

10 Classes of Medicine

And the Information
The Medical Types Would Like to
Share with You



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**ABPN, ABPM-add, ABOM,
ABPPP**

Edmond Psychiatry



Classes of Medicine (and interventions)

- Antidepressants (SSRI, SNRI, Wellbutrin, MAOI, TCA)
- Antiepileptics/Mood Stabilizers
- Antipsychotics
- Lithium
- Benzodiazepines
- Hypnotics
- Replacement Therapies
- Stimulants
- Ketamine/Spravato, rTMS
- Marijuana-classified as medical in Oklahoma

Antidepressants: Overview of Classes

- SSRI

- SNRI

- Wellbutrin/
Aplenzin

- MAO (eg
EMSAM)

- Tricyclics

- 2nd generation
SSRI (Trintellix,
Viibryd)

- Remeron

- Auvelity

Suicidal Ideation with Antidepressants

- Antidepressants have a black box warning for suicidal ideation
- Black Box Warnings are the most severe warnings issued by the FDA
 - Indicate risk of “death or serious injury”
 - Underscore the need for heightened awareness for
 - Prescribers
 - Consumers

WARNINGS: SUICIDALITY AND ANTIDEPRESSANT DRUGS

Antidepressants increased the risk compared to placebo of suicidal thinking and behavior (suicidality) in children, adolescents, and young adults in short-term studies of major depressive disorder (MDD) and other psychiatric disorders. Anyone considering the use of Lexapro or any other antidepressant in a child, adolescent, or young adult must balance this risk with the clinical need. Short-term studies did not show an increase in the risk of suicidality with antidepressants compared to placebo in adults beyond age 24; there was a reduction in risk with antidepressants compared to placebo in adults aged 65 and older. Depression and certain other psychiatric disorders are themselves associated with increases in the risk of suicide. Patients of all ages who are started on antidepressant therapy should be monitored appropriately and observed closely for clinical worsening, suicidality, or unusual changes in behavior. Families and caregivers should be advised of the need for close observation and communication with the prescriber. Lexapro is not approved for use in pediatric patients less than 12 years of age. [See Warnings and Precautions: Clinical Worsening and Suicide Risk (5.1), Patient Counseling Information: Information for Patients (17.1), and Use in Specific Populations: Pediatric Use (8.4)].

Black box continued

- All antidepressants have this warning
- Most common group impacted is indicated: children, adolescents, young adults
- Why this group?
 - Not as effectively studied
 - Differences in metabolism of medicines
 - Increased risk of activation
 - Unclear diagnosis

PROZAC[®]
FLUOXETINE CAPSULES, USP
FLUOXETINE ORAL SOLUTION, USP
FLUOXETINE DELAYED-RELEASE CAPSULES, USP

WARNING

Suicidality and Antidepressant Drugs — Antidepressants increased the risk compared to placebo of suicidal thinking and behavior (suicidality) in children, adolescents, and young adults in short-term studies of major depressive disorder (MDD) and other psychiatric disorders. Anyone considering the use of Prozac or any other antidepressant in a child, adolescent, or young adult must balance this risk with the clinical need. Short-term studies did not show an increase in the risk of suicidality with antidepressants compared to placebo in adults beyond age 24; there was a reduction in risk with antidepressants compared to placebo in adults aged 65 and older. Depression and certain other psychiatric disorders are themselves associated with increases in the risk of suicide. Patients of all ages who are started on antidepressant therapy should be monitored appropriately and observed closely for clinical worsening, suicidality, or unusual changes in behavior. Families and caregivers should be advised of the need for close observation and communication with the prescriber. Prozac is approved for use in pediatric patients with MDD and obsessive compulsive disorder (OCD). (See WARNINGS, Clinical Worsening and Suicide Risk, PRECAUTIONS, Information for Patients, and PRECAUTIONS, Pediatric Use.)

Genetic Testing

- The test, the myth, the reality
- Can help navigate side effects, pitfalls, some limited efficacy problems
- Will NOT tell a patient what medicine will work
- Some of the data is still emerging and over-represented

Genetic testing

- **Has value in SOME spaces**
 - Multi-medicine failure
 - Unusual Side effects

- **Predicts side effects and lack of response better than response**
 - Will predict “problems”
 - Will NOT state whether a medicine will work
 - Takes SOME of the guesswork out of medicines

- **Example: 2d6 null: 2d6-metabolized meds not likely to work—prozac**

Rx MetaType™ Card

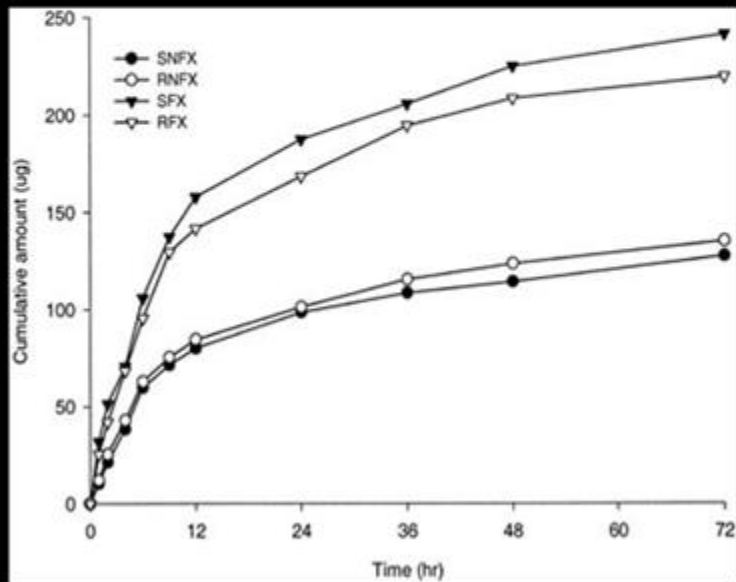
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Gene	Genotype	Phenotype	Clinical Meaning*
CYP1A2	*1F/*1F	Extensive	Normal Metabolism, but ↑ metabolism in smokers
CYP2B6	*1/*1	Extensive	Normal Metabolism
CYP2C19	*1/*1	Extensive	Normal Metabolism
CYP2C9	*1/*3	Intermediate	↓ Metabolism of some drugs
CYP2D6	*4/*4	Poor	↓ Metabolism of some drugs
CYP3A4/5	*1/*1, *3/*3	Normal	Normal Metabolism

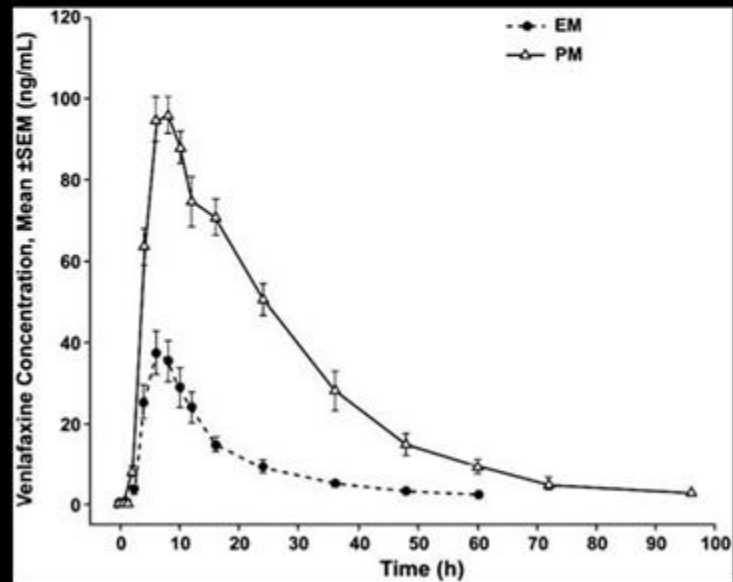
SNRI discontinuation

- Two to four days after cessation of medicine
- 20% of patients develop this if abruptly stop or significantly reduce dose
- Some patients more sensitive than others
- Lasts 5-7 days
- Can be addressed with
 - slower taper
 - transitioning to long $\frac{1}{2}$ life medicine
- Also happens with Paxil

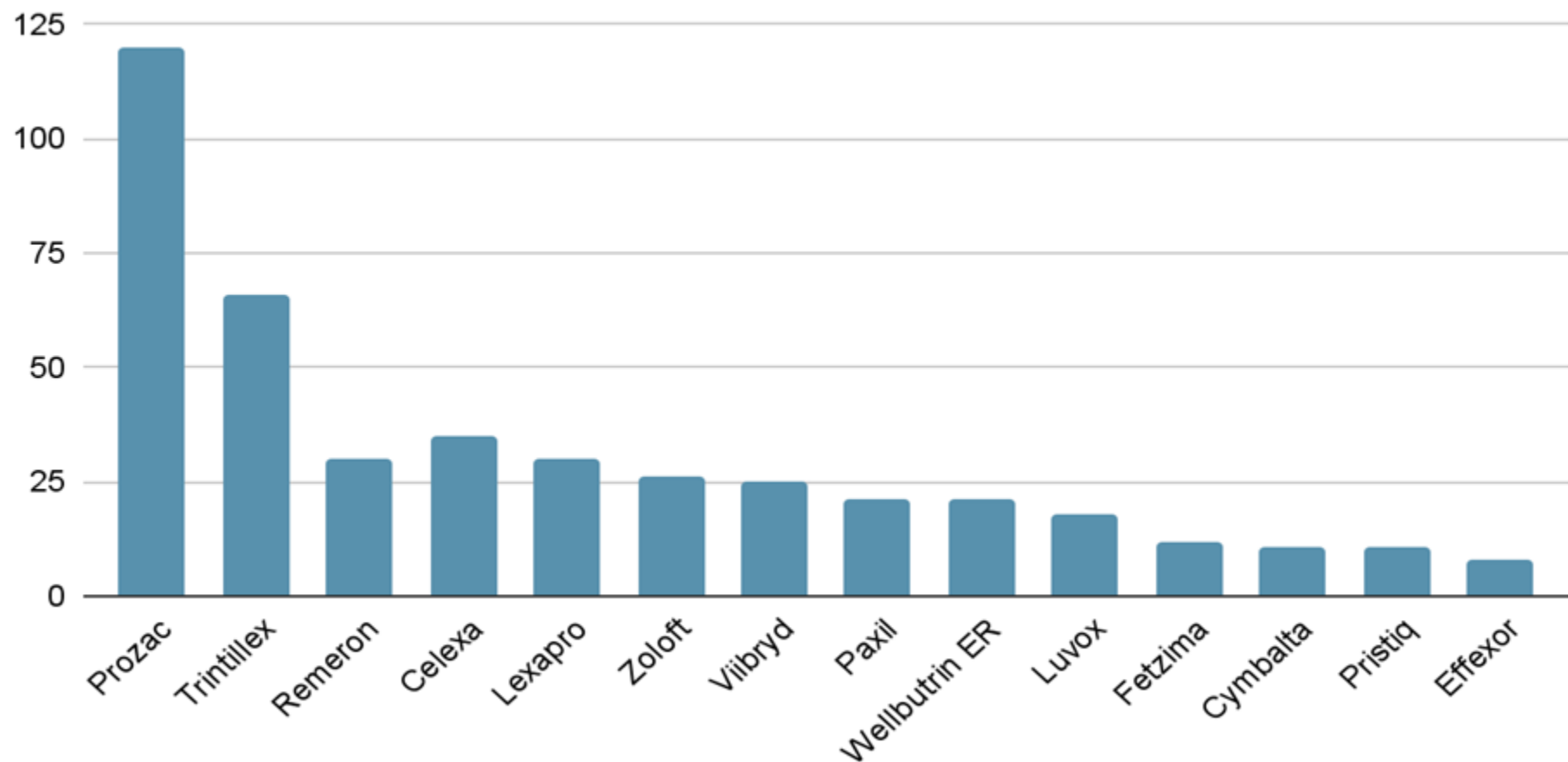
Pharmacokinetics of Prozac



Pharmacokinetics of Effexor



Medicine 1/2 life in Hours



SNRI discontinuation-FINISH

Pneumonic:

Flulike symptoms (lethargy, fatigue, headache, achiness, sweating)

Insomnia (with vivid dreams and nightmares)

Nausea (and sometimes vomiting)

Imbalance (dizziness, vertigo, light-headedness)

Sensory Disturbances (burning, tingling, electric-like, shock-like sensations)

Hyperarousal (anxiety, irritability, agitation, aggression, mania, jerkiness)

Dosing strategies—general rules everyone is a bit different

- Higher doses for anxiety
- My ballpark equivalencies:
 - 20 lexapro is 60-80 prozac is 200 zoloft is 40-60 paxil is 225-300 Effexor is 90 Cymbalta but there are NO published equivalencies
- Even higher doses for OCD (think zoloft up to 400 mg)
- Lower doses as a rule for major depression without anxiety, unless refractory
- OCD takes F-or-e-ver to respond. It's tough and refractory

Logical switching—things I see that don't make sense to me

- Don't go every other day on a short $\frac{1}{2}$ life medicine—it prolongs the drama (Effexor, Cymbalta, Pristiq, Paxil)
- Don't go every other day serotonin med/wellbutrin—that's goofy
- Stopping cold-turkey—that's just mean
- There are now some decent AI switch algorithms

Side effects to be alarmed

- Suicidal ideation
- Agitation (except a brief uptick in anxiety can happen with dose initiation or titration)
- Confusion
- Significant bruising
- “Drunk” appearing
- Significant twitches or altering vitals
- Any abrupt change

TCA drama

- TCA's from an effect size more powerful than SSRI
- Risk: arrhythmia, weight gain, anticholinergic (dementia)
- Can be very very good for folks with GI, pain or migraine concerns
- Fatal in overdose—must be very careful with these medicines

Wellbutrin drama

- Risk of seizure
- Don't use for folks struggling with alcoholism-frustrating because there is some association w/ improved abstinence
- Don't use in face of eating disorders—seizure risk higher
- Can make OCD worse

MAO

- **Very powerful, especially for “atypical” or anhedonic depression**
- **Many many drug interactions and food interactions**
- **Can cause hypertensive crisis, serotonin syndrome**
- **Patch is easier to use but still challenging**

What is Serotonin Syndrome?

- Agitation
- High blood pressure
- Heavy sweating
- restlessness
- Dilated pupils
- diarrhea
- insomnia
- Loss of muscle tone
- headache
- confusion
- twitchiness/
hyperreflexia
- shivering
- Rapid heart rate
- Muscle rigidity
- Goose bumps

Clonus?



What is Serotonin Syndrome?

Severe serotonin syndrome can be life-threatening. Signs include:

- High fever
- Tremor
- Seizures
- Irregular heartbeat
- Unconsciousness

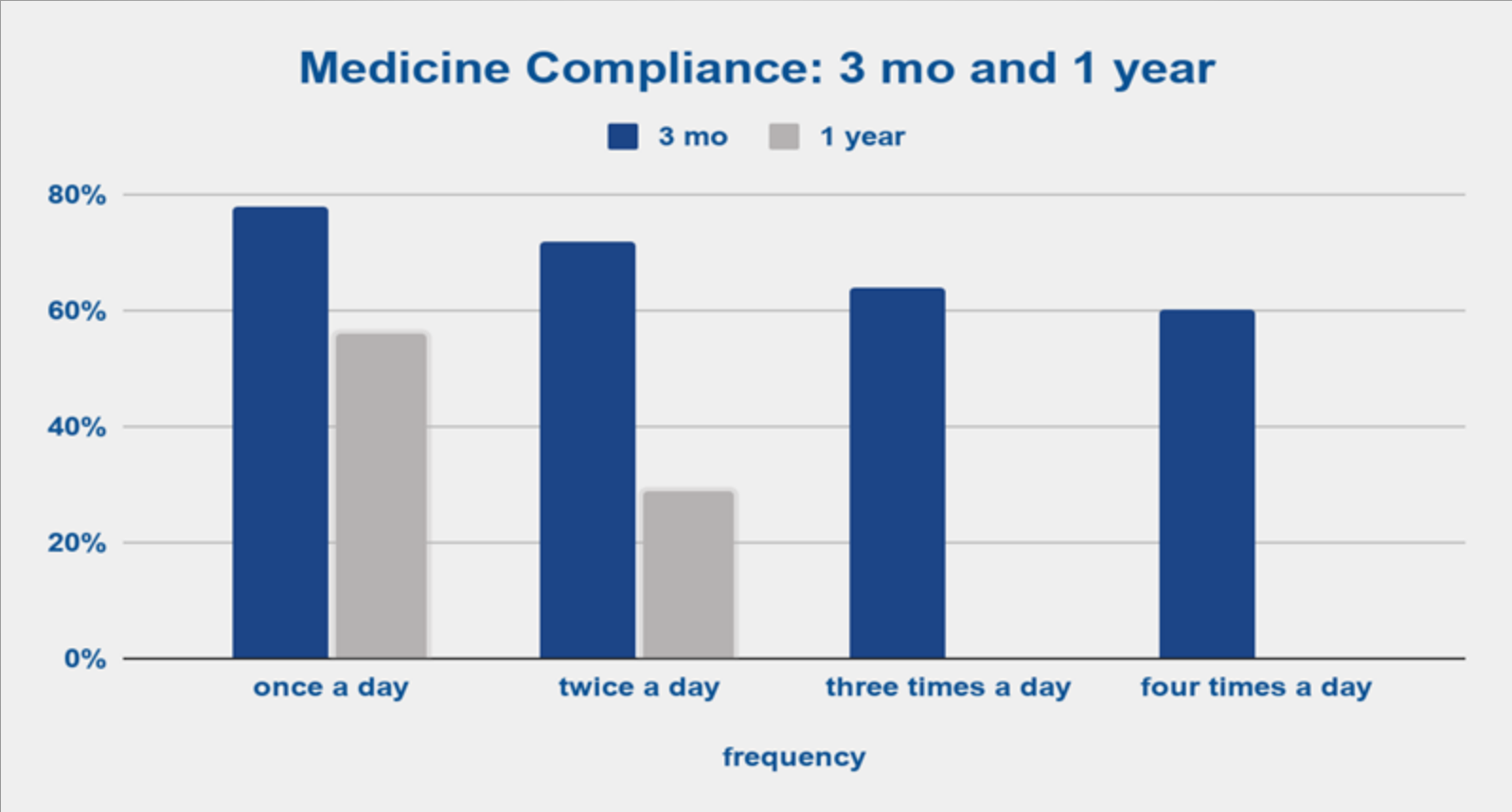
Augmenting-why we do it

- For refractory depression—when a few things haven't worked
- When an urgent response is needed

HOWEVER

- Combinations of medicines are rarely studied for long term side effects
- Pregnancy data for combinations is minimal

Compliance drops dramatically as pill count increases



Anti-Epileptics/Mood Stabilizers

- Depakote
- Lamictal
- Tegretol/Trileptal
- Gabapentin/Neurontin (off label)
- Various other are off label

Concerns

Some can invalidate birth control (tegretol, trileptal, high dose topamax)

Lamictal does NOT invalidate birth control (no matter what patients are told)

Steven Johnsons happens, but it's rare—but patients with rashes should call the prescriber

Antiepileptics have a class warning for suicidal thinking but can be helpful for depression

Can be devastating in pregnancy

The why re birth control

enzyme	substrate	inhibitors	inducers
CYP3A4	Birth control, lamictal, abilify, buspirone, estradiol, alcohol, fentanyl, progesterone, testosterone,	Ketoconazole, nefazodone, valproic acid, grapefruit juice, alcohol (wine...due to phenolic compounds)	Tegretol +/- trileptal, phenytoin, dexamethasone, modafinil, armodafinil, st john's wort, alcohol, topamax (high dose)
CYP1A2	Elavil, clozaril, clomipramine, imipramine, caffeine	Luvox, ciprofloxacin	Broccoli, brussels sprouts, cigarette smoking
CYP2C19	Elavil, celexa, lexapro,	Proton pump inhibitors (most)	tegretol
CYP2D6	Elavil, codeine, duloxetine, fluoxetine, oxycodone, propranolol, paxil, tamoxifen, tramadol, effexor	Bupropion, citalopram, clomipramine, duloxetine, lexapro, prozac, paxil, zoloft	

Pregnancy Stuff-Very General

- Medicines were not even routinely studied in women until 1994—I started medical school one year later
- Pregnancy data lags even further
- The first trimester is the highest risk for MOST medicines, including the anti seizure medicines
- We are developing pregnancy registries
- Pregnancy affects the metabolization of many medicines
- Tell your clients to LET THE PRESCRIBER know—if they are pregnant, if they have changed their minds on getting pregnant! If they have changed birth control mechanisms

antipsychotics

1st generation: haldol, thorazine, etc

- Less metabolic risk
- High EPS risk

In the world of telemedicine, EPS is harder to spot...if you are concerned, mention it to the **PRESCRIBER**

People sometimes mask these symptoms, like holding hands firmly to an armrest







Newer antipsychotics: metabolic concerns

- **Diabetes risk**
- **Elevated cholesterol risk**
- **Weight gain**

Probably increase inflammation overall

These medicines are helpful and fast-acting, but they are NOT without risk

Must do risk-benefit assessment

Treat the weight gain early

- **Adding metformin to antipsychotics is becoming mainstay treatment for many to prevent weight gain**
- **GLP medicines may ultimately find their place—though may impact absorption of medicines**
- **We manage the weight gain early...as part of treatment**
Don't wait until someone has significant health consequences...
This gets missed in telemedicine very easily...

Weight gain with medicine

- **Does not have to be inevitable**
- **Treat early and aggressively (with permission)**
- **Patient-focused language: a person with obesity, not an obese patient**
- **Psychiatric stability supersedes weight concerns but does not omit weight considerations**

GLP meds

- **Can be fabulous**
- **Not a panacea**
- **Do not always work**
- **Not safe with all medicines (delayed release, lithium, etc)**
- **Not safe for all patients—can trigger or exacerbate eating disorders**
- **Must be paired with nutrition and EXERCISE (become healthy not frail)**

Lithium-the good and the bad

- Gold standard
- Best data for suicide prevention
- Blood levels guide care...
- Works very quickly

Lithium is a jerk

Interactions with a number of medicines and conditions

- Diuretics (this is NOT theoretical...I had a patient pass away from this combination...directly attributable)
- NSAIDS
- Diabetes for a number of reasons (kidneys, lithium levels)

Lithium is still a jerk

- Toxic at too high a level and easy to get toxic
- Drops sodium
- Drops cbc—or elevates it
- Slays thyroid
- But can cause hyperparathyroidism—elevated calcium as early sign
- Hard on the kidneys
- Always thirsty
- Arrhythmia risk
- Birth defects

Urgent lithium problems

- Toxicity
- UTIs
- Don't stop abruptly if avoidable—can make a patient suicidal
- Must be followed very closely by a skilled provider—it isn't a newby med
- Fine tremor-normal; coarse tremor associated w/ other sx (gi, confusion) is signal of problem

Lithium

- **May be cognitively protective even at low dose**
- **Lithium orotate-emerging studies re cognition protection at 1.5-3 mg**
 - **This is a very different dosing than the mood stabilization dose and does not have the risk of lithium toxicity**

benzodiazepines

- **CNS depressants used to treat:**
 - **Anxiety**
 - **Insomnia**
 - **Seizures**
 - **Panic disorders**
- **By sedating the brain**
- **Controlled medicines, with addiction risk**

Concerns

- **Addictive**
- **Hard to taper off**
- **Dementia risk**
- **Cognitive concerns**
- **A number of challenging to dangerous interactions**

Benzodiazepine half life

Medicine	Brand	Half life (in hrs)
Triazolam	Halcion	2
Oxazepam	Serax	4-15
Alprazolam	Xanax	6-12
Lorazepam	Ativan	10-20
Temazepam	Restoril	8-22
Chlordiazepoxide	Librium	5-30
Clonazepam	Klonopin	18-50
Diazepam	Valium	20-100

Dementia risk

- **Controversial**
- **Early studies-significant risk, up to 87% increased risk**
- **Later studies: not so fast...early studies perhaps compromised**
 - **early dementia was being treated as anxiety or insomnia w/ benzodiazepines**

Dementia risk

The most accurate statement appears to be: there appears to be an association between esp long $\frac{1}{2}$ life and long duration benzo use and dementia; but association does not equate causation

Association Is **Not** Causation

I USED TO THINK
CORRELATION IMPLIED
CAUSATION.



THEN I TOOK A
STATISTICS CLASS.
NOW I DON'T.



SOUNDS LIKE THE
CLASS HELPED.
WELL, MAYBE.



Dependence, worsening PTSD

- **Benzos provide short-term relief from distressing feelings**

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- **Reduce the development of PTSD strategies**
- **Impair memory, which is required for effective PTSD therapy**

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- **Withdrawal ensues without the medicine**
- **This exacerbates PTSD symptoms**
- **Withdrawal can be physically dangerous**

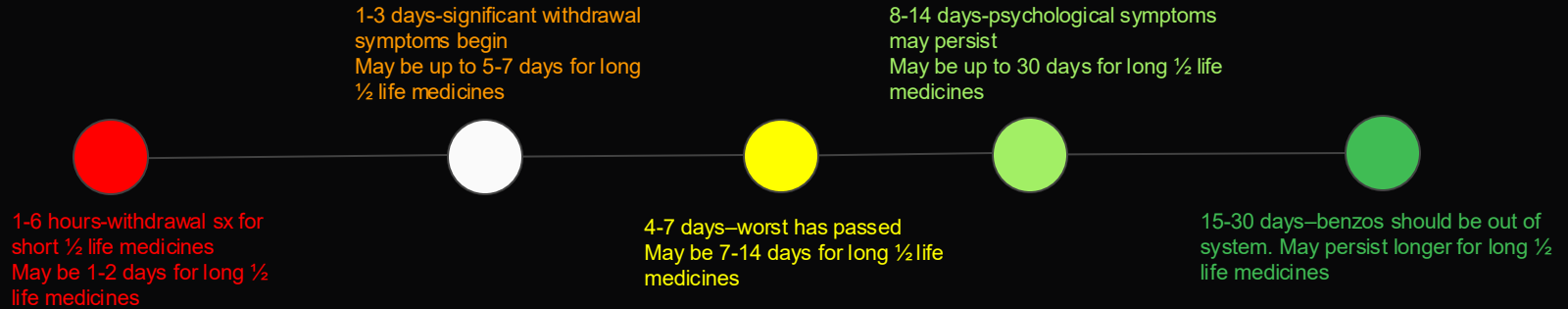
Dependence, worsening PTSD

- **Benzodiazepines are ineffective for PTSD treatment and prevention**
- **The risks associated with use tend to outweigh potential short-term benefits**
- **Benzodiazepines are associated with specific problems for patients with PTSD:**
 - **Worse overall severity**
 - **Significantly increased risk of developing PTSD with use after recent trauma**
 - **Worse psychotherapy outcomes**
 - **Aggression, depression, substance misuse**

Dependence, worsening PTSD–Conclusions

- **The results of a systematic review suggest benzodiazepines should be considered relatively contraindicated for patients with PTSD or recent trauma**
- **Evidence-based treatments for PTSD should be favored over benzodiazepines**

Benzodiazepine withdrawal timeline



Examples:

Short half life benzodiazepines: ativan, xanax

Long half life benzodiazepines: klonopin, valium

Benzodiazepine withdrawal timeline

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Benzodiazepine withdrawal can be divided into two main stages, dealing with short-term and longer-term reactions

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 - Rapid return of symptoms benzos were depression

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- **“Withdrawal syndrome”**
 - Day 5-19
 - Sleep issues, nausea, weight loss, headache, aching, sweating, tremors, anxiety and panic

Benzodiazepine withdrawal timeline

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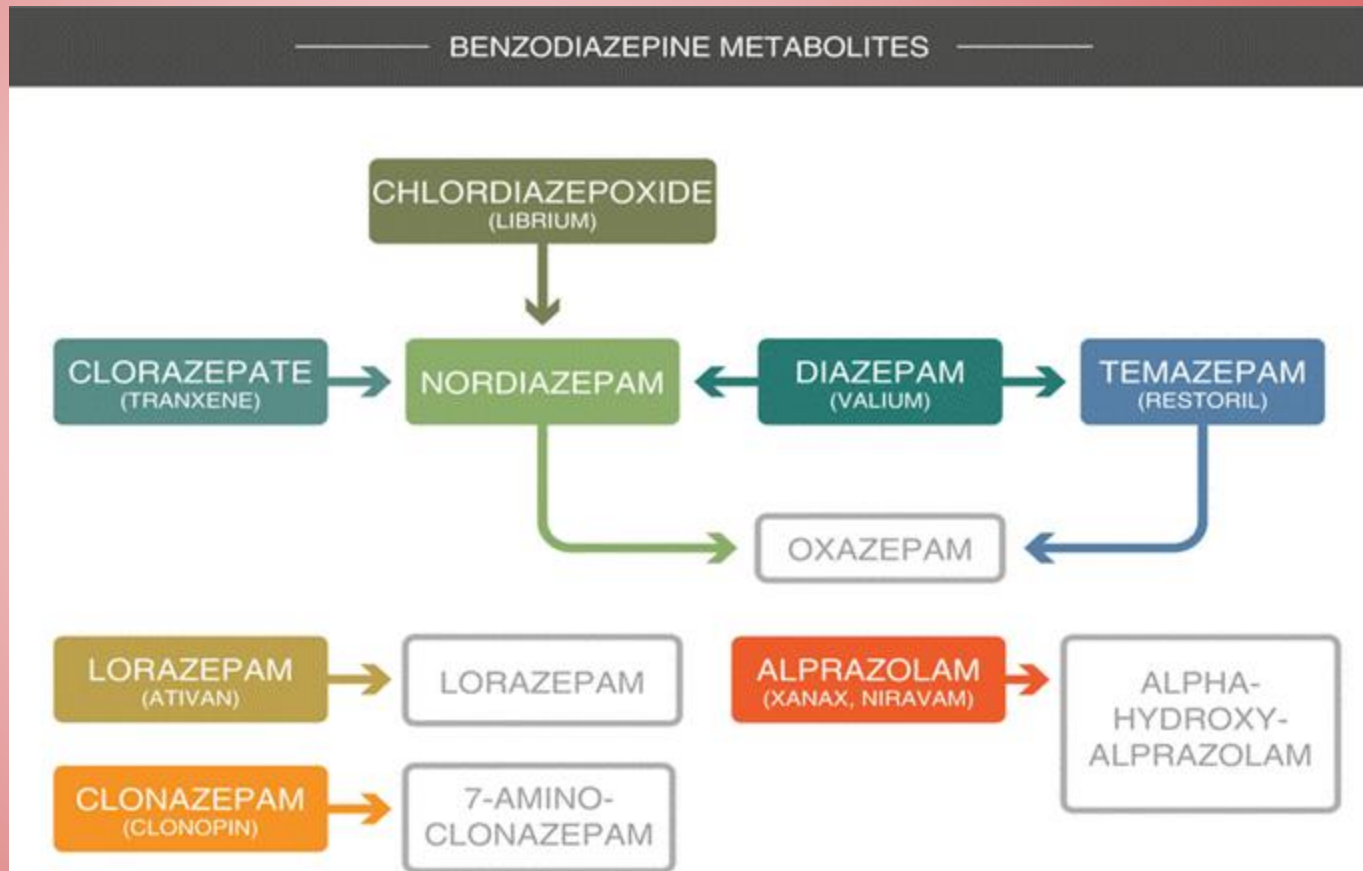
- **“Rebound period”**
 - Day 1-4
 - Rapid return of symptoms benzos were repressing
- **“Withdrawal syndrome”**
 - Day 5-19
 - Sleep issues, nausea, weight loss, headache, aching, sweating, tremors, anxiety and panic
- **“Normalizing”**
 - Day 20+
 - Normalizing to premedicated state. Anxiety or other symptoms that benzos were repressing remain until proper treatment

Taper inc prolonged taper

- **Tapers may occur over weeks-years**
- **Failure to taper may lead to seizures (abrupt cessation)**
- **Many patients fear the taper because it was done incorrectly or because they have seen/heard about rough tapers**
 - **Poor understanding of withdrawal timeline**
 - **Using alcohol withdrawal timeline to guide benzo withdrawal timeline**

Benzo uds and “false” negative

Why don't all benzodiazepines show up on a point of care UDS?



- Most tests check for oxazepam...if a medicine does not metabolize to oxazepam it may be missed.
- Most modern tests will pick up Xanax as well, but many miss Klonopin and even Ativan

What to use instead of Benzos

- **Buspar**—it really does work; it does not work as quickly and has to be titrated and used 3-4 times a day
- **Therapy**
- **Serotonin-based antidepressants**
- **Therapy**
- **Anti Seizure meds-gabapentin**
- **Therapy**
- **Vistaril/hydroxyzine**
- **Therapy**
- **Beta blockers**
- **Therapy**
- **Remeron/mirtazapine**
- **THERAPY**

When might be appropriate to use

- **Brief focused INFREQUENT or URGENT phobias–infrequent flying**
- **Alcohol detox-inpatient or outpatient**
- **Palliative eg end-stage cancer**

When absolutely contraindicated

- **Active substance abuse (outside of proscribed and monitored detox)**
- **Previous hx of addiction esp to benzos (with very rare exceptions)**
- **Respiratory compromise**
- **Clozaril–potentially fatal respiratory suppression esp w/ ativan**
- **Concomitant pain meds (relative, but you won't keep your license)**
- **Buprenorphine (same)**
- **Extreme care with elderly patients (frontal release, falls)**
- **Extreme caution w/ PTSD**

Final words on benzos

- **People feel like they get their lives back when coming off them**
- **If you feel your patient needs a benzo, please speak to the prescriber directly**
 - **Avoid triangulation**
 - **Avoid triangulation**
 - **Avoid triangulation**
 - **People are passionate in their opinions on this class of medicine**
 - **Don't set the prescriber up to be the “bad guy” or to have to frame your recommendation in a bad light—we will, but it will suck**

Sleep aids/hypnotics

- **Z-drugs or sedative-hypnotics: Ambien, Lunesta, Sonata**
- **Orexin receptor antagonists-Belsoma, Dayvigo, Quviviq**
- **Antidepressants: trazodone, silenor (3-6 mg doxepin), emeron**
- **Benzodiazepines-restoril, serax etc**
- **Anticholinergic-antihistamine: benadryl, vistaril**
- **Antipsychotics–Seroquel, Zyprexa**

Ambien, Lunesta, Sonata drama

- Next day memory impairment that may be subtle
- Concomitant pain meds-risk of respiratory suppression
- Amnesia after taking
- Women-often hypersensitivity to the class
- Older folks-hypersensitivity
- These have fallen out of favor with most psychiatrists but insurance company still loves them

Ambien, Lunesta, Sonata drama

Must take on empty stomach

DO NOT DRIVE after taking these meds or do any remotely unsafe or cognitively-requiring task

Case report: single dad

May be an increased signal in the literature for “peculiar behavior” esp. associated with history of addiction

Unexpected suicidal ideation or attempt

Out of the blue psychosis

Orexin receptor antagonists (oras)

- **Belsomra, Dayvigo, Quviviq**
- **May be safer for older people; does not disrupt sleep architecture**
- **Contra-indicated in narcolepsy (loss of orexin-producing cells lateral hypothalamus) as may worsen narcolepsy**
- **Expensive so hard to get covered, but appear to have a better safety profile**

Antidepressants

- **Trazodone**

- **Blocks antihistamine, 5ht2a, and alpha-1 adrenergic without impacting anticholinergic receptor. May also reduce cortisol.**
- **A very safe medicine, though not always effective**

- **Remeron**

- **Blocks 5ht2a and 3a, histamine but NOT anticholinergic**
- **Very safe but significant weight gain**
- **Paradoxical dosing; lower doses better for sleep (noradrenergic impact at higher doses)**

benzos

- Can “put” people to sleep
- Do not restore normal sleep architecture
- A medicine of last resort
- If used, focus on short $\frac{1}{2}$ life medicines: ativan, xanax, restoril, rather than klonopin or librium
- Use for short periods of time
- Insomnia rebound occurs when stopping which makes these hard to d/c
- Increased risk of respiratory arrest esp in apnea

Anticholinergics-benadryl, vistaril (hydroxyzine)

- **Benadryl (diphenhydramine) –is not a medicine for sleep**
- **Especially in older folks**
- **Anticholinergic impact can increase risk for dementia**
 - **Dose dependent**
 - **Duration dependent**

- **Additive impact of multiple anticholinergic medicines**

Antipsychotics

- Seroquel, Zyprexa
- Mostly capturing the antihistamine/anticholinergic side effects of these medicines
- Anticholinergic burden leads to similar risk as benadryl, vistaril

Replacement therapy and substance misuse meds

- **Vivitrol and naltrexone**
- **Buprenorphine**
- **Antabuse**

Vivitrol/naltrexone

- **Naltrexone is an oral medicine that can reduce cravings and desire to use-opiates, alcohol**
- **Works in the limbic system**
- **Vivitrol is a once a month injectable form**
- **Naltrexone can cause a false positive UDS for opiates, but will clear on confirmation**

buprenorphine

- **Used to mediate the opiate receptor**
- **Pills, depo shot**
- **There was an implant but folks were breaking them open and it was a hot mess**

buprenorphine

- **Partial agonist (accelerator with a governor) with full analgesic properties**
- **Do NOT combine with benzos...people die from this. Really. No, really**
- **Controlled medicine contracts required for this medicine. Because people can die. And other stuff...**

Antabuse

- I only write this when requested **BY THE PATIENT**
- 12 hour window of sobriety required
- People can get **REALLY** sick
- It is **NOT** negative reinforcement, it is positive punishment
- Antabuse creates aversion rather than promoting positive behavior change
- Can lead to shame rather than healthy coping mechanisms
- However, a small subset that truly benefit
 - Eg my job requires me to go to these alcohol functions—I **WANT** this med

Review

	Reinforcement	Punishment
Positive	Add something to increase the likelihood of a behavior	Add something to decrease the likelihood of a behavior
Negative	Take away something to increase the likelihood of a behavior	Take away something to decrease the likelihood of a behavior

Stimulant medicine

- **Stimulant medicine is broadly two medicines with many derivatives:**
 - **Amphetamine**
 - **Methylphenidate**

- **Everything else is either**
 - **A purified version (adderall vs dexedrine, Ritalin vs Focalin) or**
 - **A release mechanism (XR, CR, ER, DR, pro-drug, metabolite, etc.)**

How choose/when use overall

- Overall broad and highly opinionated opinion:
- **Amphetamines**
 - stronger, hit harder, more “feel”, more weight loss, more side effects
 - Higher risk of anxiety and psychosis, possibly higher risk of addiction
- **Methylphenidates**
 - More subtle, less weight loss, less irritability
 - Harder to notice, often less preferred by patients

ASAM guidelines for those who struggle with addiction

1. If ADHD is present, failure to treat adequately leads to higher risk of addiction and higher risk of relapse
2. Preference first line is nonstimulant
3. If nonstimulant is ineffective, then a reduced-diversion extended release methylphenidate (Azstarys, Quillivant/chew, branded Concerta, Jornay PM)
4. If you must use an amphetamine (better data for cocaine addiction), a reduced diversion extended release version (Vyvanse, Dyanavel)
5. Monitor closely, pill counts, UDS, limited amounts on script if necessary

Script quantity limits

- **Regardless of what anyone does, says, or has been told, the DEA rules are as follows:**
- **Scripts may be written for stable patients in 90 day quantities, as 3-30 day scripts, with do not fill before notations**
- **The DEA acknowledges the rules are unclear and ambiguous, but clarifies that stimulant medicine follows C2 policy put in place primarily for opiates**
- **The DEA is not seeking these cases to prosecute, but local DEA enforcement reserves the right to prosecute if/when they desire**

Script quantity limits

- **Dr. Susan Wynne**
- **Notified of violations of federal rule Section 1306.12(b)(1) of Title 21 of Code of Federal Regulations**
- **Even most psychiatrists, who write these medicines daily, are not aware of this rule**

Monitoring

- **UDS (medical board recommends and OBNDA audits though not since pandemic and Ryan-Haught suspension-not clear when this will end)**
- **PMP (medical board requires, the DEA requires)**
- **Controlled substance contracts**
- **Limited pharmacy moves/number of pharmacies**
- **In person requirement is evolving and subject to change (exemption extended through Dec 31 2026...)**

Stimulant health concern

- Blood pressure/pulse
- Cardiovascular changes
- Weight loss (easier to miss in telemedicine)
 - We did an audit of weights reported...some were unchanged for years...no easy way to confirm
- Insomnia
- Mania induction
- Wearing off at end of day (hw time, sports time, family time)
- R/O sleep apnea—it looks like ADHD

Stimulant holiday?

PRO

Relieve from side effects

See if the medicine is actually having an impact

Convenience in traveling

Environment during medicine holiday may be more conducive to untreated symptoms

Opportunity to regain height/weight trajectory

CON

Symptom breakthrough; ADHD is more than “classroom” results, eg social, safety (driving)

Experience “onboarding” and “offboarding” side effects

Better long-term results with medicine maintenance

Some medicines (nonstimulants) take weeks to build up

Impairs development of routines

Ketamine/Spravato

- **Highly effective with novel mechanism**
- **Not a “cure-all”**
- **Take-home is done but can be very dangerous and is not for everyone**
 - Risk over overdosing-respiratory suppression and death
 - Poor decision-making when under influence of this medicine
 - Black-market sourcing—where does your ketamine come from?
- **MOST psychiatrists are not in favor of take-home ketamine; controversial**

rTMS

- **Magnetic stimulation to different parts of the brain for: MDD, OCD, some chronic pain**
- **Off label for: addiction, anxiety, peripheral neuropathy, etc**
 - Site is chosen based on symptoms being targeted
 - It is NOT ECT
 - 20 min treatment daily 5 days a week for 36 treatments
 - New one-day protocol: 20 accelerated treatments over a full day
- **No maintenance, no driving restrictions**



ECT

Gold-standard for:

- Treatment resistant depression
- Treatment-resistant psychosis
- Treatment resistant mania
- Suicidal ideation
- catatonia



Medical Marijuana

- **Helpful for some**
- **Wild wild west**
- **Let's compare apples to apples**

Marijuana studies

- Scarce
- Limited by C1 status–changing
- Need more data

THC vs CBD

- **Sativa vs Indica**
 - Sativa-higher THC to CBD ratio
 - Indica-higher CBD to THC ratio
- **CBD MAY have some putative results for anx, inflammation**
- **THC appears to increase anxiety, depression, ADHD symptoms, insomnia over the long haul**
- **THC may create a permanent psychosis—emerging data (vs unmasking a pre-existing psychosis)**

THC/CBD/CBN metabolism and interactions

CYP enzyme	THC	CBD	CBN
1A2	Inhibits	Mixed Inhibition	
2b6	Inhibits	Inhibits	Inhibits
2C9	Inhibits, <i>Substrate</i>	Inhibits	Inhibits
2C19	Mixed Inhibition	<i>Substrate</i>	
2D6	Inhibits	Inhibits	
2E1		Inhibits	Inhibits
3A4		Inhibits, <i>Substrate</i>	

Marijuana is natural...

So is **Arsenic...**

There is a place

- For medical marijuana
- But we must understand the mechanism, how it works, what we are trying to accomplish

Bringing it all together

- Collaborate
- Don't use patients as messengers
- Be succinct...we often see 20-30 patients a day plus meetings plus CME plus committees, hospital meetings, prior authorizations, patient phone calls, patient messages, after-hours obligations...we aren't jerks, we ARE overwhelmed
- We are trained to work as a team, including the medical professionals we employ in our offices...we are required to delegate due to the sheer number of tasks we are faced with daily, but your information IS important

example

- I saw Sally...she has a new tremor i haven't observed before
- I saw Mark...he notes his anxiety is climbing esp after starting a new blood pressure medicine and he's having new nightmares
- I saw Janice...I want to let you know she started using marijuana for sleep and thought I should let you know in case it impacts her medicines
- This stuff IS super-important; we DO want to know

Recent example

- **Text from therapist: c mi.was a little sweaty in office...drinking celsius I know she takes adderall**
 - HIPAA compliant; identifiable only to me; addressable in less than 1 minute
 - Pt had high bp from combo of adderall plus caffeine.
- **Call from therapist to my MA: want to let you know Cyndi A started a new blood pressure pill; she take lithium and I don't think she sees ya'll for a month or so.**
 - Patient had indeed started a diuretic; provider missed the interaction and we were able to act

Questions, thoughts, observations, complaints?