



CSPP

**PSYCHIATRIC DIAGNOSIS AND
PEDIATRIC PSYCHOPHARMACOLOGY**

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Clinical Services in Psychopharmacology

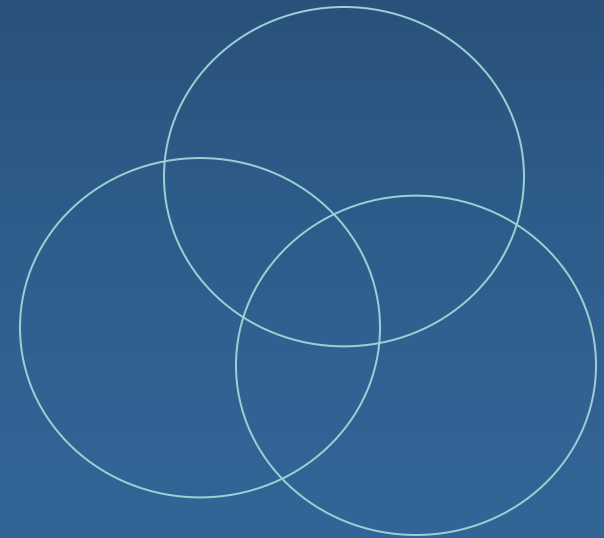
Institute for Juvenile Research

University of Illinois at Chicago

FDA

CSPP

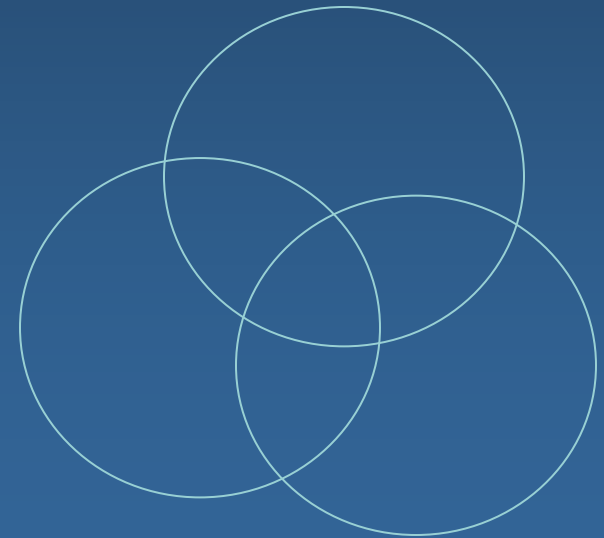
- **FDA requires that drugs used in the United States be safe and effective**



FDA

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- **FDA approval:**
 - drug's use approved in doses, routes of administration and in specific populations
- **Label information:**
 - package insert
 - Physicians Desk Reference
 - advertising



Definition

CSPP

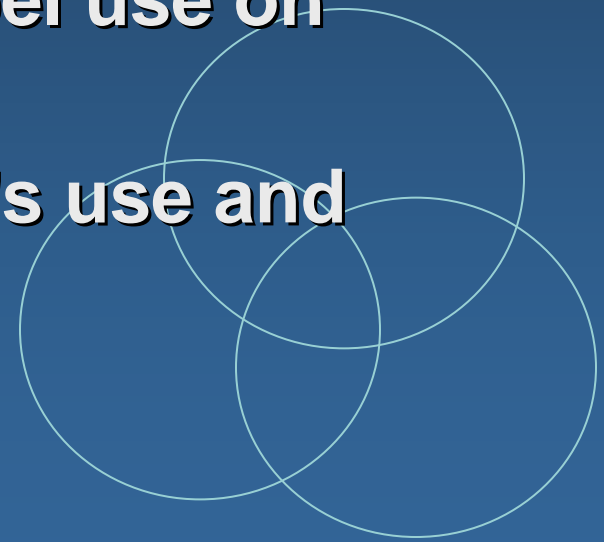
- **Off-label medication - a medication used at a different dose, for a different medical indication or in a different population than approved by the FDA**



Off-Label Medications

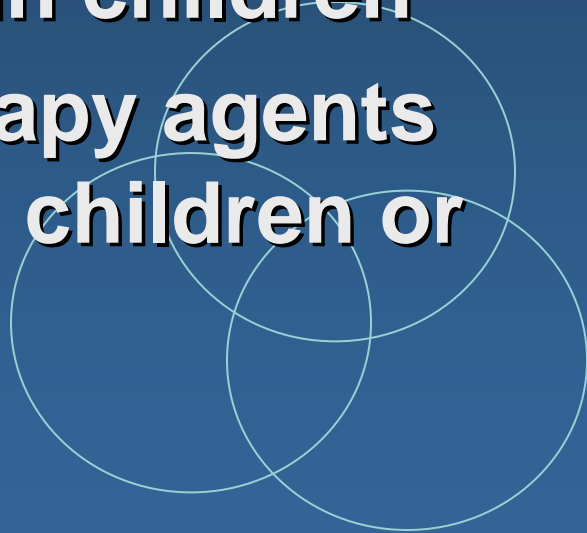
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- **Legal**
 - May represent standard of care
 - Prescribers must be well informed about the product and base off-label use on sound medical evidence
 - Maintain records of product's use and effects



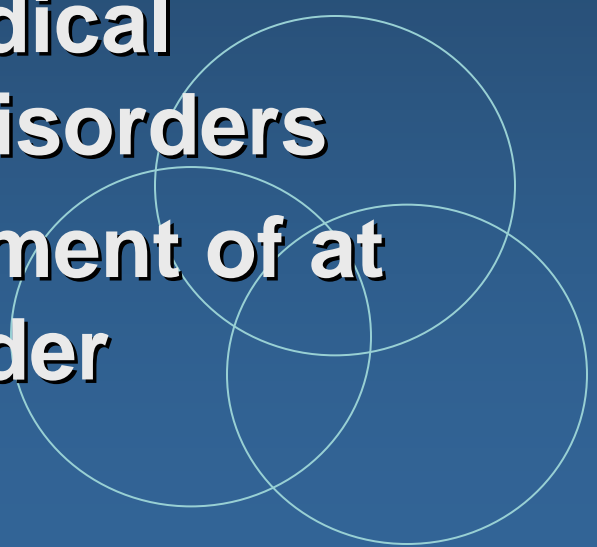
Off-Label Medications

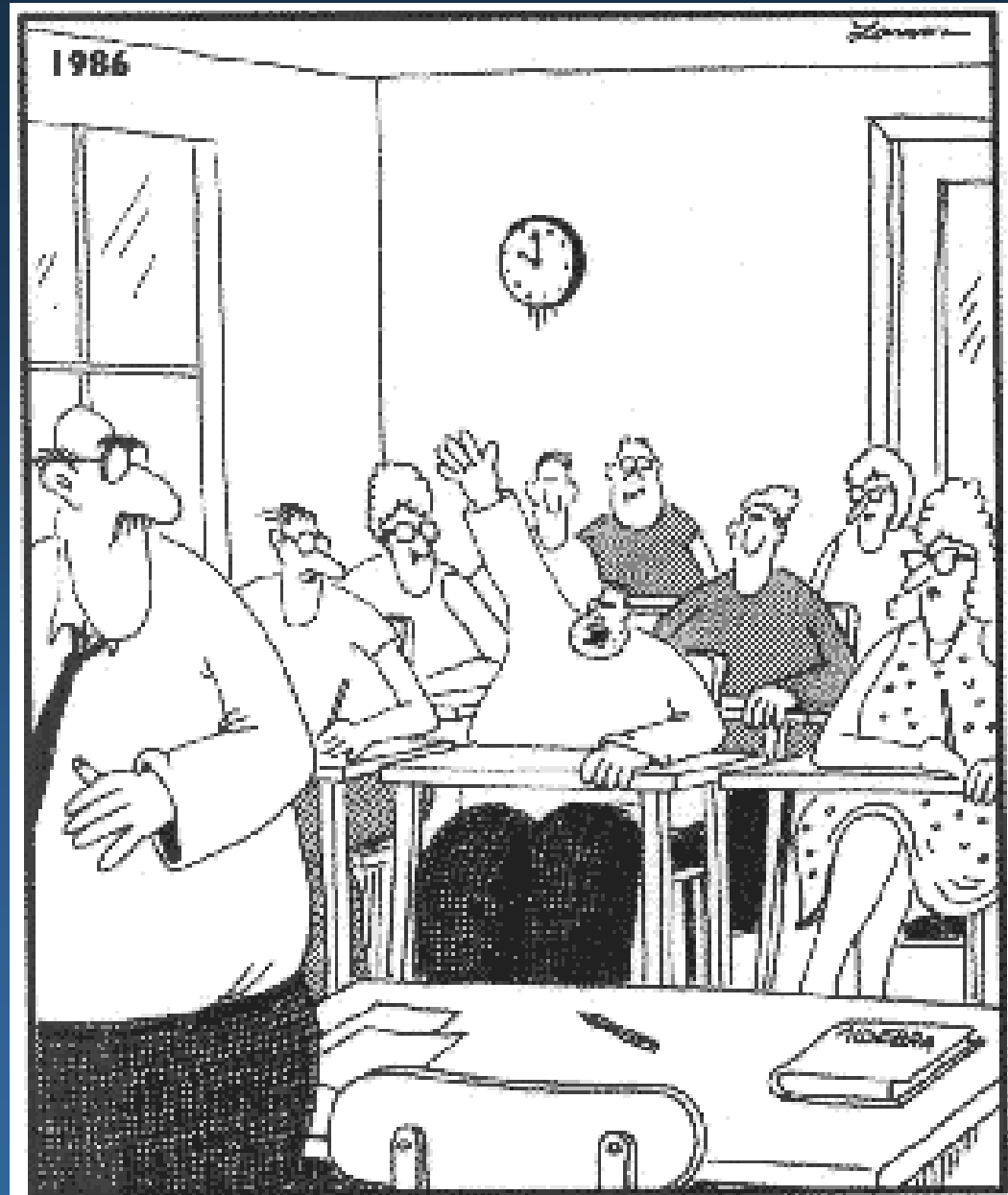
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- **> 70% of all medications in the PDR have no dosing information for pediatric patients or state that safety and efficacy have not been determined in children**
 - **vast majority of chemotherapy agents are not approved for use in children or adolescents**
- 

Off-Label Medications

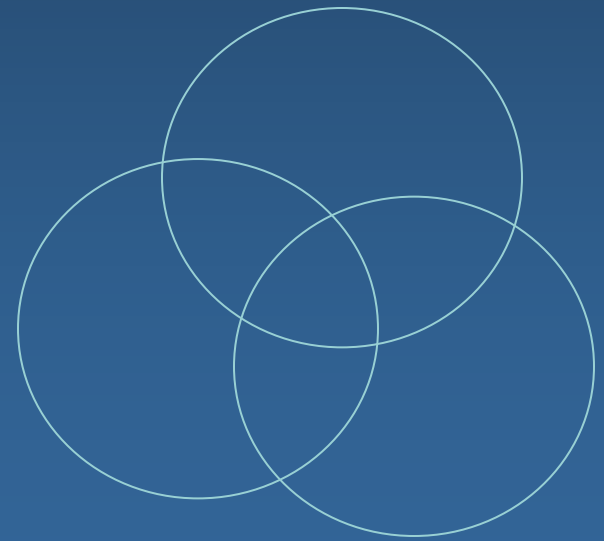
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- **50% of medications prescribed for psychiatric disorders are not approved for use under 18 years**
 - **Some are approved for medical illnesses, not psychiatric disorders**
 - **35% are approved for treatment of at least one psychiatric disorder**
- 



Dr Naylor, can I be excused? My brain is full!

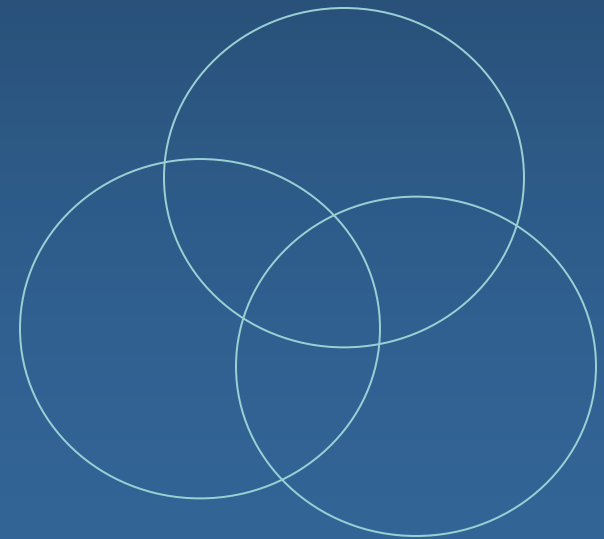
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Common Referral Symptoms

CSPP

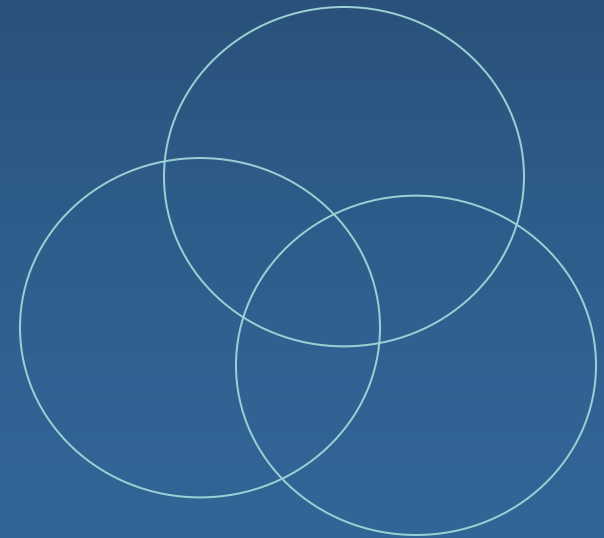
- **Mood/affect disturbances**
 - depression
 - anxiety
 - mania
 - affective lability
- **Self-destructive behavior**
 - suicidal behavior
 - self-mutilation



Common Referral Symptoms

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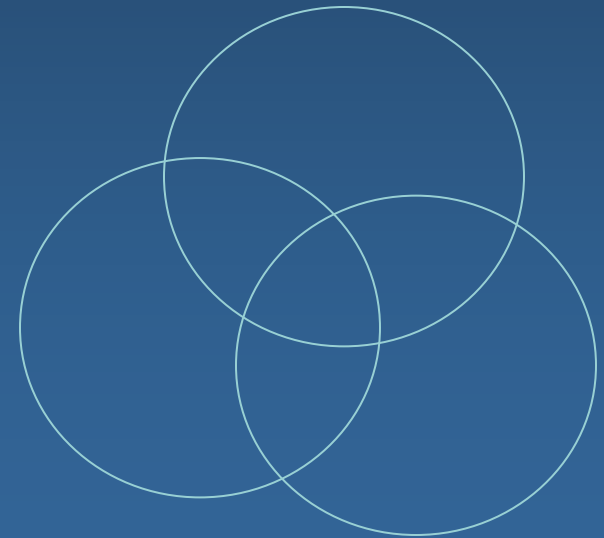
- **Disruptive behaviors**
 - inattention
 - hyperactivity
 - impulsivity
 - aggression/rage
 - explosivity
 - oppositional/defiant



Common Referral Symptoms

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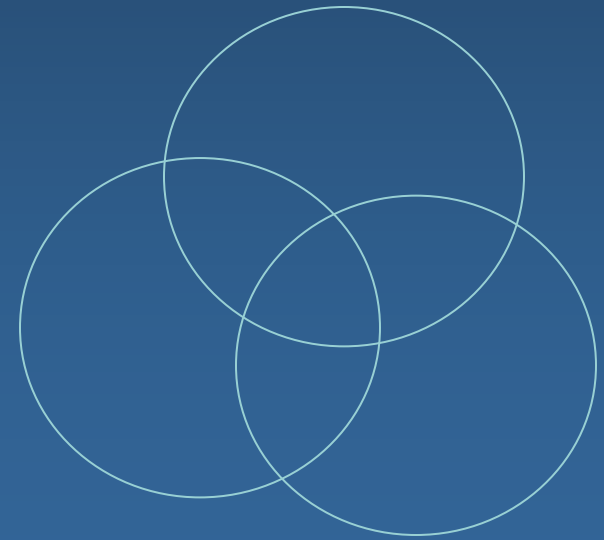
- **Trauma-related**
 - flashbacks
 - nightmares
 - overarousal
- **Other**
 - enuresis
 - psychosis



Diagnostic Assessment

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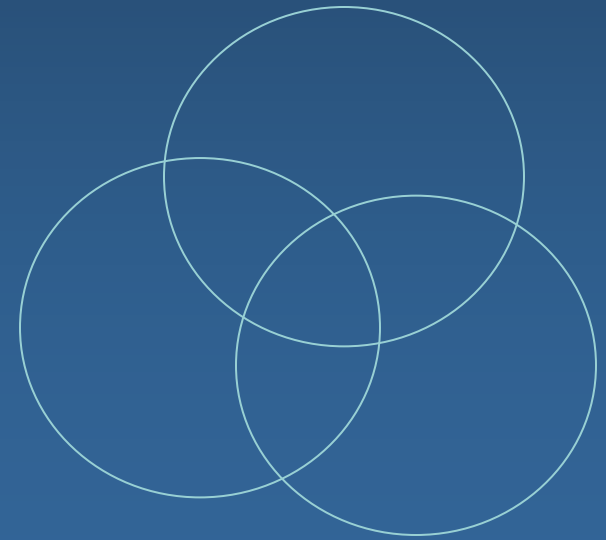
- **History of complaint**
- **Medical history**
- **Psychiatric history**
- **Family history**
- **Social history**
- **Mental status examination**



Treatment Planning

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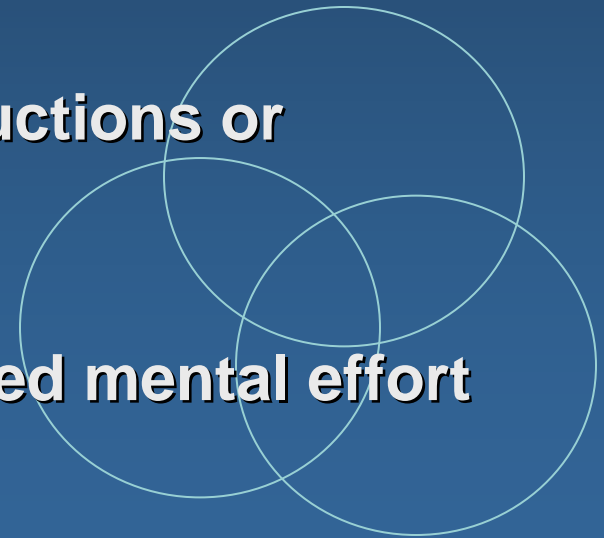
- Formulation
- Diagnosis
- Treatment plan



Attention Deficit Hyperactivity Disorder

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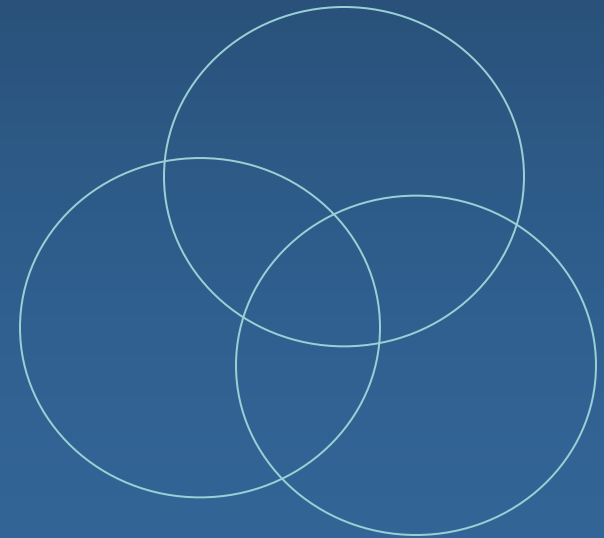
- **6 or more symptoms of inattention:**
 - fails to pay close attention
 - difficulty sustaining attention
 - does not seem to listen
 - does not follow through on instructions or complete tasks
 - difficulty organizing tasks
 - avoids tasks that require sustained mental effort
 - often loses things
 - easily distracted
 - forgetful

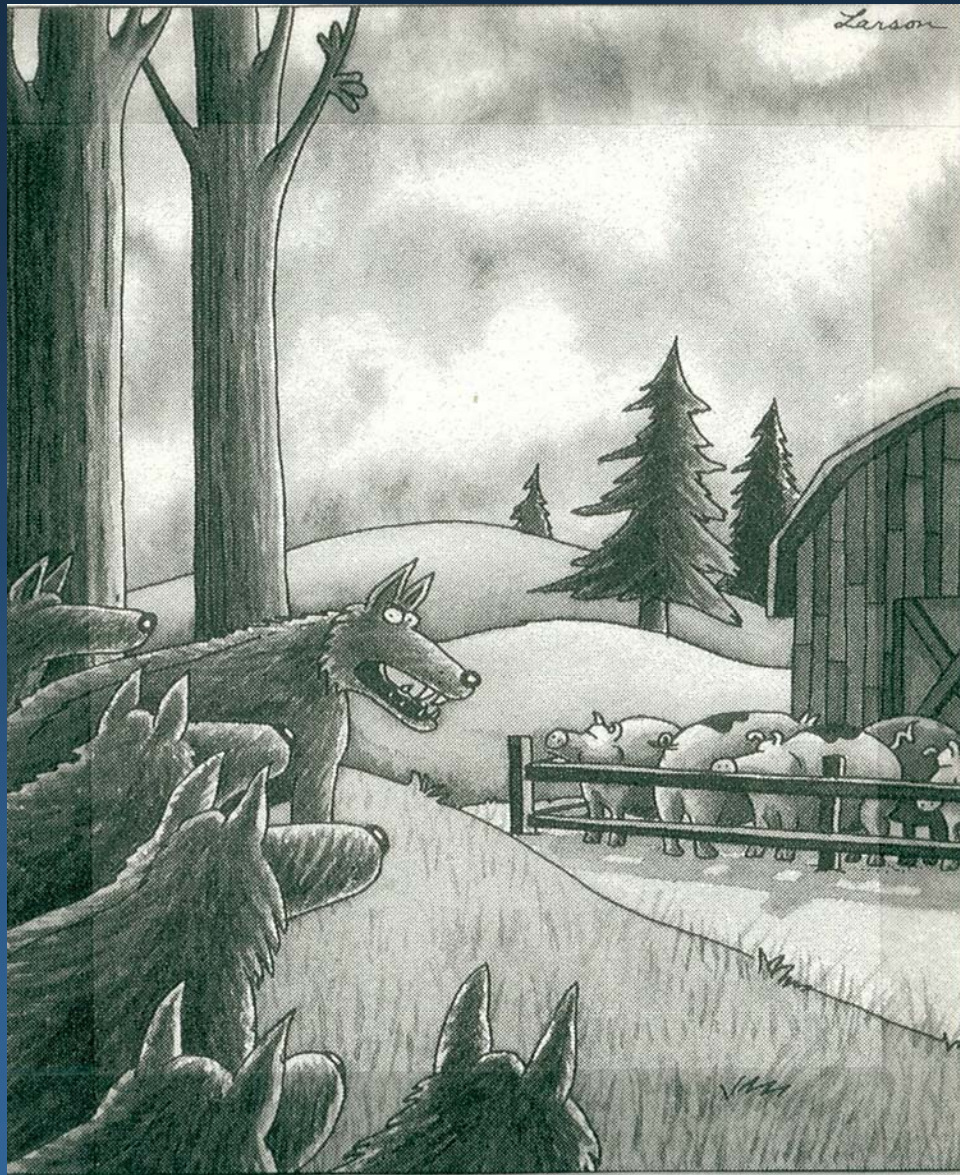


Attention Deficit Hyperactivity Disorder

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- **6 or more of the following symptoms of hyperactivity-impulsivity**
 - **hyperactivity**
 - fidgets
 - cannot remain seated
 - runs about or climbs excessively
 - difficulty engaging in quiet activities
 - on the go
 - talks excessively
 - **impulsivity**
 - blurts out answers
 - difficulty waiting turn
 - interrupts others

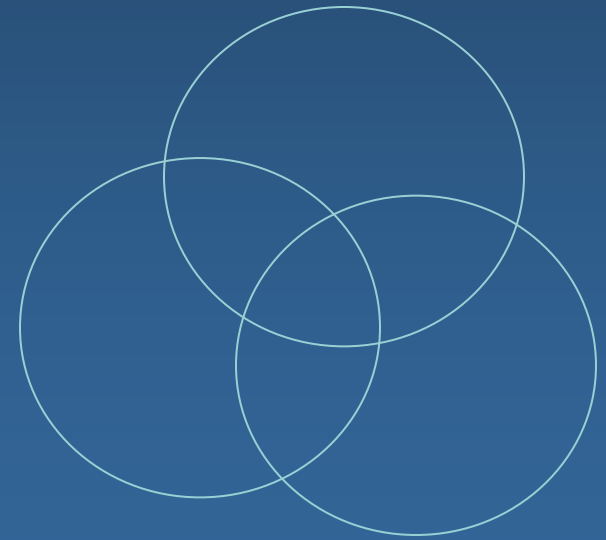




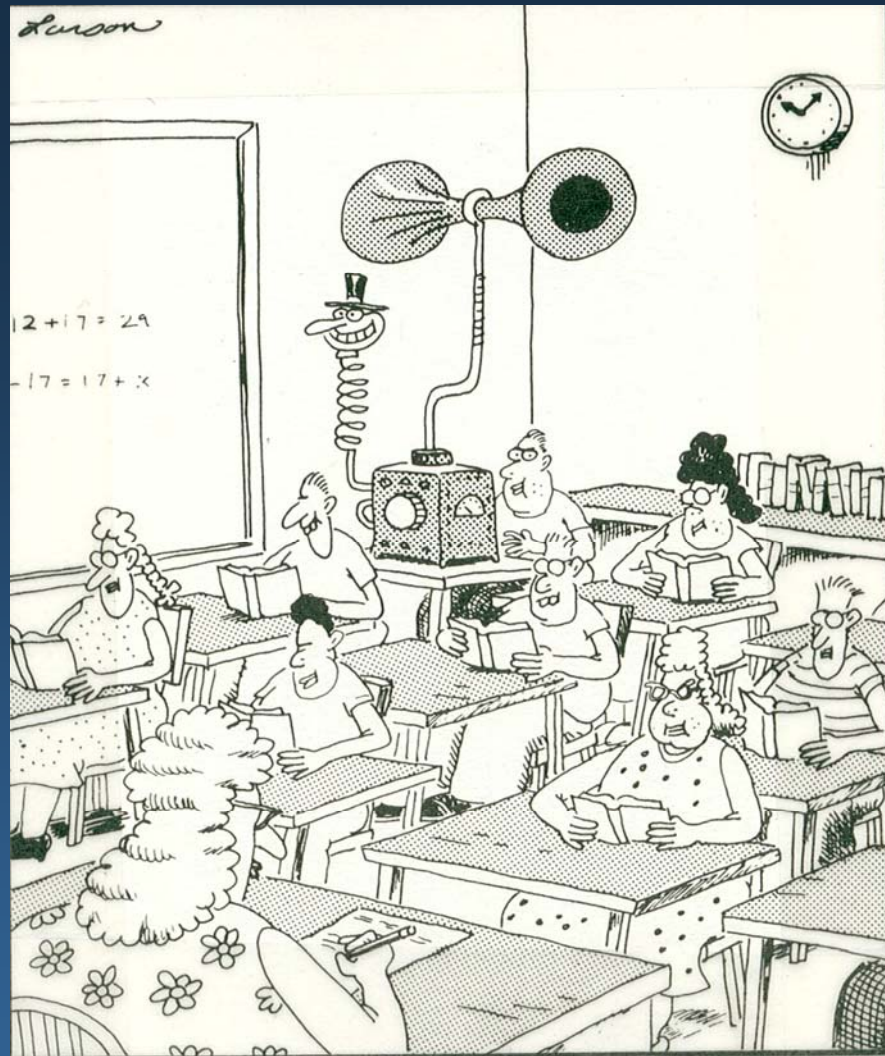
Larson

"I say we do it . . . and trichinosis be damned!"

CSPP

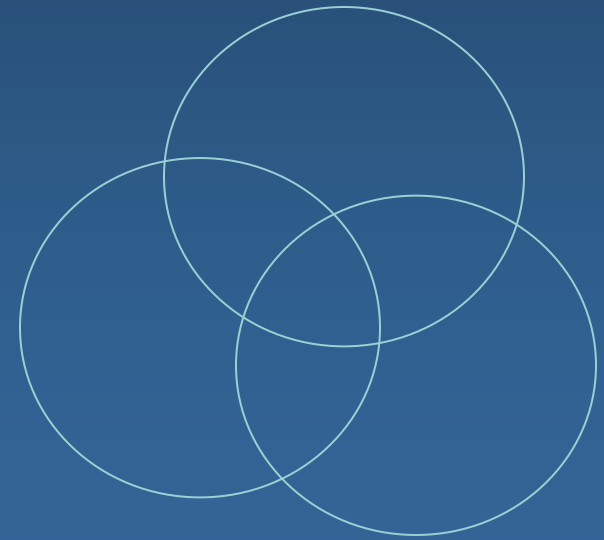


Larson



The class was quietly doing its lesson when Russell, suffering from problems at home, prepared to employ an attention getting device.

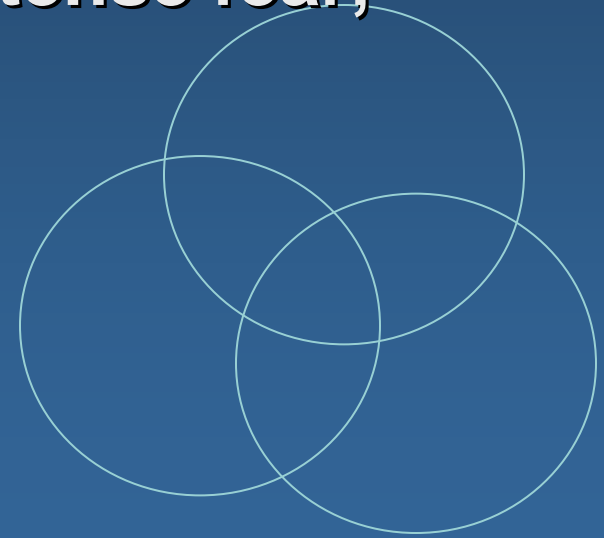
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Post-traumatic Stress Disorder

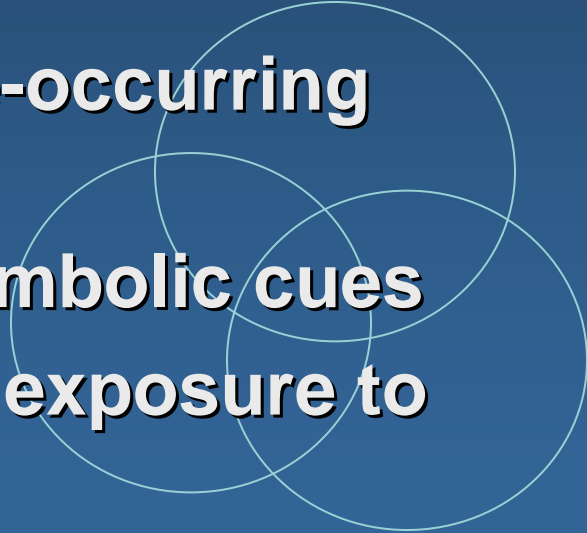
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- **Child exposed to traumatic event**
 - child witnessed or experienced event that involved threat of death or serious injury
 - child's response involved intense fear, helplessness, or horror



Post-traumatic Stress Disorder

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- **Re-experiencing traumatic event**
 - recurrent and intrusive distressing recollections (repetitive play)
 - recurrent dreams
 - feeling as if the event was re-occurring (flashbacks)
 - distress with exposure to symbolic cues
 - physiological reactivity with exposure to symbolic cues
- 

Post-traumatic Stress Disorder

CSPP

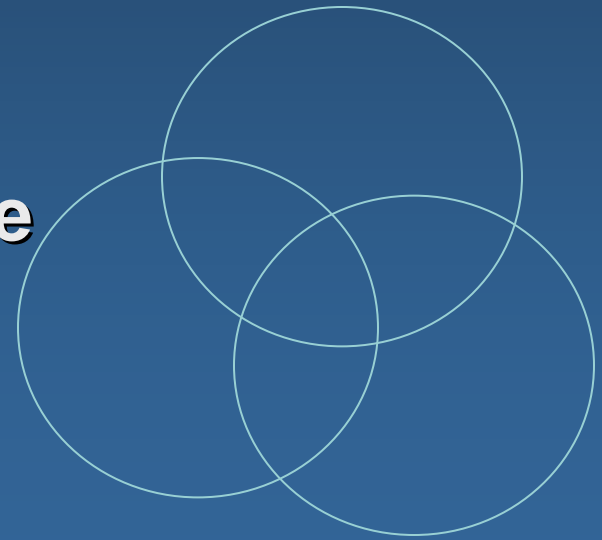
- **Avoidance of stimuli associated with trauma**
 - avoidance of thoughts and feelings
 - effort to avoid activities
 - inability to recall
 - decreased interest
 - restricted range of affect
 - sense of foreshortened future



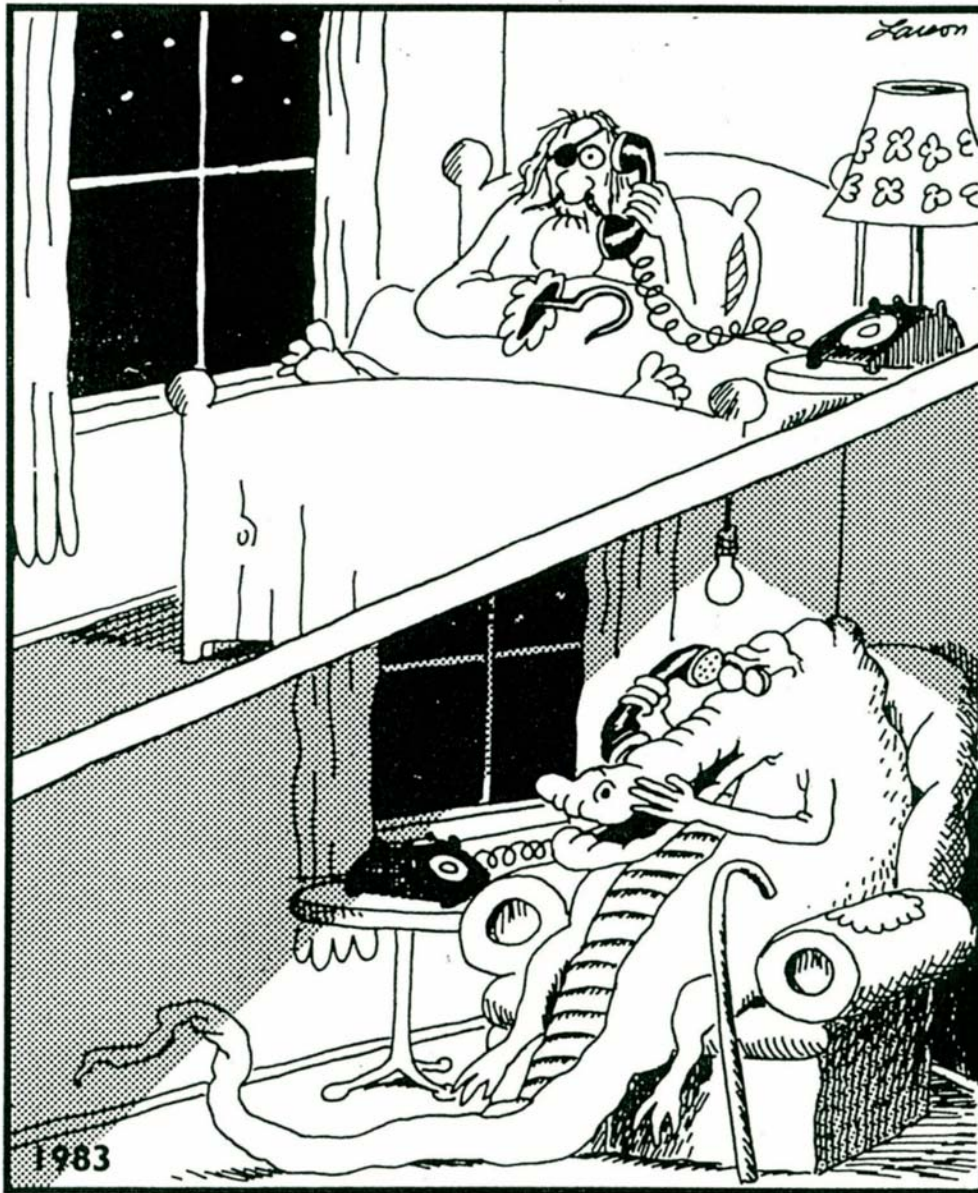
Post-traumatic Stress Disorder

CSPP

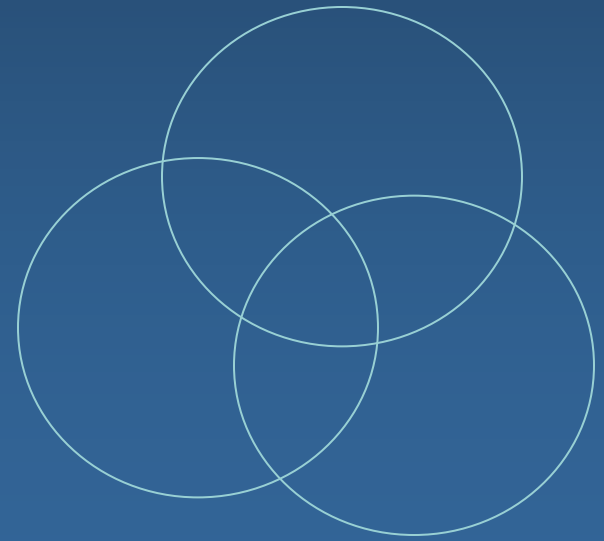
- **Hyperarousal**
 - difficulty falling asleep
 - irritability or anger outbursts
 - difficulty concentrating
 - hypervigilance
 - exaggerated startle response



CSPP



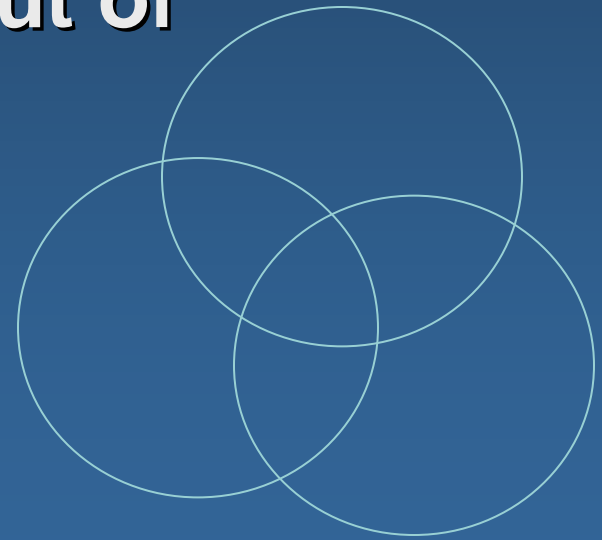
“TICK-TOCK, TICK-TOCK, TICK-TOCK, TICK-TOCK, . . .”



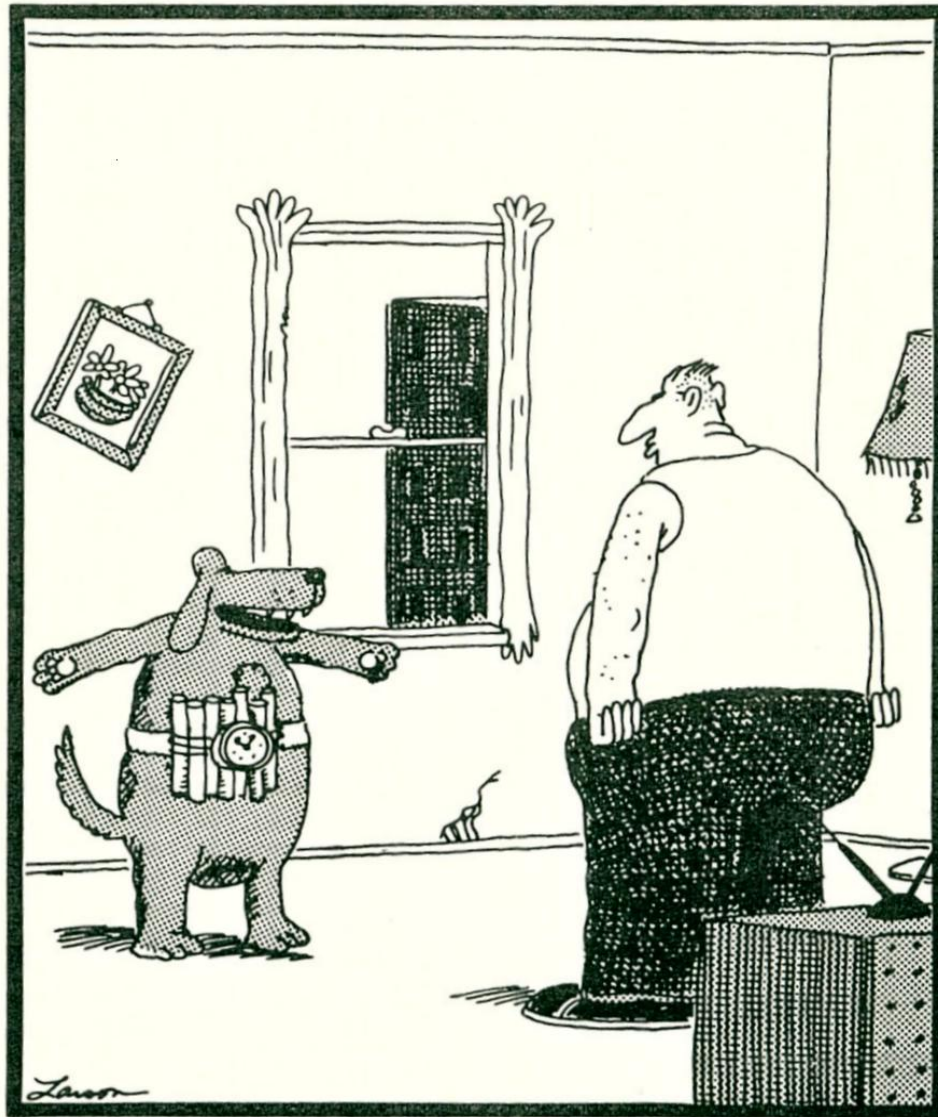
Intermittent Explosive Disorder

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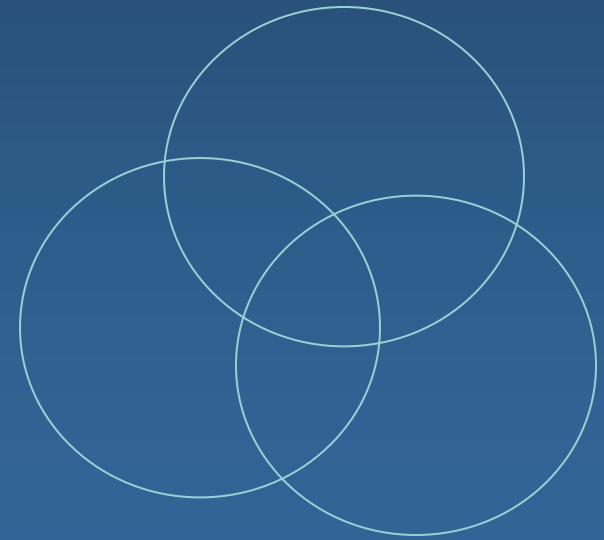
- Failure to resist aggressive impulses that result in assault or destruction of property
- Aggression expressed is out of proportion to precipitant



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"Hey! You wanna kick me? Go ahead! C'mon, tough guy! Cat got your tongue? Maybe he took your whole *brain*! ... C'mon! Kick me!"



Major Depression

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- **Five or more of the following symptoms have been present during the same 2 week period**
 - **depressed mood***
 - **loss of interest/pleasure***
 - **change in weight or appetite**
 - **sleep disturbance**
- (cont.)**



* - one of these must be present.

Major Depression

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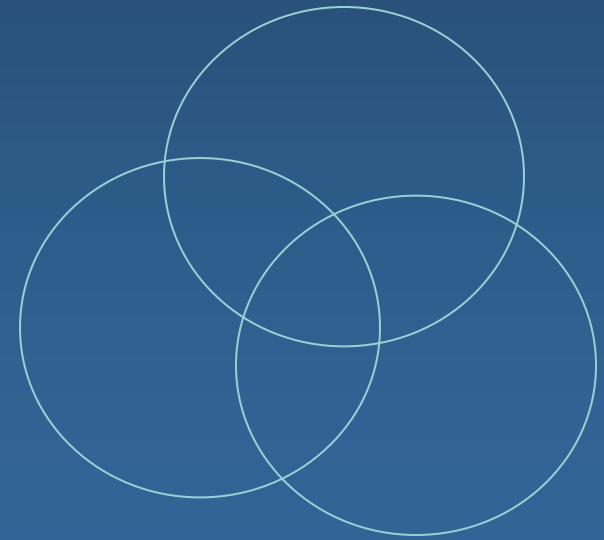
- (cont.)
 - fatigue or loss of energy
 - feelings of worthlessness or inappropriate guilt
 - decreased concentration or indecisiveness
 - suicidal ideation or behavior, thoughts of death



Mania

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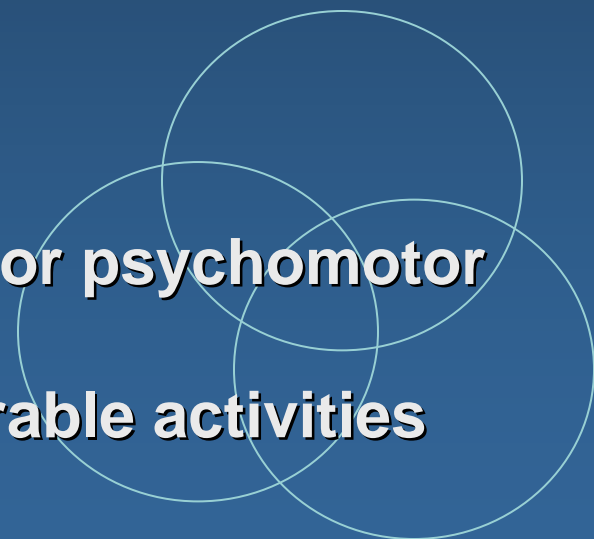
- **Distinct period of abnormally and persistently elevated, expansive, or irritable mood lasting ≥ 1 week or requiring hospitalization**



Mania

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- **During the period of mood disturbance, 3 or more of the following symptoms are present:**
 - **inflated self-esteem or grandiosity**
 - **decreased need for sleep**
 - **pressured speech**
 - **flight of ideas**
 - **distractibility**
 - **increase in goal directed activity or psychomotor agitation**
 - **excessive involvement in pleasurable activities**



Bipolar Disorder

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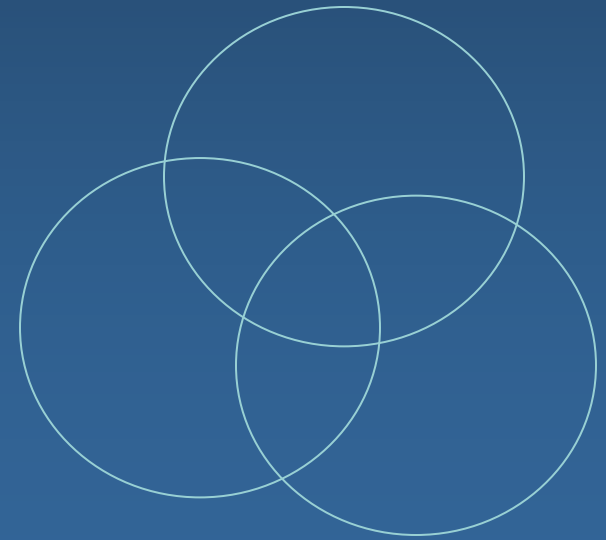
- **Currently (or most recently) in either a depressive or manic episode.**
- **There has previously been at least one manic/mixed or depressive episode.**



Bipolar Disorder

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- **Subtypes**
 - bipolar I
 - bipolar II
 - NOS



CSPP

FRANK & ERNEST

HOW'S YOUR MANIC-DEPRESSION?

EASY GLUM-EASY GLOW!



THAVES 3-28

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Schizophrenia

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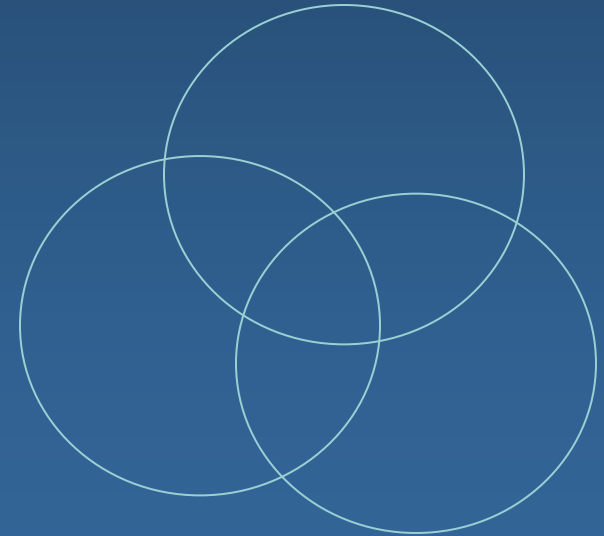
- **Characteristic symptoms**
 - delusions
 - hallucinations
 - disorganized speech
 - grossly disorganized or disorganized behavior
 - negative symptoms



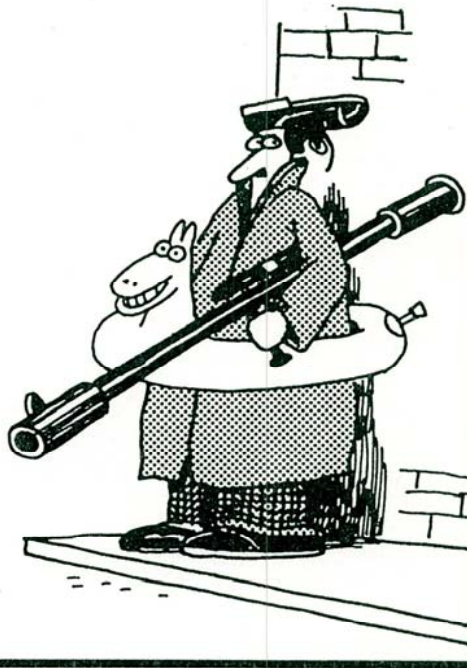
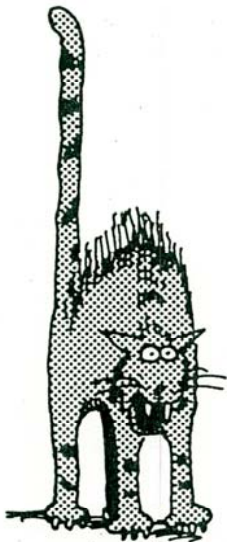
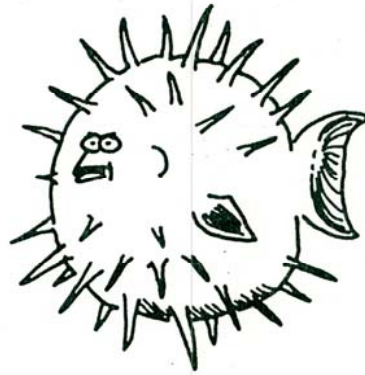
Schizophrenia

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- **Social/occupational dysfunction**
 - for a significant period of time since onset of disorder the level of social, occupational, and self-care has deteriorated below level attained before onset



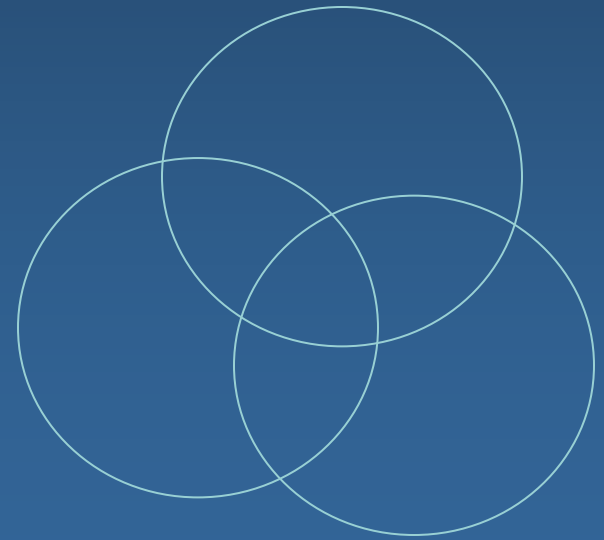
1985



Larson

HOW NATURE SAYS, "DO NOT TOUCH."

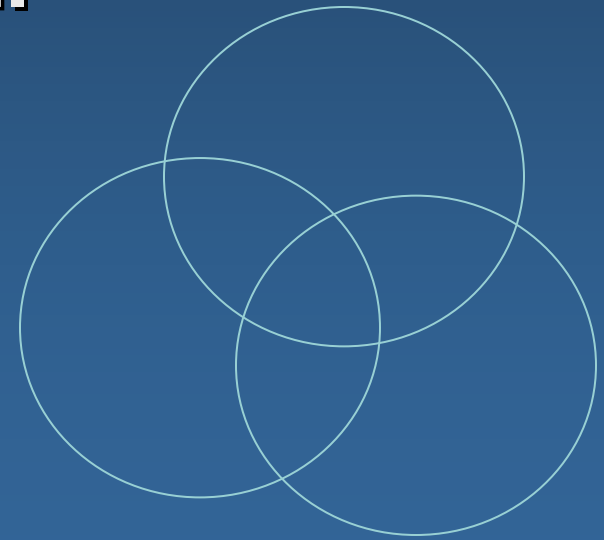
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Conduct Disorder

CSPP

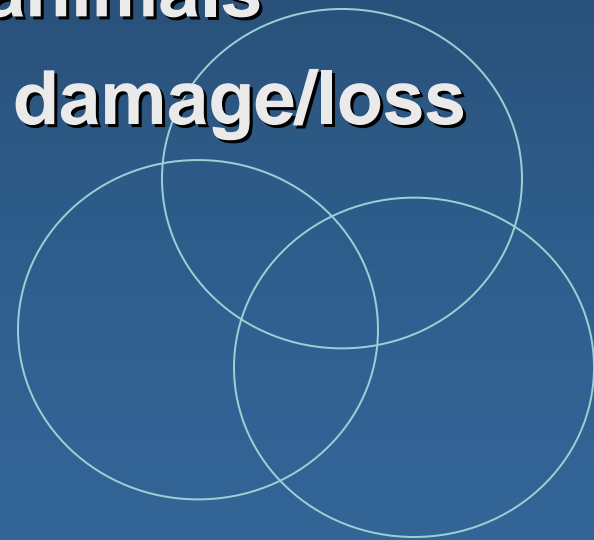
- Repetitive and persistent pattern of behavior in which the basic rights of other or major age appropriate societal norms or rules are violated.



Conduct Disorder

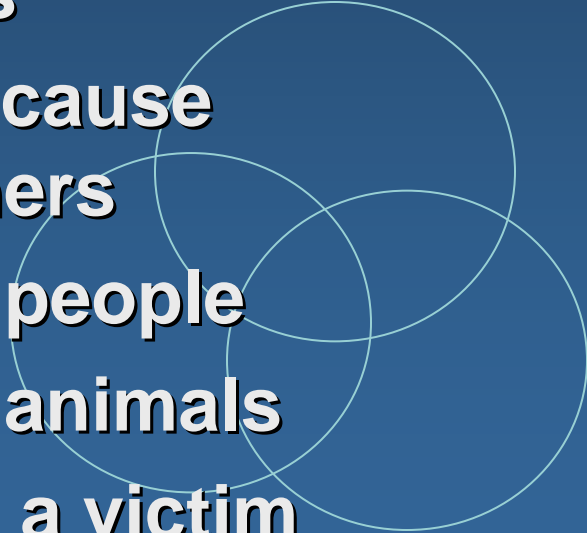
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- **3 or more examples of the following in last 12 months with at least one in past 6 months:**
 - **Aggression to people and animals**
 - **Behavior causing property damage/loss**
 - **Deceitfulness or theft**
 - **Serious violations of rules**



Conduct Disorder

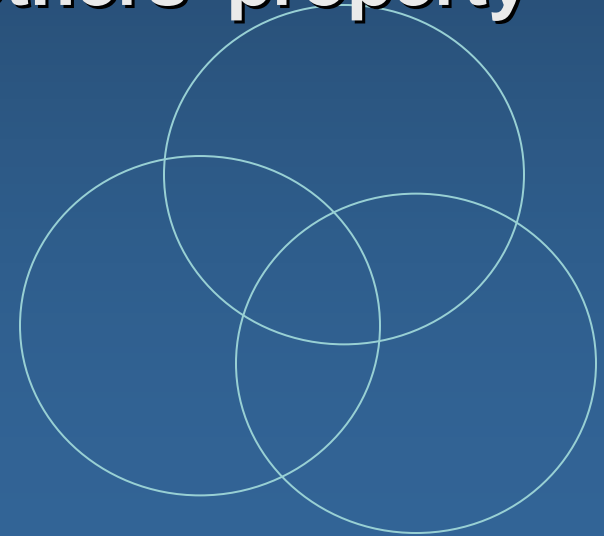
CSPP

- **Aggression to people and animals:**
 - often bullies, threatens, or intimidates others
 - often initiates physical fights
 - has used a weapon that can cause serious physical harm to others
 - has been physically cruel to people
 - has been physically cruel to animals
 - has stolen while confronting a victim
 - has forced someone into sexual activity
- 

Conduct Disorder

CSPP

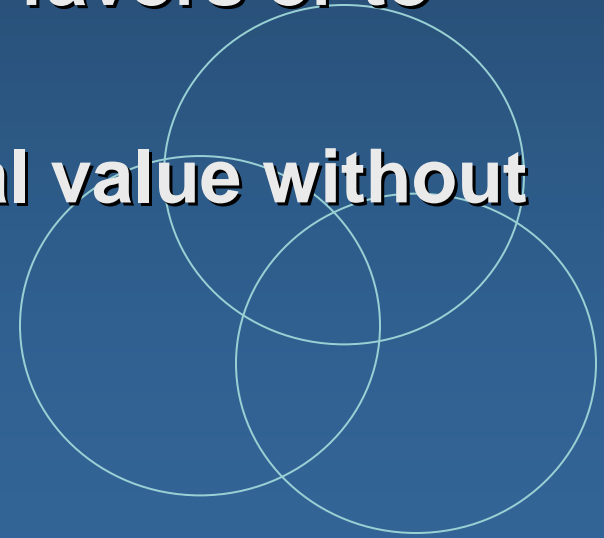
- **Destruction of property:**
 - has deliberately engaged in fire setting with the intention of causing serious damage
 - has deliberately destroyed others' property (other than by fire setting)



Conduct Disorder

CSPP

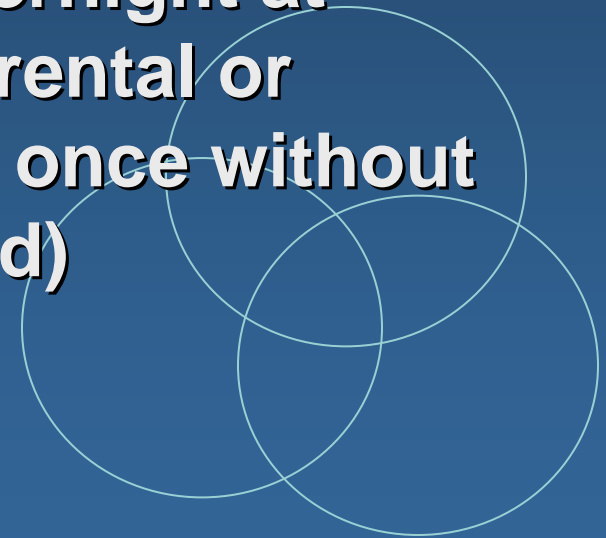
- **Deceitfulness or theft**
 - has broken into someone else's house, building, or car
 - often lies to obtain goods or favors or to avoid obligations
 - has stolen items of nontrivial value without confronting a victim



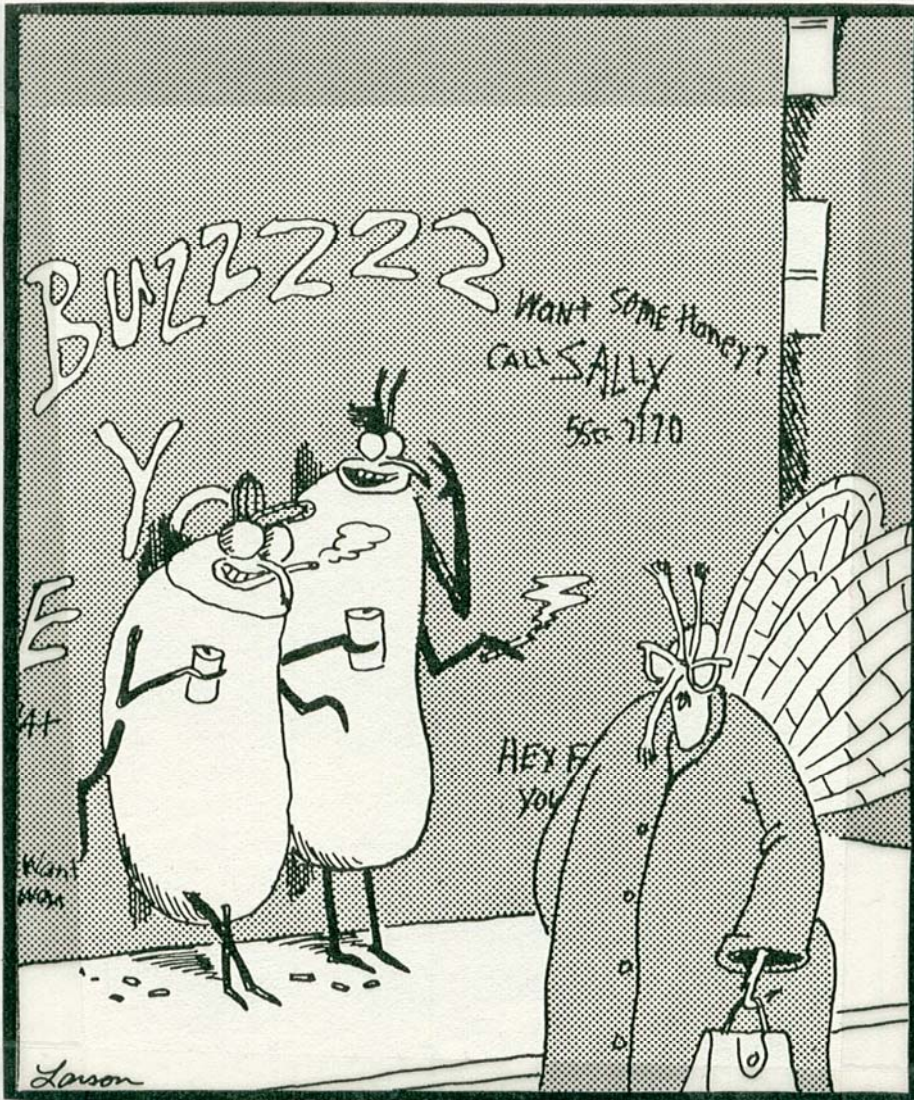
Conduct Disorder

CSPP

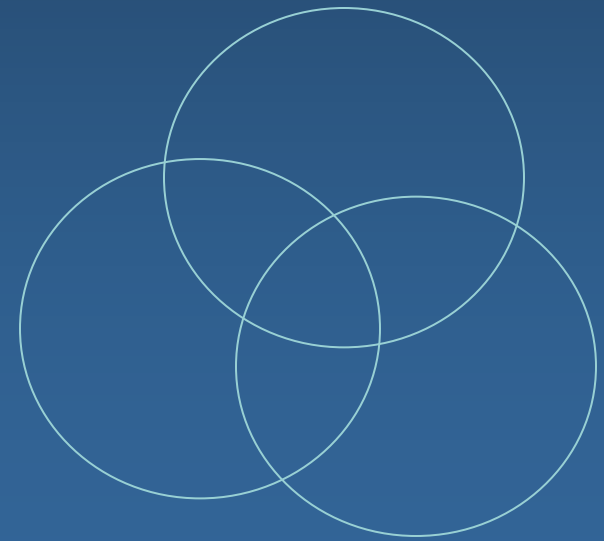
- **Serious violations of rules:**
 - often stays out at night despite parental prohibitions
 - has run away from home overnight at least twice while living in parental or parental surrogate home (or once without returning for a lengthy period)
 - is often truant from school



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Killer bees are generally thought to develop from larvae delinquents.



Oppositional Defiant Disorder

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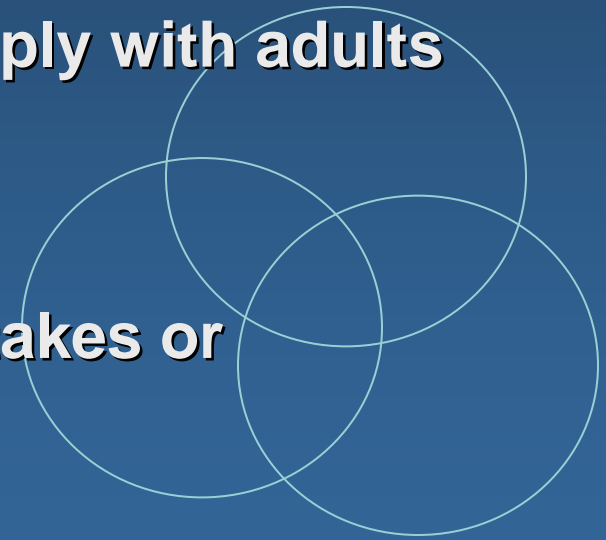
- Recurrent pattern of negative, defiant, disobedient and hostile behavior toward authority figures (> 6 months).



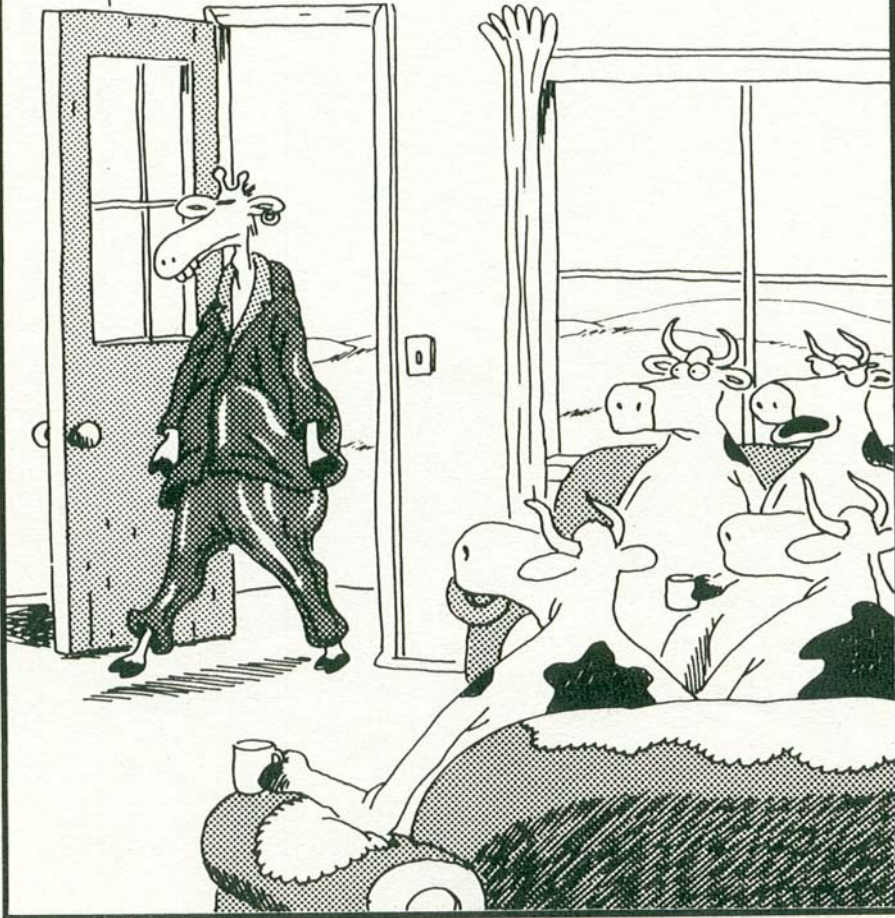
Oppositional Defiant Disorder

CSPP

- 4 or more present:
 - Loses temper
 - Argues with adults
 - Actively defies or refuses to comply with adults rules
 - Deliberately annoys people
 - Easily annoyed
 - Blames others for his or her mistakes or misbehaviors
 - Angry or resentful
 - Spiteful or vindictive

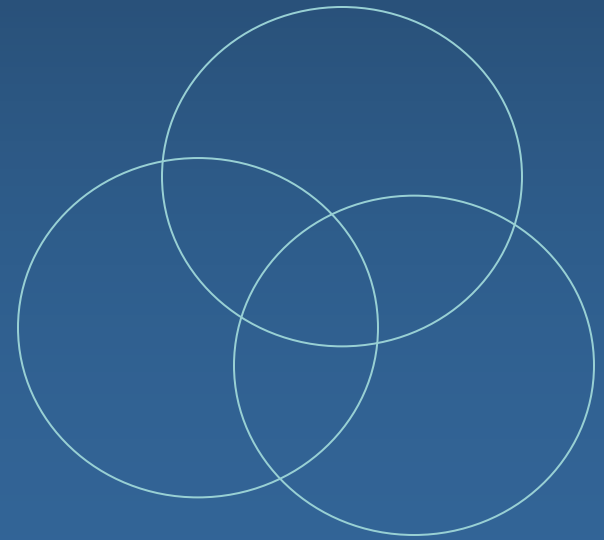


Larson



"Just ignore him. That's our young calf, Matthew - he's into wearing leather for the shock value."

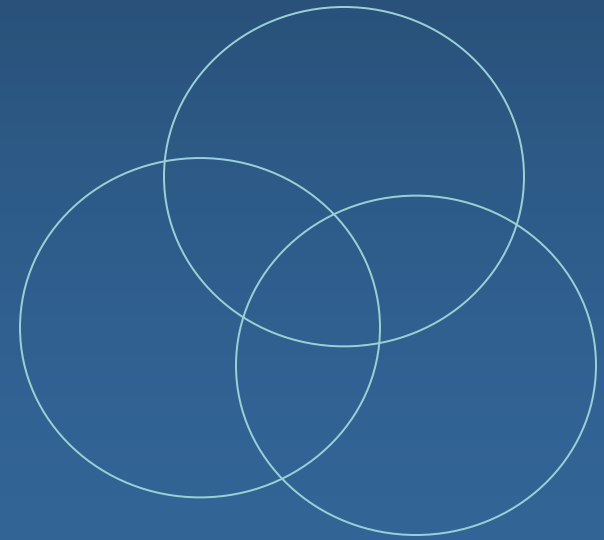
CSPP



Mental Retardation

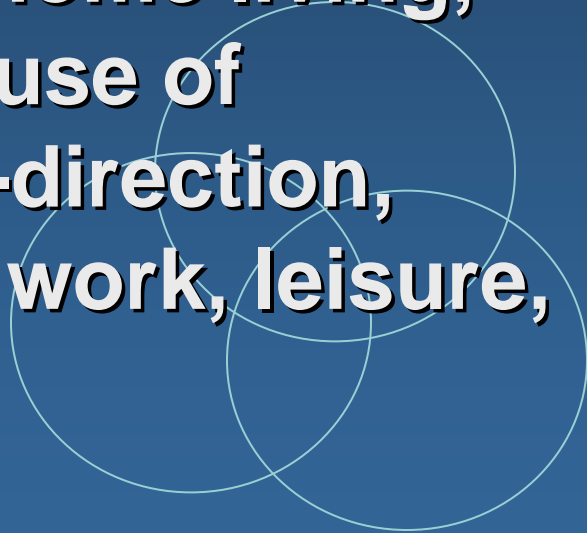
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- **Significantly subaverage intellectual functioning: an IQ of approximately 70 or below on an individually administered IQ test.**



Mental Retardation

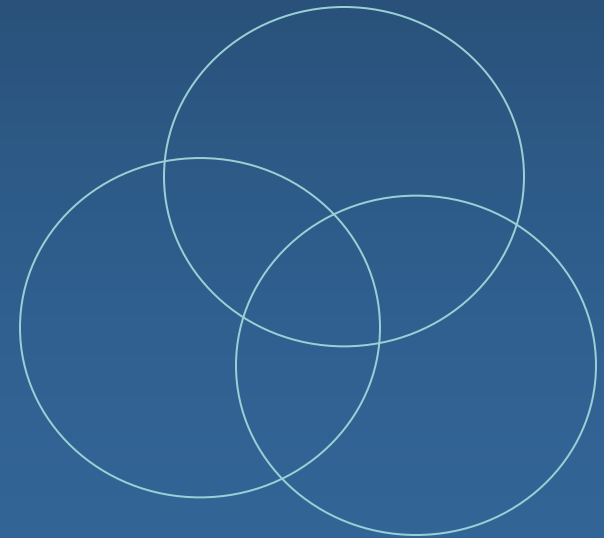
CSPP

- **Concurrent deficits or impairments in present adaptive functioning in at least two of the following areas: communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety.**
- 

Mental Retardation

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- **Classification**
 - Mild; > 50-55
 - Moderate; 35-40 to 50-55
 - Severe; 20-25 to 35-40
 - Profound <20-25



Autistic Disorder

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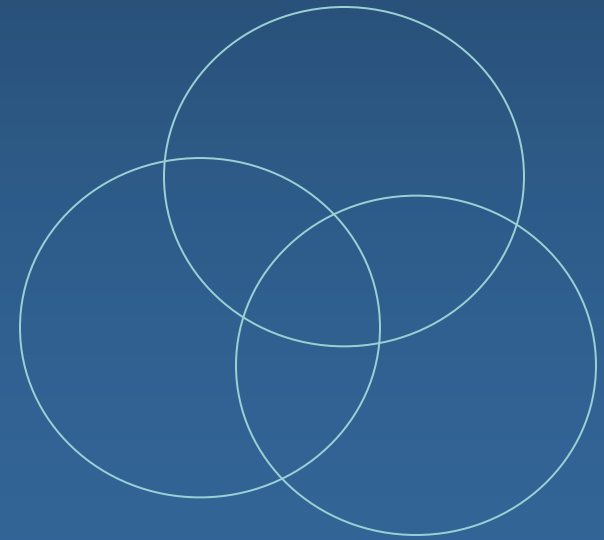
- **Symptoms from A, B, and C below:**
 - qualitative impairment in social interaction
 - qualitative impairments in communication
 - restricted repetitive and stereotyped patterns of behavior, interest and activities



Autistic Disorder

CSPP

- **Delays or abnormal functioning in one of following areas with onset before age 3:**
 - **social interaction**
 - **language**
 - **symbolic play**



Asperger's Syndrome

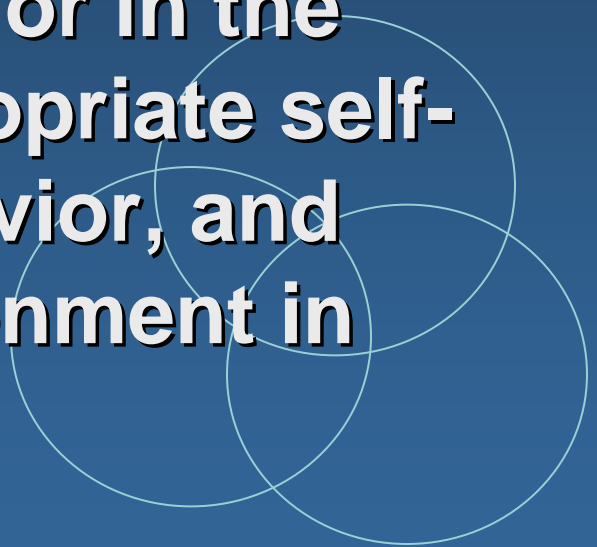
CSPP

- **Qualitative impairment in social interaction.**
- **Restricted repetitive and stereotyped patterns of behavior, interests, and activities.**



Asperger's Syndrome

CSPP

- **There is no clinically significant general delay in language.**
 - **There is no clinically significant delay in cognitive development or in the development of age-appropriate self-help skills, adaptive behavior, and curiosity about the environment in childhood.**
- 

Reactive Attachment Disorder

CSPP

- **Markedly disturbed and developmentally inappropriate social relatedness in most contexts:**
 - **persistent failure to initiate or respond in a developmentally appropriate fashion to most social interactions**
 - **diffuse attachments as manifest by indiscriminate sociability with marked inability to exhibit appropriate selective attachments**

Reactive Attachment Disorder

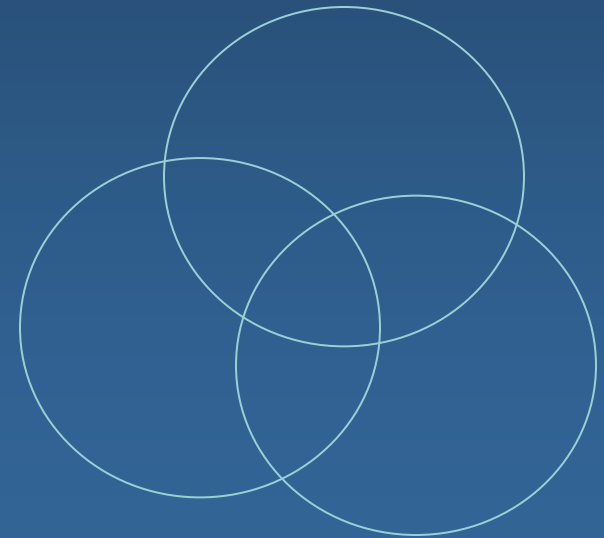
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- **Pathogenic care as evidenced by at least one of the following:**
 - **persistent disregard of the child's basic emotional needs for comfort, stimulation, and affection**
 - **persistent disregard of the child's basic physical needs**
 - **repeated changes of primary caregiver that prevent formation of stable attachments**

Reactive Attachment Disorder

CSPP

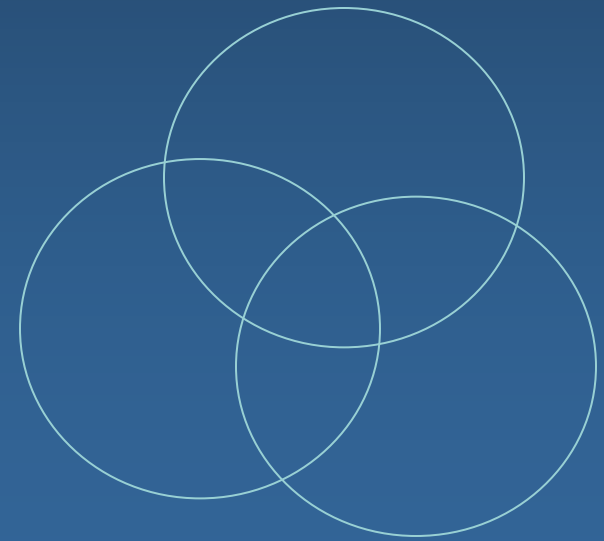
- The pathogenic care is responsible for the disturbed behavior.
- Subtypes:
 - Inhibited
 - Disinhibited



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That's true, Andre, that is not one of the listed side effects.



Medication Classifications

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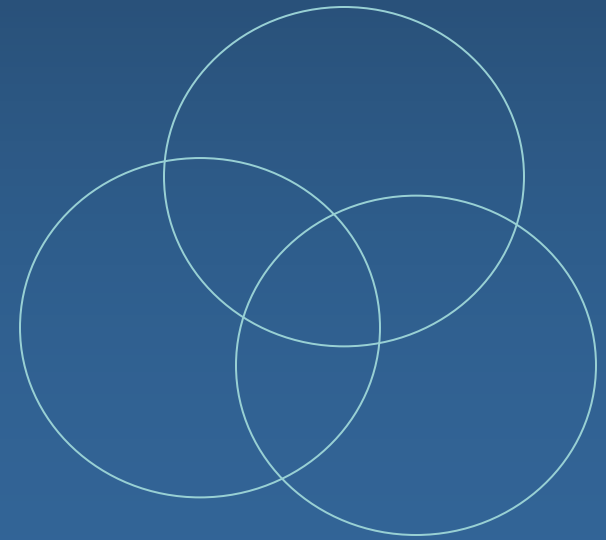
- **ADHD Medications**
- **Antipsychotics**
- **Antidepressants**
- **Mood stabilizers**
- **Other Commonly Used Agents**



ADHD Medications

CSPP

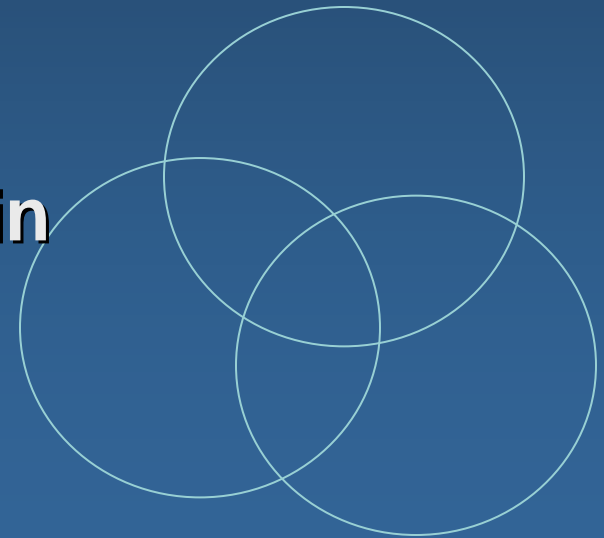
- **Psychostimulants**
- **Other**
 - **atomoxetine (Strattera)**
 - **alpha-agonists**
 - **antidepressants**



Psychostimulants

CSPP

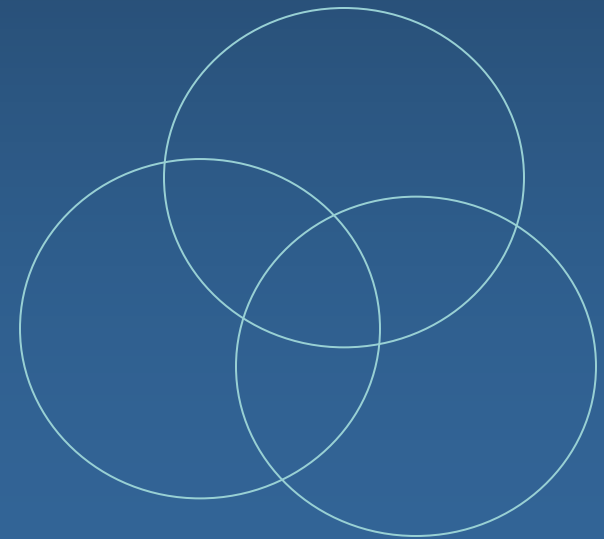
- **Methylphenidate preparations**
 - **Ritalin**
 - **Concerta**
 - **Metadate**
 - **Methylin**
 - **(dexmethylphenidate) Focalin**



Psychostimulants

CSPP

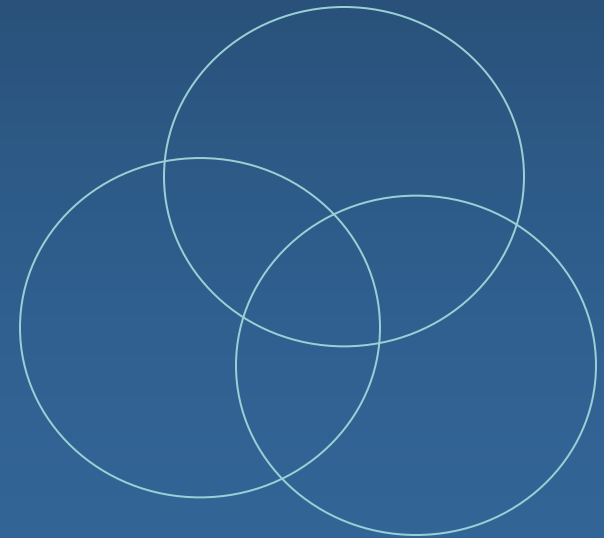
- **Amphetamine preparations**
 - d-amphetamine (Dexedrine)
 - mixed l- and d-amphetamine salts (Adderall)



Psychostimulants

CSPP

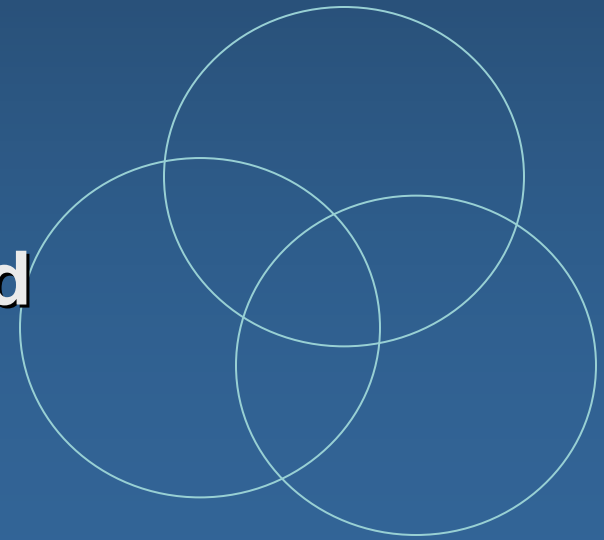
- **Common side effects**
 - anorexia and weight loss
 - insomnia
 - irritability
 - headaches, stomach aches
 - increased HR, BP
 - tics
- **May cause psychosis**



Strattera

CSPP

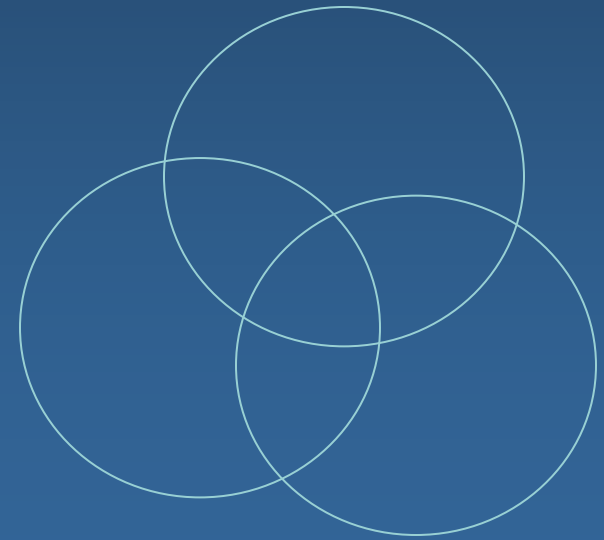
- **Side Effects**
 - stomach upset
 - decreased appetite
 - mood swings
 - fatigue, insomnia
 - increased heart rate, blood pressure



Antipsychotics

CSPP

- **Common uses**
 - **psychosis**
 - **mania**
 - **aggression**
 - **tics**



Antipsychotics

CSPP

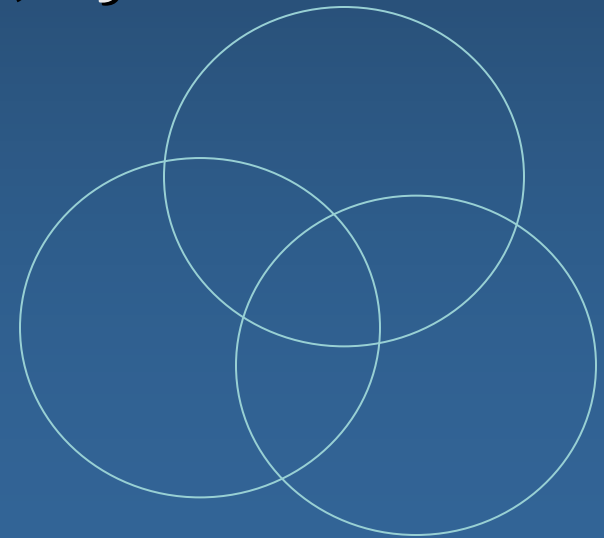
Neuroleptics

- chlorpromazine (Thorazine)
- thioridazine (Mellaril)
- mesoridazine (Serentil)
- perphenazine (Trilafon)
- fluphenazine (Prolixin)
- haloperidol (Haldol)
- pimozone (Orap)
- trifluoperazine (Stelazine)
- thiothixene (Navane)

Antipsychotics

CSPP

- **Common side effects**
 - sedation
 - extrapyramidal side effects, dystonia
 - akathisia
 - weight gain
 - hypotension
 - cognitive dulling
 - affective blunting
 - elevated prolactin



Antipsychotics

CSPP

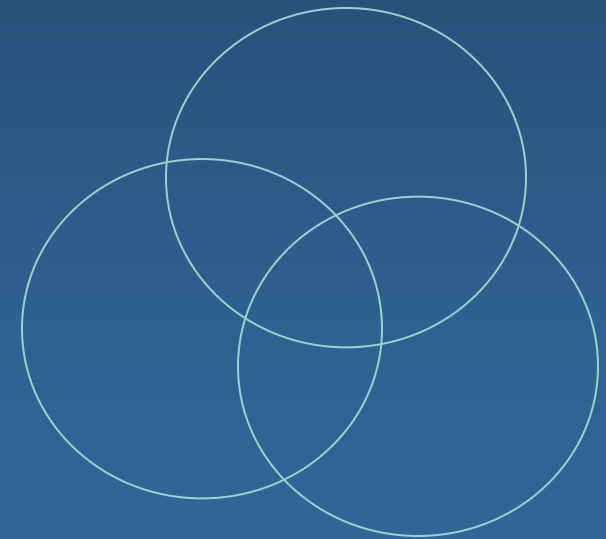
- **Severe adverse effects**
 - tardive dyskinesia
 - hepatotoxicity
 - agranulocytosis
 - ocular pigmentation
 - neuroleptic malignant syndrome
 - sudden death



Antipsychotics

CSPP

- **Atypical**
 - risperidone (Risperdal)
 - olanzepine (Zyprexa)
 - quetiapine (Seroquel)
 - ziprasidone (Geodon)
 - clozapine (Clozaril)
 - aripiprazole (Abilify)



Antipsychotics

CSPP

- **Common side effects**
 - extrapyramidal side effects (high dose)
 - hypotension
 - low white blood cell count
 - elevated prolactin
 - weight gain
 - elevated lipids
 - insulin resistance, diabetes mellitus II



Antidepressants

CSPP

- **Common uses**
 - depression
 - anxiety (SSRIs)
 - ADHD (bupropion, TCAs)
 - enuresis (TCAs)
 - insomnia (TCAs, trazodone, mirtazepine)



Antidepressants

CSPP

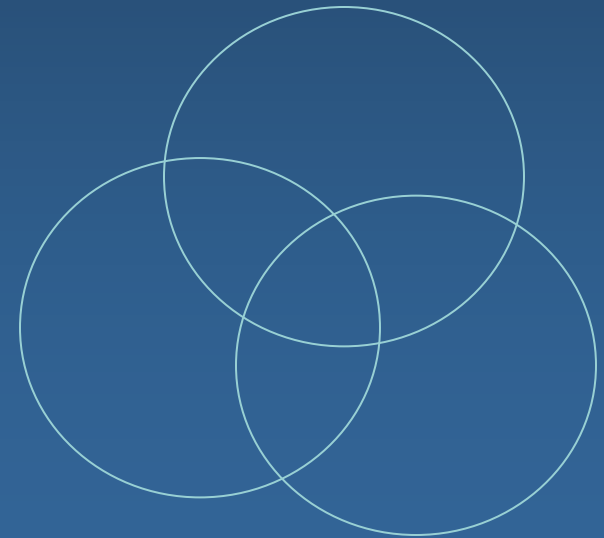
- **Selective serotonin reuptake inhibitors**
- **Serotonin/norepinephrine reuptake inhibitors**
- **Atypical**
- **Tricyclic antidepressants**
- **Monoamine oxidase inhibitors**
- **Others**



Antidepressants

CSPP

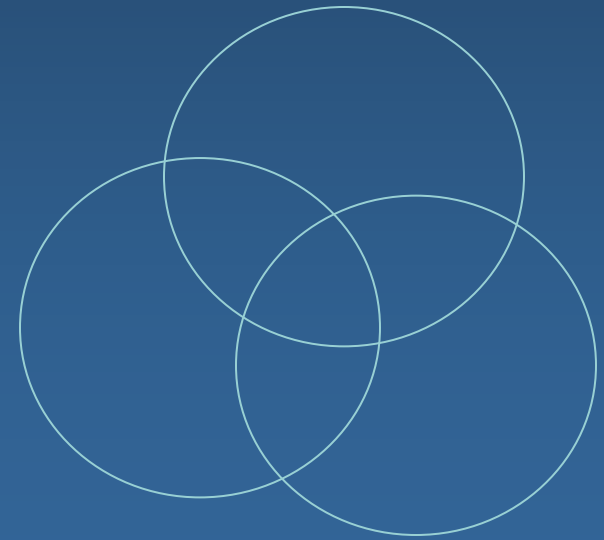
- **Selective serotonin reuptake inhibitors**
 - fluoxetine (Prozac)
 - sertraline (Zoloft)
 - paroxetine (Paxil)
 - fluvoxamine (Luvox)
 - citalopram (Celexa)
 - escitalopram (Lexapro)



Antidepressants

CSPP

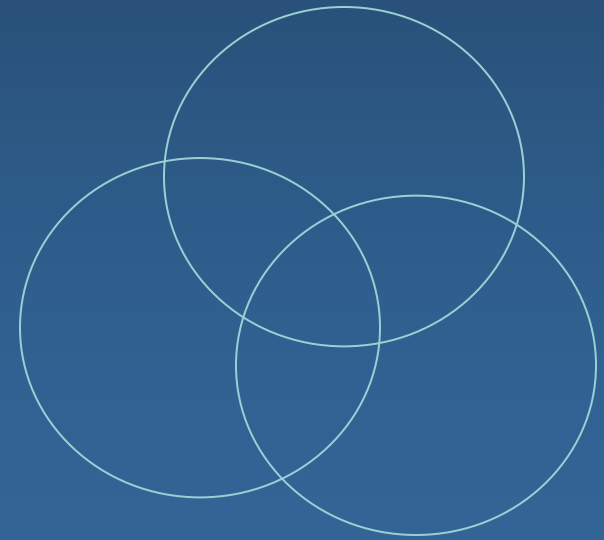
- **SSRI side effects**
 - nausea, vomiting
 - dizziness
 - insomnia/sedation
 - GI upset
 - weight loss
 - serotonin syndrome



Antidepressants

CSPP

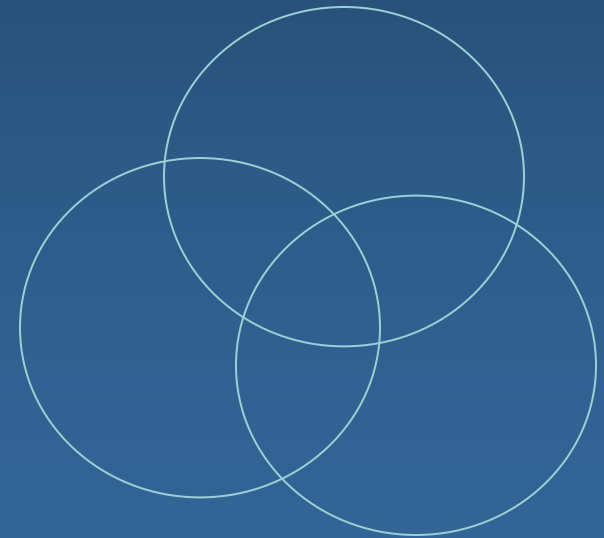
- **Serotonin/norepinephrine reuptake inhibitors**
 - venlafaxine (Effexor)
 - duloxetine (Cymbalta)



Antidepressants

CSPP

- **Atypical antidepressants**
 - bupropion (Wellbutrin)
 - trazodone (Desyrel)*
 - nefazodone (Serzone)
 - mirtazapine (Remeron)*

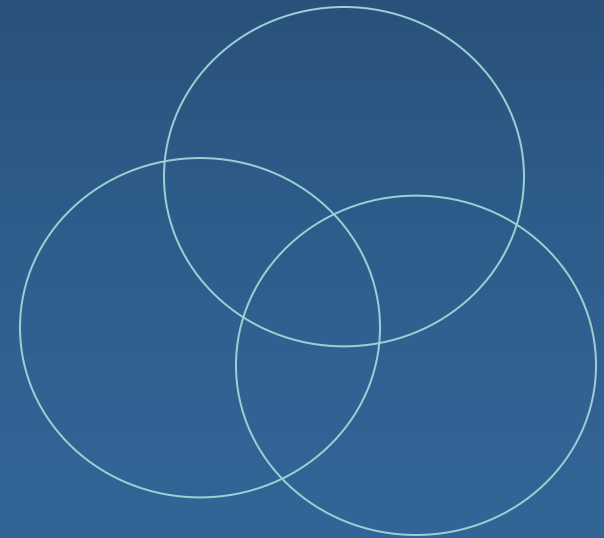


* - highly sedating, often used for treating insomnia

Antidepressants

CSPP

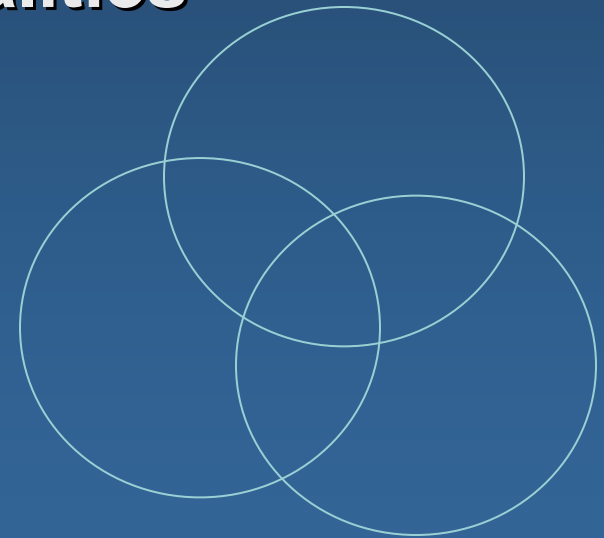
- **Tricyclic antidepressants**
 - imipramine (Tofranil)
 - desipramine (Norpramin)
 - nortriptyline (Pamelor)
 - amitriptyline (Elavil)
 - clomipramine (Anafranil)



Antidepressants

CSPP

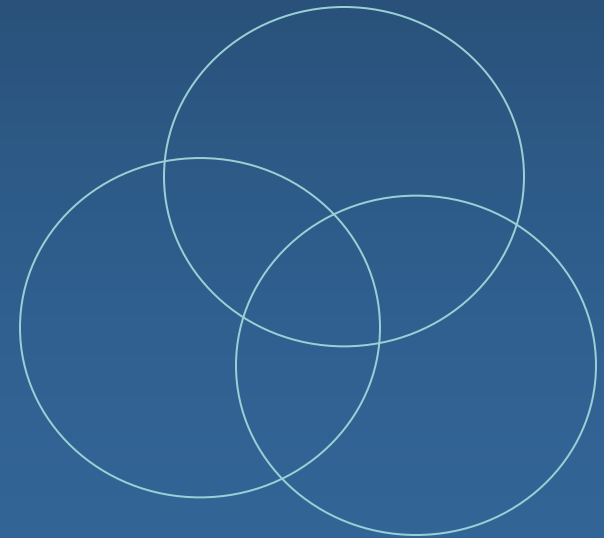
- **Tricyclic antidepressants - side effects**
 - dry mouth, dry eyes, constipation, blurred vision
 - cardiac conduction abnormalities
 - confusion



Antidepressants

CSPP

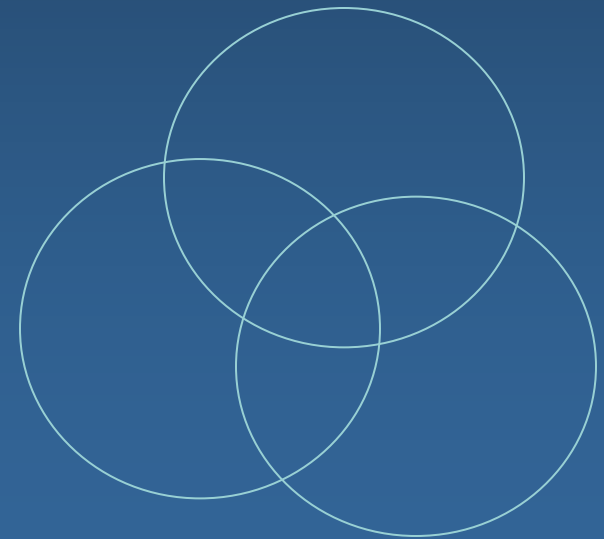
- **Monoamine oxidase inhibitors**
 - **tranylcypromine (Parnate)**
 - **phenelzine (Nardil)**
 - **pelegeline (Ensam)**



Antidepressants

CSPP

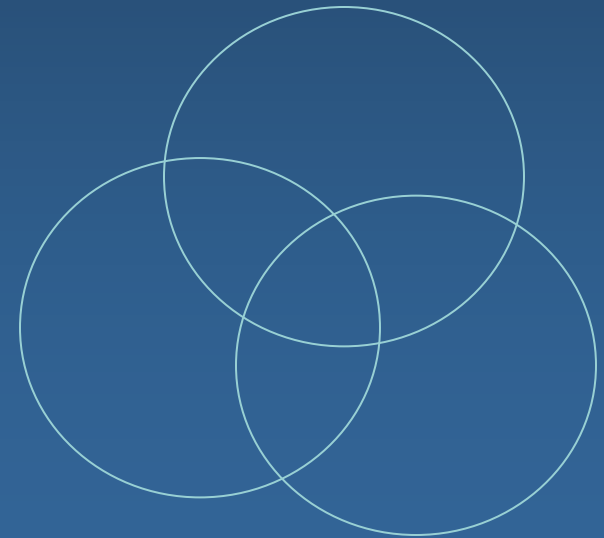
- **Monoamine oxidase inhibitors**
 - rarely used in adolescents
 - tyramine reaction – need special diet



Antidepressants

CSPP

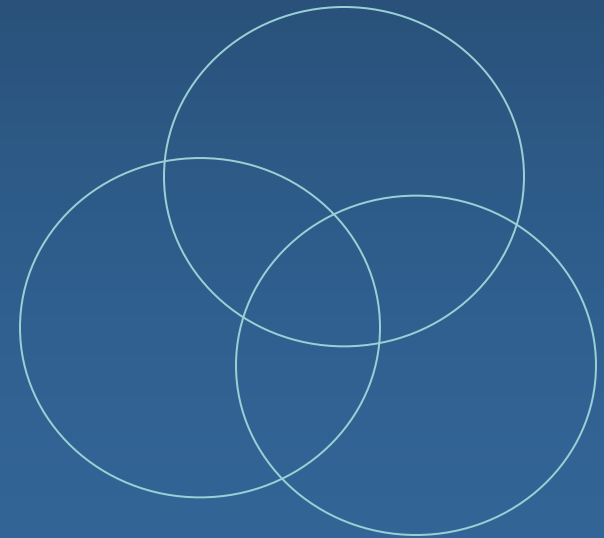
- **Other**
 - **Symbyax**
 - **Combination medication – fluoxetine/olanzepine**
 - **fixed dosages**



Mood Stabilizers

CSPP

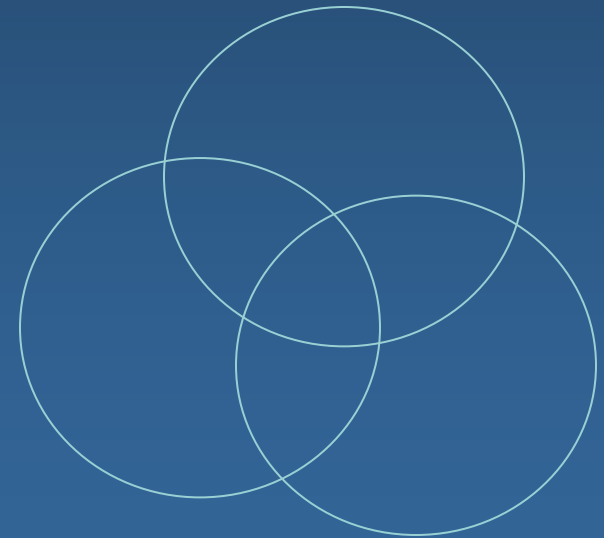
- **Uses:**
 - **bipolar disorders**
 - mood disorders
 - mania
 - mood instability
 - **aggression**



Mood Stabilizers

CSPP

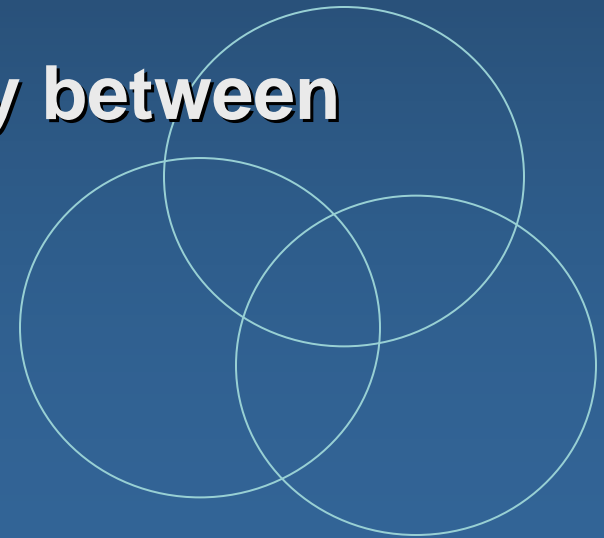
- LiCO_3
- divalproex sodium (Depakote)
- carbamazepine (Tegretol)
- topiramate (Topamax)
- oxcarbazepine (Trileptal)
- lamotrigine (Lamictal)



Mood Stabilizers

CSPP

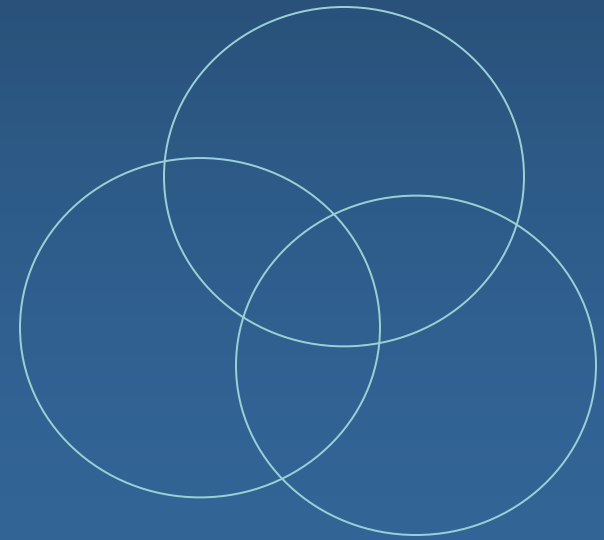
- LiCO_3
 - treatment of acute manic and depressive episodes
 - prevention of recurrence
 - reduction of mood instability between episodes
 - excreted by the kidney



Mood Stabilizers

CSPP

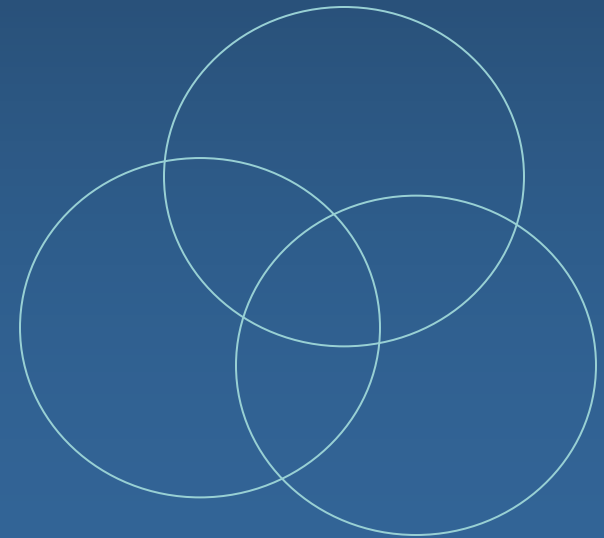
- **LiCO₃ side effects**
 - neurologic
 - gastrointestinal
 - renal
 - cardiovascular
 - endocrinologic
 - dermatologic
 - other



Mood Stabilizers

CSPP

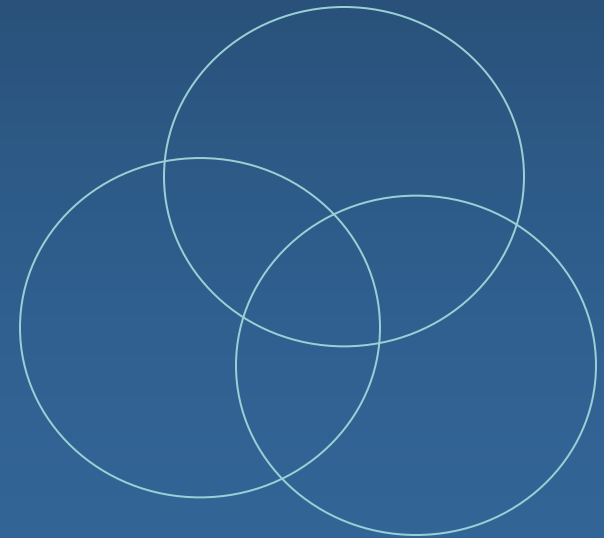
- **Divalproex sodium side effects**
 - neuropsychiatric
 - hematologic
 - gastrointestinal
 - hepatic
 - dermatologic
 - other



Mood Stabilizers

CSPP

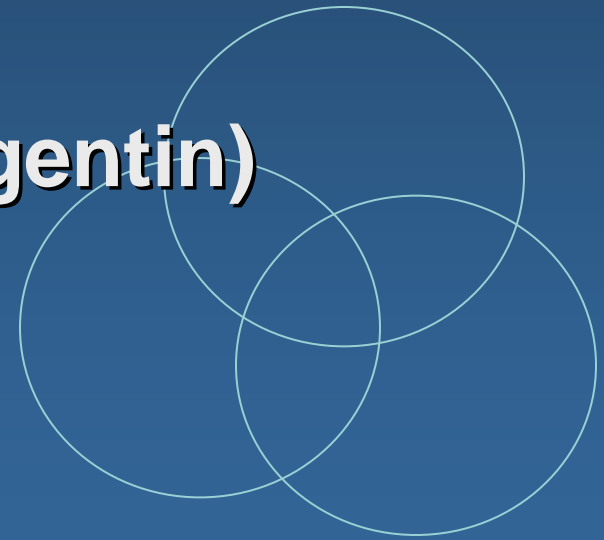
- **Carbamazepine side effects**
 - neurological
 - gastrointestinal
 - hematologic
 - dermatologic
 - hepatic



Other Commonly Used Agents

CSPP

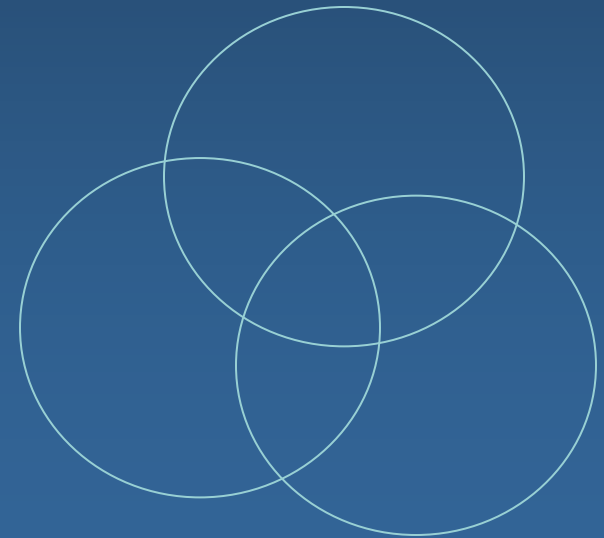
- α – agonists
 - clonidine (Catapres)
 - guanfacine (Tenex)
- propranolol (Inderal)
- desmopressin (DDAVP)
- benztropine mesylate (Cogentin)



α - Agonists

- **Uses:**
 - ADHD
 - PTSD
 - tic disorders
 - aggression
 - insomnia

CSPP



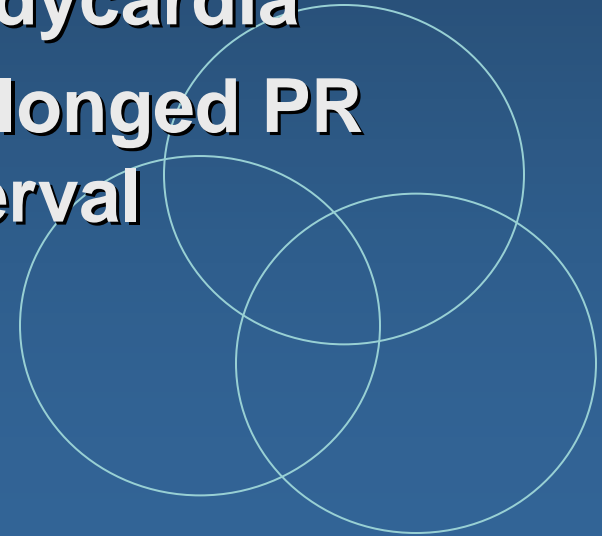
α - Agonists

CSPP

- **Side effects**

- sedation
- irritability
- dizziness
- sleep disturbance

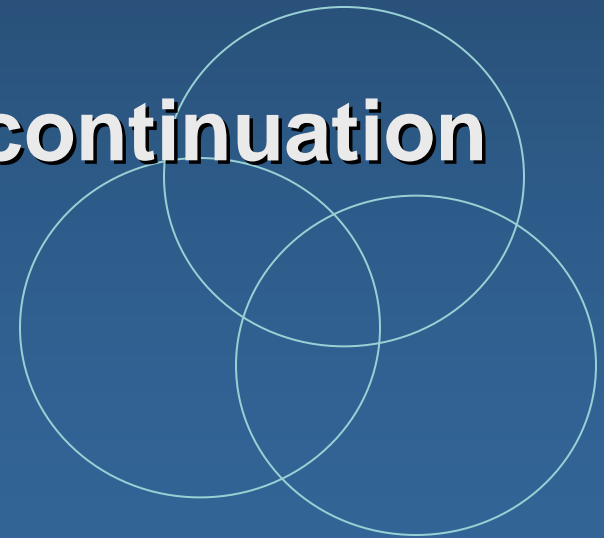
- dry mouth
- hypotension
- bradycardia
- prolonged PR interval



Desmopressin

CSPP

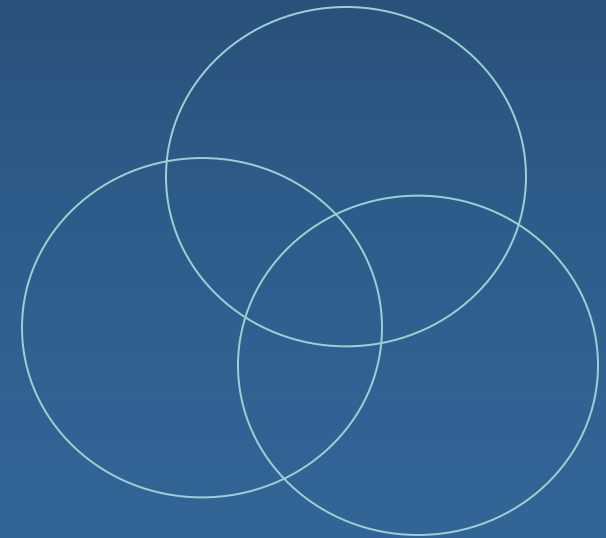
- **DDAVP**
- **Synthetic analogue of vasopressin**
 - concentration of urine
 - oral or nasal spray
- **High risk of relapse on discontinuation**



Desmopressin

CSPP

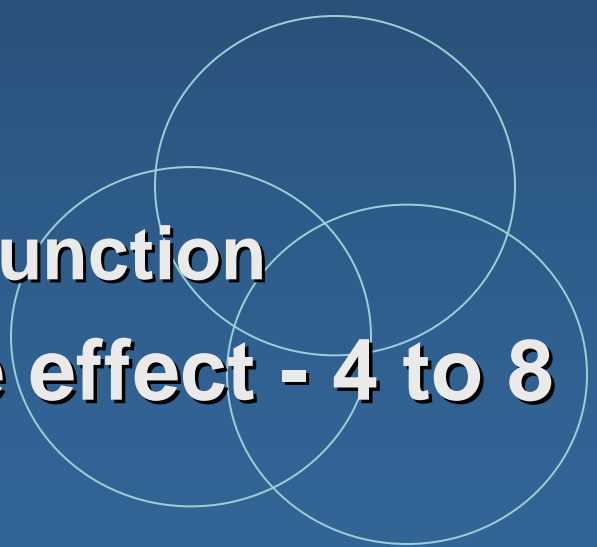
- **Adverse effects**
 - headaches
 - stomach upset
 - nasal stuffiness*
 - nose bleeds*
 - water intoxication
 - hyponatremic seizures



* – nasal spray contraindicated for enuresis

Propranolol

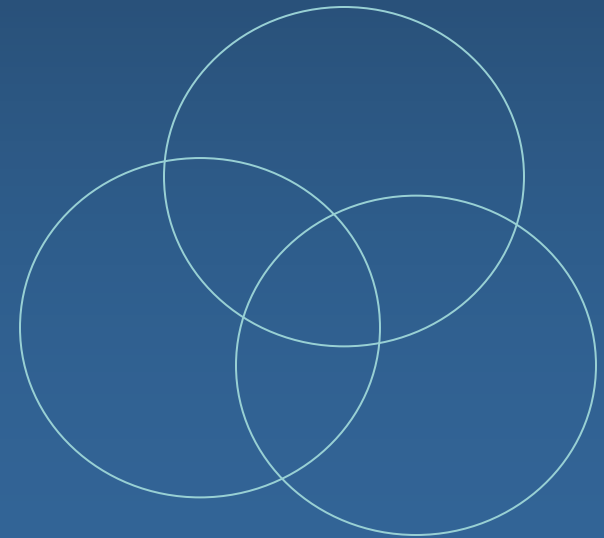
CSPP

- β blocker
 - dosages to 640 mg/d
 - used for aggression:
 - mental retardation
 - autism
 - central nervous system dysfunction
 - onset of the antiaggressive effect - 4 to 8 weeks
- 

Propranolol

CSPP

- **Side effects**
 - bradycardia
 - hypotension
 - blood pressure
 - bronchospasm
 - lethargy
 - nightmares



Partnering in Care

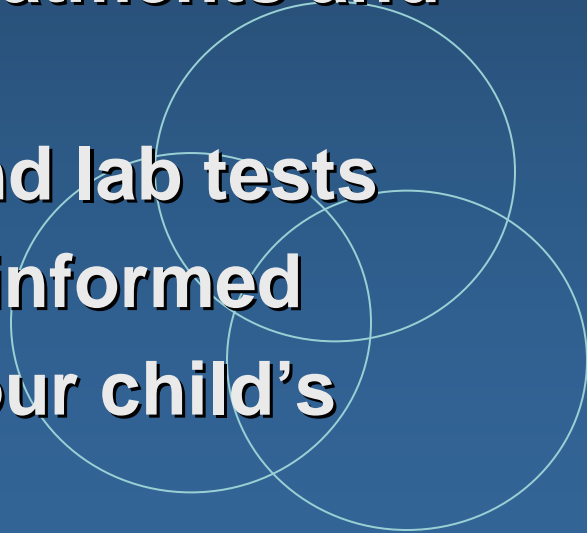
CSPP

- **Preparing for the first visit**
 - **explain the purpose**
 - address guilt feelings, not a punishment
 - tell your child what
 - **gather information for the doctor**
 - list of symptoms
 - history of your child's previous illnesses and medical conditions
 - list of current medications
 - family history of illnesses (if known)



Partnering in Care

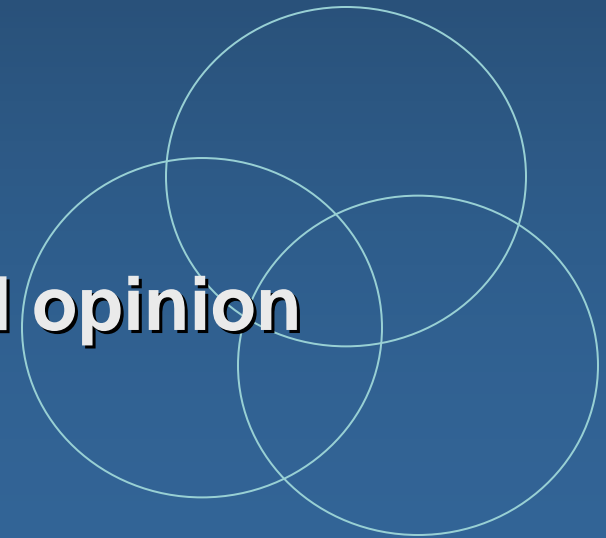
CSPP

- **Preparing for the first visit**
 - be organized and focused when giving the history
 - keep a log of your child's treatments and how he or she responded
 - keep copies of diagnostic and lab tests
 - keep your child's physician informed
 - connect all the doctors to your child's primary care physician
- 

Partnering in Care

CSPP

- **Follow-up care**
 - stay on top of appointments
 - follow through on giving the medication as prescribed
 - be an informed consumer
 - ask questions
 - feel free to request a second opinion



Partnering in Care

CSPP

- **Partnering in care**
 - ask questions about the diagnosis and proposed treatment
 - encourage your child to ask questions
 - ask about goals and objectives
 - ask about “wrap around” or other individualized services
 - help your child learn about their condition

