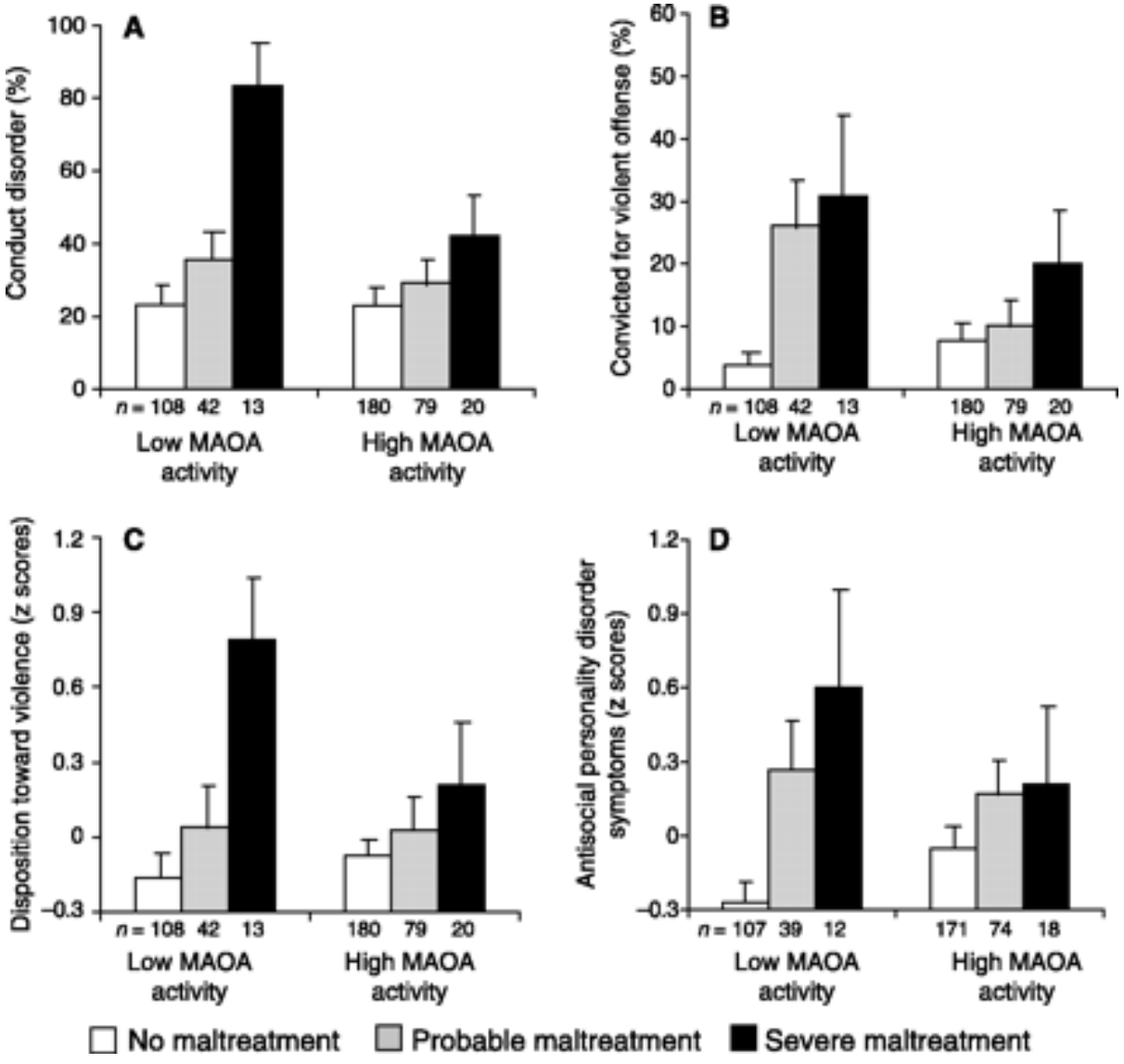
# Composite index of antisocial behavior as a function of MAO A activity

Caspi A, McClay J, et al, *Science* 2002



# Association between childhood maltreatment and subsequent antisocial behavior as function of MAOA activity

Caspi A, McClay J, et al, *Science* 2002



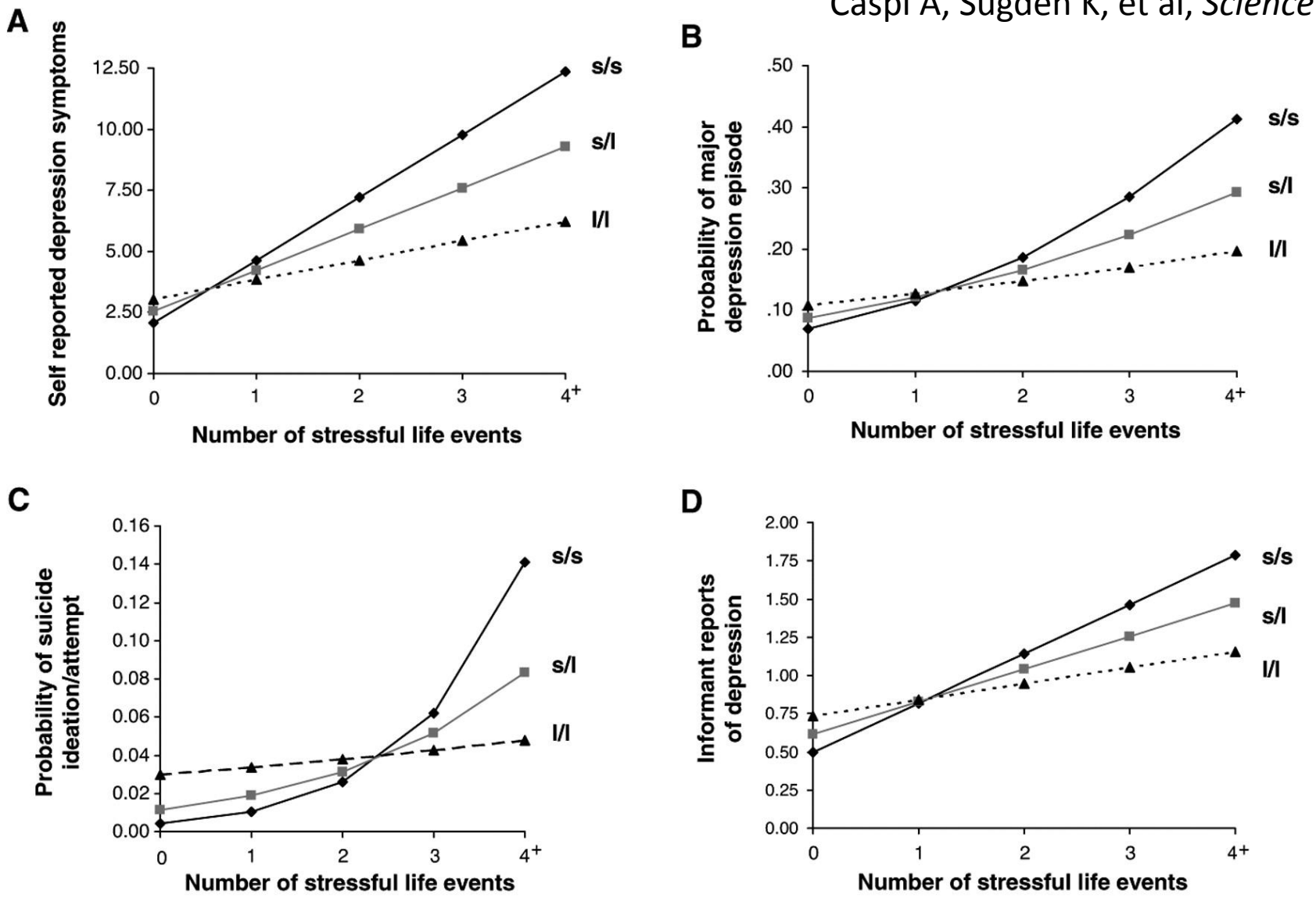
# Influence of Life Stress on Depression: Moderation by a Polymorphism in the 5-HTT gene

Caspi A, Sugden K, et al, *Science* 2003

- Caspi and colleagues studied a representative birth cohort of 1037 Australian children (52% male) over a period of more than 25 years (Dunnedin study)
- Subjects were assessed at ages 3, 5, 7, 9, 11, 13, 15, 18, and 21; the study cohort was virtually intact (96%) at age 26 years
- Caspi and colleagues identified a functional polymorphism in the promoter region of the serotonin transporter (5-HTT) gene that was found to moderate the influence of stressful life events on depression

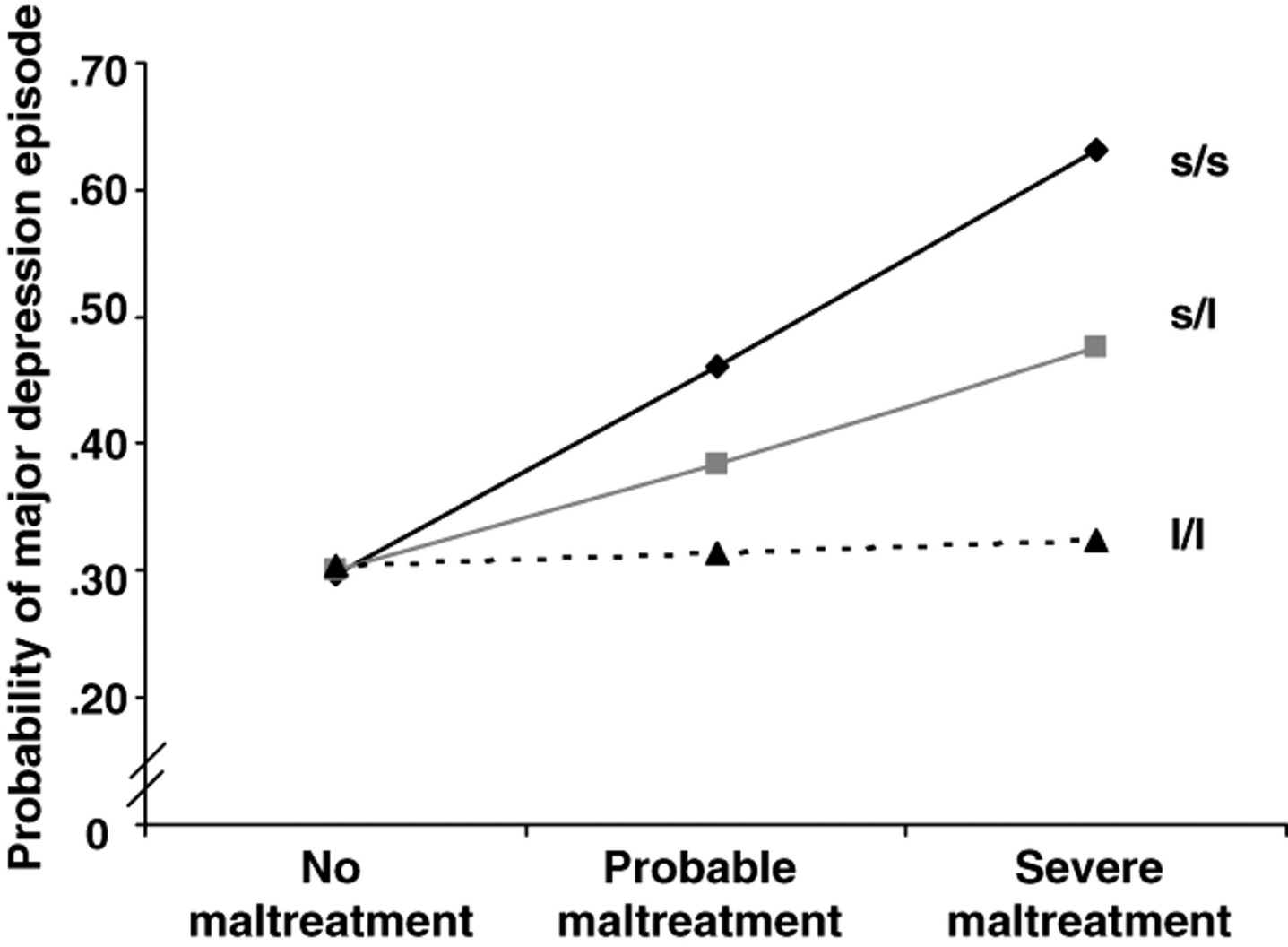
# Results of multiple regression analyses estimating the association between number of stressful life events (between ages 21 – 26 years) and depression outcomes at age 26 as a function of 5-HT T genotype

Caspi A, Sugden K, et al, *Science* 2003



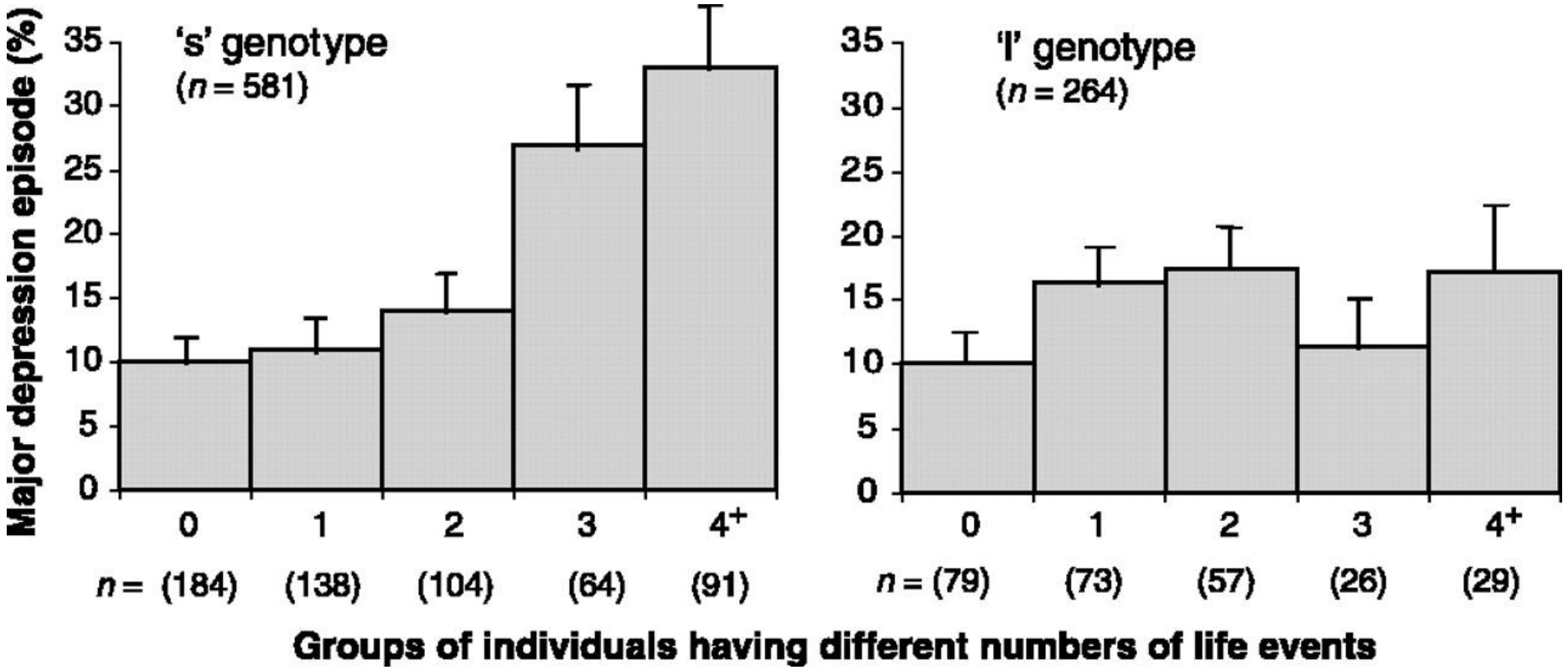
# Results of regression analysis estimating association between childhood maltreatment (between the ages of 3 and 11 years) and adult depression (ages 18 – 26), as a function of 5-HT T genotype

Caspi A, Sugden K, et al, *Science* 2003



**The percentage of individuals meeting diagnostic criteria for depression at age 26, as a function of the 5-HT T genotype and number of stressful life events between the ages of 21 and 26 years**

Caspi A, Sugden K, et al, *Science* 2003



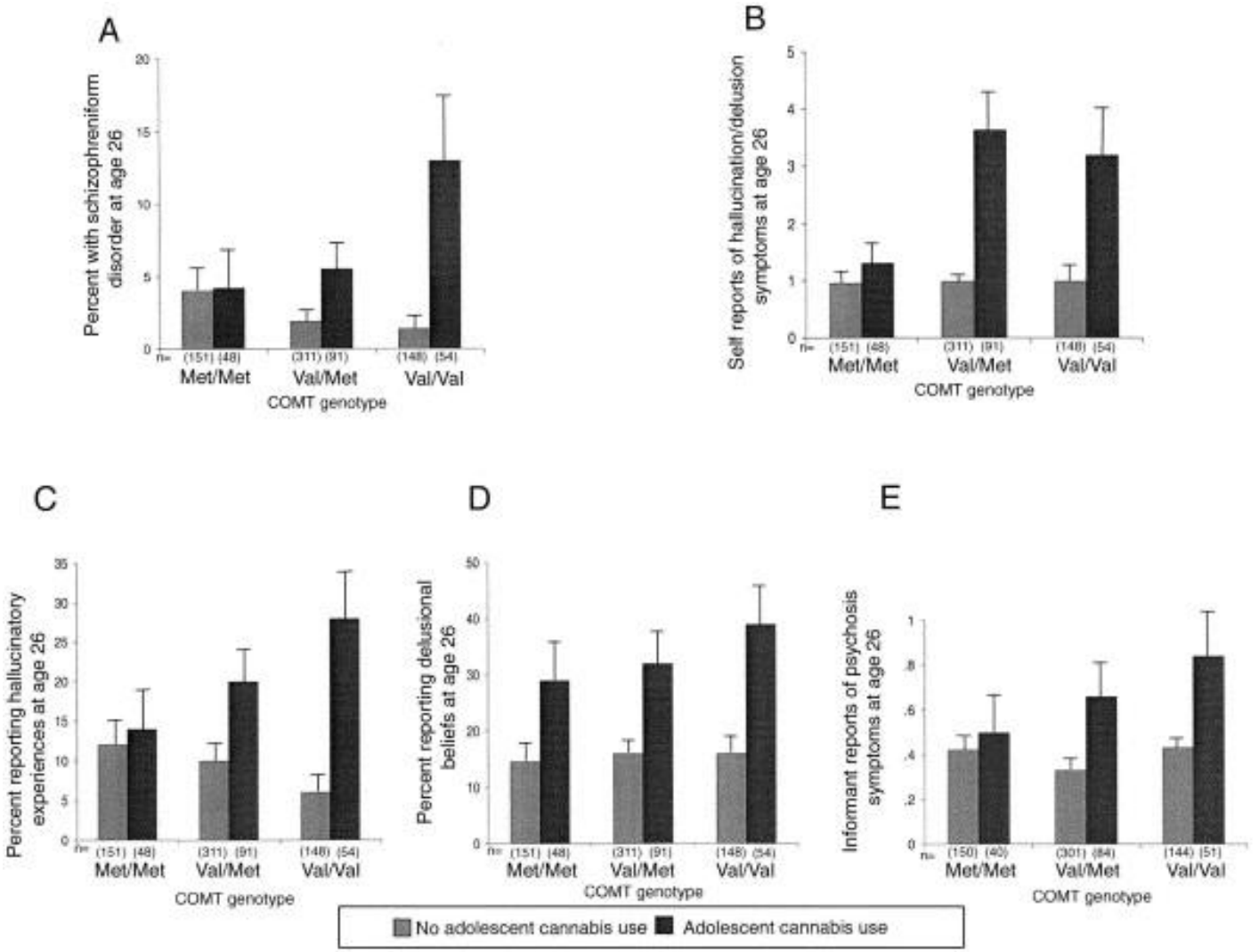
# Moderation of the Effect of Adolescent-Onset Cannabis Use on Adult Psychosis by a Functional Polymorphism in the COMT Gene: Longitudinal Evidence of a Gene X Environment Interaction

Caspi A, Moffit TE, et al *Biol Psychiatry* 2005

- Caspi and colleagues studied a representative birth cohort of 1037 Australian children (52% male) over a period of more than 25 years (Dunnedin study)
- Subjects were assessed at ages 3, 5, 7, 9, 11, 13, 15, 18, and 21; the study cohort was virtually intact (96%) at age 26 years
- The researchers found that functional polymorphisms in the catechol-O-methyltransferase (COMT) gene moderated the influence of adolescent cannabis use on developing adult psychosis.
  - Carriers of the COMT valine158 allele were most likely to exhibit psychotic symptoms and to develop schizophreniform disorder if they used cannabis.
  - Cannabis use had no such adverse influence on individuals with two copies of the methionine allele.

# Moderation of the Effect of Adolescent-Onset Cannabis Use on Adult Psychosis by a Functional Polymorphism in the COMT Gene: Longitudinal Evidence of a Gene X Environment Interaction

Caspi A, Moffit TE, et al *Biol Psychiatry* 2005



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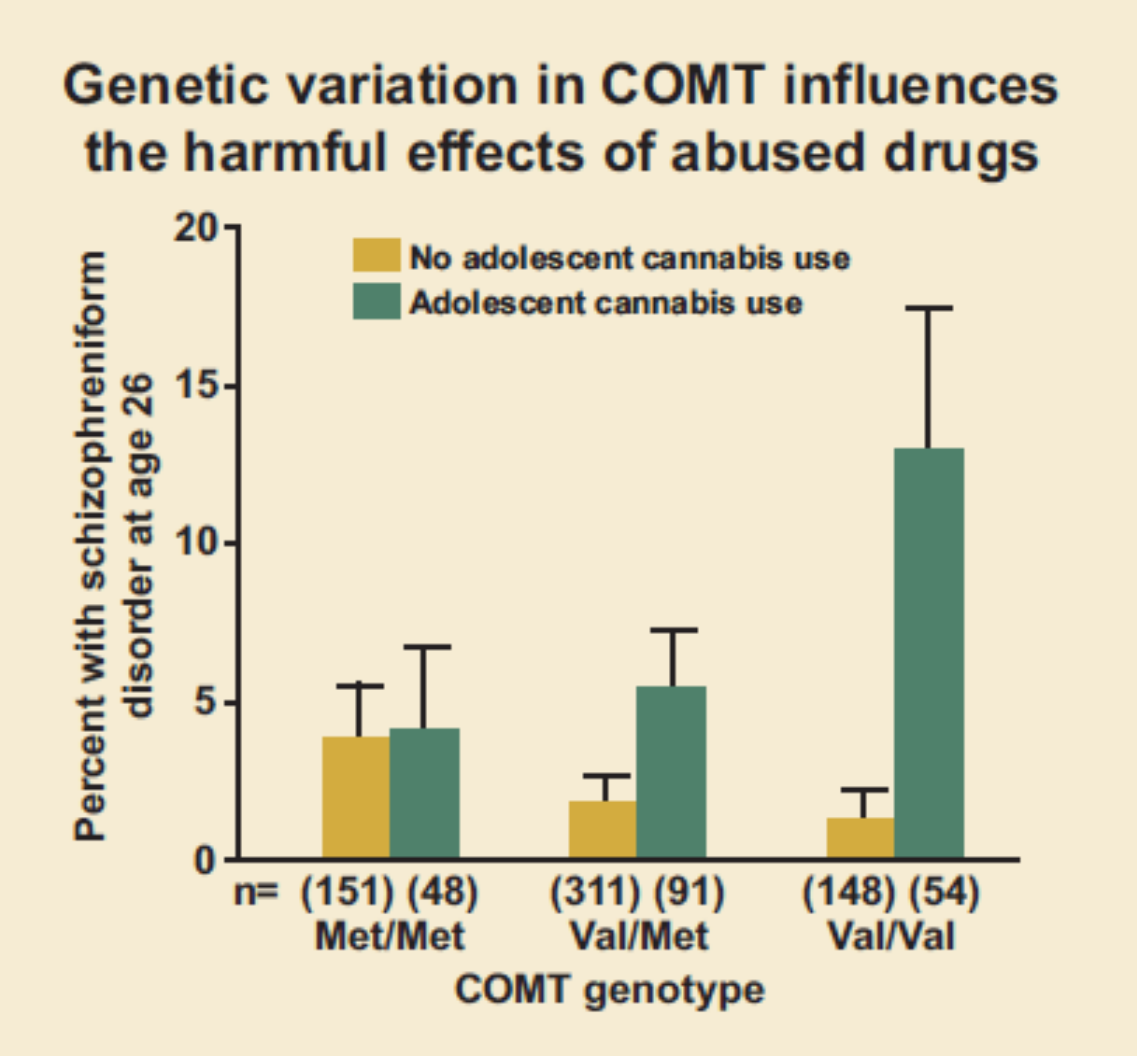
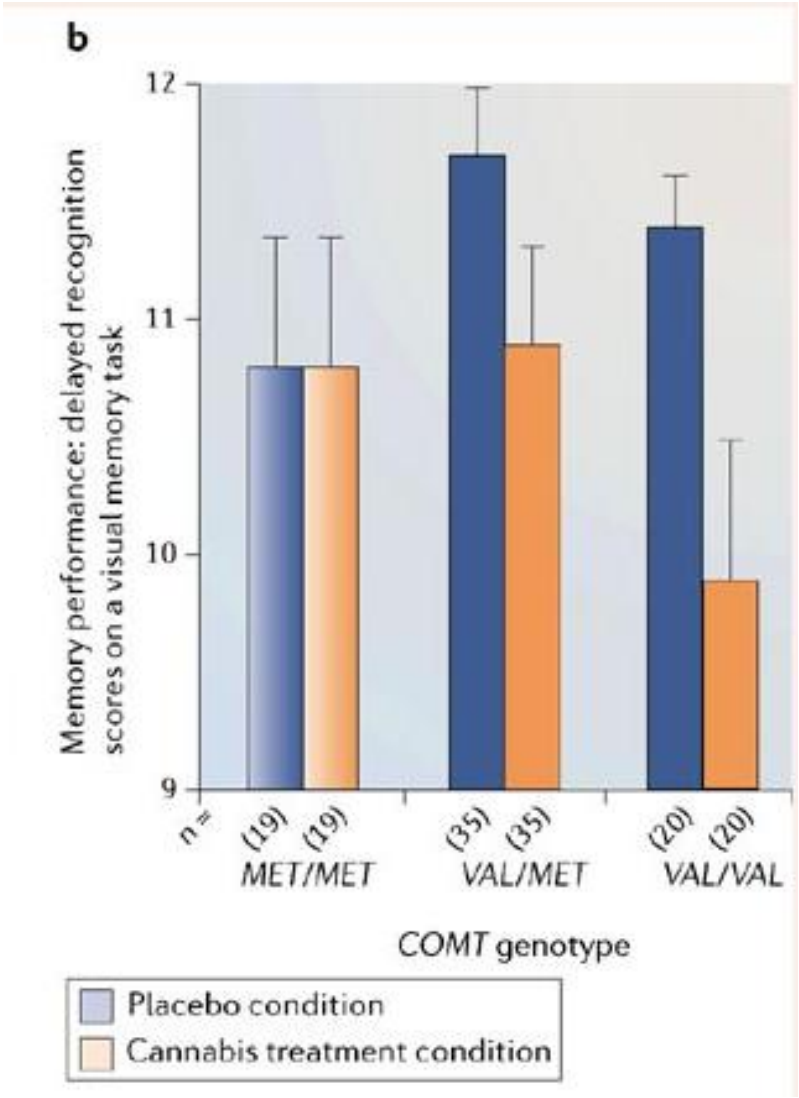


# An experimental study of catechol-o-methyltransferase Val158Met moderation of delta-9-tetrahydrocannabinol-induced effects on psychosis and cognition.




Henquet C et al (2006) *Neuropsychopharm*

A double-blind, placebo-controlled cross-over study of patients with a psychotic disorder (n=30), relatives of patients with a psychotic disorder (n=12), and healthy controls (n=32) who were exposed to Delta-9-THC, the principal component of cannabis or placebo, followed by cognitive assessment and assessment of current psychotic experiences

# Prenatal Smoking Exposure and Dopaminergic Genotypes Interact to Cause a Severe ADHD Subtype

Neuman RJ, et al (2007) *Biol Psych*

**Aim:** To examine the joint effects of genetic and prenatal substance exposures on DSM-IV and population-defined subtypes of ADHD.

**Sample:** The study sample was drawn from twins identified from birth records of the state of Missouri who had participated in a genetic epidemiology study of the prevalence and heritability of ADHD. The total sample included 812 complete male and female twin pairs and six individual twins ages 7–19 years at the time of interview.

**Methods:** Logistic regression was used to assess the relationship between ADHD subtypes, DAT1 and DRD4 polymorphisms, and prenatal substance exposures in a birth-record sample of male and female twin pairs, aged 7–19 years. Parents were interviewed about their twins using the Missouri Assessment of Genetics Interview for Children (MAGIC) to obtain DSM- IV diagnoses and individual symptom information. Mothers were rated on their rates of smoking and alcohol use during pregnancy. Children were genotyped for polymorphisms in the DAT and DRD4 alleles

# Prenatal Smoking Exposure and Dopaminergic Genotypes Interact to Cause a Severe ADHD Subtype

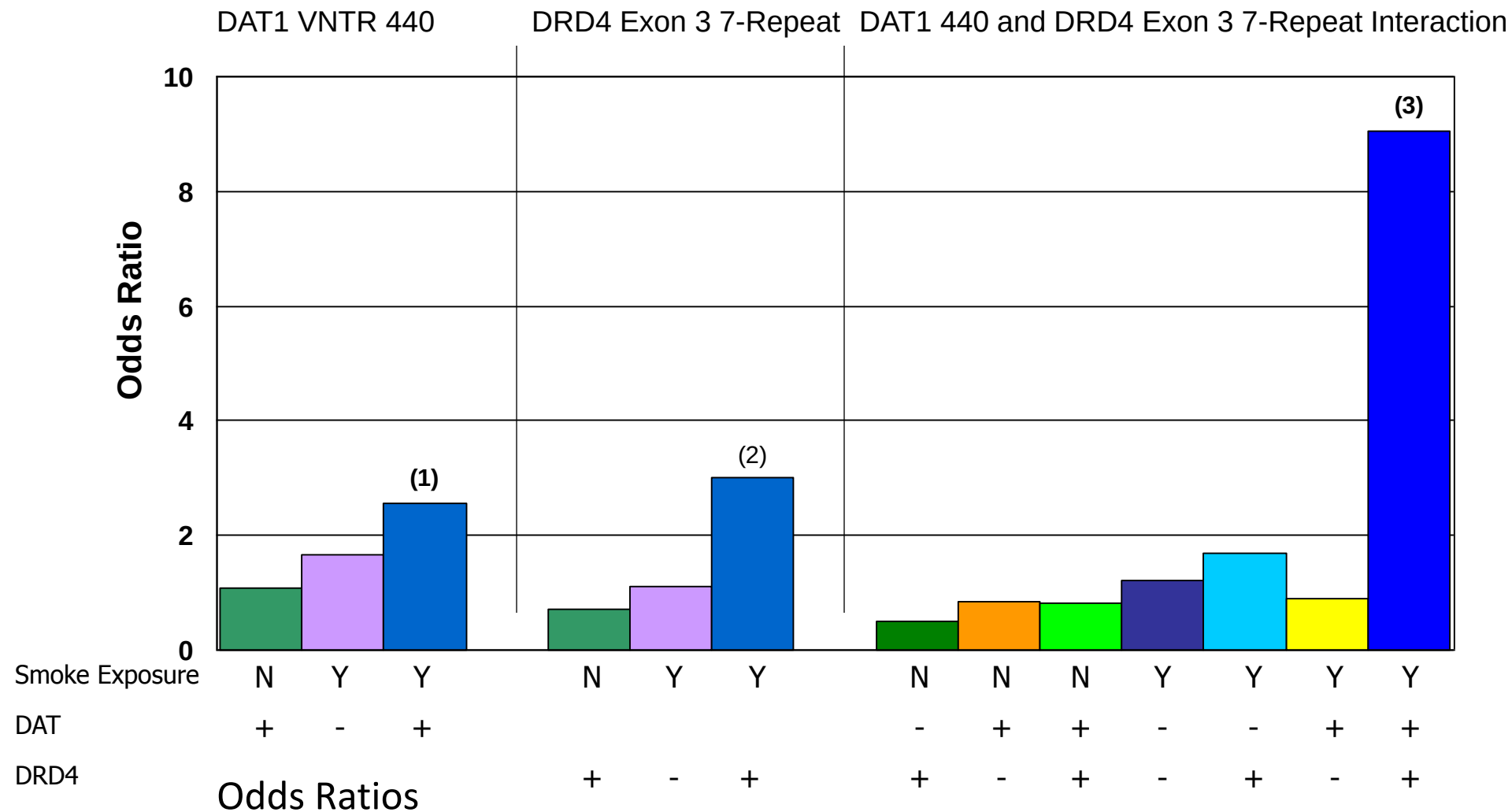
Neuman RJ, et al (2007) *Biol Psych*

Results: The odds of a diagnosis of DSM-IV combined subtype was 2.9 times greater in twins who had inherited the DAT1 440 allele and who were exposed, than in unexposed twins without the risk allele. The OR was 2.6 in the population-defined subtype. Odds ratios for the DRD4 seven-repeat allele were 3.0 (2.8) in the population-defined (DSM-IV) combined ADHD subtypes. The OR for exposed children with both alleles was 9.0 (95% confidence interval2.0–41.5) for the population defined combined subtypes.

**Conclusions:** Results indicate that smoking during pregnancy is associated with specific subtypes of ADHD in genetically susceptible children.

# Prenatal Smoking Exposure and Dopaminergic Genotypes Interact to Cause a Severe ADHD Subtype

Neuman RJ, et al (2007) *Biol Psych*




Odds Ratios

(1) 2.56[1.10, 5.95] (2) 3.01[1.14, 8.00] (3) 9.03[1.96, 41.61]

# Summary

- Developmental psychopathology is a macro-paradigm that incorporates multiple frameworks for studying the etiology of mental disorders
- Gene x Environment interactions have been shown to play a significant role in the development of psychopathology
- New research studies are clarifying the mechanisms by which environmental risks may combine with constitutional (genetic) factors to cause psychiatric disorders

# Everything Psychiatrists Need to Know about Basic Neuroscience

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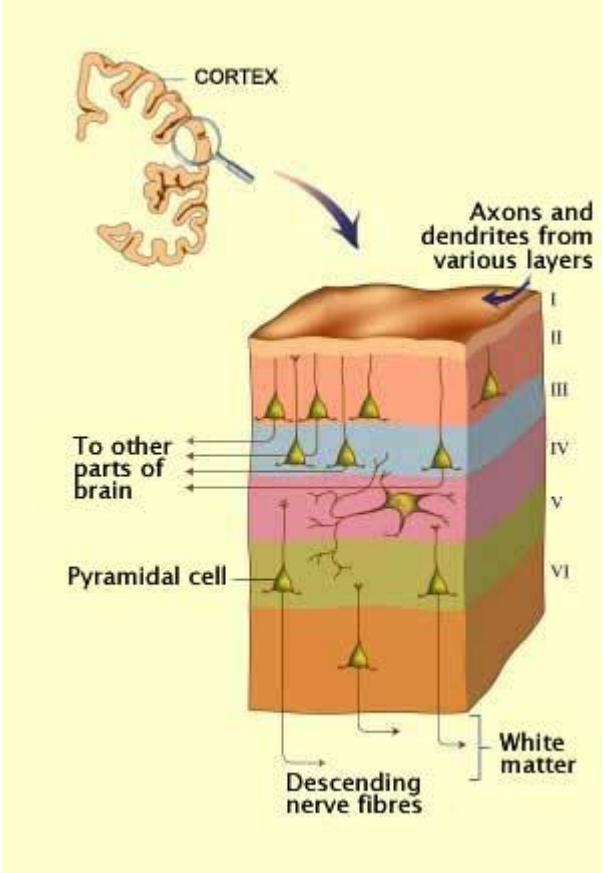
Note: Blue highlight = key words or concepts. Yellow highlight = something of clinical significance for psychiatrists.

# 1. The Psychiatrist's Brain is the CORTEX, so we should know something about that.

The Brain is made up of Gray and White Matter.

The Cortex is the Gray matter, which is the thin (about 2 -3 mm thick depending on the area), outermost portion of the brain. It's where the cells are and, since it controls higher order brain functions, it's pretty much where all of our psychiatrist diseases are happening. The cells are organized in 6 layers, which is important since this organization is disrupted in some diseases (e.g., schizophrenia).




1. Cerebral cortex.

When we talk about brain cells, we are mostly talking about pyramidal cells, since 75% of neurons are pyramidal cells. They receive signals from other neurons (usually excitatory from other regions, and inhibitory from local interneurons neurons), and project out to other areas of the cortex or to deeper structures.

The white matter is under the gray matter and is made of myelinated axons, which can be thought of as the connective cabling of the brain. Although this seems less exciting than all those neurons the fact is we are increasingly appreciating the importance of connectivity, both in terms of higher order functions as well as in psychiatric diseases.

For example, when the brain receives inputs from the retina, the signals are processed in the primary visual cortex, in the occipital lobe, but then the signals are sent in 2 directions: ventrally toward the temporal lobe, which processes information about what we are looking at, and dorsally toward parietal lobe which figures out the location, movement and direction of the object (thus ventral = "what", dorsal = "where", which is how not just sight but how many of our senses are processed)

## 2. The Brain has a LOT of different areas that do different things. As psychiatrists, we don't have to know that many of them (yet). Here are some of the areas that are the most important for psychiatrists to know.

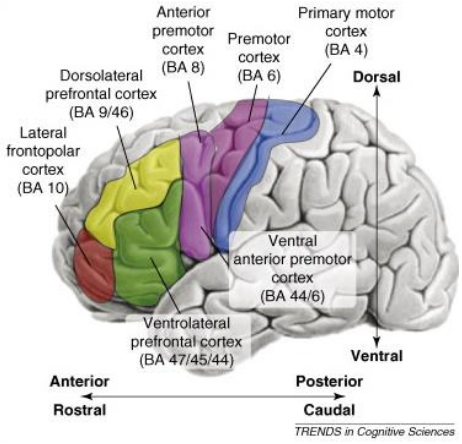
**The Prefrontal Cortex (PFC).** This varies a lot between different mammals, is biggest in humans, and is the area of the brain that gives us our "humanness." It is located, as the name suggests, in front of the motor cortex, and is organized into 4 regions. A lot of what we know about what these regions do comes from our knowledge of what happens when they are damaged, hence "deficit syndromes" or "frontal lobe syndromes."

*Dorsolateral.* This area seems responsible for organization and deficits in this area result in cognitive dysfunction, poor judgment or insight, concrete thinking and a decrease in spontaneous behaviors

*Ventromedial.* This area is involved in motivation, and deficits result in apathy, little spontaneous behavior or verbal output

*Orbital (sometimes called orbitofrontal).* This area controls inhibition and deficits result in poor impulse control.

*Anterior cingulate.* This is less well understood, but seems really important. It seems to have an important role in error detection, anticipation of tasks, attention and modulation of emotional responses.

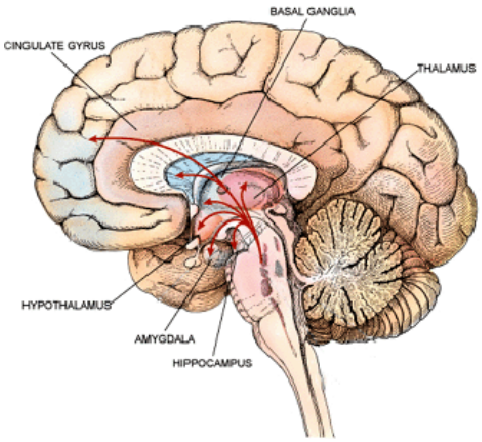



2. Some areas of the prefrontal cortex. Note that it seems there is never total agreement on exact wordings!

**The Limbic "lobe".** Not really a lobe, and we no longer think of a simplistic "limbic system" that acts as the seat of emotions. No one can agree on exactly what structures belong. However, it still remains a convenient way to organize some neuroanatomical structures that are related by location, connection and at least some functions.

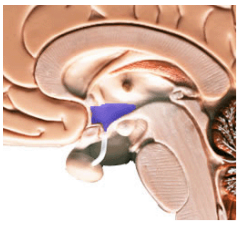
Hippocampus. Involved in memory formation. One of the few areas in which neurogenesis persists into adulthood. The volume of this area is decreased for some disorders, including Alzheimer's and major depression.

*Amygdala.* This links sensory input from the cortical regions to the hypothalamus and brain stem. It activates when people are angry or anxious, and the lack of an amygdala can make people "fearless."

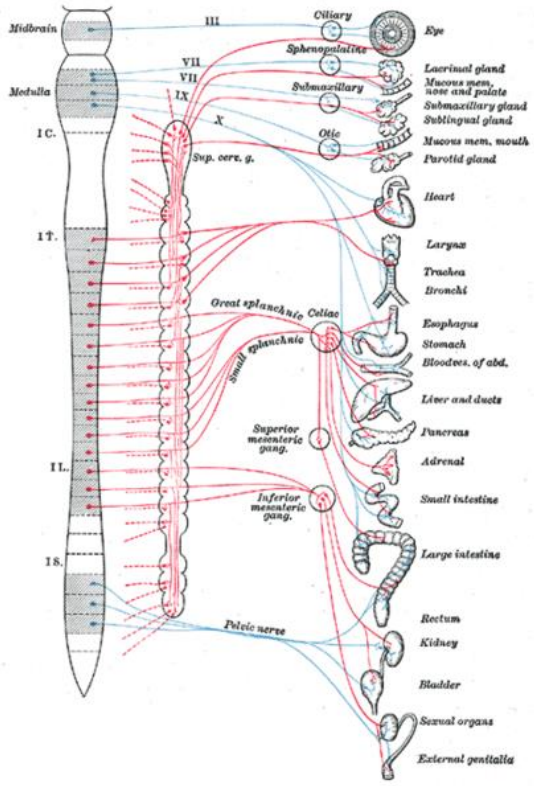



4. Limbic system.

**Hypothalamus.** Involved in homeostasis, such as eating, drinking, sleeping and temperature regulation. It receives input from lots of areas, including the cortex, brain stem, chemoreceptors and hormonal feedback, thus has a regulatory role over these basic functions. Lesions can impair, such as a lesion in the suprachiasmatic nucleus of the hypothalamus can ruin one's sleep/wake cycle.



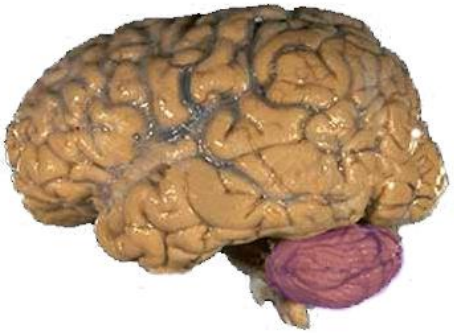
3. Hypothalamus.




5. ANS.

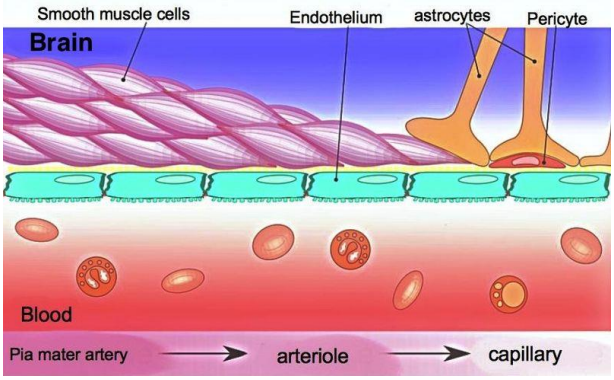
**Autonomic Nervous System (ANS).** This is the link between our brain and our vital organs. It is organized into the sympathetic and parasympathetic divisions, and they have a parallel but opposite effect: the sympathetic division is associated with arousal and is responsible for the "fight or flight" response, whereas the parasympathetic controls functions that require calm (such as digestion). Psychiatrists particularly worry about these systems when they are responsible for side effects of drugs, for example tricyclic antidepressants (TCAs) block the parasympathetic system. We also are interested in this system because it is bidirectional, which is why vagal nerve stimulation (the vagus nerve conveys the parasympathetic projections) is a viable treatment option.

**Cerebellum.** The Cerebellum, often thought of as a "lesser" brain, mainly involved with motor coordination and other basic functions, is getting new respect. It should, as it has the greatest number of neurons in the brain. It seems to have a great variety of roles, including cognitive, and probably has an auxiliary function – it may be that our cortex is able to "offload" tasks to the cerebellum.



6. Cerebellum (in purple).

**Blood Brain Barrier (BBB).** The BBB creates a protected area for the brain, shielding it from our noisy, chaotic environment. It is composed of capillary junctions, which are tightly fitted. There are some gaps, for ex. at the pituitary and hypothalamus which need a direct connection to our endocrine system. Elsewhere it is very effective, keeping out 98% of small molecules and all of the big ones. It is lipid soluble however, so lipophilic molecules can get through.




7. Blood brain barrier schematic.

## 3. Cells:
## We should know something about them, since they are what the brain is made of.

**Neurons.** We have 100 billion neurons with 100 trillion connections, so, yes, the brain really is the most complicated thing we know – way more than any computer. Neurons make up only 3% of our body weight but consume nearly 1/5 of our total energy. Neurons have the usual cell parts, although some things are specialized/adapted for the neuron's unique functions:

*Nucleus:* has the DNA, which is transcribed to RNA.

*Ribosomes:* usually found on endoplasmic reticulum, transcribes RNA to proteins.

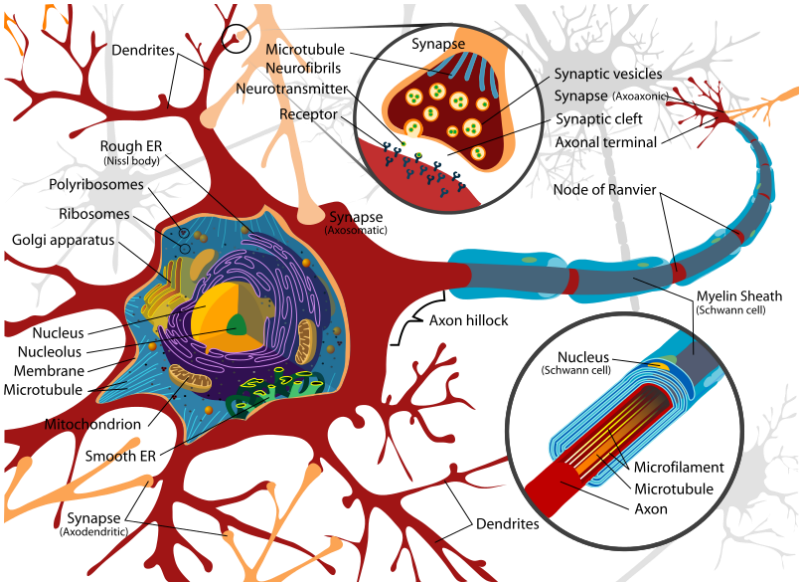
*Golgi apparatus:* post translation processing, sorting and storage.

*Mitochondria:* our cellular "energy pack" which convert ADP to ATP.

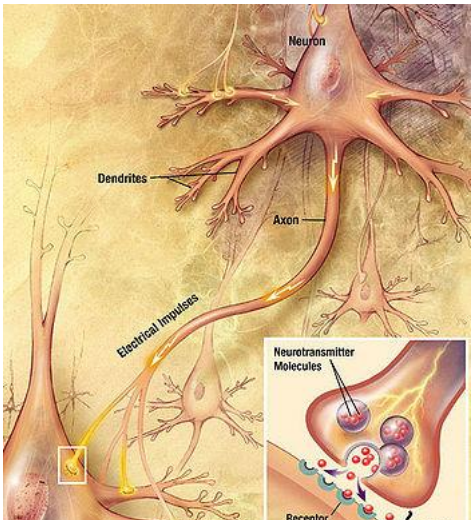
*Dendrites:* specialized structures designed to receive input (dendritic spines, which are postsynaptic receptors). These are plastic and changes in the spines are associated a growing number of psychiatric diseases.

*Axons:* transmit signals. No processing occurs in the axons, so materials have to be efficiently moved down the axon ("axonal transport"). At the synapse, the electric signal is converted to a chemical signal (using chemical transmitters stored in vesicles).

*More on electric signaling.* This is a unique role of the neurons, which convey information through electricity (that is, ions). Normally, cells maintain a negative charge relative to the extracellular space (about 60 mV). When dendrites receive the appropriate signals, it creates a postsynaptic potential, created through ion influxes (e.g., $Na^+$ for excitatory signals, $Cl^-$ for inhibitory). The different impulses in the dendrite are summed, and if high enough, this creates an action potential, which is an electrical impulse that is sent down the axon. This is performed by



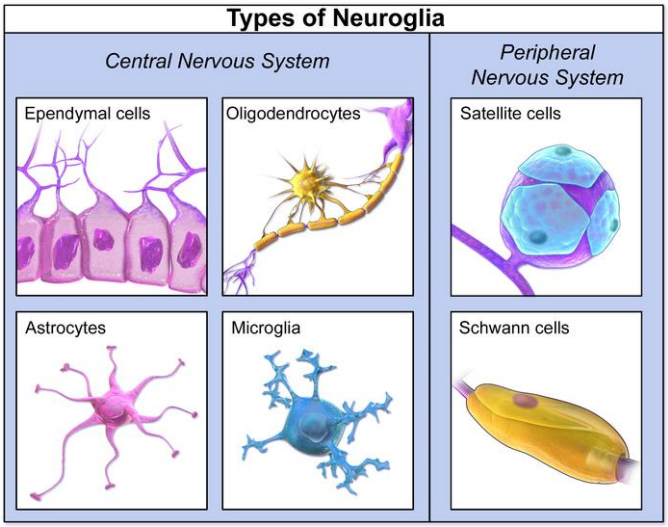

8. Neuron.




9. Signal propagation.

voltage-gated (meaning that they are opened by the appropriate nearby electrical voltage change) channels, which are arranged along the axon, allowing in $Na^+$ so that the signal continues down the axon without any loss of strength. At the terminus, voltage-gated $Ca^{+2}$ channels then help release the neurotransmitter.

**Non-neuronal cells: the glial cells.** Traditionally we have thought of these as having a supportive role, but they are probably more important than we realize. There are 3 types:



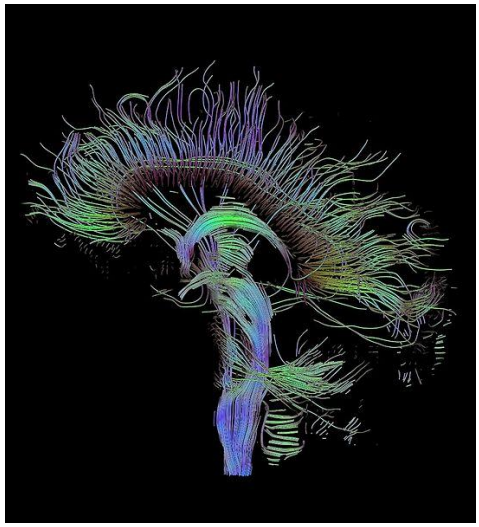

10. Glial cells.

*Astrocytes.* These help support the blood brain barrier, regulate CSF and provide nutrition for neurons. They seem to be able to release neurotransmitters as well.

*Oligodendrocytes.* These are akin to the Schwann cells in the periphery. They wrap myelin around the axons, which acts as insulation. A lot of this happens in the early years of life, which is why motor skills improve so quickly in infants and toddlers. Demyelinating diseases impair these motor skills: common examples are multiple sclerosis and Guillain-Barre disease; demyelination may have a role in epilepsy and schizophrenia as well.

*Microglia.* These act like microphages in the periphery, responding to injury and removing debris.

**Circuits.** Cells are important, but when it comes to behavior, it's all about connection. A number of disorders are thought related to hypothetical connection problems (e.g., evidence of OCD associated with "worry circuit": orbital PFC, caudate nucleus, basal ganglia, cingulate gyrus, thalamus). We have had trouble researching these because they are hard to isolate and study, however Diffusion Tensor Imaging (DTI) which is good at visualizing white matter and brain connectivity, will help.



11. DTI image of neuronal connections.

## 4. Neurotransmitters. This is how neurons communicate with each other and with other cells (motor).

We can divide up the different neurotransmitters into the classic ones, neuropeptides, and such unconventional neurotransmitters as gases and endocannabiniods.

**Classic Neurotransmitters: the amino acids and monoamines.**

**Amino Acids.** These are the most common neurotransmitters in the brain.

*Glutamate* is the most common and has an excitatory role (makes its target more likely to fire an action potential). There is probably no end to its clinical relevance; however it clearly has a role in memory. Of note, too much glutamate is neurotoxic (e.g. it is released after a stroke and can worsen the damage from a stroke).

*GABA and Glycine* are inhibitory. GABA is used by at least a quarter of cells. Clinically, we think about it when we treat insomnia, pain and anxiety.

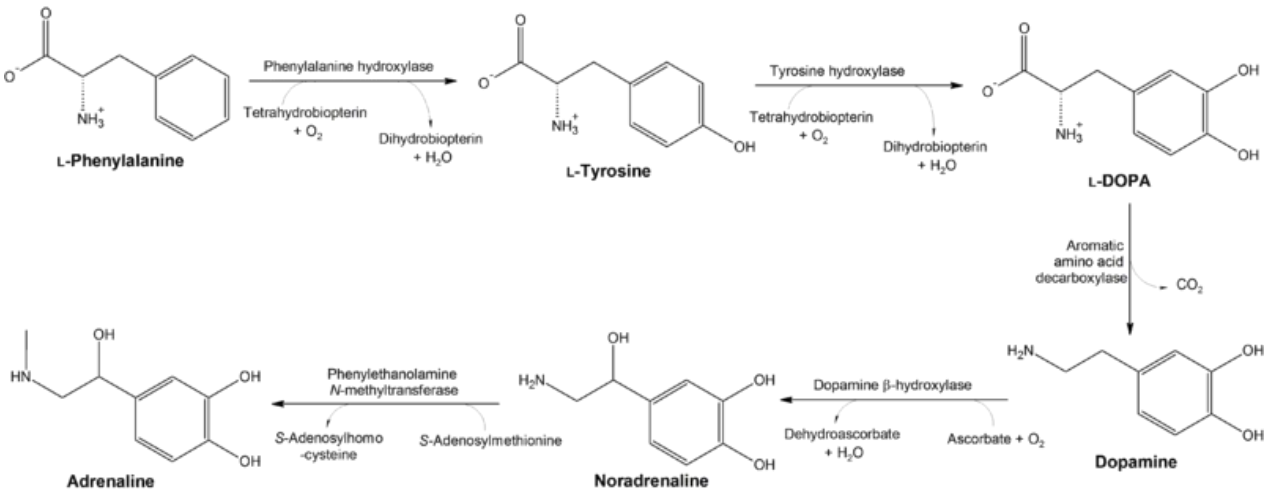
**Monoamines.** These are less common, but have longer more discrete connections, therefore they have a more a regulatory than direct role.

*The catecholamines.*

These are derived from tyrosine, which can be dietary or synthesized from phenylalanine (phe – an essential amino acid, meaning we can only get from food). Tyrosine hydroxylase converts tyrosine into L-DOPA, which is the precursor for all the catecholamines. DOPA decarboxylase then converts it to Dopamine (DOPA). (Clinically, we use L-DOPA for Parkinson's patients, since is crosses the BBB whereas DOPA cannot. Plus we add carbidopa, which is DOPA decarboxylase inhibitor).

*Dopamine (DA).* There are 3 main dopamine tracks in the brain.

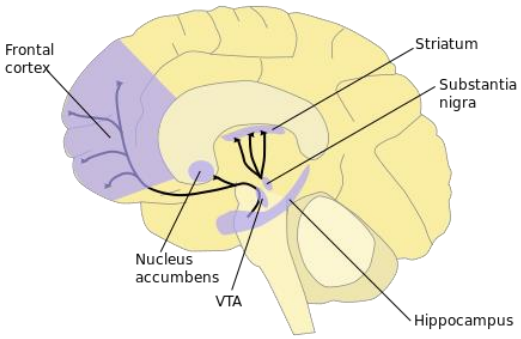
Nigrostriatal. From substantia nigra to caudate and putamen in the basal ganglia. Helps control voluntary movement. The loss of neurons here cause Parkinson's, and inhibition of them by antipsychotics and other medications are the basis of extrapyramidal side effects.




12. Synthetic pathway of the catecholamines.

Mesolimbocortical. From the ventral tegmental area (midbrain) to the limbic area (nucleus accumbens (NA), amygdala, hippocampus) and prefrontal cortex. Believed involved in reward pathways as well as schizophrenia.

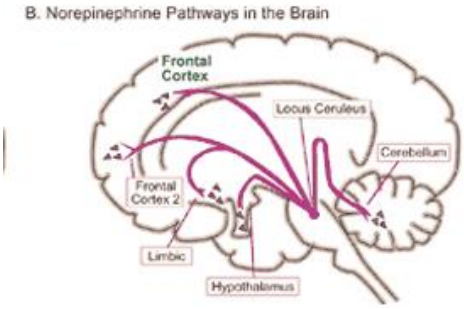
Tuberoinfundibular. Arcuate nucleus to pituitary. Inhibits prolactin synthesis. Dopamine antagonists (such as antipsychotics) can cause hyperprolactinemia.




13. Dopamine pathways.

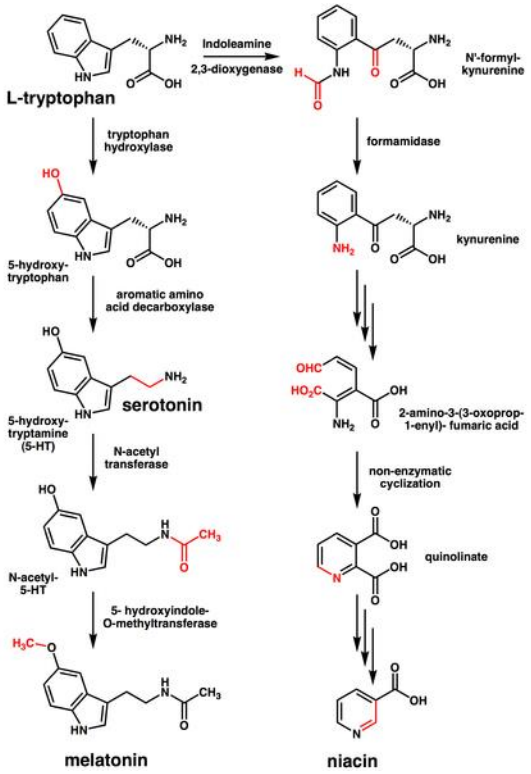
*Norepinephrine* *(NE or Noradrenaline, NA, in the UK).* From dopamine (via dopamine beta-hydroxylase), ½ of NE neurons are in the locus coeruleus, the rest are scattered around the medullary reticular formation. They project throughout the brain and are involved in alertness and response to threats. The molecule is cleared by a transporter (as is DOPA), and is involved in anxiety, depression.

*Epinephrine* *(adrenaline).* Most is peripherally produced in adrenal medulla. But some central. Involved in sympathetic stimulation.




14. Norepinephrine pathways.

*The Indoleamines.* These are derived from tryptophan, another essentially dietary amino acid.



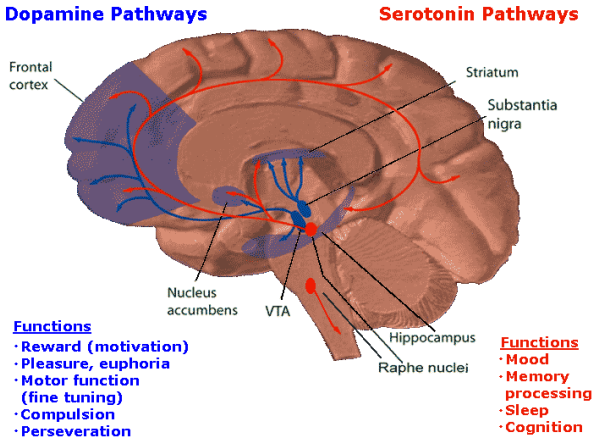

15 . Tryptophan metabolism.

*Serotonin (5-hydroxytryptamine of 5-HT).* Most is peripheral (platelet s, mast cells) but also in CNS, where is projects from the raphe nucleus throughout the brain. It is the object of much of our neurotransmitter-related research on depression, anxiety and sleep.

*Melatonin.* Converted from serotonin in the pineal gland, involved in regulation of sleep.

*Other Monoamines*

*Histamine.* Again, much of it is peripheral (allergic reactions), but central histamine is involved in arousal and attention. It projects from the tuberomammilary nucleus of the posterior hypothalamus to various parts of brain. Blocking it causes sedation. Activating histamine neurons can be a treatment for fatigue (e.g., modafanil).




16. Serotonin and dopamine pathways.

*Acetylcholine.* This was the first neurotransmitter discovered (in the 1920s). It's not really a monoamine, but is usually grouped with them because it acts similarly. Its main functions are peripheral, where it is involved with the ANS and is the prime neurotransmitter at the neuromuscular junction. Centrally, it projects from the brain stem and forebrain to the cortex and hippocampus. It is involved in memory (hence the action of cholinesterase inhibitors to partly compensate for the loss of cholinergic neurons), and, in the striatum it helps to balance dopamine (which is why anticholinergic medications are used in Parkinson's disease).

**Neuropeptides.** These are chains of amino acids which have been recognized for years for their role in the periphery; more recently we have come to appreciate their role in the CNS. Examples include: pituitary peptides (ACTH, LH, Oxytocin), hypothalamic releasing peptides (CRH, GRH, TRH) opioid peptides (beta-endorphin), angiotensin and bradykinin. They often have a modulatory role, meaning that they don't generate an action potential, but rather enhance or inhibit the effects of the classic neurotransmitters.

**Gases.** These include nitrous oxide, created in glutamate neurons which can diffuse easily across membranes to affect second messengers.

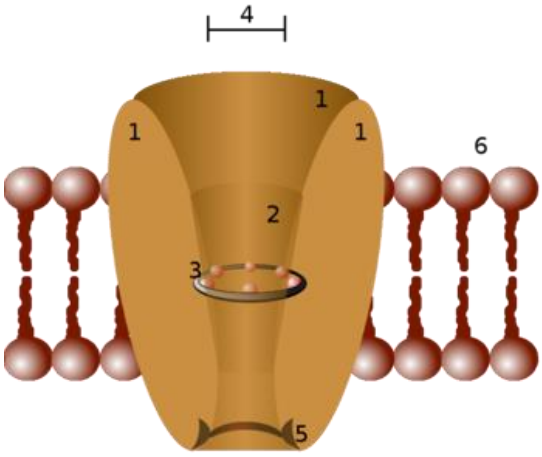
**Endocannabinoids,** whose receptors are widely expressed in the brain, and diffuse across the synaptic space to inhibit presynaptic neurotransmission, thus "calming" neuronal activity. Research on them is increasing owing to interest in the possible medical effects of marijuana. Clinically, they have a role in nausea, glaucoma and pain, but have significant side effects (psychosis, depression). Although they have been anecdotally reported helpful for anxiety research is inconclusive.

## 5. Receptors are the controlling link between neurotransmitters and neurons. There are two kinds: fast receptors (Ionotropic) and slow (metabotropic).

**Fast Receptors (Ionotropic).** These are transmitter-gated ion channels. Positive ions (Na+, Ca++ usually excite and negative (Cl-) usually inhibit (remember that cells are negatively charged relative to the extracellular space). Fast receptors allow rapid and precise entry of current. Examples include the amino acid receptors: glutamate and GABA. These allow for quick response to changing situations that might call for increased or decreased brain activity.

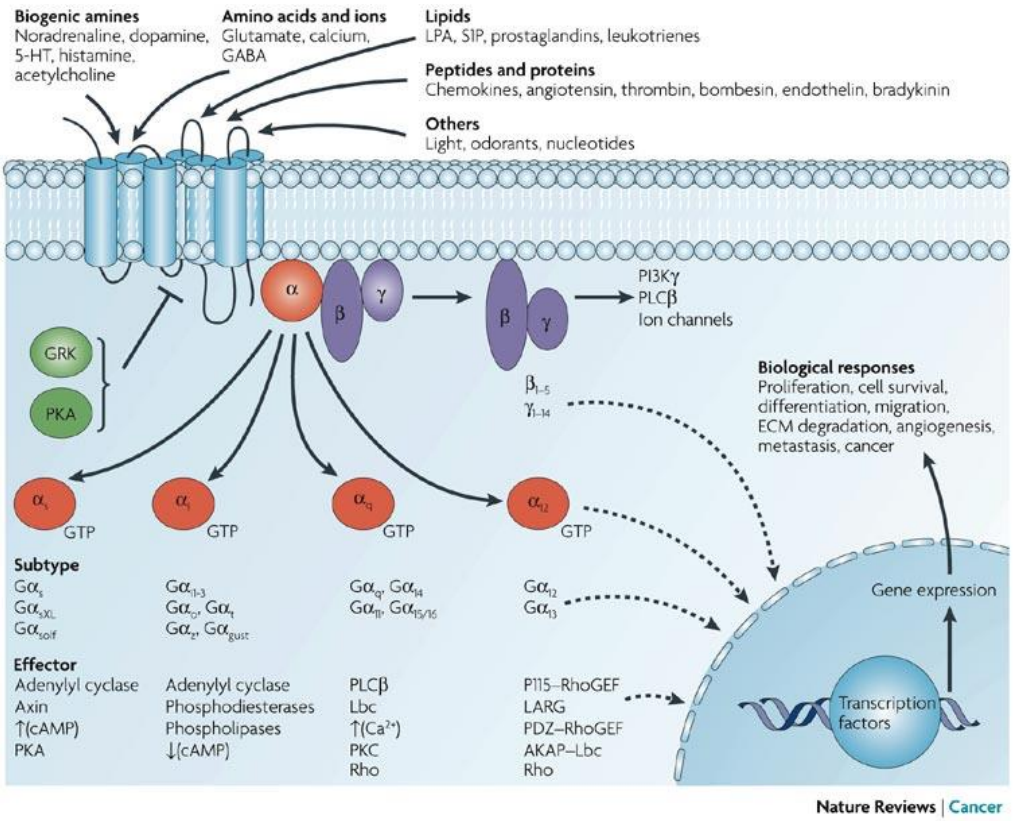
*Glutamate*. There are 3 types of receptors for this excitatory transmitter: NMDA, AMPA and Kainate. These are quick entry of Na+ to the cell (and Ca++ in the case of NMDA, modulated by AMPA). Lots of research attention on these, for ex. use of ketamine in depression, role of glutamate in schizophrenia.

*GABA*. This has 5 protein subunits which vary depending on the class of the receptor. In addition to a Cl- channel and a site for GABA, there are binding sites for barbiturates and benzodiazepines, which modulate the clinical actions of these sedatives. Also involved in the effects of alcohol and, possibly, steroid hormones (which may explain mechanism of premenstrual syndrome).




**17. Schematic diagram of an ion channel. 1 - channel domains (typically four per channel), 2 - outer vestibule, 3 - selectivity filter, 4 - diameter of selectivity filter, 5 - phosphorylation site, 6 - cell membrane.**

**Slow Receptors (metabotropic).** Unlike the fast receptors, these are indirectly linked to ion channels through a signal transduction mechanism, usually G-Protein. G-protein creates a second messenger cascade. Thus, these take longer than ionotropic, but remain open for longer; although they are not good for things that require quick responses, they can have a more widespread effect on the cell. All monoamine receptors are G-Protein coupled except for 5-HT3.




18. G-protein coupled receptor signaling.

*Serotonin (5-HT) receptors.* There are 2 major subtypes of 5-HT receptors with multiple subdivisions. The largest subtype is the 5-HT1 family. 5-HT1A is an autoreceptor on the cell body which reduces cell firing. Clinically it is important in depression and anxiety. For example, blocking this receptor makes TCAs less effective. Also, buspirone is a partial 5-HT1A agonist. 5-HT2A likely has a clinical role as well, for example, it may help make atypical antipsychotics atypical, in that atypicals are more potent blockers of this receptor.

*Dopamine.* There are at least 5 subtypes, with D1 and D2 being most important. D1 has low affinity for typical antipsychotics, and seems to be involved in reward and cognition. Psychostimulants block dopamine reuptake and may exert their effects through this receptor. D2 has high affinity for antipsychotics, in fact affinity for the D2 receptor correlates with therapeutic efficacy as well as the likelihood of causing extrapyramidal symptoms.

*Adrenergic.* There 3 types, α 1, α2 and β, each with their own subtypes.

*α-1* has a peripheral role in smooth muscle contraction (hence an effect on blood pressure, prostate and nasal congestion). Its role in the CNS is not clear.

*α-2* inhibits NE firing through autoreceptors. This is a mechanism of action for clonidine.

*β* is involved, peripherally, w/ cardiac rhythm and blood pressure. CNS is less clear, but it may have a role in anxiety.

*Histamine.* There are 4 subtypes. *H1* is involved in arousal and is the target for antihistamines. H1 antagonism as correlates with weight gain as a side effect. *H2* is primarily found in the GI tract is and is the basis for many peptic ulcer treatments. *H3* has an inhibitory role, but this is not clear; it may be involved in appetite and arousal.

*Cholinergic.* There are two types: nicotinic and muscarinic, and multiple subtypes. Nicotinic receptors act on skeletal muscle, muscarinic on the heart and CNS. Clinically, muscarinic blockade causes the "anticholinergic" side effects we associate with TCAs, antipsychotic and many other medications. Myasthenia gravis is the result of antibodies being produced against nicotinic receptors.

**The effect of receptors on cells.** Fast receptors cause a sudden change in electrical charge that is local to the area of the receptor. Slow receptors can have far ranging effects through second messengers. These messengers activate enzymes, which can then phosphorylate (i.e., "turn on") proteins. This can then cause a large variety of effects on a cell, ranging from regulating enzymes, opening ion channels, to inducing gene expression.

# Further Reading

**Higgins ES, George MS. The Neuroscience of Clinical Psychiatry, 2nd Edition. Philadelphia: Wolters Kluver Lippincott, Williams and Wilkins. 2013**

*A must have for any psychiatrist interested in neuroscience, and who wants a book that is briefer than Kandel but not superficial. It is well written, and emphasizes clinically meaningful material.*

**Kandel, Eric R.; Schwartz, James Harris; Jessell, Thomas M. Principles of Neural Science (5th Edition. New York: McGraw-Hill. 2012**

*The Bible of neuroscience. Fortunately, if you don't want to carry this tome, there is a Kindle edition.*

**Wikipedia.com.**

*Many of the articles on neuroscience are excellent. Just search the keywords listed here.*

# Graphic Sources

Cover: http://www.flickr.com/photos/tom-margie/2070691464/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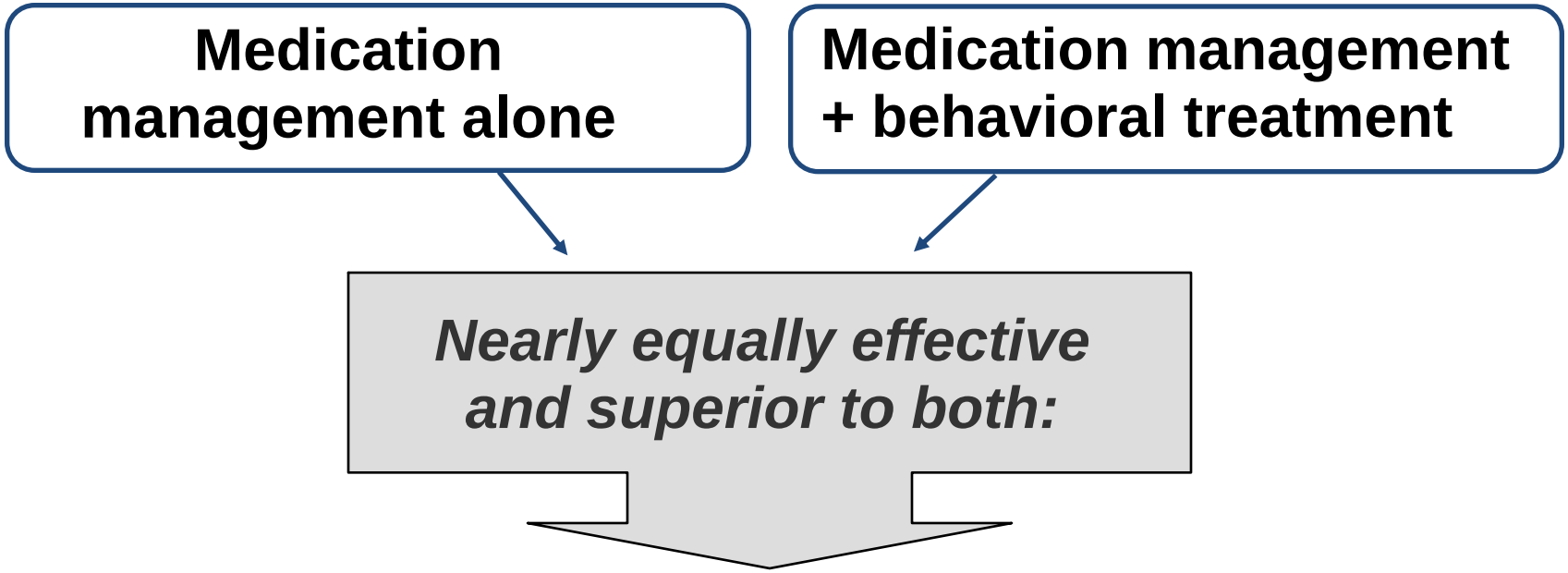
# Pediatric Psychopharmacology

# #1. ADHD: MTA + PATS

**All treatment arms found to be effective on an absolute basis**




- **Behavioral treatment alone**
- **Community based treatment**

(MTA Study Group, Arch Gen Psych, 1999)

# #2. TADS

- Treatment Response with acute treatment:

Combination: 71%; Fluoxetine: 61%

CBT: 43%; Placebo: 35%

Conclusions:

- Combination of fluoxetine & CBT is most effective.
- Fluoxetine alone is effective, but not as effective as combination

# #3. TORDIA

- Aim- to compare the effectiveness of an alternative antidepressants (SSRIs or venlafaxine), alone and in combination with CBT, in adolescents with depression who failed an adequate initial SSRI trial
- 12 weeks of
  - Switch to 2nd, different SSRI (paroxetine, citalopram, or fluoxetine)
  - Switch to a different SSRI + CBT
  - Switch to venlafaxine
  - Switch to venlafaxine + CBT
- N= 326; 12-18 years old
- 12 weeks of acute treatment followed by a 12 week continuation

# #3. TORDIA

- The combination of CBT and a switch to another antidepressant resulted in a higher rate of clinical response (54.8%) than did a medication switch alone (40.5%).
- There was no difference in response rate between venlafaxine and a second SSRI, although venlafaxine was associated with an increase in diastolic blood pressure & pulse and more skin problems than SSRI.

# #4. Pediatric Anxiety Disorders

- Pediatric OCD Treatment Study (POTS): Comparison of CBT, Sertraline, Combination and Placebo
- Childhood Anxiety Multimodal Study (CAMS)
- PTSD: Trauma-focused CBT
- Bottom-line: Treat childhood anxiety symptoms first with CBT!

# #5. FDA Atypical Antipsychotic Indications in Children

| | **Bipolar Disorder (10-17 yo)** | **Schizophrenia (13-17 yo)** | **Irritability in Autism** |
|---|---|---|---|
| Clozapine | | | |
| Olanzapine | X (13-17 yo) | X | |
| Risperidone | X | X | X (5-16 yo) |
| Quetiapine | X | X | |
| Ziprasidone | | | |
| Aripiprazole | X | X | X (6-17 yo) |

# Pearls for Personality Disorders, PTSD, Psychosomatic Medicine

**Mark Servis, MD**

**Senior Associate Dean for Medical Education**

# Diagnosis

- **Persistent** and **Pervasive**
- Genetic linkages in Schizotypal, Antisocial and Borderline
- Childhood abuse in Borderline PD
- Pathognomomic features
  - Borderline – suicide gestures and cutting
  - Narcissistic – grandiosity, but fragile self-esteem
  - Antisocial – lack of guilt or remorse
  - Avoidant vs. Schizotypal – desires relationships vs. indifferent

# Treatment

- **Psychotherapy** – for Borderline, Narcissistic, Histrionic, OCPD, Avoidant
- **Dialetical Behavior Therapy** – individual and group therapy, phone coaching
  - mindfulness,
  - distress tolerance
  - interpersonal effectiveness
  - emotional regulation
- Transference-focused Therapy, Mentalization Therapy, Schema Therapy

# If in doubt?

# Cognitive Behavior Therapy

# PTSD Pearls

- **Diagnosis**
  - Intrusion, Avoidance, Negative alterations of mood and cognition, Alternations in arousal and reactivity
  - Acute stress disorder if within 4 weeks, and with dissociative symptoms
- **Treatment**
  - SSRIs
  - CBT, Exposure therapy, Eye movement desensitization and reprocessing (EMDR)
  - Group therapy

# Psychosomatic Medicine Pearls

| Unconscious | | Conscious |
|---|---|---|
| Conversion Disorder | ⟷ | Factitious Disorder |
| Somatic Symptom Disorder | | Malingering |
| Illness Anxiety Disorder | | |

## Treatment

- **Do no harm –** beware furor therapeuticus
- Prevent iatrogenic injury in factitious and malingering
- Even somatoform patients get sick

# Cytochrome P450 system Drug Drug Interactions

## 3A4 and 2D6

# Good Luck!

Charles F. Gillespie, MD, PhD

# Practice Literacy

# Topic Outline

- Validity
- Reliability
- Study Design
- Statistics
- Measures of Diagnostic Test Validity
- Measurement of Prevalence & Incidence
- Measures of Risk/Association & Effect
- Evidence-Based Medicine

# Validity I

- Test Validity
  - Construct Validity
    - Test capacity to measure a particular construct.
  - Content Validity
    - Test capacity to measure a representative range of a particular construct.
  - Criterion Validity
    - Correlation of test measurement of a construct compared to a criterion representative of the construct.

# Validity II

- Experimental Validity
  - Statistical Validity
    - Extent that study conclusions are justifiable based on appropriate use of statistics.
  - Internal Validity
    - Capacity to conclude possible presence of causal relationships in study based on elimination or control of confounding.
  - External Validity
    - Degree to which study results may be generalized to comparable cases.
  - Ecological Validity
    - Extent that research findings may apply to "real world" settings.

# Reliability

- Reliability refers to the consistency of a particular measure.
- Inter-Rater Reliability
  - Extent of agreement between two or more raters with respect to their appraisals.
- Test-Retest Reliability
  - Extent that test scores are consistent from one administration to the next.

# Study Design I: Variables I

- Independent Variable
  - Condition manipulated by the experiment e.g. drug treatment or placebo treatment
- Dependent Variable
  - Variable used to measure the effect of the independent variable e.g. change in depressive symptoms

# Study Design I: Variables II

- Confounding Variable
  - Uncontrolled variable whose presence affects the dependent variable in a systematic manner.
- Controlled Variable
  - Variable whose potential effects on the dependent variable is managed through experimental design or the use of statistics.
- Uncontrolled Variable
  - Uncontrolled variable whose presence is not thought to affect the dependent variable or is not amenable to experimental design or statistical controls.

# Study Design II: Descriptive Studies

- Descriptive Studies
  - Case Report
    - Detailed description of a single patient
  - Case Series
    - Detailed description of a series of patients with a common disease or exposure.
  - Cross-Sectional Survey
    - Assesses the status of an individual with respect to exposure and presence of disease at single timepoint.

# Study Design III: Analytic Studies

- Analytic Studies
  - Observational Study
    - Association between risk factors and outcomes.
    - Types
      - Case-Control Studies-Conventional & Nested
      - Cohort Studies-Prospective & Retrospective
  - Interventional (Experimental) Study
    - Association between interventions and outcomes.
    - Types
      - Randomized Controlled Trial (RCT)
      - Clinical Experimental/Physiological Studies

# Study Design IV: Bias Management

- Confounding Bias
  - Randomization
    - Sample Size
    - Quality of Randomization
      - "Table 1"
  - Data Analysis
    - Regression Analysis
- Measurement Bias
  - Blinding
    - Single-Blind (Subject)
    - Double-Blind (Subject & Rater)
    - Crossover Designs
    - Quality of Blinding
      - Non-Active v. Active Placebo

# Statistics I: Descriptive Statistics

- Used to summarize and describe characteristics of data.
- Measures of Central Tendency
  - Mean: Sum of scores/number of scores.
  - Median: Score that is in the center of set of scores arranged low-high.
  - Mode: Score that appears at highest frequency in set of scores.
- Measures of Dispersion
  - Range: Numerical distance between lowest and highest score.
  - Population Standard Deviation (SD): $\sqrt{}$variance
  - Standard Error of Mean (SEM): SD/$\sqrt{}$N
  - Z-Score: Deviation of individual score from group mean in SD units.
  - Skewness: Collection of measures describing the distribution of data points within a set of data.
    - negative skew (mode & median > mean)
    - positive skew (mode & median < mean)
  - Kurtosis: Collection of measures describing the "peakedness" or "flatness" of data distribution.

# Statistics II: Inferential Statistics I

- Used to analyze data
- Null Hypothesis
  - Hypothesis that there is no significant difference or any apparent difference is due to chance.
  - Contingency to reject null hypothesis (presence of effect) is based on p-value indicating probability that effects are due to chance instead of real effect.
- Type I Error
  - Null hypothesis is mistakenly rejected. $\alpha$ is probability of type I error.
  - Appears to be an effect when no effect exists.
  - Testing multiple hypotheses at once without statistically correcting using Bonferroni Correction of p-value increases likelihood of Type I Error.
- Type II Error
  - Null hypothesis is mistakenly retained. $\beta$ is probability of making type II error.
  - Appears to be no effect when an effect actually exists.
  - Generally a problem of inadequate statistical power and solution is to do power analysis prior to starting study to ensure adequate sample size to detect effects if actually present.

# Statistics II: Inferential Statistics II

- Parametric Statistics
  - Assume presence of normal distribution.
    - Correlation
      - Correlation Coefficient
      - Pearson's Product Moment Correlation
    - Regression Analysis
    - Tests between Means
      - Student's t-test
      - Analysis of Variance
- Non-Parametric Statistics
  - Do not require normal distribution.
    - Correlation
      - Spearman's Rank Correlation
    - Tests between Means
      - Mann-Whitney U Test
      - Kruskal-Wallis Analysis of Variance
    - Tests between Percentages
      - Chi Square Test

# Statistics III: Meta-Analysis I

- "Study of Studies"
- Data from multiple studies on common topic are pooled to determine the magnitude of a proposed association.
- Identify common measure of effect size and use statistics to determine meta-effect which is better estimate of true effect size than single study.

# Statistics III: Meta-Analysis II

- Main concern is "file-drawer problem" aka publication bias.
- Base-rate fallacy created when positive studies published and negative studies are not.
- Assess for publication bias in meta-analysis using funnel plot of sample-size and effect size for included studies.
- Fail-safe N is related measure and is the number of negative studies required to be added to for an effect to no longer be statistically reliable.

# Measures of Diagnostic Test Validity I

- Sensitivity
- Specificity
- Positive Predictive Value (PPV)
- Negative Predictive Value (NPV)

# Measures of Diagnostic Test Validity II: Sensitivity vs. Specificity

Sensitivity = a/(a+c) x100%

Specificity = d/(b+d) x100%

Sensitivity - the proportion of true positives that are found to be positive on a test. Probability of positive test when disease is present.

Specificity - the proportion of true negatives that are found to be negative on a test. Probability of negative test when disease is absent.

| | | Outcome/Disease | |
|---|---|---|---|
| Test Result | | Yes | No |
| | Positive | a | b |
| | Negative | c | d |

# Measures of Diagnostic Test Validity III: Positive vs. Negative Predictive Value

- Often used in interpreting diagnostic tests to rule in/out disease.
- Positive predictive value
  - Proportion of people with a positive test who have the disease.
  - Probability of disease present when test is positive.
- Negative predictive value
  - Proportion of people with a negative test who are free of disease.
  - Probability of disease absent when test is negative.

# Measurement of Prevalence vs. Incidence

Prevalence is the proportion of persons affected with a particular disease at a specified time.

Incidence is the number of new cases of a disease occurring during a specified period of time; expressed as a percentage of the number of people at risk.

# Measures of Risk/Association and Effect I

- Absolute risk
- Absolute risk reduction
- Relative risk
- Odds ratio
- Effect size
- Number needed to treat/harm

"Exposure" can be a risk factor or a treatment

# Measures of Risk/Association and Effect II: Absolute Risk

$$\text{Absolute Risk (AR)} = \frac{a}{a+b}$$

The percentage or proportion of patients with the outcome of interest.

| | | Outcome | |
|---|---|---|---|
| Exposure | | Yes | No |
| | Yes | a | b |
| | No | c | d |

# Measures of Risk/Association and Effect III: Absolute Risk Reduction

Absolute Risk Reduction (ARR) = c/(c+d) – a/(a+b)

Difference in the absolute risk between the exposed group **vs** the unexposed group.

| | | Outcome | |
|---|---|---|---|
| Exposure | | Yes | No |
| | Yes | a | b |
| | No | c | d |

# Measures of Risk/Association and Effect IV: Relative Risk

$$\text{Relative Risk (RR)} = \frac{a/a+b}{c/c+d}$$

- Ratio of the probability of developing the outcome in a specified timeframe if the exposure (risk factor) is present **vs** the probability of developing the outcome in that same period if the exposure (risk factor) is not present.
- Measure of strength of association in cohort and RCT studies.

| | | Outcome | |
|---|---|---|---|
| Exposure | | Yes | No |
| | Yes | a | b |
| | No | c | d |

# Measures of Risk/Association and Effect V: Odds Ratio

$$\text{Odds Ratio (OR)} = \frac{a/b}{c/d} = \frac{ad}{cb}$$

- A ratio of the odds of an event in an exposed group to the odds of the same event in a group that is not exposed.
- A measurement of risk/association expressed as a ratio of odds.
- Standard measurement of risk in a case-control study.

| | | Outcome | |
|---|---|---|---|
| Exposure | | Yes | No |
| | Yes | a | b |
| | No | c | d |

# Measures of Risk/Association and Effect VI: Effect Size

The difference in outcomes between the intervention and control groups divided by some measure of variability, typically the standard deviation.

**Cohen's rule of thumb (1988):**

| | |
|---|---|
| **<0.2** | **Trivial** |
| **0.2-<0.5** | **Small** |
| **0.5-0.8** | **Moderate** |
| **>0.8** | **Large** |

# Measures of Risk/Association and Effect VII: Number Needed to Treat/Harm

How many more patients would need to be treated/exposed for one more case of the outcome of interest to develop?

(need to define treatment/exposure, duration, and outcome of interest)

**NNT = 1/ARR**

# Measures of Risk/Association and Effect VIII: NNT/H Example

In a study of a new ADHD medication, positive outcome = Vanderbilt score <10. 50% of the treatment group vs 10% in the control group have this outcome in 6 wks

ARR = 0.50 – 0.10 = 0.40

NNT = 1/0.4 = 2.5 (round up)

3 more people would need to be treated with the new medication over 6 weeks for one good outcome to occur.

# Evidence-Based Medicine (EBM)

- Making clinical decisions that fit patient values while factoring in available "best" current evidence.
- Central concept is "Levels of Evidence" ranging from low (case report/series) to intermediate (large observational/small open randomized clinical trials) to high (randomized double-blind placebo-controlled clinical trials).
- Central task is determining level of evidence providing maximally informative and relevant data for the question at hand.
- Comorbidity and psychosocial complexity require thoughtful application of EBM to psychiatric questions.

# References

Guyatt G and Rennie, D. User's Guides to the Medical Literature – A Manual for Evidence-Based Clinical Practice. AMA Press, 2002.

Riegelman RK. Studying a Study and Testing a Test – How to Read the Medical Evidence. 5th ed., Lippincott, Williams & Wilkins, 2005.

Richard Balon, M.D.

# Sexual dysfunctions

# Sexual Functioning

- So called sexual response cycle is usually divided into
  - Desire (libido)
  - Excitement (arousal)
  - Orgasm
  - Resolution

  It is still widely used, and male sexual dysfunctions are described in terms of sexual response cycle, but female sexual dysfunctions are not.

# Sexual Dysfunctions in DSM-5

- Delayed ejaculation
- Erectile disorder
- Female orgasmic disorder
- Female sexual interest/arousal disorder
- Genito-pelvic pain/penetration disorder
- Male hypoactive sexual desire disorder
- Premature (early) ejaculation
- Substance/medication-induced sexual dysfunction
- Other specified sexual dysfunction
- Unspecified sexual dysfunction

# Sexual Dysfunctions in DSM-5

- Alphabetical listing of dysfunctions
- Duration of 6 months criterion added
- Sexual aversion disorder removed
- Two "new" disorders replacing DSM-IV ones: Female Sexual Interest/Arousal Disorder; Genito-Pelvic Pain Penetration Disorder

# New Diagnoses

- Note that all sexual dysfunction, in addition to the main criterion (which describe the specific dysfunction) have to meet the following three criteria (with small modifications):
- B. The symptoms in criterion A have persisted for a minimum duration of approximately 6 months
- C. The symptoms in criterion A. cause clinically significant distress in the individual.

# Female Sexual Interest/Arousal Disorder

- In a way combines symptomatology of previous hypoactive sexual desire disorder in women and female arousal disorder

# Female Sexual Interest/Arousal Disorder

- Lack of, or significantly reduced, sexual interest/arousal, as manifested by at least three of the following:
  - Absent/reduced interest in sexual activity
  - Absent/reduced sexual/erotic thoughts or fantasies
  - No/reduced initiation of sexual activity, and typically unreceptive to a partner's attempts to initiate

# Female Sexual Interest/Arousal Disorder

- Absent/reduced sexual excitement/pleasure during sexual activity in almost all or all (approx 75%-100%) sexual encounters
- Absent/reduced sexual interest/arousal in response to any internal or external sexual/erotic cues (e.g., written, verbal, visual)
- Absent/reduced genital or nongenital sensations during sexual activity in almost all or all sexual encounters.

# Genito-Pelvic Pain/Penetration Disorder

- In a way combines symptomatology of dyspareunia and vaginismus

# Genito-Pelvic Pain/Penetration Disorder

- Persistent or recurrent difficulties with one (or more) of the following:
  - Vaginal penetration during the intercourse
  - Marked vulvovaginal or pelvic pain during vaginal intercourse or penetration attempts
  - Marked fear or anxiety about vulvovaginal or pelvic pain in anticipation of, during, or as a result of vaginal penetration
  - Marked tensing or tightening of the pelvic floor muscles during attempted vaginal penetration

# Treatment Issues

- Initial (and mainstay) in therapy of most sexual dysfunctions and paraphilic disorders is psychotherapy.
- Sex therapy and CBT most useful for SD.
- Specific behavioral techniques in some dysfunctions (e.g., squeeze-technique or stop-start technique in premature ejaculation)

# Treatment Issues

- Differential diagnosis
- Considering of predisposing, precipitating and maintaining factors
- First step in management  of SD should consider promotion of healthy life style
  - Weight reduction
  - Exercise
  - Smoking cessation
  - Treatment of substance abuse
  - Medications?

# Treatment of Erectile Dysfunction

- Phosphodiesterase-5 terminates the action of cGMP which relaxes smooth muscles of penis – inhibition of PDE-5 allows for longer and improved erection
- Four PDE-5 inhibitors available
  - Avanafil (Stendra)
  - Sildenafil (Viagra)
  - Tadalafil (Cialis) – also BPH
  - Vardenafil (Levitra)

# Issues in Pharmacological Treatment of Female Sexual Interest/Arousal Disorder

- Remember, this is all theory as this is a new diagnosis with no treatment data

# Issues in Pharmacological Treatment of Female Sexual Interest/Arousal Disorder

- Use of hormones
  - Androgen levels in women decline after menopause
  - Testosterone could improve sexual functioning, increase libido and sense of well-being
  - Testosterone patches lead to increase of testosterone, sexual functioning and well-being in women after oophorectomy

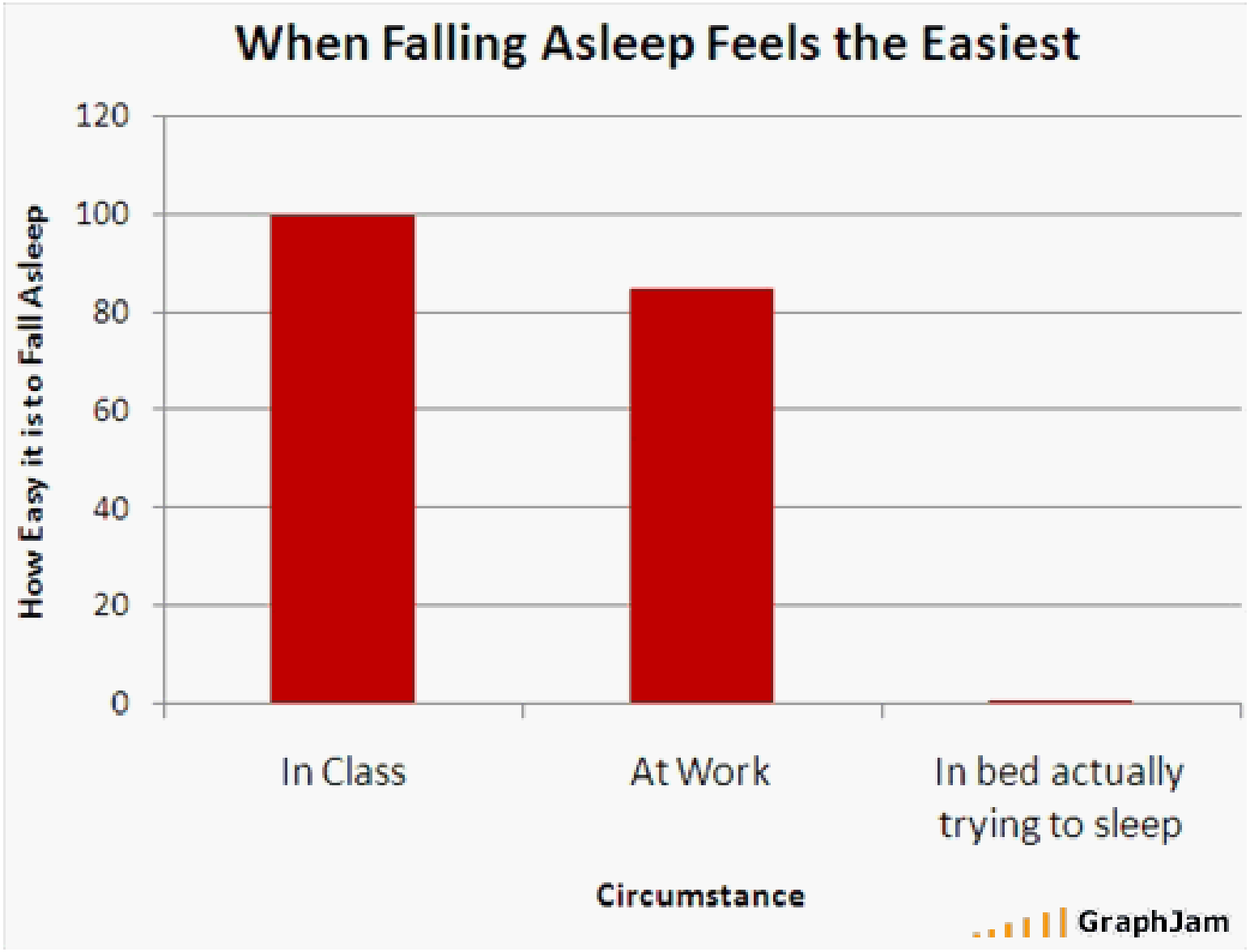
# Issues in Pharmacological Treatment of Female Sexual Interest/Arousal Disorder

- Nonhormonal therapy
  - No solid evidence for usefulness of phosphodiesterase-5 inhibitors
  - Limited evidence for use of bupropion in non-depressed women with FHSDD
    - Bupropion fared better than placebo, but the difference was not significant

# Issues in Pharmacological Treatment of Female Sexual Interest/Arousal Disorder

- Lubricants
  - Petroleum-based
  - Water-based
  - Silicone-based
  - Fruit-based
  - Suppositories
  - Vaginal moisturizers

# Sleep Disorders


When Falling Asleep Feels the Easiest
How Easy it is to Fall Asleep
120
100
80
60
40
20
0
In Class
At Work
In bed actually trying to sleep
Circumstance
GraphJam

# What is Normal Sleep?

- Regular bed and wake time
- Fall asleep within 30 min
- No more than 1 or 2 awakenings per night, less than 30 min each
- 85% or more of time in bed is spent sleeping (not lying awake, tossing & turning)
- Feel rested and refreshed in a.m.

# Approaching and Evaluating Patient with a Sleep Disorder

- Basic questions in every evaluation
  - Are you satisfied with your sleep?
  - Are you excessively sleepy during the day?
  - Do others complain about your sleep?

# Approaching and Evaluating Patient with a Sleep Disorder

- Careful sleep history:
- When did it start? Pattern? Medical, job, stress-related factors? What makes symptoms better or worse? Impact on daily life? Schedule? Family history? Meds for sleep? Other meds? Health issues affecting sleep?

# Approaching and Evaluating Patient with a Sleep Disorder

- Sleep Diary or Sleep Log
- Laboratory procedures
  - Polysomnography (all night sleep recordings)
  - Multiple Sleep Latency Test (EEG etc. quantifying the nature and degree of daytime sleepiness, naps)
  - Actigraphy (long term body activity)

# SLEEP DISORDERS
## Treatment

- Sleep disturbances could be temporary or an associated feature of another disorder. Treat it accordingly.
- Current view of treatment of chronic insomnia has changed – it is viewed basically as a state of chronic hyperarousal and thus pharmacotherapy is no longer time limited
- Remember  that more than one cause of chronic insomnia may be present (e.g., depression and chronic insomnia)

# Treatment of Insomnia Disorder
## Sleep Hygiene

- Regular sleep time
- Proper sleep environment
- Wind-down time
- Stimulus control
- Avoidance of poorly timed alcohol and caffeine consumption
- Late-night high-tryptophan snack
- Regular exercise

# Treatment of Insomnia Disorder Behavioral Therapies

- Cognitive-behavioral therapy (could be brief, has been manualized, may include sleep hygiene)
- Biofeedback
- Sleep restriction (alone or as a part of CBT) – especially for the elderly

# Treatment of Insomnia Disorder Pharmacotherapy

- Benzodiazepines (FDA approved for insomnia, no time limit)
  - Triazolam (Halcion) 0.125 – 0.25 mg
  - Temazepam (Restoril) 7.5 – 30 mg
  - Estazolam (ProSom) 1-2 mg
  - Quazepam (Doral) 7.5 – 15 mg
  - Flurazepam (Dalmane) 15 – 30 mg

# Treatment of Insomnia Disorder Pharmacotherapy

- Nonbenzodiazepine agents (FDA approved for insomnia, no time limit)
  - Zaleplon (Sonata) 5 – 20 mg
  - Zolpidem (Ambien) 2.5 – 10 mg
  - Zolpidem ER (Ambien CR) 6.25 – 12.5 mg
  - Ramelteon (Rozerem) 4 – 8 mg
  - Eszopiclone (Lunesta)1-3 mg
  - Suvorexant (Belsomra) 10-20 mg

# Treatment of Insomnia Disorder Pharmacotherapy

- Other agents and herbal remedies
  - Sodium oxybate (Xyrem) approved only for narcolepsy
  - Sedating tricyclic antidepressants (amitriptyline, doxepin)
  - Trazodone
  - Thalidomide
  - Chloral hydrate suppository
  - Valerian, melatonin

# Management of Narcolepsy

- Behavioral
  - Maximal sleep hygiene
  - Scheduled naps
  - Education for patient, family, teachers, employers

# Management of Narcolepsy

- Pharmacological
  - Stimulants to control daytime sleepiness
  - Anticataleptic medication if necessary (TCA)
  - Treatment of associated symptoms (maybe sodium oxybate – Xyrem, needs a special registration)

# Top 5 Toxidromes to recognize

## “Toxidrome” = Toxic + Syndrome

# Top 5 Toxidromes to recognize

## “Toxidrome” = Toxic + Syndrome

Opioids

Sedative-Hypnotic

Anticholinergic

Sympathomimetic

Serotonergic

# #1. Opioid

- CNS depression leading to coma
- Decreased HR, BP, RR, Temp
- Hyporeflexic
- Miotic pupils

# #1. Opioid

- CNS depression leading to coma
- Decreased HR, BP, RR, Temp
- Hyporeflexic
- Miotic pupils

## #2. Sedative-Hypnotic

- Much like opioid toxicity but without miotic pupils

# #3. Anticholinergic

*"Red as a beet, dry as a bone, hot as a hare, mad as a hatter"*

- Hypervigilence, agitation, confusion
- Hallucinations
- Increased HR, Temp
- Myoclonus
- Dry skin, dry mucous membranes, urinary retention

# #4. Sympathomimetic

- Hyperalert, agitated, paranoid
- Hallucinations
- Mydriasis
- Increased HR, BP, Temp, RR
- Tremor, hyperreflexia
- Diaphoretic

# #5. Serotonergic

- Anxiety, agitation, delirium
- Increased HR, BP, Temp
- Diaphoresis
- Motor symptoms:
  - Tremor
  - Hyperreflexia, increased tone
  - Clonus or occular clonus

# Summary

| | Arousal | BP | HR | RR | Temp | Pupils | Reflexes | Dia-phoresis |
|---|---|---|---|---|---|---|---|---|
| **Opioids** | down | down | down | down | down | down | down | down |
| **Sedative-Hypnotic** | down | down | down | down | down | -- | down | down |
| **Anticholinergic** | up | -- | up | -- | up | up | up | down |
| **Sympathomim.** | up | up | up | up | up | up | up | up |
| **Serotonergic** | up | up | up | -- | up | up | up | up |

**REFERENCES/ BACKGROUND MATERIAL:**

**American Psychiatric Association**
http://www.psychiatry.org/learn/cme/recertification-moc

**FOCUS: The Journal of Lifelong Learning in Psychiatry**
**http://focus.psychiatryonline.org/journal.aspx?journalid=21**
Editors: Deborah J. Hales, M.D. and Mark Hyman Rapaport, M.D.

- Provides two journal issues a year, CME opportunities and practice examinations
- Can use to meet Maintenance of Certification requirements of the ABPN, self-assessment, Performance in Practice and lifelong learning
- Provides a comprehensive review of current clinical practice based on the content outlined by the ABPN recertification exam
- Each issue offers: Clinical Reviews, Patient Management Exercise, Seminal Articles, and a CME quiz with 20 hours of CME per year for the journal and 20 additional hours can be earned through completion of the Self-Assessment Exam
- All current and back issues are accessible online with available CME credits for your subscription year
- A subscription to *FOCUS* also provides ABPN approved Performance in Practice Modules that meet requirements for MOC Part IV and an opportunity to earn an additional 20 CME credits.

**American Academy of Child & Adolescent Psychiatry**
http://www.aacap.org/AACAP/Clinical_Practice_Center/MOC

**American Board of Psychiatry & Neurology**
Psychiatry: http://www.abpn.com/moc_psych.asp
CAP: http://www.abpn.com/moc_cap.asp

**The American College of Psychiatrists**
**http://www.acpsych.org**

**PRITE (Psychiatry Resident-In-Training Examination)**

- Annual examination for psychiatry residents
- Previous exams available for purchase

**CHILD PRITE (Child Psychiatry-In-Training Examination)**

- Annual examination for child and adolescent psychiatry residents
- Previous exams available for purchase

**PIPE (Psychiatrists In-Practice Examination)**

- Online examination for practitioners
- Designed to:

  - Provide comprehensive self-assessment of professional skills for practicing psychiatrists
  - promote lifelong learning; and
  - award up to 30 *AMA PRA Category 1 Credits™.*
  - cover the content areas represented on the American Board of Psychiatry and Neurology's maintenance of certification exam
- Test-takers receive immediate feedback on each item, including a written discussion of correct responses and two reference citations for additional information about each topic

# Master Course: Psychiatry Review Morning

## 1. Psychopathologies

*Directors:*
*Robert J. Boland, MD*
*Marcy Verduin MD*

1

## Panel

*Vishal Madaan MD – U Virginia*
*Mark Servis MD – UC Davis*
*Stephanie Smith – Harvard*

**Specific Areas to be covered:**

1. Anxiety
2. Child
3. Geriatric and Neuropsychiatric
4. Depressive Disorders
5. Bipolar Disorders
6. OCD
7. Personality
8. Psychosomatic
9. PTSD
10. Schizophrenia

3

**The symptom domain most strongly correlated with functional impairment in schizophrenia is:**

A. Positive symptoms.
B. Negative symptoms.
C. Cognitive impairment.
D. Mood disturbance.

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**Which of the following characteristics of patients with an initial diagnosis of major depressive disorder has been shown to be predictive of a later non-pharmacologically induced manic or hypomanic episode?**

A. “melancholic” subtype of depression
B. lower depression severity score
C. comorbid alcohol dependence
D. female gender

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**A 49-year-old patient presents to an outpatient clinic with the chief complaint of "nervousness in public." The patient describes himself as always having been "shy." In middle school, the patient's voice cracked when reading a passage aloud, provoking the ridicule of classmates. Subsequently, the patient became very anxious when speaking in front of others. He managed to finish school and became an accountant, but he has never dated nor applied for a job promotion due to anxiety about embarrassing himself. Which of the following is the most likely diagnosis?**

A. Specific phobia
B. Panic disorder
C. Social anxiety disorder
D. Generalized anxiety disorder

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**Major depressive disorder is associated with hyperconnectivity within which of the following brain networks?**

A. Ventral attention
B. Dorsal attention
C. Default
D. Frontoparietal
E. Affective

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**The psychiatrist asks a patient to spell the word "world" backwards. Which of the following is being evaluated with this question?**

A. Concentration
B. Registration
C. Thought process
D. Immediate recall

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**Which of the following is most likely to be predictive of a good prognosis in schizophrenia?**

A. Early age at onset of symptoms
B. Presence of predominantly negative symptoms
C. Acute onset with underlying precipitating factors
D. Presence of neurological signs and symptoms
E. Low IQ

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15

**The DSM includes which of the following among the diagnostic criteria of conversion disorder?**

A. Primary gain
B. Unconscious conflict
C. Voluntary symptom production
D. Internal inconsistency of symptoms
E. Absence of a coexisting personality disorder

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17

**A psychiatrist is asked by the local school to consult on a 13-year-old boy who has exhibited problems with compulsive eating and failure to make academic progress. The boy's parents report that he has always eaten "everything in sight" and has been delayed in his development. Medical history is remarkable for poor muscle tone and failure to thrive as an infant. Physical examination reveals hypotonia, obesity, hypogonadism, a narrow-appearing forehead, downslanting palpebral fissures, small-appearing hands and feet and downturning of the corners of the mouth. Intelligence testing is consistent with mental retardation. What is the MOST LIKELY cause of the patient's signs and symptoms?**

18

**What is the MOST LIKELY cause of the patient's signs and symptoms?**

A. Childhood disintegrative disorder
B. Congenital rubella infection
C. Homocystinuria
D. Prader-Willi syndrome
E. Tuberous sclerosis

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20

**When diagnosing major depressive disorder in young children, which of the following signs or symptoms is MORE likely to be present than would be expected in an adolescent or adult?**

A. Diurnal variation in mood
B. Hypersomnia
C. Melancholia
D. Poor self-esteem
E. Somatic complaints

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**Family members bring a 55-year-old patient for evaluation because of the patient's insidious onset of personality change characterized by impulsivity and socially inappropriate behavior. Examination is generally unremarkable with the exception of the patient's bizarre affect and lack of insight into the problem. This presentation is most consistent with which of the following diagnoses?**

A. Neurocognitive Disorder Due to Alzheimer's Disease
B. Frontotemporal neurocognitive disorder
C. Late onset schizophrenia
D. Neurocognitive Disorder with Lewy bodies
E. Primary progressive aphasia

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24

**A 34-year-old woman presents to your outpatient clinic and you diagnose her with Generalized Anxiety Disorder. Her lifetime prevalence of comorbidity is greatest for which of the following disorders?**

A. Major Depressive Disorder
B. Alcohol Use Disorder
C. Simple Phobia
D. Social Phobia
E. Bipolar Disorder

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**A 34-year-old woman presents to your outpatient clinic and you diagnose her with Generalized Anxiety Disorder. Her lifetime prevalence of comorbidity is greatest for which of the following disorders?**

A. Major Depressive Disorder
B. Alcohol Use Disorder
C. Simple Phobia
D. Social Phobia
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26

**Which of the following personality disorders is most common in the biological relatives of patients with schizophrenia?**

A. Schizoid
B. Paranoid
C. Schizotypal
D. Histrionic
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**A 55 year old female with no known psychiatric or medical history is brought into the emergency department by her daughter due to sudden onset memory loss after participating in her local "polar bear plunge" In which she jumped into a freezing river. Several times during the interview she asks the physician, "Who are you?" On exam, the patient is euthymic; motor and cranial nerve exams are normal; and her memory is intact to remote events. Which of the following is the most likely diagnosis?**

A. Dissociative amnesia
B. Transient epileptic amnesia
C. Transient global amnesia
D. Dissociative identify disorder
E. Transient ischemic attack

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30

**A 45-year-old patient reports depressed mood, fatigue and difficulty concentrating. The symptoms have been present for most of the past 3 years during which time the patient's work performance has declined. The review of systems is otherwise negative. The patient worries about being fired, stating, "I have nothing to offer and I don't see that changing." This presentation is most consistent with which of the following diagnoses?**

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B. Persistent depressive disorder
C. Disruptive mood dysregulation disorder
D. Adjustment disorder with depressed mood
E. Attention-deficit hyperactivity disorder

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**The psychiatrist observes odd motor movements in a hospitalized patient. When the psychiatrist moves the patient's arm, the patient maintains this position. Which of the following terms defines this behavior?**

A. Akathisia
B. Echopraxia
C. Waxy flexibility
D. Catatonic posturing
E. Catatonic negativism

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**Which of the following characteristics is/are present in patients with locked-in syndrome?**

A. Persistent vegetative state
B. Ability to experience a range of feelings
C. Inability to recognize objects and people
D. Severe depression and desire to die

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36

**Demographic and clinical factors associated with suicide in patients with schizophrenia include:**

A. Older age.
B. Female gender.
C. Higher cognitive function.
D. Lower socioeconomic status.
E. Good social support.

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**During an initial evaluation, a patient complains of multiple episodes of having palpitations, sweating and intense anxiety. Information that would be most supportive of panic disorder is that the episodes occur when the patient:**

A. is reminded of a past assault.
B. must use a public bathroom.
C. attends a large party.
D. is in essentially any setting.
E. must use an elevator.

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40

**Which of the following statements gives the most appropriate guidance for patients and their families regarding driving by patients with neurocognitive disorder?**

A. Families have no responsibility for getting involved in driving decisions of patients with mild cognitive impairment.
B. All patients with mild cognitive impairment should be reported to their State Motor Vehicle Departments for mandatory tracking.
C. Clinicians should advise all patients with mild cognitive impairment to stop driving and to turn in their driver's licenses.
D. Mildly impaired patients should be advised to stop driving at night.
E. Patients and families should be informed that even mild neurocognitive disorder increases the risk of vehicular accidents.

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42

**Borderline personality disorder is marked by pervasive instability of self-image, emotions and impulsivity. Which of the following is a DSM diagnostic criteria for this diagnosis?**

A. Consistent irresponsibility
B. Lack of remorse after injuring others
C. Requiring excessive admiration
D. Displays rapidly shifting and shallow expression of emotions.
E. Unstable sense of self

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**A 26 year old woman was brought to the emergency department with newfound psychosis that developed over the past week, characterized predominantly by forgetfulness as well as paranoia and auditory hallucinations. Her development of dysautonomia and buccal automatisms prompted the team to search for anti-NMDA antibodies, which were positive. The most likely source of her anti-NMDA antibodies would be which of the following?**

A. Teratoma
B. Melanoma
C. Glioblastoma
D. Lung malignancy
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46

**A 35-year-old man presents with memory deficits and emotional lability. Head CT reveals atrophy of the caudate. His father died from the same disorder when he was 38 years old. This presentation is most consistent with which of the following disorders?**

A. Alzheimer's disease
B. Huntington's disease
C. Progressive multifocal leukodystrophy
D. Subacute sclerosing panencephalitis
E. Whipple's disease

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48

**A 10-year-old boy is referred for psychiatric assessment after setting his family's home on fire. His mother smoked cigarettes during the pregnancy. The patient grew up in an extremely impoverished neighborhood with his mother as his sole caregiver. His mother describes the boy as being extremely oppositional and defiant as a preschooler. She has primarily used corporal punishment including beating him with a belt and electric cords. Since starting school he has had multiple suspensions for fighting with peers and teachers. Intelligence testing is consistent with borderline intellectual functioning. Which of these factors from the patient's history is MOST predictive of a poor outcome in this patient's conduct disorder?**

49

**Which of these factors from the patient's history is MOST predictive of a poor outcome in this patient's conduct disorder?**

A. Early age at onset of symptoms.
B. Exposure to toxins in utero.
C. Lack of a father figure in his life.
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51

**A 20-year-old college student presents to the mental health clinic because he is worried about an exam that he must take in two days. He has chronic problems with concentration and sleep, and complains that he is easily fatigued. He states that he is tired of the pressure he always feels. He adds that he has been to the medical clinic as well because he feared that his frequent muscle tension and headaches meant he had a neurological disease. Which of the following is the most likely diagnosis?**

A. Major depression
B. Illness anxiety disorder
C. Generalized anxiety disorder
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**Which of the following is a common symptom of seasonal affective disorder?**

A. Light sensitivity
B. Somatic complaints
C. Insomnia
D. Overeating
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55

**A 42-year-old patient requests treatment for anxiety and interpersonal difficulties. The patient reports feelings of social inadequacy and sensitivity to rejection for the past 20 years. The patient does not attend social events or interact with others as a result of this anxiety, worries excessively about being criticized by others, and feels inferior to others. This has caused occupational problems since the patient is only able to function in jobs that have virtually no social interaction. The patient is unhappy that he has no friends and has never been romantically involved. Which of the following is the most likely diagnosis?**

56

**Which of the following is the most likely diagnosis for the situation?**

A. Schizoid personality disorder
B. Generalized anxiety disorder
C. Avoidant personality disorder
D. Social anxiety disorder
E. Obsessive-compulsive disorder

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58

**A 45 year old man with no significant prior medical history comes to his primary care physician with his wife for concerns of worsened memory over the past 5 months in addition to some gait instability. Additionally his wife is concerned of his apathy, worsened mood, and over sleeping. On exam, he is observed to have myoclonus. MRI of the brain would most likely reveal:**

A. Major depressive disorder
B. Viral encephalitis
C. Parkinson's disease
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60

**A 56-year-old man with a history of cancer presents with confusion, pure amnestic syndrome, and affective symptoms. Diagnostic studies are consistent with paraneoplastic limbic encephalitis. Which of the following cancers is the most common cause of this paraneoplastic syndrome?**

A. Pancreatic cancer
B. Prostate cancer
C. Renal cancer
D. Small cell lung cancer
E. Testicular cancer

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62

**The main factor of somatic symptom disorder which differentiates it from factitious disorder or malingering is that in somatic symptom disorder :**

A. Patients seek to play the sick role.
B. There are external incentives for the behavior.
C. Complaint of symptoms is exaggerated.
D. Patients often have had multiple hospitalizations.
E. Symptoms are not under voluntary control.

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64

**A bus carrying students from a local high school is swept down the side of the mountain following a mudslide. Despite rescue attempts, all the youth on the bus either die or are seriously wounded. Based on prevalence data, which of the following groups of individuals is most likely to develop PTSD symptoms after the disaster?**

A. Family members
B. First responders
C. Guidance counselors
D. Classmates
E. Teachers

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66

**Which of the following situations is most typically an source of anxiety for patients with social anxiety disorder?**

A. Crossing bridges
B. Eating in public
C. Being in closed spaces
D. Proximity to spiders
E. Sitting in movie theatres

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68

**Which of the following is a required criterion for the diagnosis of depression with melancholic features?**

A. Mood worse in the late afternoon
B. Middle or late insomnia
C. Significant hyperphagia or weight gain
D. Mood changes similar to those found in bereavement
E. Loss of pleasure in all, or almost all, activities

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70

**Advanced paternal age is a well-established risk factor for which of the following psychiatric illnesses?**

A. Schizophrenia
B. Substance use disorder
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72

**Post-stroke depression is most commonly associated with cerebrovascular disease involving the:**

A. Anterior communicating artery.
B. Anterior cerebral artery.
C. Middle cerebral artery.
D. Posterior communicating artery.
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74

**An 8-year-old boy presents with a one-month history of stomachaches and headaches every morning just before going to school. When interviewed, he reports having persistent nightmares of being kidnapped and worries about his father having an accident. The most likely diagnosis is:**

A. Normal childhood.
B. Agoraphobia.
C. Separation anxiety.
D. Generalized anxiety disorder.
E. Panic disorder.

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76

**Which of the following is characteristic of social anxiety disorder?**

A. Spontaneous, uncued panic attacks
B. Avoiding public speaking because of trembling
C. Fear of humiliation when speaking in a group setting
D. Fainting while having blood drawn
E. Avoiding parties because of fear of contamination

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78

**Which of the following is the best predictor of a recurrence of depression in someone with major depressive disorder?**

A. Family history of depression
B. Prior episodes of depression
C. Prior suicidal attempt
D. Co-morbid Axis I disorder
E. Co-morbid medical condition

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80

**A 67-year-old woman presents with visual hallucinations, memory loss, apathy and extrapyramidal symptoms. The patient's extrapyramidal symptoms increase markedly when given olanzapine 2.5 mg. This presentation is most consistent with:**

A. Vascular neurocognitive disorder.
B. Neurocognitive disorder due to Alzheimer's disease.
C. Neurocognitive disorder with Lewy bodies.
D. Neurocognitive disorder due to HIV.
E. Neurocognitive disorder due to Huntington's disease.

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82

**Evidence to date from OCD genetic studies indicate that its inheritance is best characterized by which pattern?**

A. Autosomal dominant
B. Autosomal recessive
C. Sex-linked recessive
D. Complex
E. Mendelian

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E. Mendelian

84

**Lucy is a 32 year old woman who lives alone on welfare in a small apartment. She has no apparent friends. Her neighbors consider her peculiar and the neighborhood children often tease her about her appearance. Lucy's clothes appear slightly askew and her makeup is unusual. Her behavior is also unusual and she is often seen watching the neighborhood children from her window, partially hidden behind the curtains. Lucy is generally suspicious of other people and often makes strange gestures when she passes people in the street. Her social worker reports that Lucy is always anxious during their meetings and has a very limited range of emotional expression. This is accompanied by unusual beliefs and thoughts that she has special telepathic powers. Which of the following personality disorders is most likely to be characterized by this pattern of behavior?**

85

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A. Avoidant
B. Borderline
C. Schizotypal
D. Schizoid
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**A 22-year-old woman is driving her boyfriend home. The car hits a tree and he is killed. Six months after the accident she is still unable to drive, avoids going out, jumps when she hears loud noises and cannot feel any sadness or happiness. What is the most likely diagnosis for this patient?**

A. Adjustment disorder
B. Agoraphobia
C. Major depressive disorder
D. Posttraumatic stress disorder
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89

**A 42-year-old patient complains of a fear of crowded places. This fear is present in any situation in which the patient perceives that escape may be difficult, including riding alone in elevators and cars. As a result of this fear, the patient rarely leaves home. Which of the following is the most likely diagnosis?**

A. Social anxiety disorder
B. Agoraphobia
C. Specific phobia
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**A 70-year-old man presents to a clinic with progressive memory loss. Which of the following findings, if present, would be most representative of a cortical neurocognitive disorder?**

A. Apathy
B. Aphasia
C. Decreased attention
D. Bradyphrenia
E. Mood lability

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**Which of the following psychiatric conditions is most commonly associated with self neglect in the geriatric population?**

A. Depression
B. Generalized anxiety disorder
C. Panic disorder
D. Schizophrenia
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**A 28-year-old woman with an identical twin is diagnosed with major depressive disorder. She asks you to comment on the chance her sister will develop the same illness. Which of the following is the best response regarding the genetic basis of depression?**

A. "Major depression is a genetic illness. Your sister will definitely develop it as well."
B. "While schizophrenia is quite heritable, there is only a slightly increased risk that your sister will become depressed."
C. "The likelihood of identical twins sharing a mood disorder is high."
D. "Although there may be some genetic basis for affective illness, it is one's childhood environment that determines whether illness will manifest."
E. "Your sister's risk of developing depression is the same as any other sibling."

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**A 25-year-old man has a history of facial and truncal tics since childhood. He presents to an outpatient clinic for evaluation of anxiety and is diagnosed as having OCD. Which of the following patterns of OCD symptoms is he at increased risk of exhibiting?**

A. Obsessions and checking
B. Cleanliness and washing
C. Symmetry and ordering
D. Hoarding

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99

**A local radio talk show host comes to see you for psychotherapy because you were described as "the best doctor at the clinic" by one of his friends. He spends most of the hour talking about problems he is having with a workmate who he feels is treating him rudely. At the end of the session he asks to be seen at a special time to accommodate his work schedule. When you tell him you will be unavailable at that time, he becomes dismissive and angry.**

100

**These traits are suggestive of which one of the following:**

A. Schizoid
B. Antisocial
C. Obsessive-compulsive
D. Narcissistic
E. Borderline

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**Which of the diagnostic criteria for PTSD is rarely fully-endorsed in preschool children?**

A. Disturbance of over one month
B. Re-experiencing
C. Avoidance/numbing
D. Increased arousal
E. Clinically significant impairment

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**Which of the following signs and symptoms is most reliable in distinguishing between delirium and neurocognitive disorder?**

A. Orientation
B. Short-term memory
C. Long-term memory
D. Sleep pattern
E. Level of consciousness

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**A 19-year-old college student comes to the clinic with a complaint of feeling "depressed and worried." He states that he may fail his English class because he is nervous about the public speaking assignment. When he thinks about it, he feels nervous, his heart races, his palms become sweaty, and he becomes short of breath. He endorses a depressed mood because "I feel like I'm wasting my parents' money." He skipped his last three English classes because he knew it would be his turn to give a speech. He attends his other classes with no difficulty. The most likely diagnosis is:**

107

**The most likely diagnosis is:**

A. Panic disorder.
B. Normal shyness.
C. Social anxiety disorder.
D. Agoraphobia.
E. Major depressive disorder

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**A 20-year-old woman was brought to the emergency department by police after disrupting one of her university classes. She was agitated and demanded that her intellectual abilities be acknowledged. She had pressured speech and her affect alternated between periods of euphoria and irritability. Her roommate told the emergency staff that the patient had been very energetic, unable to sleep for several days and had previously been admitted to hospital for similar behavior.**
**Which of the following diagnoses is most likely?**

110

**Which of the following diagnoses is most likely?**

A. Delirium
B. Cyclothymia
C. Bipolar disorder, manic
D. Schizophrenia

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**Which of the following personality disorders most closely resembles social anxiety disorder?**

A. Schizoid
B. Borderline
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D. Dependent
E. Histrionic

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**A 27-year-old woman presents to the clinic complaining of feeling depressed for two days. She broke up with her boyfriend two days ago and has been feeling suicidal since he left her. She has seen a psychiatrist in the past and has been treated with mood stabilizers and antidepressants, but is currently taking no medication stating "the medications didn't help" and "that psychiatrist was a terrible doctor." She tells you that a friend recommended your clinic and that "you seem like a fantastic doctor." Vital signs are normal. Physical examination is normal except for multiple superficial lacerations on both upper arms. The patient admits to using a razor to make these cuts, stating "they made me feel better after my boyfriend left." Mental status examination is notable for labile mood with tears and laughing during the interview, and for passive suicidal ideation without an active suicide plan. There are no delusions or hallucinations. What is the most likely diagnosis for this patient?**

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**What is the most likely diagnosis for this patient?**

A. Bipolar disorder
B. Borderline personality disorder
C. Histrionic personality disorder
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117

**For the detection and identification of delirium in medically ill patients, the best strategy to employ is:**

A. Enhanced EEG monitoring.
B. Serum and urine lab tests.
C. Revised MMSE.
D. Specific neuroimaging.
E. Observation and rating scales.

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**In addition to time course, which of the following symptoms is more prominent in ASD compared to PTSD?**

A. Impairment in functioning
B. Dissociative symptoms
C. Fear or helplessness response
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121

**A 78-year-old patient is referred from a residential setting for fluctuating confusion and memory difficulties which have become progressively worse over the last 6 months. The patient has no past history of mental illness. Six months ago, the patient began hearing the threatening voices of long-deceased relatives at night which would interfere with sleep. Two days ago, after an aggressive outburst, the patient was given haloperidol for agitation, however the patient's condition has deteriorated and the patient now has an expressionless face, visual hallucinations, catatonia, shuffling gait and muscle rigidity.**

122

**Which of the following types of neurocognitive disorder best explains this patient's course of illness?**

A. Vascular
B. Alzheimer
C. Frontotemporal
D. Lewy body
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**An adolescent girl becomes anxious and "panicky" at the thought of spiders. She cannot join her high school classmates for lunch outside due to the fear that she "will run into a spider." The most appropriate diagnosis is:**

A. Agoraphobia.
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**Two teenagers randomly fire their guns at a 54-year-old man in their neighborhood. A week later the patient complains that he can't "get it out of my mind" and is having frequent nightmares about this incident. He is always "on the watch" when he drives down the road and avoids going out alone. The most likely diagnosis for this patient is:**

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128

# End of Psychopathology Session

*Thank you for your Attention*

# Master Course: Psychiatry Review Morning Session

## 2. Treatment

*Directors:*
*Robert J. Boland, MD*
*Marcy Verduin MD*

1

## Panel

*Vishal Madaan MD – U Virginia*
*Mark Servis MD – UC Davis*
*Stephanie Smith – Harvard*

**Specific Areas to be covered:**

1. Anxiety
2. Child
3. Geriatric and Neuropsychiatric
4. Depressive Disorders
5. Bipolar Disorders
6. OCD
7. Personality
8. Psychosomatic
9. PTSD
10. Schizophrenia

3

**A common side effect of SSRI medications is gastrointestinal disturbances. Which SSRI is associated with the highest frequency of gastrointestinal disturbances?**

A. Fluoxetine
B. Paroxetine
C. Citalopram
D. Fluvoxamine
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**Which of the following treatments has the greatest body of evidence demonstrating efficacy for treatment of specific phobia?**

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B. In vivo exposure therapy
C. Hypnotherapy
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17

**A 34-year-old woman with bipolar disorder has a body mass index of 31.2. To minimize the risk of aggravating this factor, which of the following medications would be most appropriate?**

A. Lithium
B. Clozapine
C. Lamotrigine
D. Olanzapine
E. Divalproex

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**A 25-year-old female with OCD has failed two adequate trials of SSRI and is currently taking clomiprimine with little relief of her symptoms. She recently started CBT for her OCD symptoms, but has been having a difficult time tolerating the therapy. Which of the following would be the best adjunctive medication to had to her current treatment?**

A. Aripiprazole
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**The available data when considered together suggests that desvenlafaxine has which of the effects on blood pressure?**

A. No effect
B. Small but significant increases
C. Increases in systolic but not diastolic blood pressure
D. Increases in diastolic but not systolic blood pressure
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**Which of the following has the strongest evidence for efficacy in the acute treatment of panic disorder?**

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B. Propranolol
C. Bupropion
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**A 30-year-old man with history of bipolar disorder is brought into the ED after being found unresponsive in his home. Physical examination reveals vital signs nonfebrile, blood pressure 69/40, heart rate 110, and spontaneous breathing at 8 breaths/minute. He is obtunded and follows simple commands, miosis, dry mucous membranes, tachycardia w/o murmurs, and normal lung sounds. EKG is performed that reveals QT interval prolongation. Which of the following has the patient most likely ingested?**

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**Which of the following pharmacological agents is a first-line treatment for catatonia?**

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B. Valproic acid
C. Methylphenidate
D. Haloperidol
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**A 32-year-old war veteran with major depression and PTSD has reported a reduction in depressive symptoms since his psychiatrist titrated sertraline to 200mg daily. However, he continues to experience trauma-related nightmares and daytime hyperarousal. Which of the following augmenting approaches has the best evidence in the literature to target his residual symptoms?**

A. Start aripiprazole
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C. Increase sertraline
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**A 19-year-old man is brought to your office by his mother, who explains that her son has obsessional and ritualistic behaviors which have not responded to 12 weeks of maximal SSRI monotherapy. Which of the following treatment modalities would you choose next for helping with his OCD symptoms?**

A. Exposure and Response prevention
B. Brief family intervention
C. Clomipraimine
D. Adjunctive Gabapentin
E. Adjunctive Risperidone

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**A 35-year-old patient is referred by the rheumatologist for treatment of fibromyalgia syndrome. The patient reports suffering from this disorder for more than a decade. Recently the rheumatologist prescribed amitriptyline, which the patient reports helped pain and mood. However, the patient discontinued the medication due to constipation and worsening fatigue. Which of the following medications is most likely to treat the patient's symptoms while causing fewer side effects than amitriptyline?**

A. Bupropion
B. Duloxetine
C. Paroxetine
D. Imipramine
E. St. John's Wort

34

**A 35-year-old patient is referred by the rheumatologist for treatment of fibromyalgia syndrome. The patient reports suffering from this disorder for more than a decade. Recently the rheumatologist prescribed amitriptyline, which the patient reports helped pain and mood. However, the patient discontinued the medication due to constipation and worsening fatigue. Which of the following medications is most likely to treat the patient's symptoms while causing fewer side effects than amitriptyline?**

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**The use of stimulants to treat ADHD is relatively contraindicated if the child has which of the following co-morbid conditions?**

A. Tic disorder
B. Pre-existing cardiovascular disease
C. Seizure disorder
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E. Bipolar disorder

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**Psychological interventions for mood disorders have which of the following benefits over pharmacological therapies?**

A. Greater overall efficacy
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**In which of the following cases is the use of antidepressants a reasonable option for a patient with bipolar depression who has not responded to other therapies?**

A. Only as an adjunct to a mood stabilizer when other adjuncts have failed
B. Antidepressants should never be used in patients with bipolar disorder
C. As a monotherapy if carefully monitored and titrated
D. In cases in which antipsychotic treatment is contraindicated
E. As a monotherapy but only with certain agents (e.g., bupropion) that are unlikely to cause mania

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41

**A 29 year old man with a history of schizophrenia reports feeling less disorganized after being started on haloperidol. However, he feels significant unease, anxiety, and restlessness. His examination is notable for frequently crossing and uncrossing his legs and overall he appears fidgety. Switching from haloperidol to which of the following medications is most likely to improve these symptoms while maintaining his improvement?**

A. Perphenazine
B. Lurasidone
C. Pimozide
D. Aripirazole
E. Iloperidone

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**Which of the following has the best efficacy for the treatment of posttraumatic stress disorder (PTSD)?**

A. Hypnosis
B. Alpha antagonist
C. Coping skills training
D. Cognitive-behavioral therapy (CBT)
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**Which of the following adverse effects of clozapine warrants immediate discontinuation without later rechallenge?**

A. Neutropenia
B. Weight gain
C. Atrial hypertension
D. Seizures
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**A 78-year-old female is brought into your office by her daughter who reports that for the last 4 years the patient has been more forgetful, repeating questions, socially inappropriate, and more recently has become easily irritable. The daughter expresses feeling increasing stressed about the situation and would like to know if there is anything that could help with the situation. Which of the following has the best evidence for improving this situation?**

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C. Citalopram
D. Haloperidol
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49

**Which of the following represents our current understanding regarding the use of ketamine as a novel treatment for major depressive disorder?**

A. Although effective, it offers no clear advantage over standard treatments
B. As the data is limited to open, uncontrolled trials, no confident statement can be made
C. Promising early studies have not been confirmed by larger trials
D. Ketamine appears to offer several advantages over standard treatments
E. The high efficacy of the treatment is largely offset by the long time to onset

50

**Which of the following represents our current understanding regarding the use of ketamine as a novel treatment for major depressive disorder?**

A. Although effective, it offers no clear advantage over standard treatments
B. As the data is limited to open, uncontrolled trials, no confident statement can be made
C. Promising early studies have not been confirmed by larger trials
D. Ketamine appears to offer several advantages over standard treatments
E. The high efficacy of the treatment is largely offset by the long time to onset

51

**Which of the following benzodiazepines has the shortest half-life?**

A. Alprazolam
B. Diazepam
C. Lorazepam
D. Temazepam
E. Triazolam

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**Which of the following forms of neuromodulation for the treatment of depression requires the determination of a threshold for motor-evoked responses prior to dosing?**

A. Vagus nerve stimulation
B. Deep brain stimulation of cingulate cortex
C. Unilateral electroconvulsive therapy (ECT)
D. Transcranial magnetic stimulation (TMS) of prefrontal cortex

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55

**Treatment of Tourette syndrome targets:**

A. Glutaminergic modulation at the orbitofrontal cortex
B. Dopaminergic modulation at the striatum
C. Serotonergic modulation at the orbitofrontal cortex
D. Noradrenergic modulation

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57

**The risk of switch in mood polarity to hypomania or mania in patients with bipolar depression is greatest which of the following antidepressant medications?**

A. Sertraline
B. Citalopram
C. Bupropion
D. Fluoxetine
E. Venlafaxine

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**Which of the following antipsychotics has an active metabolite with putative antidepressant properties?**

A. Quetiapine
B. Chlorpromazine
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D. Olanzapine
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61

**A 35-year-old woman began taking citalopram, 20 mg, daily about three months ago when she presented with symptoms consistent with panic disorder. On the current regimen, her symptoms are under control. Until her recent episode of illness she has had no other history of psychiatric symptoms and there is no family history of psychiatric illness. How long should she continue this medication?**

A. Four weeks
B. Three months
C. One year
D. Three years
E. Indefinitely

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63

**A 37-year-old woman, in dynamic psychotherapy for borderline personality disorder, has been expressing an unrealistic overvaluation of the therapist. After many months of this expressed high regard, she suddenly becomes enraged after the therapist fails to return her call, and now declares the therapist to be "the worst ever." Which of the following would be the most appropriate way to handle the patient's new reaction?**

A. Avoid directly responding and instead encourage the patient to further express her emotions.
B. Apologize for the missed call and then suggest they move on with the current work.
C. Acknowledge the failing and then question how the patient's opinion could change so dramatically.
D. Propose that they clarify an appropriate call-back policy to avoid future mishaps.
E. Suggest to the patient that such inevitable mistakes are an important part of the therapy.

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65

**A 26-year-old bystander of a horrific motor vehicle accident is taken to the ED after reporting that suddenly she had gone blind. She does not appear to focus on anyone who is talking. However, her eyes are noted to track her reflection when a mirror is waved in front of her. After hospital admission, a complete medical and neurological workup is found to be normal. What should be the first intervention for her condition?**

A. Pointing out that she can see as a result of the mirror test
B. Instituting a reward system for sight improvement
C. Discussing the stress of the event under amobarbital
D. Suggesting symptom improvement through hypnosis
E. Reassuring her that her sight will soon return

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67

**After having a good response to a course of high frequency repetitive transcranial magnetic stimulation (rTMS), a patient is now in remission from what was a severe episode of major depressive disorder. The patient asks about continuing with maintenance rTMS therapy rather than using antidepressants. Which of the following represents the best advice for this patient?**

A. Repeated TMS has adverse effects on the nervous system and should be avoided
B. rTMS has only a limited maintenance effect and antidepressants should still be used
C. As rTMS works through fundamental neuronal changes no maintenance treatment is needed
D. Monthly rTMS has been shown to be highly effective as maintenance treatment
E. rTMS has not been studied in the maintenance period and no advice can be given

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69

**Dialectical behavioral therapy (DBT) is a principle-driven, flexible and comprehensive treatment for patients with different psychiatric disorders. It includes skill training sessions organized into four modules including distress tolerance, emotion regulation, interpersonal effectiveness and:**

A. mindfulness.
B. decisional balance.
C. radical acceptance
D. behavioral inhibition
E. generation of alternatives

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71

**Considering recent evidence bearing on the subject, which of the following agents should be considered to be the single preferred first-line drug in the long-term treatment of bipolar disorder?**

A. Lamotrigine
B. Pregabalin
C. Quetiapine
D. Lithium
E. Olanzapine

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73

**A single mother reports that her 12-year-old child has become increasingly defiant with parental requests, at times becoming physically aggressive by kicking doors and hitting walls. She notes that the child does not exhibit these problems with the father. Which of the following is the most appropriate treatment?**

A. Inoculation techniques, such as boot camp
B. Contingency management
C. Medication management
D. Send the child to live with the father temporarily
E. Brief hospitalization

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75

**Which of the following medications is mostly likely to cause sexual dysfunction?**

A. Bupropion
B. Mirtazapine
C. Duloxetine
D. Citalopram
E. Imipramine

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**A 50-year-old patient with hypertrophic cardiomyopathy who has an implantable cardioverter-defibrillator reports an increasing fear of inappropriate electrical discharges. The discharges occur infrequently. Since the last one, the patient has stopped exercising, become more irritable, and has developed disturbed sleep due to flashbacks of past discharge experiences. Which of the following treatment strategies has the strongest evidence base?**

A. Prazosin and eye movement desensitization and reprocessing (EMDR)
B. Sertraline and cognitive-behavioral therapy (CBT)
C. Imipramine and progressive muscle relaxation
D. Mirtazapine and cardiac rehabilitation therapy
E. Citalopram and atenolol

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79

**Priapism is a rare but serious side effect of many medications, including atypical antipsychotics. Which of the followin atypical antipsychotics has the likely highest risk for priapism?**

A. Clozapine
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D. Quetiapine
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81

**How many weeks should one wait to start phenelzine after discontinuing fluoxetine?**

A. 1
B. 2
C. 3
D. 5
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**Which of the following characteristics would make a patient a suitable candidate for brief dynamic therapy?**

A. Presence of psychosis
B. Inability to tolerate separation
C. Poor motivation for treatment
D. Presence of childhood sexual abuse
E. Ability to identify a circumscribed problem

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85

**A 35-year-old patient with schizophrenia has had 4 serious suicide attempts over the past year despite consistent treatment with haloperidol decanoate. Given the patient's recent suicide attempts, what would be the BEST next medication trial?**

A. Olanzapine
B. Quetiapine
C. Fluphenazine decanoate
D. Long-acting risperidone
E. Clozapine

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87

**Which antidepressant group is most likely to induce significant anticholinergic side effects that should be considered when treating late-life depression?**

A. Serotonin norepinephrine reuptake inhibitors
B. Monoamine oxidase inhibitors
C. Selective serotonin reuptake inhibitors
D. Reversible monoamine oxidase inhibitors
E. Tricyclic antidepressants

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89

**Which of the following statements most accurately describes the benefits of SSRIs in the treatment of PTSD? SSRIs have been shown to:**

A. Ameliorate core PTSD and other associated symptoms.
B. Treat primarily the comorbid psychiatric disorders.
C. Improve primarily hyperarousal symptoms.
D. Improve the effectiveness of alpha 2 adrenergic agonists.
E. Act only to augment psychotherapy in PTSD.

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**According to the results of the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) study, which antipsychotic medication had the lowest all cause discontinuation rate?**

A. Olanzapine
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C. Risperidone
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93

**Which of the following is the most accurate information to give families regarding the risk of using antipsychotics to treat agitation in elderly patients with moderate Neurocognitive Disorder due to Alzheimer's disease?**

A. There is an increased risk of mortality, but only for the antipsychotics risperidone and olanzapine.
B. Increased mortality in the elderly has been associated with both atypical and conventional antipsychotics.
C. Although suggested by earlier studies, subsequent studies have not found a significant risk of mortality with atypical antipsychotics.
D. The risk is unknown, as inadequate data exists to make any conclusive statements.
E. Although newer antipsychotics may have a risk, typical antipsychotics appear to be safe.

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**A 21-year-old patient dropped out of college and has been unable to attend social gatherings as a result of extreme fear of embarrassing herself. She has failed to respond to therapeutic trials of paroxetine, fluvoxamine, sertraline, clonazepam, and buspirone. Which of the following medications would be most appropriate to prescribe next?**

A. Fluoxetine
B. Propranolol
C. Phenelzine
D. Lithium
E. Risperidone

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97

**Which medication has demonstrated efficacy treating unipolar and bipolar depression with the least risk of veering into mania?**

A. Olanzapine
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C. Quetiapine
D. Paroxetine
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99

**A 42-year-old woman receiving chemotherapy for non-Hodgkin's lymphoma develops anorexia-cachexia syndrome. She is started on a medication to address her symptoms. A few weeks later she returns with reports of an increase in her sense of well-being, and decreased pain and nausea. However, she has gained no weight and has new onset muscle weakness. Which of the following agents is most likely responsible?**

A. Corticosteroids
B. Cyproheptadine
C. Medroxyprogesterone acetate
D. Metoclopramide
E. Ondansetron

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101

**A 25-year-old patient with schizophrenia is admitted to the hospital with auditory hallucinations and persecutory delusions. The psychiatrist initiates haloperidol 5mg orally twice per day. After 48 hours of receiving medication, the patient becomes increasingly irritable, agitated, and is noted to be restless and pacing. The patient's blood pressure is 130/85 with a pulse of 88. The next step in management of this patient's symptoms should be to:**

A. Increase the haloperidol to 10mg orally twice per day.
B. Administer benztropine 1mg orally twice per day.
C. Administer a one-time dose of haloperidol 5mg intramuscularly.
D. Administer a one-time dose of diphenydramine 25mg intramuscularly.
E. Initiate propranolol 20mg orally three times per day.

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103

**Which of the following psychotherapeutic interventions represents the best approach for a patient with germ obsessions who washes his hands every time he touches something he considers dirty?**

A. Having the patient place his hands in a container of mud
B. Having the patient snap his wrist with a rubber band when he washes his hands
C. Pointing out to the patient that the germ phobia is an example of distorted thinking
D. Having the patient touch a dirty object, then not allowing him to wash his hands
E. Providing the patient with coping cards to remind him that the hand washing is unnecessary

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105

**What were the findings of the Treatment for Adolescents with Depression Study (TADS), with regard to efficacy of treatment?**

A. Fluoxetine alone was most effective.
B. Cognitive behavioral therapy alone was most effective.
C. Fluoxetine plus cognitive behavioral therapy was most effective.
D. Interpersonal therapy alone was most effective.
E. Fluoxetine plus interpersonal therapy was most effective.

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107

**A 28-year-old man is referred to psychiatry clinic for evaluation of his depression and anxiety. He reveals that he spends up to 2 hours a day washing his hands and a fear of germs has led to a marked constriction in social activities and an inability to eat. Over the past 3 weeks, he describes anhedonia and fatigue. In addition psychotherapy, which of the following treatment modalities is considered to be a first-line treatment for this man's disorder?**

A. Fluoxetine
B. Lorazepam
C. Clomipramine
D. Quetiapine
E. Structured cognitive behavioral training

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D. Quetiapine
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109

**A 22-year-old man with chronic schizophrenia developed gynecomastia after being treated with risperidone for many months. His prolactin level is markedly elevated and you want to switch him to the antipsychotic drug that is less likely to cause this problem. Which one of the following would be the most appropriate choice?**

A. Aripiprazole
B. Olanzapine
C. Perphenazine
D. Haloperidol
E. Paliperidone

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**A 23-year-old man is the sole survivor of a fire aboard a crowded plane. In the immediate aftermath of exposure to the trauma, which of the following interventions is most likely to be successful in preventing psychological sequelae?**

A. Encourage him to imagine positive emotions.
B. Have the man ventilate about how he is feeling.
C. Normalize the stress reaction.
D. Prescribe a short-acting benzodiazepine.
E. Use critical incident debriefing.

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E. Use critical incident debriefing.

113

**A patient is evaluated for an irregular menstrual cycle. On physical examination the patient is noted to be obese, has remarkable facial hair growth and acne. The patient reveals that she has been taking a medication prescribed by her psychiatrist for the treatment of bipolar disorder. Which of the following medications is most likely to be responsible for the patient's presentation?**

A. Aripiprazole
B. Lamotrigine
C. Lithium
D. Carbamazepine
E. Valproate

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115

**A 24-year-old man on lithium maintenance therapy develops severe, persistent polyuria and polydipsia. Which of the following medications is most likely to be effective in treating these side effects without requiring administration of supplemental electrolytes?**

A. Amiloride
B. Furosemide
C. Hydrochlorothiazide
D. Metolazone
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117

**Which of the following atypical antipsychotic medications has the longest half-life?**

A. Risperidone
B. Ziprasidone
C. Quetiapine
D. Clozapine
E. Aripiprazole

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C. Quetiapine
D. Clozapine
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119

**A 75-year-old woman is diagnosed with Neurocognitive Disorder due to Alzheimer's disease and started on donepezil. This medication has been shown to:**

A. Restore cognition to near premorbid functioning
B. Decrease accumulation of amyloid plaques
C. Reduce the risk of falls
D. Delay time to nursing home admission
E. Decrease neurotoxicity through NDMA receptor antagonism

120

**A 75-year-old woman is diagnosed with Neurocognitive Disorder due to Alzheimer's disease and started on donepezil. This medication has been shown to:**

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C. Reduce the risk of falls
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121

**A 58-year-old patient with diabetic peripheral neuropathic pain presents with major depressive disorder. Which of the following antidepressants is most likely to have beneficial effects on both conditions?**

A. Bupropion
B. Duloxetine
C. Escitalopram
D. Nefazodone
E. Mirtazapine

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C. Escitalopram
D. Nefazodone
E. Mirtazapine

123

**A 28-year-old hospitalized patient is started on an antipsychotic medication for schizophrenia. Within 3 weeks, the patient complains of chest pain, shortness of breath and swelling of the lower extremities. Which medication is the patient most likely taking?**

A. Fluphenazine
B. Quetiapine
C. Risperidone
D. Aripiprazole
E. Clozapine

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125

**A depressed 62-year-old man being treated with an SSRI is admitted to the hospital with motoric immobility, posturing, grimacing, echolalia and echopraxia. Intravenous administration of lorazepam and amobarbital leads to no relief. Which of the following treatments should be considered?**

A. Add a second antidepressant.
B. Begin a mood stabilizer.
C. Initiate electroconvulsive therapy.
D. Add dantrolene.
E. Administer intravenous haloperidol.

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C. Initiate electroconvulsive therapy.
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127

**The anti-anxiety effects of buspirone are most likely exerted through its effects on which of the following receptors?**

A. GABA
B. 5-HT1A
C. 5-HT2A
D. 5-HT2C
E. 5-HT3

128

**The anti-anxiety effects of buspirone are most likely exerted through its effects on which of the following receptors?**

A. GABA
B. 5-HT1A
C. 5-HT2A
D. 5-HT2C
E. 5-HT3

129

**A 38-year-old woman with a history of estrogen receptor-positive breast cancer is currently taking tamoxifen to reduce the risk of recurrence. However, she has become increasingly tearful, withdrawn, and anergic over the past month. She also notes difficulty with sleep and concentration as well as distressing hot flashes since initiating tamoxifen. Which one of the following medications is most appropriate to treat her symptoms?**

A. Venlafaxine
B. Paroxetine
C. Gabapentin
D. Fluoxetine
E. Duloxetine

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**A 32-year-old woman with a history of early childhood abuse and abandonment begins dynamic psychotherapy. Although the initial stages of treatment proceed well, after three months her psychiatrist notices that she is becoming more critical of the therapy and frequently questions the value of it. In addition, she is dismissive of the psychiatrist and begins to question whether the psychiatrist is adequately trained. As a result, the psychiatrist begins to dread the sessions, thinking that perhaps he is not skilled enough to help this patient, and begins considering a referral. This dynamic is best described as a type of:**

132

**This dynamic is best described as a type of:**

A. Projective identification
B. Displacement
C. Sublimation
D. Paranoid-schizoid position
E. Ambivalent/resistant pattern

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**A 73-year-old woman with anxiety presents to the physician's office with confusion. Lab work-up reveals low serum sodium and low plasma osmolarity. Her urine sodium and osmolarity are high. Her medications include diazepam, paroxetine, and propranolol. The physician should consider a diagnosis of:**

A. Hypothyroidism.
B. Syndrome of Inappropriate Antidiuretic Hormone.
C. Hyperparathyroidism.
D. Renal failure.
E. Dehydration.

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136

**For patients with functional gastrointestinal disorders, which of the following medications would be most likely to alleviate the visceral pain associated with irritable bowel syndrome?**

A. Bupropion
B. Clonazepam
C. Fluoxetine
D. Quetiapine
E. Amitriptyline

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**A 42-year man is being treated with cognitive-behavior therapy (CBT) for depression. He describes several mistakes he made at work, and voices the belief that "no matter what I try, I always fail." This is an example of:**

A. Automatic thought.
B. Maladaptive schema.
C. Full consciousness.
D. Modified cognition.
E. Unconscious conflict.

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**A 38-year-old patient with schizophrenia is observed holding her arms in bizarre positions for hours at a time. On interview, the patient does not answer any questions, but rather repeats everything the psychiatrist says. Which of the following is the most appropriate initial treatment?**

A. Lorazepam
B. Propranolol
C. Diphenhydramine
D. Phenobarbital
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142

**A 72 year old patient is admitted to the hospital with a fever of 101.8° F and a urinary tract infection. The patient believes that it is 1974 and that the hospital room is a kitchen. The nursing staff is concerned because the patient is agitated, trying to get out of bed, and trying to pull out the IV. Which of the following medications is the best choice for the patient's agitation?**

A. Lorazepam
B. Haloperidol
C. Diazepam
D. Thioridazine
E. Valproate

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**A 70-year-old woman presents with a history of a fixed belief that her arms and legs are infested with bugs that are crawling and biting her. She has no known associated medical condition and is physically healthy. Which of the following is best supported as a treatment of her condition?**

A. Methylphenidate
B. Imipramine
C. Pimozide
D. Selegiline
E. Fluoxetine

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**Patients who are being treated with exposure therapy for anxiety disorders are:**

A. Encouraged to think about non-threatening situations during the treatment.
B. Encouraged to focus on their fears and allow feelings of anxiety to occur.
C. Required to conduct the therapy in real life or fully realistic situations.
D. Required to develop a protocol and start with the most feared stimulus first.
E. Required to be on an appropriate type and dose of anti-anxiety medication.

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148

**Which of the following is considered the treatment of choice for the core deficit of children with autism spectrum disorder without accompanying intellectual or language impairment (formerly Asperger's syndrome)?**

A. Speech and language therapy
B. Self-care assistance
C. Social skills training
D. Structured educational intervention
E. Vocational rehabilitation

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**In which of the following situations would a high potency benzodiazepine be the preferred initial pharmacotherapy for panic disorder?**

A. Co-morbid major depression
B. Need for rapid onset of action
C. Anticipation of long-term treatment
D. Associated agoraphobia
E. Co-morbid cardiovascular disease

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152

**A 35-year-old patient worries obsessively that he will kill his mother. To alleviate the anxiety, he calls her repeatedly throughout the day to hear her voice and reassure himself that he has not harmed her. He has tried adequate trials of high doses of fluoxetine, paroxetine, lorazepam, and clonazepam, without improvement. Which of the following medications would be most appropriate to prescribe next?**

A. Citalopram
B. Alprazolam
C. Bupropion
D. Lithium
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**A 35-year-old patient worries obsessively that he will kill his mother. To alleviate the anxiety, he calls her repeatedly throughout the day to hear her voice and reassure himself that he has not harmed her. He has tried adequate trials of high doses of fluoxetine, paroxetine, lorazepam, and clonazepam, without improvement. Which of the following medications would be most appropriate to prescribe next?**

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**Which of the following should be the initial treatment of hypochondriasis?**

A. Cognitive behavioral therapy
B. Treatment of incidental physical exam findings
C. Scheduling regular physical examinations
D. Discussing the false nature of the illness
E. Pharmacotherapy with SSRIs

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**A 42-year-old man presents to a psychiatrist 6 months after a motor vehicle accident. He has difficulty sleeping because he has frequent nightmares about the accident. He has not been able to drive since the accident, and his wife usually drives for him. Even then, he finds it very difficult to be in a car, often panicking if another car is near them on the road. Which of the following medications would be the most appropriate for this man?**

A. Propranolol
B. Nortriptyline
C. Clonazepam
D. Olanzapine
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**Which of the following is the best established psychosocial intervention for the treatment of panic disorder?**

A. Dialectical behavioral therapy
B. Interpersonal psychotherapy
C. Psychodynamic psychotherapy
D. Marital and family therapy
E. Cognitive-behavioral therapy

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**A 42-year-old patient with schizophrenia presents to the emergency department with confusion and agitation following an overdose of antipsychotic medication. The patient has a temperature of 101.7 degrees Fahrenheit, blood pressure of 140/80 mm Hg, and pulse of 112. Physical examination reveals hot, dry skin, dilated pupils, and decreased bowel sounds. This patient's symptoms are most likely caused by medication effects at which of the following receptors?**

A. Muscarinic cholinergic
B. Nicotinic cholinergic
C. alpha-1-adrenergic
D. Histaminergic
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**A 9-year-old boy is brought by his mother at the insistence of the school for the assessment of behavior problems. The diagnosis of attention-deficit/hyperactivity disorder is made, along with the recommendation to start stimulant medication. The mother is concerned that stimulant medication might put her son at risk for developing substance use problems. Regarding the risk of developing substance use problems, what is known about stimulant treatment for ADHD?**

A. Increased risk of drug use disorder only
B. Increased risk of both alcohol and drug use disorder
C. Decreased risk of drug use disorder only
D. Decreased risk of both alcohol and drug use disorder
E. Unchanged risk for both alcohol and drug use disorder

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**A 72-year-old man is referred by his primary care doctor to a geriatric psychiatrist for treatment of depression. Two weeks earlier the man had seen his primary care doctor who started citalopram 20 mg daily. The patient continues to report severe depressive symptoms. On interview, it becomes apparent that this is the man's first episode of depression, and he has no history of any prior psychiatric disorder. The psychiatrist should advise that the patient:**

A. Discontinue citalopram and begin nortriptyline.
B. Discontinue citalopram and begin venlafaxine.
C. Continue citalopram, but add lithium.
D. Continue the current treatment as prescribed.
E. Increase the citalopram to 40 mg daily.

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**Which of the following therapies for borderline personality disorder incorporates psychoeducation about the illness, emotional management skills training, and behavior skills training?**

A. Mentalization based therapy
B. Schema-focused therapy
C. Trauma-focused cognitive-behavior therapy
D. Eye movement desensitization and reprocessing
E. Systems Training for Emotional Predictability and Problem Solving (STEPPS)

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**Which psychotherapeutic modality involves teaching patients to tolerate distress, regulate their emotions, reduce vulnerability to cues, and avoid or distract without problem behavior, while concomitantly reducing reinforcement of maladaptive behavior?**

A. Psychoanalytic psychotherapy
B. Cognitive behavioral therapy
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# End of Treatment Session

*Thank you for your Attention*

171

**Behavioral & Social Sciences**

- Psychological/ Psychotherapy Theories
- Research Methodology
- Sociology & Anthropology

**A mental health organization is developing a job skills training program for patients who are seriously mentally ill but able to manage their own medications. This treatment is targeted at which of the following phases of psychiatric rehabilitation?**

A. Engagement
B. Prodromal
C. Stable
D. Refractory
E. Acute

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**A new patient shows up 30 minutes late for a one-hour psychiatric evaluation. The patient is distant and easily distracted; memory function is preserved. The patient answers all questions, but otherwise exhibits no spontaneous conversation. Which of the following defense mechanisms most likely accounts for the patient's behavior?**

A. Denial
B. Schizoid fantasy
C. Reaction formation
D. Isolation of affect
E. Passive-aggressive

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**A 30-year-old morbidly obese patient refuses to change his eating and exercise habits, and repeatedly tells the physician, "I'll worry about my health when I'm 65." One month later, the patient's equally obese 55-year-old father dies of a myocardial infarction contributed to by his weight and hypercholesterolemia. The now obvious disparity between the patient's current behavior and knowledge of the circumstances surrounding his father's death is an example of which learning theory process?**

A. Social learning
B. Attribution error
C. Motivation
D. Cognitive dissonance

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**According to sociobiologic theory, which of the following terms describes behaviors at the level of the individual that maximize fitness at the level of the gene?**

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B. Humor
C. Suppression
D. Asceticism
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**Which of the following gene x environment interactions has been demonstrated to play a role in the etiology of ADHD?**

A. DRD4 and maternal smoking during pregnancy
B. DAT and poor maternal rearing practices during infancy
C. MAO-A and stressful life events during early childhood
D. 5-HTT and bullying during elementary school
E. COMT and marijuana smoking during adolescence

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**Development**

- Aspects of Development
  - Biology
  - Cognitive
  - Social
  - Emotional
  - Gender/ Sexuality
- Theories

**In a typically developing infant, which of the following sensory modalities is fully developed last?**

A. Taste
B. Touch
C. Smell
D. Sight
E. Hearing

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**Investigations of temperament have identified four major traits: harm avoidance, novelty seeking, reward dependence, and persistence. Individuals low in reward dependence are more likely to be:**

A. detached and aloof.
B. pessimistic and fearful.
C. reserved and deliberate.
D. unmotivated and underachieving.
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**In order for a preschool-age child to understand that death is final and irreversible, which of the following developmental competencies must have been achieved?**

A. Seriation
B. Abstraction
C. Conservation
D. Object constancy
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**The capacity to conceptualize a hypothetical future and integrate past, present and future concerns typically appears during which phase of development?**

A. Toddlerhood
B. Preschool
C. Early school age
D. Late school age
E. Adolescence

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**Which of the following cognitive functions decreases the most with advancing age in healthy older adults?**

A. Vocabulary
B. Attention span
C. Spatial orientation
D. Semantic memory
E. Speed of mental processing

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**Which of the following types of memory is unconscious and involves the influence of past experiences on current behavior?**

A. Explicit
B. Implicit
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**Erikson's stage of generativity vs. stagnation is characterized by which of the following tasks?**

A. Mastery of intimacy
B. Planning of legacies
C. Deepened spirituality
D. Career consolidation
E. Promoting the well-being of others

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**A 7-year-old girl is brought to a psychiatrist because her parents are worried that she does not display enough interest in "feminine activities." Although she wears dresses and identifies herself as a girl, she prefers playing basketball and hockey to taking ballet lessons and playing "house." The parents' concerns appear to involve which of the following aspects of the patient's development?**

A. Gender identity
B. Sexual identity
C. Sexual orientation
D. Gender role
E. Sexual role

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**A group of girls in a 4th grade class spend their recess time playing almost exclusively with each other, exhibiting a clear preference to avoid playing with the boys in the class. This same-gender orientation of behavior most likely represents which of the following?**

A. A counter-phobic response to homoerotic feelings
B. A response to the boys refusing to play with them
C. An opportunity to consolidate gender-appropriate identifications
D. Evidence that children this age have no interest in the opposite sex
E. An adaptive defense against erotic impulses displaced from father onto male peers

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**Parents of a teen using marijuana ask for information about its impact on brain function. After explaining that the adolescent brain is affected by environmental events, which of the following is the best response? Marijuana is likely to impact development by its**

A. influence on neuron synaptic pruning
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**Having a theory of mind is essential for the development of which of the following**

A. Empathy
B. Abstraction
C. Self Confidence
D. Morality
E. Intelligence

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D. Morality
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**During therapy, a patient minimizes being upset about not getting a long awaited promotion which was given to a friend. The patient states that work has been less of a priority and being the top scorer in the adult recreational soccer league has been very satisfying though being reprimanded by the referee for rough play has been a problem. Which of the following psychological defenses is the patient most likely using?**

A. Humor
B. Repression
C. Altruism
D. Sublimation
E. Denial

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**Basic Drives and Related Disorders**

- Psychopathology, Diagnosis, & Treatment
  - Eating Disorders
  - Sleep Disorders
  - Sexual Disorders

**A 42-year-old woman is referred for a polysomnogram to evaluate her complaint of insomnia. During the polysomnogram, she seems to fall asleep within 15 minutes, and her EEG reflects normal sleep throughout the night. When she wakes in the morning in the sleep lab, she reports that she was awake most of the night. Which type of sleep disorder is this patient most likely to have?**

A. Psychophysiological insomnia
B. Sleep state misperception
C. Idiopathic insomnia
D. Obstructive sleep apnea
E. Delayed sleep-phase syndrome

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28

**Binge eating disorder is characterized by:**

A. Feelings of being unable to control one's intake of food.
B. Consumption of a large amount of food over a 24-hour period.
C. Purging after eating a large amount of food.
D. Increasing amounts of exercise.
E. Progressive weight loss.

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30

**A 38-year-old married woman presents to a psychiatrist complaining of difficulty in her sex life. She reports that, for much of her married life, she has had little interest in sexual intercourse with her husband. She has not had any affairs, and she denies any discord in her relationship with her husband aside from the lack of a satisfactory sex life. She does not masturbate and rarely has any sexual fantasies. On the few occasions that she does have intercourse with her husband, she is able to enjoy sex and achieve an orgasm. Which of the following diagnoses is most appropriate?**

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**Which of the following diagnoses is most appropriate?**

A. Genito-pelvic/pain penetration disorder
B. Sexual aversion disorder
C. Female sexual interest/arousal disorder
D. Female orgasmic disorder

32

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**The hormone that masculinizes the human brain during uterine life is:**

A. Testosterone.
B. Dihydrotestosterone.
C. Estrone.
D. Estradiol.
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**In order to make a diagnosis of bulimia nervosa, the symptoms must have duration of at least:**

A. 1 month.
B. 3 months.
C. 6 months.
D. 9 months.
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**A 16-year-old woman presents with fatigue and dehydration. On physical examination she is noted to have swollen salivary glands and calluses on her knuckles. She is also hypokalemic. These findings are most consistent with which of the following diagnoses?**

A. Chronic fatigue syndrome
B. Bulimia nervosa
C. Obsessive-compulsive disorder
D. Anorexia nervosa
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**A 37-year-old single man's sex life centers on donning women's lingerie before engaging in sexual activities with willing female partners. He considers himself heterosexual and has never had any interest in having sex with men. He is distressed about his sexual behavior and is now seeking treatment. Which of the following best describes his behavior?**

A. Transvestic disorder
B. Gender dysphoria
C. Frotteuristic disorder
D. Exhibitionistic disorder

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**A 15-year-old girl is diagnosed with anorexia nervosa. She has had symptoms for 18 months. Her medical status is stable and she maintains an acceptable weight. The treatment that would be most beneficial for ongoing care is:**

A. Behavioral management.
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C. Cognitive-behavioral therapy.
D. Family therapy.
E. Dialectical behavior therapy.

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**A 16-year-old girl is brought by her parents for an evaluation as part of the admission process for a weight reduction program. The adolescent agrees that she is overweight and that she would like to lose weight. Which of the following would be MOST indicative that she will be successful in the program?**

A. BMI = 30
B. No family history of eating disorders
C. Mother successfully lost weight
D. She is willing to take medication
E. She is willing to change her eating habits

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**A 17-year-old patient diagnosed with anorexia nervosa at age 14 is brought to a psychiatrist by her parents. They are concerned because she is 65% of her expected body weight. The most appropriate intervention is to:**

A. Suggest a group therapy program.
B. Initiate treatment with an antidepressant.
C. Restore the patient's nutritional state.
D. Refer the patient and family for counseling.
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**The parents of a 4-year-old boy report that a few hours after he goes to sleep, their son will suddenly get up in the bed and look extremely frightened. His heart races; he is diaphoretic and cries out. He is difficult to awaken and has no recall for the event the next morning. Which of the following is the most appropriate next step in the management of this patient?**

A. Administer a short-acting hypnotic for two weeks.
B. Have the child go to bed at a later time.
C. Obtain an electroencephalogram to rule out temporal lobe epilepsy.
D. Reassure the parents that their son will outgrow the disorder.
E. Suggest to the parents that they allow their son to sleep with them for a temporary period.

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**A 48-year-old obese man presents for an evaluation, at the prompting of his wife. The wife, who has accompanied the patient to the appointment, complains that the patient snores loudly and keeps her awake at night. She states he sometimes seems to be gasping for air. On questioning, the patient admits to falling asleep easily during the day, and even falling asleep while driving on occasion. He also complains of morning headaches and was recently diagnosed with hypertension. Which of the following is the best initial treatment for this patient's condition?**

A. Uvulopalatopharyngoplasty
B. Temazepam
C. Biofeedback
D. Modafinil
E. Nasal continuous positive airway pressure (CPAP)

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**Which of the following medications has the strongest body of evidence for the treatment of bulimia nervosa?**

A. Bupropion
B. Fluoxetine
C. Duloxetine
D. Paroxetine
E. Venlafaxine

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**Because electroencephalograph (EEG) sensitivity to electrical potential changes is greatest in neurons in the cortex beneath the scalp, which of the following phenomena would most likely produce artifact in the EEG?**

A. Eye blink
B. Drowsiness
C. Heightened attention
D. Brainstem reticular activation

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Which of the following patterns is most likely to be seen on an EEG of a delirious patient?

A. Generalized slowing
B. Increased alpha
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E. Focal high frequency spikes

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**A 28-year-old man presents with the chief complaint of excessive daytime sleepiness. He reports the sudden onset of brief periods of daytime sleep that are very restful. On a few occasions, he has experienced brief muscle paralysis after laughter. Recently, he has had two episodes of temporary paralysis when he awakens during the morning accompanied by vivid visual hallucinations. A polysomnogram is most likely to show which of the following?**

A. Episodes of decreased blood oxygen saturation in spite of ventilatory effort
B. Sleep-onset REM periods within 15 minutes of falling asleep
C. Increased sleep spindles and K-complexes in stage 2 non-REM sleep
D. Multiple awakenings during stage 3 and 4 of non-REM sleep
E. Prolonged episodes of REM sleep in the first half of the night

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**Diagnostic Procedures and Addictions**

- Interviewing/ Mental Status
- Psychological Testing
- Addictions

**Which of the following terms describes overinclusion of trivial or irrelevant details that impedes the sense of getting to the point?**

A. Circumstantiality
B. Derailment
C. Flight of ideas
D. Perseveration
E. Tangentiality

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**Which of the following is the most significant disadvantage of using a family member as an interpreter for a patient who does not speak the psychiatrist's language?**

A. The family member does not know clinical medicine.
B. The psychiatrist may relate more to the interpreter than to the patient.
C. It may be uncomfortable for the family member.
D. The patient may censor comments to keep information from the family.
E. Extra time might be required to complete an assessment.

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**A 44-year-old woman presents with a general history of alcohol abuse and significant depressive and anxiety symptoms over 20 years. It is unclear whether the substance use was in response to the affective symptoms or if the affective symptoms were substance-induced. Which of the following procedures would help make this determination?**

A. Administer the MacAndrew Alcoholism Scale—Revised (MAC-R).
B. Conduct a detailed mental status exam, focusing on form of thought.
C. Draw a timeline of all substances used and all psychiatric symptoms.
D. Measure the percent carbohydrate-deficient transferrin.
E. Obtain serial urine toxicology tests.

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**Which of the following tests is most useful in the detection of malingering?**

A. Stroop test
B. Rorschach Inkblot
C. Thematic Apperception Test (TAT)
D. Wisconsin Card Sorting Test (WCST)
E. Minnesota Multiphasic Personality Inventory-2 (MMPI-2)

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**A 72-year-old woman is referred to a psychiatrist because the family has noticed increasing apathy. In evaluating the patient, which of the following would be the most useful first step for revealing the likely underlying pathology?**

A. An empirical trial of an antidepressant
B. An MRI of the brain
C. History and a full mental status examination
D. Thyroid function testing
E. Neuropsychological evaluation

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**The admitting psychiatrist asks a patient to serially subtract sevens from 100. This task is intended to assess which of the following?**

A. Learning disorder
B. Concentration
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D. Memory
E. Effort

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**In the Wisconsin Card Sorting Test (WCST), the patient sorts a series of cards based on various rules set by the examiner. The examiner does not tell the patient how to match the cards, only whether the patient is right or wrong. Which of the following domains of neuropsychological functioning is being assessed?**

A. Motor
B. Language
C. Executive functioning
D. Visuospatial-constructional
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Which of the following laboratory studies has the highest specificity for relapse (recent heavy drinking)?

A. Gamma-glutamyltransferase (GGT)
B. Mean corpuscular volume (MCV)
C. Aspartate aminotransferase (AST)
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**During an interview of a patient with a substance abuse disorder, the therapist asks the patient about the pros and cons of specific behaviors, explores the patient's goals and associated ambivalence about reaching those goals, and listens reflectively to the patient's response. This treatment approach is most consistent with:**

A. Cognitive-behavioral therapy.
B. Contingency management.
C. Interpersonal therapy.
D. Motivational enhancement therapy.
E. Psychodynamic psychotherapy.

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78

**Defining high-risk situations, covert antecedents, and stimulus control techniques are a focus of which of the following therapeutic modalities?**

A. Brief psychodynamic psychotherapy
B. Cognitive behavioral therapy
C. Supportive therapy
D. Interpersonal therapy
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**A visibly pregnant 29-year-old woman presents seeking treatment for oxycodone use disorder. Because of her pregnancy, she wants to stop using all drugs and does not want to take any medications. She went through untreated opioid withdrawal in the past when she couldn't get any pills, and while it was very uncomfortable, she thinks she could do it again with intensive social support and counseling. At this point the best treatment recommendation would be to initiate:**

A. Methadone maintenance.
B. Methadone-assisted withdrawal.
C. Clonidine-naltrexone assisted withdrawal.
D. Buprenorphine maintenance.
E. Daily clinic visits to provide support.

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82

**A 58-year-old man with a history of alcohol use disorder and mild neurocognitive disorder presents to the hospital for a liver biopsy due to suspected alcoholic hepatitis. He complains of severe anxiety about having the procedure done and requests "something for my nerves." Which of the following benzodiazepines is safest to administer?**

A. Alprazolam
B. Chlordiazepoxide
C. Diazepam
D. Oxazepam
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**A 69-year old man with chronic obstructive pulmonary disease, cirrhosis of the liver, benign prostatic hypertrophy and alcohol use disorder is prescribed acamprosate as part of his comprehensive treatment plan for his alcoholism. Which of the following laboratory tests would be most appropriate to obtain in order to determine the best starting dose of acamprosate?**

A. Alanine aminotransferase
B. Electrolytes
C. Creatinine clearance
D. Serum osmolality
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**An individual with a history of opioid use disorder admits to daily use of opiates, but a confirmatory urine toxicology screen is negative. Which of the following opiates is the patient most likely using?**

A. Hydrocodone
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**A 31-year-old man is admitted to an inpatient psychiatric unit after a suicide attempt. Past records show a history of using multiple substances. He sleeps poorly and the next day paces around the unit, restless and grumpy. He is tachycardic at 112 beats per minutes, his palms and forehead are sweaty and his tongue is showing a coarse tremor. When asked, the patient says he feels anxious. The most likely diagnosis is:**

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**An 18-year-old woman is brought to the emergency department after collapsing at a party. She appears delirious and confused, with a temperature of 104°F. The friends who brought her to the emergency room say that she might have taken some pills. She was talking about feeling blissful and dancing a lot until she collapsed. Which of the following is the most likely drug ingested?**

A. Methylenedioxymethamphetamine (MDMA)
B. Ketamine
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92

## Special Topics

- Death/ Dying
- Forensics
- Ethics/ Professionalism
- History

**Which of the following actions is most likely to ease the fears of a dying patient and his family?**

A. Postponing the discussion of pain and pain management
B. Giving the family and patient information on a need to know basis
C. Telling the patient that only the family's input regarding care will be sought
D. Educating the patient that he may have discomfort that cannot be alleviated
E. Obtaining the patient's wishes regarding treatment decisions

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**Which of following is the most common fear during the dying process?**

A. Loneliness
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C. Pain
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**Which of the following individuals described the schizoid personality, coined the term "schizophrenia," and introduced the terms "autism" and "ambivalence"?**

A. Jean Étienne Dominique Esquirol
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**The first attempt to gather information about mental illness prevalence in the United States was initiated by which of the following groups?**

A. DSM-1 authors
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**When managing a chronically suicidal patient, respecting the patient's preference to remain at home and not be admitted to the psychiatric unit for additional care reflects which of the following ethical principles?**

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**A psychiatrist's neighbor tells her that he is having trouble sleeping due to work related stresses. He asks for recommendations and some medication until he can get an appointment with his internist. What ethical problem results if the psychiatrist gives the neighbor the medication?**

A. Prescribing medication creates a doctor-patient relationship
B. The assistance may be ineffective, straining the relationship
C. Providing free care can foster resentment
D. Assisting this neighbor creates an expectation that the psychiatrist will treat other neighbors

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D. Patient misses two appointments and does not return the psychiatrist's calls
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**Children and adolescents are considered a vulnerable population in the conduct of research because they:**

A. Cannot consent
B. Suffer more adverse effects
C. Are in riskier studies
D. Cannot assent
E. Do not benefit

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**Which of the following statements most accurately reflects the position of the APA's Principles of Medical Ethics on faculty psychiatrists having sex with trainees?**

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**Which of the following is one of the standards used to determine mental capacity in decision making?**

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**Which of the following potential reasons for medication noncompliance implies that the patient lacks capacity?**

A. The patient was too delirious from her infection to remember to take her medications
B. The patient's eyesight is too impaired to read the instructions on her pill bottles
C. The patient is unable to understand the reasons the medications were prescribed
D. The patient has a long history of noncompliance owing to a general mistrust of doctors
E. The patient felt too hopeless and depressed to comply with her medication regimen

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**The daughter of an 89-year-old man with severe dementia requests that her father be deemed incompetent. The ultimate decision to determine competence is made by the:**

A. Daughter
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**Evidence Based Medicine**

- Research
- Statistics
- Practice Literacy

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B. External validity
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D. Predictive validity
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**Effective subject randomization is the best way to control for which of the following problems in experimental research?**

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B.Measurement error

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B. The number of people who have a negative outcome in a randomized control trial.

C. The absolute risk of being on a medication.

D. The relative risk of being on a medication as opposed to placebo.

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**Which of the following is NOT a true statement regarding Type 1 Error in statistical evaluation of experimental hypotheses?**

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B. Appears to be no effect where an effect actually exists.

C. α is the probability of Type I Error.

D. Testing multiple hypotheses at once without statistically correcting using Bonferroni Correction of p-value increases likelihood of Type I Error.

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B. Individual study effect sizes
C. Number needed to treat
D. Meta-effect size
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**SELF ASSESSMENT QUESTIONS**

1. The leading cause of medical morbidity in patients with schizophrenia is

A. Obesity.

B. Diabetes.

C. HIV-associated hepatitis.

D. Cigarette smoking.

E. Lack of exercise.

The correct response is option D.

Cigarette smoking, which is consistently reported to be associated with cardiovascular and pulmonary diseases, is the leading cause of morbidity in schizophrenia patients, up to 90% of whom smoke.

*Woo T-UW, Zimmet SV, Wojcik JD, et al: Treatment of schizophrenia, in The American Psychiatric Publishing Textbook of Psychopharmacology, 3rd Edition. Edited by Schatzberg AF, Nemeroff CB. Washington, DC, American Psychiatric Publishing, 2004, p 895*

FOCUS, Exam 1, question #17

2. Borderline personality disorder is associated with which of the following cognitive and perceptual disturbances?

A. Odd thinking and speech.

B. Ideas of reference.

C. Odd beliefs.

D. Transient, stress-related paranoid ideation.

E. Superstitions.

The correct response is option D.

Borderline personality disorder is associated with transient, stress-related paranoid ideation or severe dissociative symptoms. Schizotypal personality disorder is associated with odd thinking, beliefs, and speech; ideas of reference; and superstitions.

*Royce L, Coccaro EF: Biology of personality disorders, in The American Psychiatric Publishing Textbook of Psychopharmacology, 3rd Edition. Edited by Schatzberg AF, Nemeroff CB. Washington, DC, American Psychiatric Publishing, 2004, p 837*

FOCUS, Exam 1, question #33

3. Drug use disorders have been modeled both as impulse-control disorders and as a compulsive disorders, two models that feature different drug-related behaviors. Which of the following behaviors is associated with impulse-control disorder as opposed to compulsive disorder?

A. Tension/arousal.

B. Anxiety/stress.

C. Repetitive behaviors.

D. Relief of anxiety/relief of stress.

E. Obsessions.

The correct response is option A.

In impulse-control disorders, an increasing tension and arousal occurs before the impulsive act, with pleasure, gratification, or relief during the act. Following the act there may or may not be regret or guilt. In compulsive disorders, there are recurrent and persistent thoughts (obsessions) that cause marked anxiety and stress followed by repetitive behaviors (compulsions) that are aimed at preventing or reducing distress. Positive reinforcement (pleasure/gratification) is more closely associated with impulse-control disorders. Negative reinforcement (relief of anxiety or relief of stress) is more closely associated with compulsive disorders.

*Koob GF: Neurobiology of addiction, The American Psychiatric Publishing Textbook of Substance Abuse Treatment, 4th Edition. Edited by Galanter M, Kleber HD. Washington, DC, American Psychiatric Publishing, 2008, p 5; Figure 1–1*

FOCUS, Exam 1, question #38

4. Mr. Jones reports that he stole a car because he was hearing a voice inside his head telling him that if he did not steal the car, the world would be destroyed. The evaluating psychiatrist would be suspicious of malingering if Mr. Jones reported that this auditory hallucination

A. Was continuous and incessant.

B. Was spoken in fluent and grammatical language.

C. Could be ignored or avoided by turning up the volume on a radio or television.

D. Was associated with a delusion.

E. Was associated with a documented history of psychotic episodes of similar content.

The correct response is option A.

Malingerers of schizophrenia often attempt to feign positive symptoms of schizophrenia such as hallucinations and delusions, but skilled examiners can detect whether these symptoms are typical or feigned, and therefore atypical.

Atypical hallucinations that suggest malingering include auditory hallucinations that are continuous rather than intermittent, vague, or inaudible, spoken in stilted language, and are not associated with a delusion; lack of strategies to diminish auditory hallucinations; and visual hallucinations that are seen in black. In general, imitating negative symptoms and disordered forms of thinking, such as derailment, neologisms, incoherence, and perseveration, is more difficult than mimicking positive symptoms.

*Thompson JW, LeBourgeois HW III, Black FW: Malingering, The American Psychiatric Publishing Textbook of Forensic Psychiatry. Edited by Simon RI, Gold LH. Washington, DC, American Psychiatric Publishing, 2004, p 438*

FOCUS, Exam 1, question #117

5. A 36-year-old woman who had been fired from her job in March presents to the outpatient medical clinic in August with a 1-month history of depressed mood and insomnia. She also reports decreased appetite but no other symptoms of depression. She relates her symptoms to the job loss. The most likely diagnosis is

A. No diagnosis.

B. Acute adjustment disorder with depressed mood.

C. Anxiety disorder not otherwise specified.

D. Acute stress disorder.

E. Chronic adjustment disorder with depressed mood.

The correct response is option B.

According to DSM, adjustment disorder is characterized by the development of emotional or behavioral symptoms in response to an identifiable stressor occurring within 3 months of the onset of the stressor. This patient is experiencing depressed mood, insomnia, and decreased appetite, all within 3 months of a stressor (loss of job). Apart from insomnia, the patient has no anxiety symptoms. Option C is incorrect because her fulfilling criteria for adjustment disorder preclude this diagnosis. Option D is incorrect because acute stress disorder requires exposure to a traumatic event in which the person experienced, witnessed, or was confronted with an event that involved actual or threatened death or serious injury, or a threat to the physical integrity of self or others, or a response involving intense fear, helplessness, or horror. For this diagnosis, an individual would also have to experience at least three dissociative symptoms such as derealization or depersonalization. The only criterion that this individual meets for acute stress disorder is the onset and duration of symptoms, which for acute stress disorder is a minimum of 2 days and a maximum of 4 weeks. Option E is incorrect because symptoms must persist for more than 6 months to be specified as chronic.

*American Psychiatric Association: Diagnostic and Statistical Manual of Mental Disorders, 5th Edition. Washington, DC, American Psychiatric Association, 2013*

FOCUS, Exam 1, question #155

6. Outpatient therapy as an initial approach has the best chance of success in patients with anorexia nervosa who

A. Have had the illness for more than 6 months.

B. Are bingeing.

C. Are vomiting.

D. Have medical complications.

E. Have parents who will participate in family therapy.

The correct response is option E.

Outpatient therapy as an initial approach has the best chance for success in patients with anorexia who 1) have had the illness for less than 6 months, 2) are not bingeing and vomiting, and 3) have parents who are likely to cooperate and effectively participate in family therapy. The more severely ill patient with anorexia may present an extremely difficult medical management challenge and should be hospitalized and undergo daily monitoring of weight, food and calorie intake, and urine output.

*Halmi KA: Eating disorders, in The American Psychiatric Publishing Textbook of Psychiatry, 5th Edition. Edited by Hales RE, Yudofsky SC, Gabbard GO. Washington, DC, American Psychiatric Publishing, 2008, p 980*

FOCUS, Exam 1, question #184

7. A 39-year-old male patient presenting to an outpatient clinic has falsely believed for the past 4–5 years that he is a professional football player. He describes in detail a few of his best plays as a quarterback for the Chicago Bears. He has told similar tales for the past few years and denies other psychotic symptoms. The introverted single man has lived alone in the same apartment for the past 7 years and has counted parts in the inventory department for the same company during that time. His symptoms have been refractory to previous treatments. On the basis of this limited clinical information, the most likely diagnosis is

A. Paranoid schizophrenia.

B. Schizophreniform disorder.

C. Brief psychotic disorder.

D. Delusional disorder.

E. Schizoaffective disorder.

The correct response is option D.

In delusional disorder, the psychosis is confined to one or more delusions, usually nonbizarre, as in this case; function remains largely intact; there is minimal decline in function or change in symptoms over time; and

symptoms are more refractory to treatment than in schizophrenia. For paranoid schizophrenia, schizophrenia disorder, brief psychotic disorder, and schizoaffective disorder, the psychosis is exhibited by two or more characteristic symptoms: delusions, hallucinations, disorganized speech, grossly disorganized behavior, and negative symptoms. There is also a significant decline in functioning.

*Minzenberg MJ, Yoon JH, Carter CS: Schizophrenia, in The American Psychiatric Publishing Textbook of Psychiatry, 5th Edition. Edited by Hales RE, Yudofsky SC, Gabbard GO. Washington, DC, American Psychiatric Publishing, 2008, pp 420–421; Table 10–5*

FOCUS, Exam 1, question #191

8. A 35-year-old man who has been clean from heroin comes to the methadone maintenance clinic to pick up his usual 50-mg-per-day dosage of methadone. Despite taking his usual methadone dose every day, the man reports worsening anxiety, muscle cramps, nausea, diarrhea, and insomnia that started a week ago. Two weeks ago, he was prescribed and started taking a new medication for "really bad pain" on one side of his face, which has resolved completely. What is the name of the new medication?

A. Phenytoin

B. Phenobarbital.

C. Carbamazepine.

D. Valproic acid.

E. Gabapentin.

The correct response is option C.

The man was prescribed carbamazepine for trigeminal neuralgia. Carbamazepine is an inducer of several P450 enzymes, specifically 3A4. Because methadone is a substrate for 3A4, there was an increased production of 3A4 after the man started the carbamazepine. Over the ensuing weeks, the blood level of methadone decreased because of the increased availability of 3A4, leading to the development of opioid withdrawal symptoms. After stopping the carbamazepine, the patient's methadone will need to be increased back to his usual dosage over a 2- to 3-week period. Options B and D are incorrect because phenobarbital and valproic acid are 3A4 inhibitors, which would have led to increased, not decreased, methadone levels. Phenytoin, a 3A4 inducer, could have theoretically decreased the patient's methadone level. Phenytoin may be used for acute relief of trigeminal neuralgia symptoms, but carbamazepine is typically used for long-term treatment of the condition, so option A is incorrect. Option E is incorrect because gabapentin does not affect blood levels of the 3A4 enzyme and may actually be an appropriate alternative for this patient.

*Sandson NB: Drug-Drug Interaction Primer: A Compendium of Case Vignettes for the Practicing Clinician. Washington, DC, American Psychiatric Publishing, 2007, pp 188–189*

FOCUS, Exam 1, question #44

9. A 53-year-old man with a history of recurrent mild major depressive disorder has avoided psychiatric treatment for "years" because of his earlier experience with a medication. The antidepressant significantly reduced libido and contributed to his gaining 30 lb., so he completely stopped taking it. He does not recall the name of the medication or any other side effects but threatens to stop taking any medications that cause either of these symptoms. Of the following, which pair of antidepressants did the patient most likely take in the past?

A. Amitriptyline or nefazodone.

B. Phenelzine or venlafaxine.

C. Mirtazapine or bupropion.

D. Trazodone or paroxetine.

E. Fluoxetine or sertraline

The correct response is option D.

Trazodone and paroxetine are both associated with significant weight gain and sexual side effects. Of the selective serotonin reuptake inhibitors (SSRIs), paroxetine is the most prone to causing weight gain. Studies show that fluoxetine, sertraline, citalopram, and escitalopram have equivocal effect on weight gain. Option A is incorrect because amitriptyline causes both weight gain and sexual side effects, but nefazodone has a relatively low risk of sexual side effects. Option B is incorrect because phenelzine causes weight gain, but venlafaxine has a low risk of weight gain. Neither is associated with substantial sexual side effects. Option C is incorrect because mirtazapine is associated with weight gain and sexual side effects, but bupropion has a low risk of both sexual side effects and weight gain. Option E is incorrect because fluoxetine is associated with significant sexual side effects, but sertraline is not associated strongly with either side effect. Based on side-effect profile alone, in order of preference, the patient would most likely adhere to bupropion (neither side effect), venlafaxine (no weight gain, low risk sexual side effects), and possibly nefazodone (equivocal risk of weight gain, low risk sexual side effects). Thereafter, the SSRIs sertraline, citalopram, and escitalopram may be acceptable options for this patient.

**Antidepressant Side Effects**

**Most likely to cause both weight gain and sexual side effects**: most tricyclic antidepressants (TCAs), paroxetine, trazodone, and mirtazapine.

**Most likely to cause weight gain:** TCAs, especially tertiary TCAs such as clomipramine and doxepin. Weight gain is less common with secondary TCAs such as desipramine, nortriptyline, and protriptyline; phenelzine; paroxetine; trazodone; and mirtazapine.

**Most likely to cause sexual side effects:** TCAs, paroxetine, fluoxetine, trazodone, and mirtazapine.

**Least likely to cause weight gain:** bupropion and venlafaxine.

**Least likely to cause sexual side effects:** bupropion and nefazodone.

*Boland RJ, Keller M: Treatment of depression, in The American Psychiatric Publishing Textbook of Psychopharmacology, 3rd Edition. Edited by Schatzberg AF, Nemeroff CB. Washington, DC, American Psychiatric Publishing, 2004, pp 858–859; Tables 52–6 and 52–7*

FOCUS, Exam 1, question #64

10. A 45-year-old woman who is considering moving out of state soon presents to the outpatient clinic for evaluation of depression. She reports depressed mood, hopelessness, increased self-criticism, and indecision about moving. The severity is judged to be mild by the clinician. Before the episode of depression began, she had been ruminating about being "a failure" with regard to home and work issues. Which psychotherapeutic interventions would best help this patient to address her symptoms in general and specifically her feeling that she is "a failure"?

A. Address information processing distortions arising from dysfunctional schemas, and alter these schemas.

B. Address conditioned patterns of emotion and behavior triggered by internal and environment cues, and focus on firsthand experiences of mastery.

C. Address internalized relationship conflicts and patterns by focusing on altering interpersonal patterns in current relationships.

D. Address specific personality traits by focusing on insight.

E. Identify key defense mechanisms, and observe and interpret significant transference data.

The correct response is option A.

Option A describes a learning model of treatment that includes a wide range of cognitive-behavioral therapies (CBT) such as cognitive therapy. The premise of cognitive therapy is that early experience leads to the development of global negative assumptions, called schemas. The schema in this case is "I'm a failure." Depressive schemas involve distorted assumptions such as "If I'm not perfect, I'm a failure." Option B is incorrect because it describes exposure therapy, another learning model that includes the identification of environmental triggers and symptoms, and skills training for symptom management. This patient's main complaints revolved around negative thought patterns (schemas) and not on circumstantially triggered symptoms such as panic symptoms. Option C is incorrect because it describes interpersonal therapy, which would be a better choice if the patient had complained primarily about relational problems. Option D is incorrect because it describes psychodynamic psychotherapy, which includes an exhaustive exploration of the past as a primary context for change efforts. Because psychodynamic psychotherapy would ideally span several months or years, this would not be the ideal option for this patient, who may move out of state soon. Option E is incorrect because it also describes components of psychodynamic psychotherapy.

*Dewan MJ, Steenbarger BN, Greenberg RP: Brief psychotherapies, in The American Psychiatric Publishing Textbook of Psychiatry, 5th Edition. Edited by Hales RE, Yudofsky SC, Gabbard GO. Washington, DC, American Psychiatric Publishing, 2008, pp 1155–1161*

FOCUS, Exam 1, question #90

11. The primary forensic issue in a child custody evaluation in the context of a divorce is

A. What custodial arrangements will be least disruptive to the child's life.

B. To what custodial arrangements will the child agree.

C. What custodial arrangements are in the best interests of the child.

D. Which parent has been more involved in caretaking of the child.

E. Which parent is more motivated to do what is best for the child.

The correct response is option C.

The central issue before the court in a custody dispute is a comparison of custody options and a determination of which of these is in the best interest of the child. Most custody disputes reflect marital disputes that compromise one or both parents' abilities to reason about their children's best interests. However, few divorces stem from disagreements about how to raise children. Clinicians conducting such evaluations should be aware that current standards for conducting custody evaluations strongly recommend that all parties to a custody case (including both parents and all children) be interviewed before rendering an opinion on child custody matters. The clinician presenting an opinion based on the assessment of only one parent is not likely to have a basis for comparing the custody options or making a well-informed recommendation regarding the child's best interest.

*Ash P: Children and adolescents, in The American Psychiatric Publishing Textbook of Forensic Psychiatry. Edited by Simon RI, Gold LH. Washington, DC, American Psychiatric Publishing, 2004, pp 457–458*

FOCUS, Exam 1, question #160

12. Which one of the following dimensions assessed on the Temperament and Character Inventory (TCI) is MOST likely to increase with age?

A. Cooperativeness

B. Harm avoidance

C. Persistence

D. Reward dependence

E. Self-transcendence

The correct response is option A.

In general, three dimensions of personality change substantially with age. Novelty Seeking decreases; Cooperativeness increases; and Self-Directedness increases.

*Sadock BJ, Sadock VA (Eds): Kaplan and Sadock's Comprehensive Textbook of Psychiatry, 9th ed. Philadelphia, Lippincott Williams & Wilkins, 2009, p. 2233.*

FOCUS Psychiatry Review, volume 2, question #18