Understanding Medications for Treatment Court Participants

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CUCS Academy
for Justice-Informed Practice

NEW YORK ASSOCIATION OF TREATMENT COURT PROFESSIONALS

NEW YORK STATE UNIFIED COURT SYSTEM
OFFICE *for* JUSTICE INITIATIVES
DIVISION of POLICY and PLANNING

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GOALS

Understand the role of medications in treatment plans for court participants

- Medications used to treat mental illness
- Medications used to treat substance use disorders
- Reasons that treatment court participants refuse or avoid taking medications
- Strategies to promote the use of prescribed medications

2

The role of medications as part of a court-supervised treatment plan: Defense and prosecution perspectives

3

Major types of psychotropic medications and how they address symptoms of mental illness

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DIAGNOSES

- SCHIZOPHRENIA
- BIPOLAR DISORDER
- SCHIZOAFFECTIVE DISORDER
- SUBSTANCE INDUCED PSYCHOSIS AND MOOD DISORDERS
- MAJOR DEPRESSIVE DISORDER
- ANXIETY DISORDERS
- POST-TRAUMATIC STRESS DISORDER (CPTSD)
- OTHER TRAUMA AND STRESSOR DISORDER
- PERSONALITY DISORDERS (ANTISOCIAL, BORDERLINE, NARCISSISTIC, SCHIZOTYPAL)
- ADJUSTMENT DISORDER WITH DISTURBANCE OF CONDUCT

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SCHIZOPHRENIA

Criterion A. Two (or more) of the following (At least one of these should include 1-3):

1. Delusions
2. Hallucinations
3. Disorganized speech
4. Grossly disorganized or catatonic behavior
5. Negative symptoms (i.e., diminished emotional expression or avolition)

Criterion B. One or more major areas functioning, such as work, interp, are markedly below the level achieved prior to the onset.

Criterion C. Continuous signs of the disturbance persist for at least 6 months.

Criterion D. Schizoaffective disorder and depressive and bipolar disorder with psychotic features have been ruled out.

Criterion E. Substance / general medical condition exclusion.

Criterion F. If there is a history of autism spectrum disorder or other communication disorder of childhood onset, the additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations are also present for at least 1 month (or less if successfully treated).

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BIPOLAR DISORDER

BIPOLAR I DISORDER:

For a diagnosis of bipolar I disorder, it is necessary to meet the following criteria for a manic episode. The manic episode may have been preceded by and may be followed by hypomanic or major depressive episodes.

Manic Episode:

- A distinct period of abnormally and persistently elevated, expansive, or irritable mood and abnormally and persistently increased goal-directed activity or energy, lasting at least 1 week and present most of the day, nearly every day (or any duration if hospitalization is necessary).
- During the period of mood disturbance and increased energy or activity, 3 (or more) of the following symptoms (4 if the mood is only irritable) are present to a significant degree and represent a noticeable change from usual behavior:
  - Inflated self-esteem or grandiosity
  - Decreased need for sleep (e.g., feels rested after only 3 hours of sleep)
  - More talkative than usual or pressure to keep talking
  - Flight of ideas or subjective experience that thoughts are racing
  - Distractibility (i.e., attention too easily drawn to unimportant or irrelevant external stimuli), as reported or observed
  - Increase in goal-directed activity (either socially, at work or school, or sexually) or psychomotor agitation (i.e., purposeless, non-goal-directed activity)
  - Excessive involvement in activities that have a high potential for painful consequences (e.g., engaging in unrestrained buying sprees, sexual indiscretions, or foolish business investments)
- The mood disturbance is sufficiently severe to cause marked impairment in social or occupational functioning, or to necessitate hospitalization to prevent harm to self or others, or there are psychotic features.
- The episode is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication, or other treatment) or to another medical condition.

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Childhood trauma has life-long effect on genes and the brain

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Meaney and his colleagues studied the licking and grooming behavior of mother rats toward their pups and divided them into consistently high-licking and low-licking groups.

Pups reared by low-licking mothers carried the methyl mark on genes that normally inhibit stress responses. As adults, these animals showed a greater stress response than animals reared by high-licking mothers.

"This implies that relatively simple maternal behavior during early childhood has profound effects on genes expressed in their brains when they reach adulthood," said Szyf. The researchers found that more than 900 genes were regulated by maternal care, many of which were specific to the level of maternal behavior.

Meaney MJ, Szyf M. Environmental programming of stress responses through DNA methylation: Life at the interface between dynamic environment and a fixed genome. Dialogues in Clinical Neuroscience 7: 103-123

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COMPLEX PTSD

Complex post-traumatic stress disorder (CPTSD) can result from experiencing chronic trauma, such as prolonged child abuse or domestic violence. It's closely related to PTSD and borderline personality disorder

- Anxiety
- Having flashbacks or nightmares.
- Avoiding situations, places and other things related to the traumatic event.
- Heightened emotional responses, such as impulsivity or aggressiveness.
- Persistent difficulties in sustaining relationships.

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Trauma- and Stressor-Related Disorders

- Posttraumatic Stress Disorder
- Acute Stress Disorder
- Adjustment Disorders
- Reactive Attachment Disorder
- Disinhibited Social Engagement Disorder
- **Other Specified Trauma- and Stressor-Related Disorder**
- **Unspecified Trauma- and Stressor-Related Disorder**

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PERSONALITY DISORDERS

A. An enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual's culture. This pattern must be manifested in 2 (or more) of the following areas:
   1) Cognition (ie, ways of perceiving and interpreting self, other people, and events)
   2) Affectivity (ie, the range, intensity, lability, and appropriateness of emotional response)
   3) Interpersonal functioning
   4) *Impulse control*

B. The enduring pattern is inflexible and pervasive across a broad range of personal and social situations

C. The enduring pattern leads to clinically significant distress or impairment of social, occupational, or other important areas of functioning

D. The pattern is stable and of long duration and its onset can be traced back at least to adolescence or early adulthood

E. The enduring pattern is not better accounted for as a manifesttion or consequence of another mental disorder

F. The enduring pattern is not due to the direct physiological effects of a substance (eg, a drug of abuse, a medication) or a general medical condition (eg, head trauma)

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MEDICATIONS

- ANTIPSYCHOTICS
- MOOD STABILIZERS
- ANTIDEPRESSANTS
- ANXIOLYTICS

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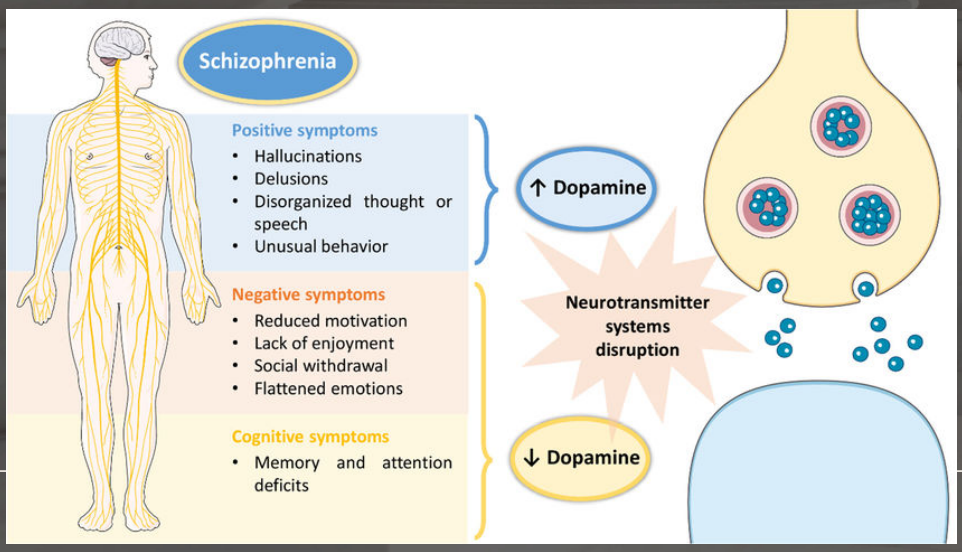

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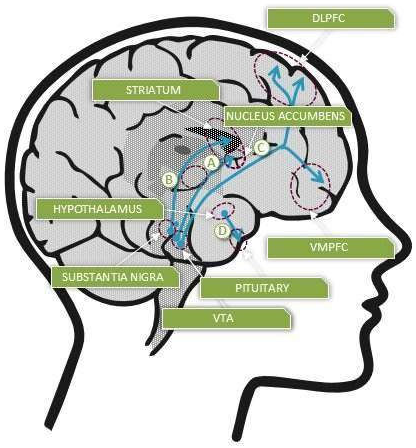
CONCEPTUALISATION OF SCHIZOPHRENIA



- A: VTA → NA → Positive symptoms
- B: Substantia Nigra → Striatum → EPSE
- C: VTA → VMPFC → Affective
- C: VTA → DLPFC → Cognition
- D: Hypothalamus → Anterior pituitary → Elevated prolactin

METABOLIC SYNDROME

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ANTIPSYCHOTICS

Class	Name
Conventional APs	Chlorpromazine, cyamemazine, fluphenthixol, fluphenazine, haloperidol, loxapine, mesoridazine, molindone, perphenazine, pimozide, pipothiazine, sulpiride, thioridazine, thiothixene, trifluoperazine, zuclopenthixol
SDAs	Clozapine, risperidone, paliperidone, olanzapine, quetiapine, ziprasidone, perospirone, zotepine, sertindole, low-dose loxapine?, low-dose cyamemazine?, iloperidone, asenapine
SDAs in development	SM13493/lurasidone, blonanserin, Y931, NRA0562, nemonapride
DPAs	Aripiprazole, low-dose sulpiride?, amisulpride?
DPAs in development	Bifeprunox, sarizotan, cariprazine (RGH188), 3PPP, SLV313, SLV314, ACR16, PNU 9639/OSU 6162, CI1007, ACP-104, SSR-181507
SPAs	SPA + SDA: ziprasidone, quetiapine, clozapine SDA + DPA + SPA: aripiprazole DPA + SPA: bifeprunox

AP: antipsychotic; SDA: serotonin 2A dopamine 2 antagonist; DPA: dopamine 2 partial agonist; SPA: serotonin 1A partial agonist

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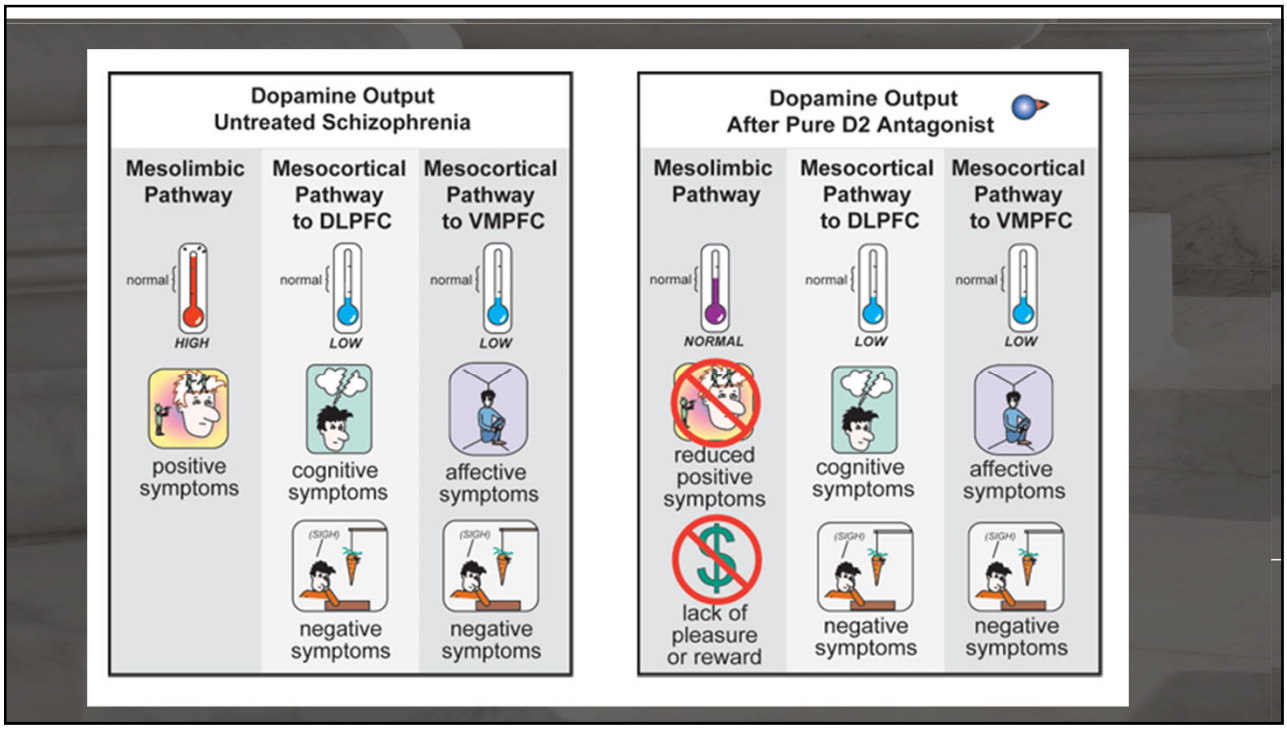
Dopamine Output
Untreated Schizophrenia
Mesolimbic Pathway
Mesocortical Pathway to DLPFC
Mesocortical Pathway to VMPFC
normal
HIGH
LOW
LOW
positive symptoms
cognitive symptoms
affective symptoms
negative symptoms
negative symptoms
Dopamine Output
After Pure D2 Antagonist
Mesolimbic Pathway
Mesocortical Pathway to DLPFC
Mesocortical Pathway to VMPFC
normal
NORMAL
LOW
LOW
reduced positive symptoms
cognitive symptoms
affective symptoms
lack of pleasure or reward
negative symptoms
negative symptoms

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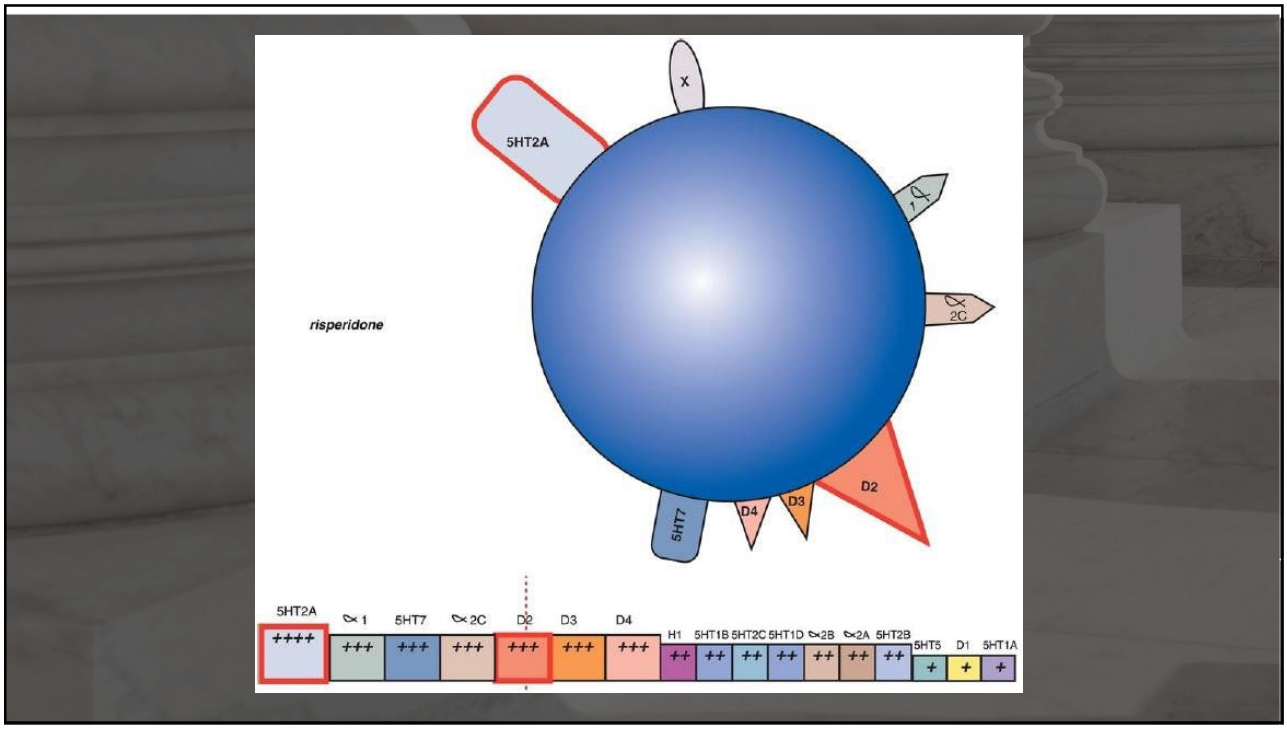
risperidone
5HT2A
X
1
2C
D2
D3
D4
5HT7
5HT2A
1
5HT7
2C
D2
D3
D4
H1
5HT1B
5HT2C
5HT1D
2B
2A
5HT2B
5HT5
D1
5HT1A
++++
+++
++
+

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Receptor	Clinical Effects
Dopamine D_2	Mediation of **positive** psychotic symptoms (hallucinations, delusions) Adverse effects: **Extrapyramidal symptoms** and prolactin levels
Serotonin $5\text{-}HT_{2A}$	Balances D_2 blockade and **attenuates extrapyramidal symptoms**; Possible role in circadian rhythm and hallucinations
Serotonin $5\text{-}HT_{1A}$	Possible role in anxiety, cognition, mood
Serotonin $5\text{-}HT_7$	Possible role in circadian rhythm, mood, thermoregulation, learning, memory, and endocrine regulation
α-Adrenergic α_1	Adverse effects: Dizziness, drowsiness, **orthostatic hypotension**
Histamine H_1	Adverse effects: **Sedation**, weight gain, impaired cognition
Muscarinic M_1	Adverse effects: Deficits in memory and cognition, **constipation**, blurred vision, dry mouth, drowsiness, **tachycardia**, urinary retention

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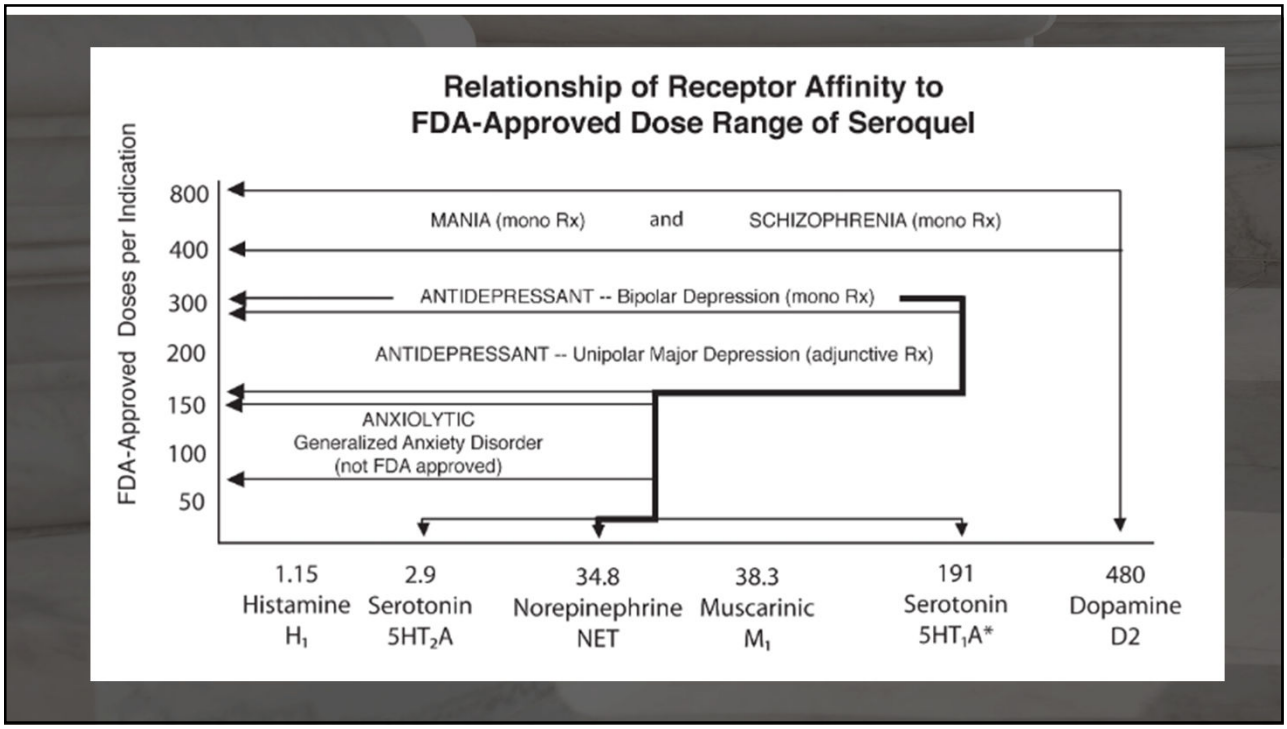

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BIPOLAR DISODER

- CARBAMAZEPINE /TEGRETOL)
- DIVALPROEX SODIUM (DEPAKOTE)
- LAMOTRIGINE (LAMICTAL)
- LITHIUM
- OLANZAPINE/ FLUOXETINE

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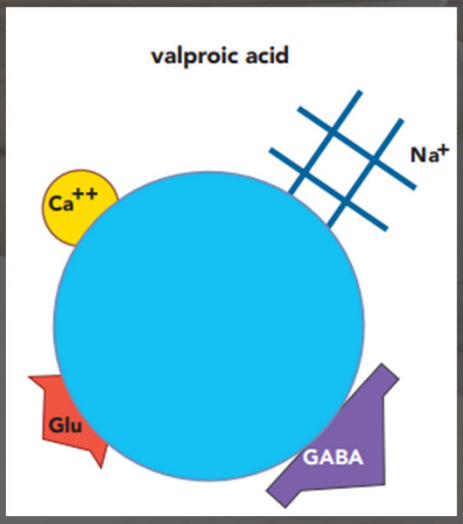
VALPROIC ACID

DEPAKOTE



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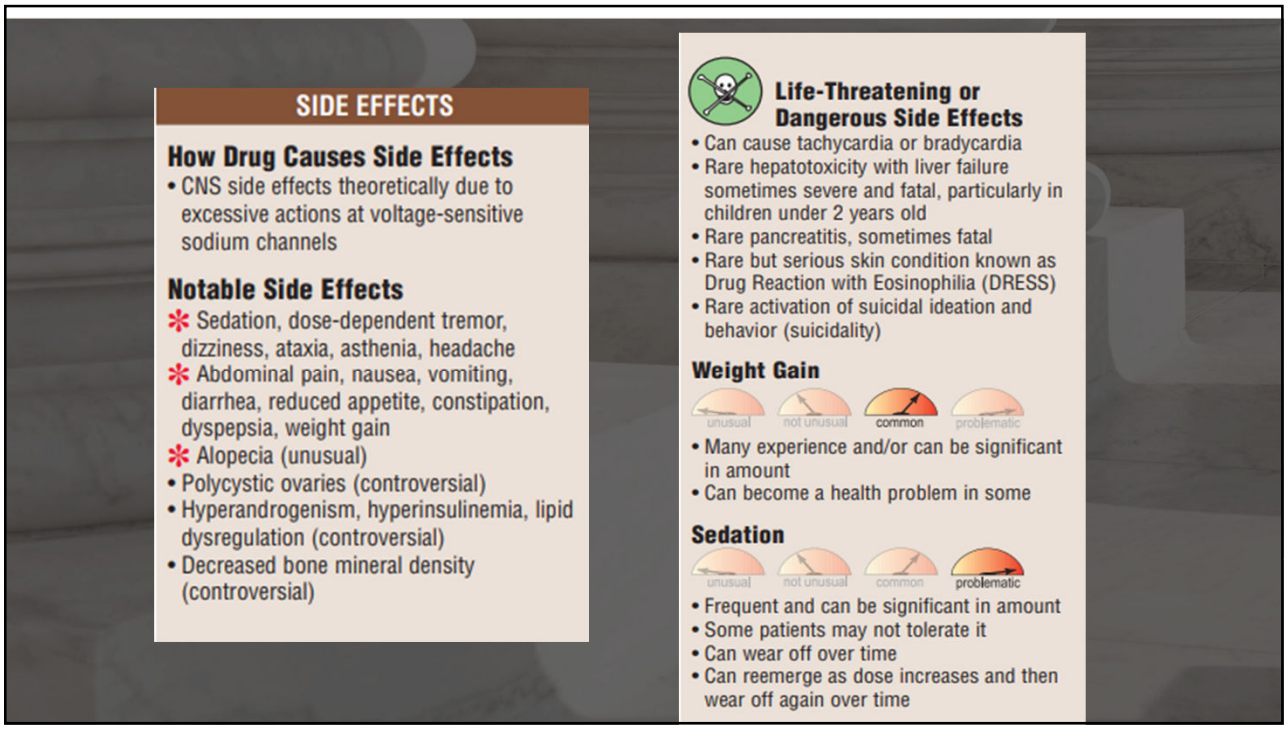

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MEDICATIONS FOR SUBSTANCE USE DISORDERS

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MEDICATIONS TYPICALLY NOT ALLOWED IN SUBSTANCE USE COURTS

- Benzodiazepines
- Stimulants
- Opioids

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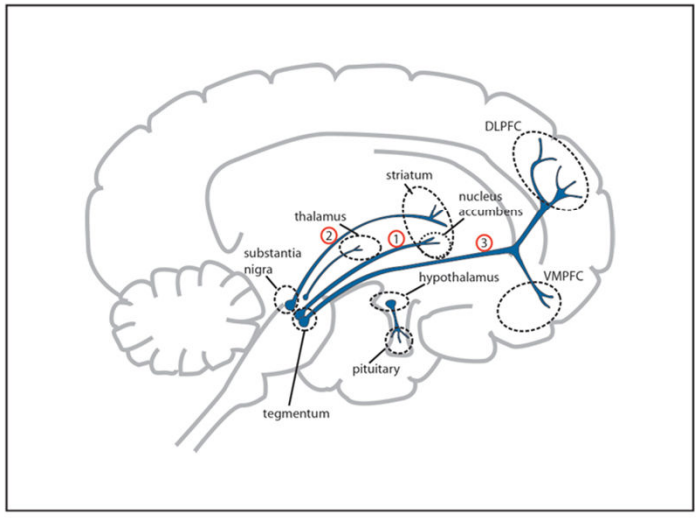
Dopamine Pathways Involved in Reward



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Dopamine and Drugs of Abuse

Drug	Target	Mechanism of DA Increase
Stimulants	Dopamine transporter (DAT)	Blocks DAT on DA neurons projecting from VTA to NAc (cocaine) or releases DA from DA terminals (methamphetamine, amphetamine)
Opioids	Mu-opioid receptor (MOR)	Disinhibits VTA DA neurons by inhibiting GABA interneurons that contain MOR in the VTA or directly activates NAc neurons that contain MOR
Nicotine	Nicotine receptors (mainly alpha 4 beta 2)	Directly activates VTA DA neurons via stimulation at their nicotine receptors and indirectly activates them by stimulating the nicotine receptors in glutamatergic terminals to VTA DA neurons
Alcohol and inhalants	Multiple, including GABA and glutamate receptors	Facilitates GABAergic neurotransmission, which may disinhibit VTA DA neurons from GABA interneurons or may inhibit glutamate terminals that regulate DA release in NAc
Cannabinoids	Cannabinoid CB1	Regulates DA signaling through CB1 receptors in NAc neurons and in GABA and glutamate terminals to NAc

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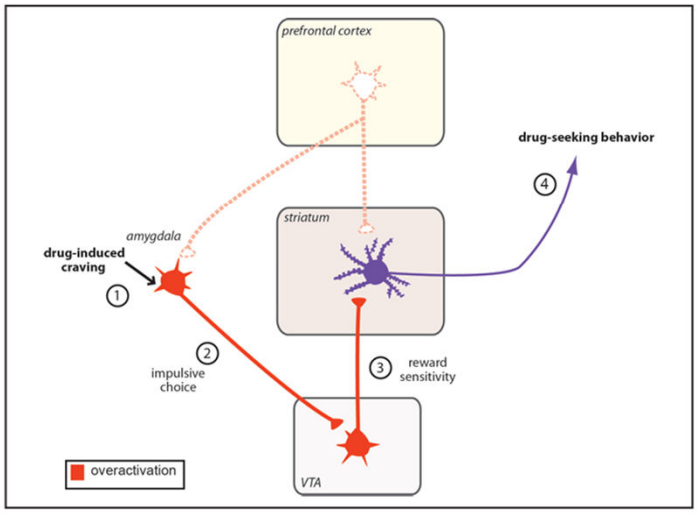
Compulsive Use/Addiction



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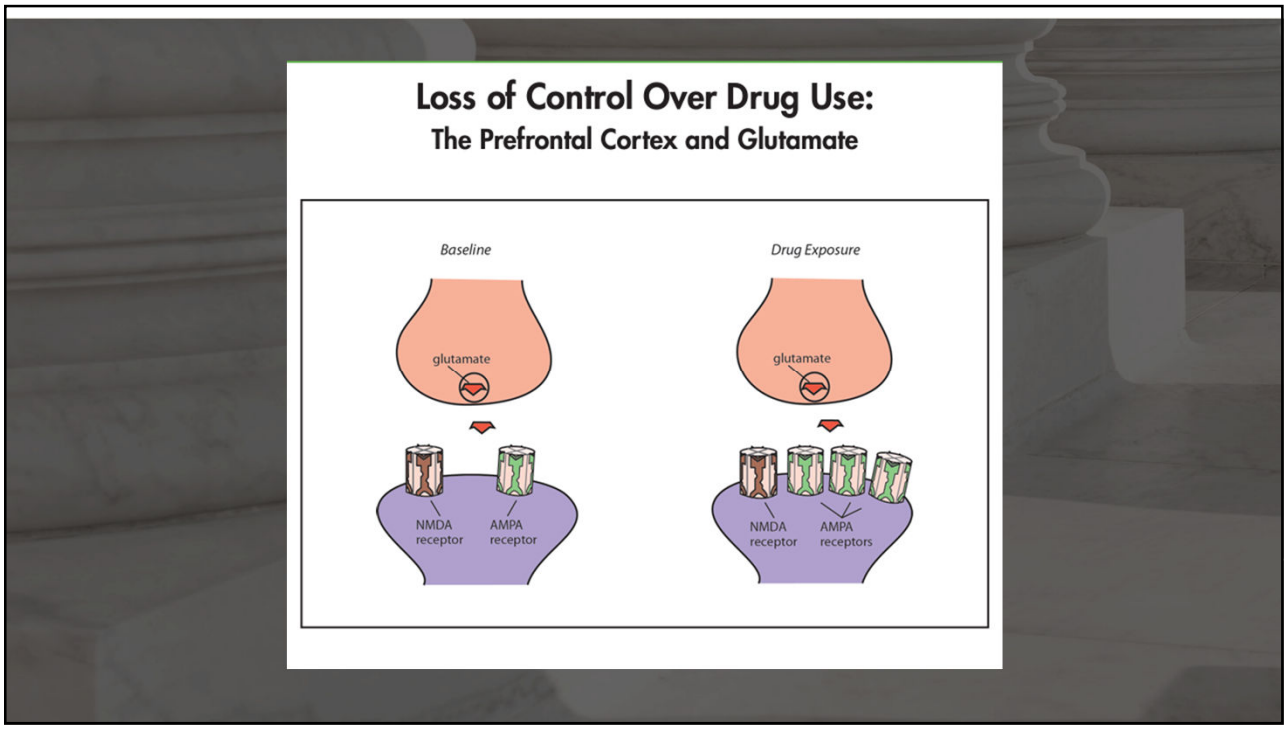
Loss of Control Over Drug Use:
The Prefrontal Cortex and Glutamate
Baseline
Drug Exposure
glutamate
glutamate
NMDA receptor
AMPA receptor
NMDA receptor
AMPA receptors

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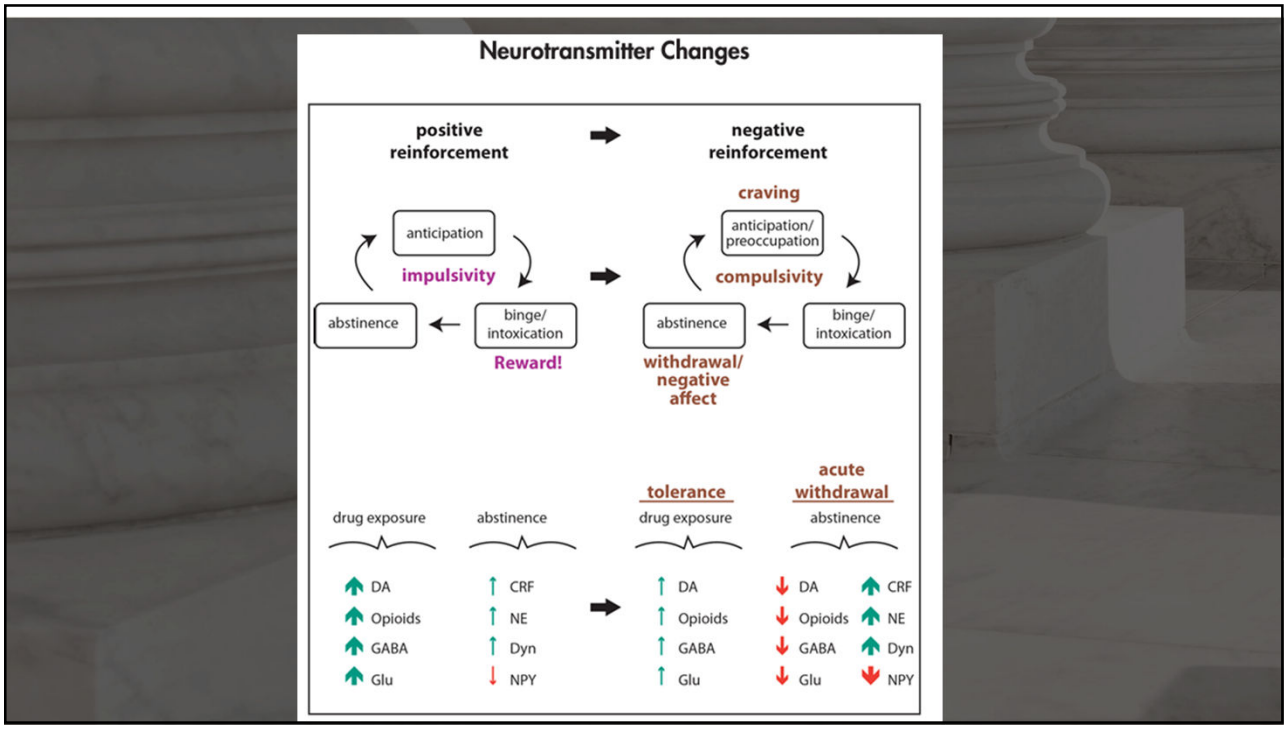
Neurotransmitter Changes
positive reinforcement
negative reinforcement
craving
anticipation
impulsivity
anticipation/ preoccupation
compulsivity
abstinence
binge/ intoxication
Reward!
abstinence
binge/ intoxication
withdrawal/ negative affect
tolerance
acute withdrawal
drug exposure
abstinence
drug exposure
abstinence
DA
Opioids
GABA
Glu
CRF
NE
Dyn
NPY
DA
Opioids
GABA
Glu
DA
Opioids
GABA
Glu
CRF
NE
Dyn
NPY

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PSYCHOTROPICS FOR SUBSTANCE USE TREATMENT

- Alcohol Use
  - Topamax
  - Naltrexone
  - Dilsulfiram
  - Acamprosate
- Opioids
  - Methadone
  - Suboxone
- Benzodiazepines
  - Other anxiolytics

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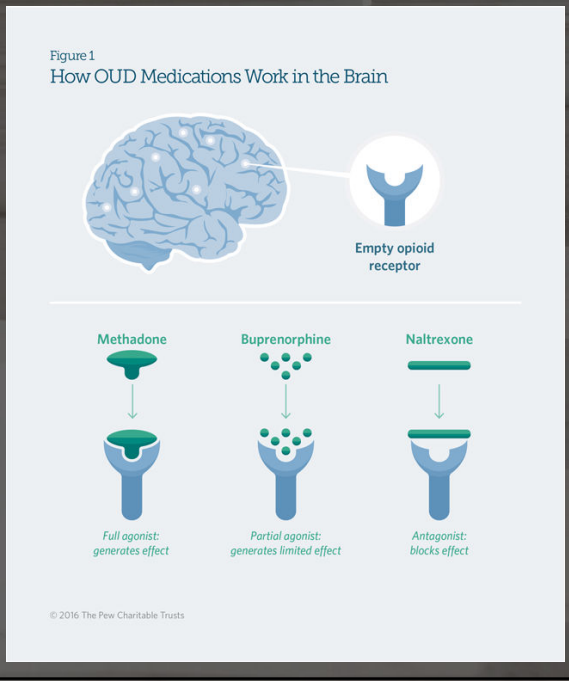
OPIOID USE DISORDER TREATMENT



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Discussion topics

- Use of alcohol, legal drugs, and illicit drugs
- Why people refuse or avoid taking prescribed medications
- Effective (and ineffective) strategies to promote the use of prescribed medications

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Legal right to refuse medication

- *Rivers v. Katz*, 67 NY2d 485 (1986)
- *Sell v. U.S.*, 539 US 166 (2003)

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