# Substance Use and Mental Health Conditions

Shabnam Thompson, DO
Psychiatrist

# Objectives

1. To be able to recognize substance induced disorders
2. Be aware of possible suicide risks
3. Recognize the psychiatric symptoms associated with opioid use

# How long does it take for substance induced mental disorders to go away?

A. 1 week
B. 2 weeks
C. 1 month
D. 2 months

There is an increased rate of suicidal behavior as well as of completed suicide among individuals with Alcohol Use Disorder but NOT with Opioid Use Disorder

A. True
B. False

Practitioners should be aware that opioid analgesic use of longer than what time period imposes risk of new-onset depression?

A. 1 week
B. 2 weeks
C. 3 weeks
D. 4 weeks

# Substance Related Disorders

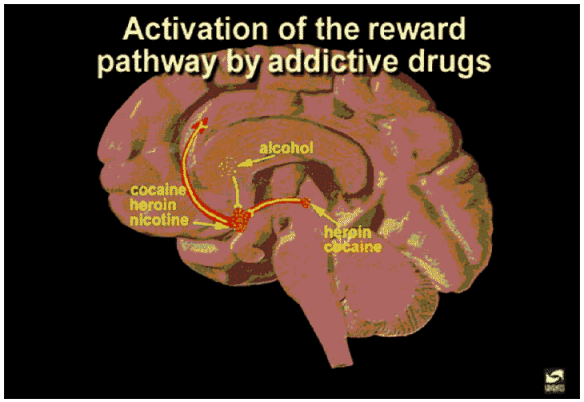
- Encompass 10 separate classes of drugs:
  1. Alcohol
  2. Caffeine
  3. Cannabis
  4. Hallucinogens

     (with separate categories for phencyclidine [or similarly acting arylcyclohexylamines] and other hallucinogens)
  5. Inhalants
  6. Opioids
  7. Sedatives, Hypnotics, and Anxiolytics
  8. Stimulants

     (amphetamine-type substances, cocaine, and other stimulants)
  9. Tobacco
  10. Other (or unknown) substances

# Substance Related Disorders

- All drugs that are taken in excess have in common direct activation of the brain reward system, which is involved in the reinforcement of behaviors and the production of memories.




- They produce such an intense activation of the reward system that normal activities may be neglected.

- Instead of achieving reward system activation through adaptive behaviors, drugs of abuse directly activate the reward pathways

(Koob 2006)

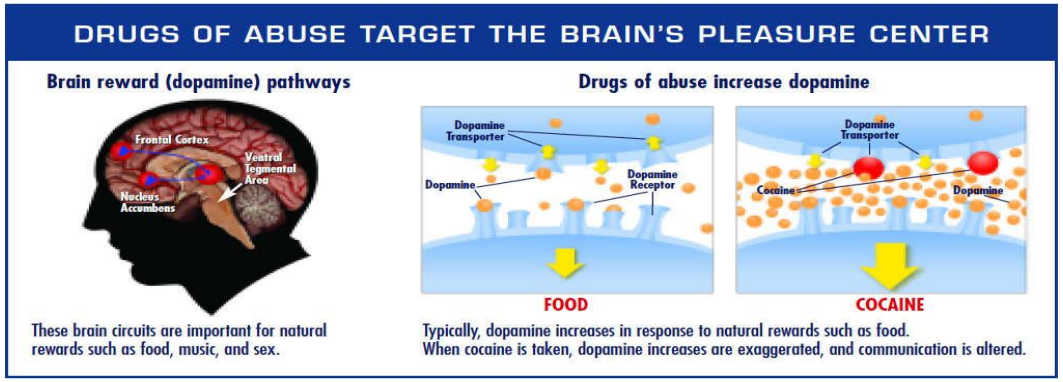
# Substance Related Disorders

- The pharmacological mechanisms by which each class of drugs produces reward are different but the drugs typically activate the system that produces feelings of pleasure often referred to as a "high"

- Furthermore, individuals with *lower levels of self-control* which may reflect *impairments of brain inhibitory mechanisms*, may be particularly predisposed to develop substance use disorders

- Suggesting that the *roots* of substance use disorders for some persons can be *seen in behaviors long before* the onset of actual substance use itself

  (Moffitt et al. 2011)



# Substance Related Disorders

- The substance-related disorders are divided into two groups:
  - Substance Use Disorders
  - Substance-Induced Disorders

# Substance Related Disorders

- The following conditions may be classified as substance-induced:
  - Intoxication
  - Withdrawal
  - Other **substance/medication-induced mental disorders**:
    - **Psychotic disorders, bipolar and related disorders, depressive disorders, anxiety disorders**, obsessive-compulsive and related disorders, sleep disorders, sexual dysfunctions, delirium, and neurocognitive disorders

# Substance/Medication-Induced Mental Disorders

The disorder represents a clinically significant symptomatic presentation of a relevant mental disorder.

There is evidence from the *history, physical examination, or laboratory Findings* of both of the following:

- The disorder developed during or within ***1 month*** of a substance intoxication or withdrawal or taking a medication

and

- The involved substance/medication is ***capable*** of producing the mental disorder.

# Substance/Medication-Induced Mental Disorders

- The disorder is *not better explained by* an independent mental disorder (i.e., one that is not substance- or medication-induced). Such evidence of an independent mental disorder could include the following:

  - The disorder preceded the onset of severe intoxication or withdrawal or exposure to the medication

  or

  - The full mental disorder persisted for a substantial period of time ***(e.g., at least 1 month)*** after the cessation of acute withdrawal or severe intoxication or taking the medication.

    - This criterion does not apply to substance-induced neurocognitive disorders or hallucinogen persisting perception disorder, which *persist beyond the cessation* of acute intoxication or withdrawal.

# Substance/Medication-Induced Mental Disorders

- The disorder does not occur exclusively during the course of a **delirium**.

- The disorder causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

# Substance/Medication-Induced Mental Disorders

- Some generalizations can be made regarding the categories of substances capable of producing clinically relevant substance-induced mental disorders.

- In general the more ***sedating drugs*** can produce:

  - Prominent and clinically significant **depressive disorders** during intoxication
    - Sedative, hypnotics, or anxiolytics, and alcohol

  - While **anxiety conditions** are likely to be observed during withdrawal syndromes from these substances
    (Schuckit 2006a)

# Substance/Medication-Induced Mental Disorders

- The more ***stimulating substances*** (e.g., amphetamines and cocaine):
  - During intoxication are likely to be associated with:
    - Substance-induced *psychotic disorders*

      and

    - Substance-induced *anxiety disorders*

      (McLellan et al. 1979)


  - During withdrawal it is associated/observed with
    - Substance-induced *major depressive episodes*

# Substance/Medication-Induced Mental Disorders

- Both the more sedating and more stimulating drugs are likely to produce significant but temporary sleep and sexual disturbances

(Van Reen et al. 2006)

# Substance/Medication-Induced Mental Disorders

- In general, to be considered a ***substance/medication-induced mental disorder***,
  - There must be evidence that the disorder being observed is not likely to be better explained by an **independent mental condition.**

- The latter are most likely to be seen if the mental disorder was present:
  - **BEFORE** the severe intoxication or withdrawal or medication administration, or, with the exception of several substance-induced persisting disorders
  - **Continued** more than **1 month** after cessation of acute withdrawal, severe intoxication, or use of the medications

(Caton et al. 2005; Hasin et al. 2002; Schuckit 2006a)

# Substance/Medication-Induced Mental Disorders

## Development and Course

- Substance-induced mental disorders ***develop*** in the context of intoxication or withdrawal from substances of abuse

And

- Medication-induced mental disorders are ***seen*** with prescribed or over-the-counter medications that are taken at the suggested doses

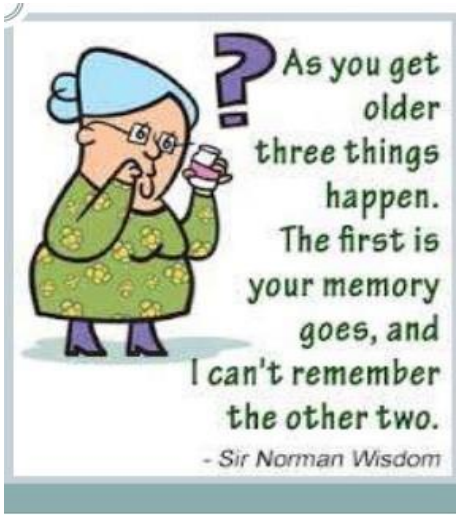
- Both conditions are usually temporary and likely to disappear within ***1 month*** or so of cessation of acute withdrawal, severe intoxication, or use of the medication.

# Substance/Medication-Induced Mental Disorders

## Development and Course

Exceptions to these generalizations occur for certain long-duration substance-induced disorders:

- Substance-associated neurocognitive disorders that relate to conditions such as:
  - Alcohol-induced neurocognitive disorder
  - Inhalant-induced neurocognitive disorder
  - Sedative-, Hypnotic-, or Anxiolytic-induced neurocognitive disorder
  - Hallucinogen persisting perception disorder "flashbacks"



# Substance/Medication-Induced Mental Disorders

## Development and Course

- As is true of many consequences of heavy substance use
  - Some individuals are more and others less prone toward specific substance-induced disorders

- There are indications that the intake of substances of abuse or some medications with psychiatric side effects in the context of a preexisting mental disorder is likely to result in an intensification of the preexisting independent syndrome

(Fu et al. 2002; Swendsen et al. 2010)

# Substance/Medication-Induced Mental Disorders

## Development and Course

- While the symptoms of substance/medication-induced mental disorders can be identical to those of independent mental disorders

  (e.g., delusions, hallucinations, psychoses, major depressive episodes, anxiety syndromes)

- And they can have the same severe consequences

  (e.g., suicide)

  (Aharonovich et al. 2002)

- **Most** induced mental disorders are likely to ***improve*** in a *matter of days to weeks of abstinence*

  (Brown et al. 1995; Gilder et al. 2004; Nunes and Rounsaville 2006; Schuckit et al. 2007)

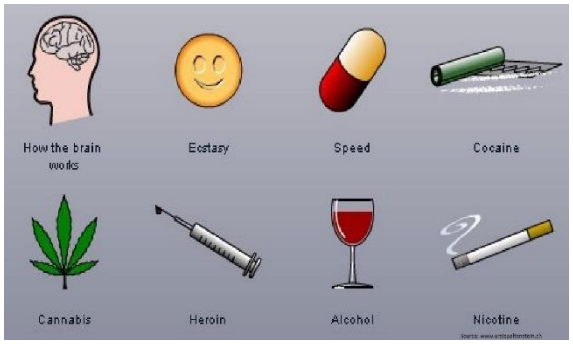
# Substance/Medication Induced Psychotic Disorders

## Diagnostic Criteria

- Presence of one or both of the following symptoms:
  - Delusions
  - Hallucinations
- There is evidence from the history, physical examination, or laboratory findings of both (1) and (2):
  - The symptoms in Criterion A developed during or soon after substance intoxication or withdrawal or after exposure to a medication.
  - The involved substance/medication is capable of producing the symptoms in Criterion A.
- The disturbance is not better explained by a psychotic disorder that is not substance/medication-induced. Such evidence of an independent psychotic disorder could include the following:
  - The **symptoms preceded** the onset of the substance/medication use; the **symptoms persist for a substantial period of time** (e.g., about ***1 month***) **after the cessation of acute withdrawal or severe intoxication;** or there is other evidence of an independent non-substance/medication-induced psychotic disorder (e.g., a history of recurrent non-substance/medication-related episodes).
- The disturbance does not occur exclusively during the course of a delirium.
- The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

# Substance/Medication Induced Psychotic Disorders

- Psychotic disorders can occur in association with intoxication with the following classes of substances:
  - Alcohol
  - Cannabis
  - Hallucinogens, including phencyclidine and related substances
  - Inhalants
  - Sedatives, hypnotics, and anxiolytics
  - Stimulants (including cocaine)
  - Other (or unknown) substances.



# Substance/Medication Induced Psychotic Disorders

- Psychotic disorders can occur in association with withdrawal from the following classes of substances:
  - Alcohol
  - Sedatives, hypnotics, and anxiolytics
  - Other (or unknown) substances

# Substance/Medication Induced Psychotic Disorders

- Some of the medications reported to evoke psychotic symptoms include:
  - Anesthetics and analgesics
  - Anticholinergic agents
  - Anticonvulsants,
  - Antihistamines
  - Antihypertensive and cardiovascular medications
  - Antimicrobial medications
  - Antiparkinsonian medications
  - Chemotherapeutic agents (e.g., cyclosporine, procarbazine)
  - Corticosteroids
  - Gastrointestinal medications
  - Muscle relaxants
  - Nonsteroidal anti-inflammatory medications
  - Other over-the-counter medications (e.g., phenylephrine, pseudoephedrine)
  - Antidepressant medication,
  - Disulfiram.

# Substance/Medication Induced Psychotic Disorders

- Toxins reported to induce psychotic symptoms include:
  - Anticholinesterase
  - Organophosphate insecticides
  - Sarin and other nerve gases
  - Carbon monoxide
  - Carbon dioxide
  - Volatile substances such as fuel or paint

# Substance/Medication Induced Psychotic Disorders

- Psychotic disorders induced by **amphetamine and cocaine** share similar clinical features.
- Persecutory delusions may rapidly develop shortly after use of amphetamine or a similarly acting sympathomimetic.
- The hallucination of bugs or vermin crawling in or under the skin (formication) can lead to scratching and extensive skin excoriations

# Substance/Medication Induced Psychotic Disorders

- **Cannabis**-induced psychotic disorder may develop shortly after high-dose cannabis use and usually involves:
  - Persecutory delusions
  - Marked anxiety
  - Emotional lability
  - And depersonalization

- The disorder usually remits within a day but in some cases may persist for a few days.

# Substance/Medication Induced Psychotic Disorders

- Substance/medication-induced psychotic disorder is typically severely disabling and consequently is observed most frequently in ***emergency rooms***, as individuals are often brought to the acute-care setting when it occurs

  (Schanzer et al. 2006)

# Substance/Medication Induced Psychotic Disorders

- Agents such as **amphetamines, phencyclidine, and cocaine** have been reported to evoke temporary psychotic states
  - Can sometimes persist for weeks or longer despite removal of the agent and treatment with neuroleptic medication

# Substance/Medication Induced Psychotic Disorders

- In later life, **polypharmacy** for medical conditions and exposure to medications for parkinsonism, cardiovascular disease, and other medical disorders may be associated with:
  - A greater likelihood of **psychosis induced by prescription medications** as opposed to substances of abuse

# Substance/Medication-Induced Bipolar and Related Disorder

## Diagnostic Criteria

- A prominent and persistent disturbance in mood that predominates in the clinical picture and is characterized by *elevated, expansive, or irritable mood*, with or without depressed mood, or markedly diminished interest or pleasure in all, or almost all, activities.
- There is evidence from the history, physical examination, or laboratory findings of both (1) and (2):
  - The symptoms in Criterion A developed during or soon after substance intoxication or withdrawal or after exposure to a medication.
  - The involved substance/medication is capable of producing the symptoms in Criterion A.
- The disturbance is not better explained by a bipolar or related disorder that is not substance/medication-induced. Such evidence of an independent bipolar or related disorder could include the following:
  - The symptoms precede the onset of the substance/medication use; the symptoms persist for a substantial period of time (e.g., **about 1 month**) after the cessation of acute withdrawal or severe intoxication; or there is other evidence suggesting the existence of an independent non-substance/medication-induced bipolar and related disorder (e.g., a history of recurrent non-substance/medication-related episodes).
- The disturbance does not occur exclusively during the course of a delirium.
- The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

# Substance/Medication-Induced Bipolar and Related Disorder

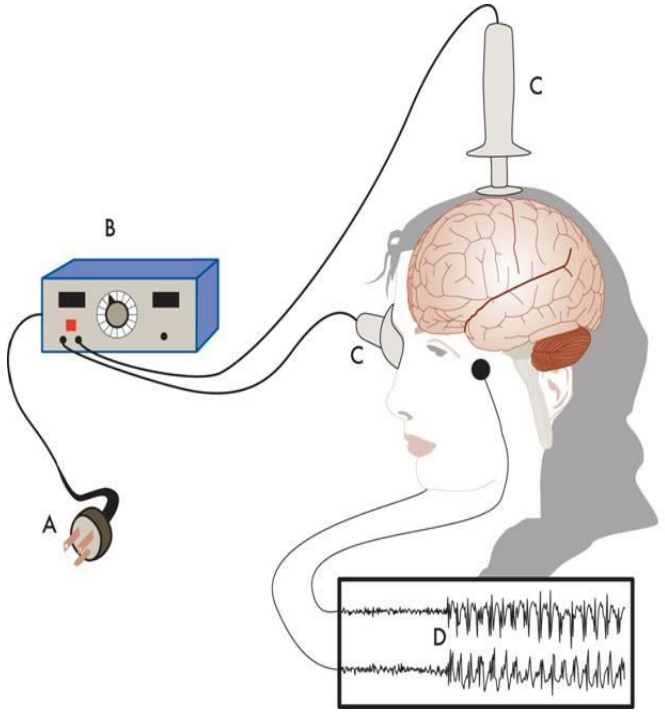
- A key exception to the diagnosis of substance/medication-induced bipolar and related disorder is:
  - The case of hypomania or mania that occurs after **antidepressant medication** use or other treatments and persists beyond the physiological effects of the medication
- This condition is considered an **indicator of true bipolar disorder**, **NOT** substance/medication-induced bipolar and related disorder

(Angst 1987; Gijsman et al. 2004; Lewis and Winokur 1982; Licht et al. 2008)

# Substance/Medication-Induced Bipolar and Related Disorder

- Similarly, individuals with apparent **electroconvulsive therapy**–induced manic or hypomanic episodes that persist beyond the physiological effects of the treatment **are diagnosed with bipolar disorder**

- NOT substance/medication-induced bipolar and related disorder



# Substance/Medication-Induced Bipolar and Related Disorder

- In ***phencyclidine-induced mania***
  - The initial presentation may be one of a **delirium** with affective features
  - Which **then** becomes an atypically appearing **manic or mixed manic state**

(Rosen 1979; Slavney et al. 1977)

# Substance/Medication-Induced Bipolar and Related Disorder

- In **stimulant-induced manic** or hypomanic states
  - Response is in **minutes to 1 hour** after one or several ingestions or injections
  - Episode is very *brief* and typically resolves over 1–2 days

# Substance/Medication-Induced Bipolar and Related Disorder

- With **corticosteroids** and some **immunosuppressant medications**
  - Mania (or mixed or depressed state) usually follows several days of ingestion
  - And the higher doses appear to have a much greater likelihood of producing bipolar symptoms

    (Onyike et al. 2004; Wada et al. 2000; Wamboldt et al. 1984)

# Substance/Medication-Induced Depressive Disorder

**Diagnostic Criteria**

- A prominent and persistent disturbance in mood that predominates in the clinical picture and is characterized by depressed mood or markedly diminished interest or pleasure in all, or almost all, activities.
- There is evidence from the history, physical examination, or laboratory findings of both (1) and (2):
  - The symptoms in Criterion A developed during or soon after substance intoxication or withdrawal or after exposure to a medication.
  - The involved substance/medication is capable of producing the symptoms in Criterion A.
- The disturbance is not better explained by a depressive disorder that is not substance/medication-induced. Such evidence of an independent depressive disorder could include the following:
  - The symptoms preceded the onset of the substance/medication use; the symptoms persist for a substantial period of time (e.g., **about 1 month**) after the cessation of acute withdrawal or severe intoxication; or there is other evidence suggesting the existence of an independent non-substance/medication-induced depressive disorder (e.g., a history of recurrent non-substance/medication-related episodes).
- The disturbance does not occur exclusively during the course of a delirium.
- The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

# Substance/Medication-Induced Depressive Disorder

- Some medications can induce depressive mood disturbances:
  - Stimulants
  - Steroids
  - L-dopa
  - Antibiotics
  - Central nervous system drugs
  - Dermatological agents
  - Chemotherapeutic drugs
  - Immunological agents

# Substance/Medication-Induced Depressive Disorder

Things to consider:

- A depressive episode that developed within the first several weeks of beginning alpha-methyldopa (an antihypertensive agent) in an **individual with no history of major depressive disorder** would qualify for the diagnosis of medication-induced depressive disorder.

- In some cases, a **previously established condition** (e.g., major depressive disorder, recurrent) **can recur** while the individual is coincidentally taking a medication that has the capacity to cause depressive symptoms (e.g., l-dopa, oral contraceptives).

- In such cases, the **clinician must make a judgment** as to whether the medication is causative in this particular situation.

# Substance/Medication-Induced Depressive Disorder

## Medications Evoke Depressive Symptoms

- Antiviral agents (efavirenz)
- Cardiovascular agents
  - (clonidine, guanethidine, methyldopa, reserpine),
- Retinoic acid derivatives
  - (isotretinoin)
- Antidepressants
- Anticonvulsants
- Anti-migraine agents
  - (triptans)
- Antipsychotics,
- Hormonal agents
  - (corticosteroids, oral contraceptives, gonadotropin-releasing hormone agonists, tamoxifen
- Smoking cessation agents
  - (varenicline)
- Immunological agents
  - (interferon)

(Botts and Ryan 2010)

# Substance/Medication-Induced Depressive Disorder

## Suicide Risk

- In regard to the treatment-emergent suicidality associated with antidepressants, a U.S. Food and Drug Administration (FDA) advisory committee considered *meta-analyses of 99,839 participants enrolled in 372 randomized clinical trials of antidepressants* in trials for mental disorders

- The analyses showed that when the data were pooled *across* all adult *age groups*, there was no perceptible increased risk of suicidal behavior or ideation.

# Substance/Medication-Induced Depressive Disorder

## Suicide Risk

- However, in *age-stratified analyses*, the risk for patients ages **18–24 years was elevated,** albeit not significantly (odds ratio [OR] = 1.55; 95% confidence interval [CI] = 0.91–2.70)

- The FDA meta-analyses reveal an absolute risk of suicide in patients taking investigational antidepressants of 0.01% (Friedman and Leon 2007).
- In conclusion, suicide is clearly an extremely rare treatment-emergent phenomenon, but the outcome of suicide was serious enough to prompt the FDA to issue an expanded black-box warning in 2007 regarding the importance of **careful monitoring of treatment-emergent suicidal ideation in patients receiving antidepressants**.

# Substance/Medication-Induced Depressive Disorder

# Substance/Medication-Induced Depressive Disorder

- Compared with individuals with major depressive disorder and **NO** comorbid substance use disorder, those with substance/medication-induced depressive disorder have *higher rates of comorbidity* with any DSM-IV mental disorder
  - These individuals are more likely to have specific DSM-IV disorders of:
    - Pathological gambling and paranoid, histrionic, and antisocial personality disorders;
  - Are less likely to have persistent depressive disorder (dysthymia)

(Blanco et al. 2012)

# Substance/Medication-Induced Depressive Disorder

- Compared with individuals with major depressive disorder **AND** a comorbid substance use disorder, individuals with substance/medication-induced depressive disorder are more likely to have
  - Alcohol use disorder, any other substance use disorder, and histrionic personality disorder
- However, they are less likely to have persistent depressive disorder

(Blanco et al. 2012)

# Substance/Medication-Induced Anxiety Disorder

## Diagnostic Criteria

- Panic attacks or anxiety is predominant in the clinical picture.
- There is evidence from the history, physical examination, or laboratory findings of both (1) and (2):
  - The symptoms in Criterion A developed **during or soon after substance intoxication or withdrawal** or after exposure to a medication.
  - The involved substance/medication is capable of producing the symptoms in Criterion A.
- The disturbance is not better explained by an anxiety disorder that is not substance/medication-induced. Such evidence of an independent anxiety disorder could include the following:
  - The symptoms precede the onset of the substance/medication use; the symptoms persist for a substantial period of time (e.g., about **1 month**) after the cessation of acute withdrawal or severe intoxication; or there is other evidence suggesting the existence of an independent non-substance/medication-induced anxiety disorder (e.g., a history of recurrent non-substance/medication-related episodes).
- The disturbance does not occur exclusively during the course of a **delirium**.
- The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

# Substance/Medication-Induced Anxiety Disorder

- Panic or anxiety can occur in association with intoxication with the following classes of substances:
  - Alcohol
  - Caffeine
  - Cannabis
  - Phencyclidine
  - Other hallucinogens
  - Inhalants
  - Stimulants (including cocaine)
  - Other (or unknown) substances.

# Substance/Medication-Induced Anxiety Disorder

- Panic or anxiety can occur in association with withdrawal from the following classes of substances:
  - Alcohol
  - Opioids
  - Sedatives
  - Hypnotics, and anxiolytics
  - Stimulants (including cocaine)
  - Other (or unknown) substances

# Substance/Medication-Induced Anxiety Disorder

## Medications Evoke Anxiety Symptoms

- Anesthetics and analgesics
- Sympathomimetics or other bronchodilators,
- Anticholinergics
- Insulin
- Thyroid preparations
- Oral contraceptives
- Antihistamines
- Antiparkinsonian medications
- Corticosteroids,
- Antihypertensive and cardiovascular medications
- Anticonvulsants
- Lithium carbonate,
- Antipsychotic medications
- Antidepressant medications.

# Substance/Medication-Induced Anxiety Disorder

- Heavy metals and toxins that may also cause panic and anxiety symptoms include:
  - Organophosphate insecticide
  - Nerve gases
  - Carbon monoxide,
  - Carbon dioxide,
  - Volatile substances such as gasoline and paint

# Substance Use Disorders

- The essential feature of a substance use disorder is a cluster of:
  - Cognitive
  - Behavioral
  - Physiological symptoms
- Indicating that the individual continues using the substance despite significant substance-related problems

# Substance Use Disorders:

## Alcohol Use Disorder

- Alcohol use disorder is a common disorder
- In the United States, the 12-month prevalence of alcohol use disorder is estimated to be:
  - 4.6% among 12- to 17-year-olds
  - 8.5% among adults age 18 years and older
- Rates of the disorder are greater among adult men (12.4%) than among adult women (4.9%).
- Twelve-month prevalence of alcohol use disorder among adults decreases in middle age
  - Being greatest among individuals 18- to 29-years-old
    - 16.2%
  - And lowest among individuals age 65 years and older
    - 1.5%

# Alcohol Use Disorder

## Diagnostic Criteria

- A problematic pattern of alcohol use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a **12-month p**eriod:
  - Alcohol is often taken in **larger amounts or over a longer period** than was intended.
  - There is a **persistent desire or unsuccessful efforts to cut down** or control alcohol use.
  - A **great deal of time** is spent in activities necessary to obtain alcohol, use alcohol, or recover from its effects.
  - **Craving**, or a strong desire or urge to use alcohol.
  - Recurrent alcohol use resulting in a **failure to fulfill major role obligations** at work, school, or home.
  - Continued alcohol use despite having persistent or recurrent **social or interpersonal problems** caused or exacerbated by the effects of alcohol.
  - **Important** social, occupational, or recreational **activities are given up** or reduced because of alcohol use.
  - Recurrent alcohol use in situations in which it is **physically hazardous**.
  - Alcohol use is **continued** despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by alcohol.
  - **Tolerance**, as defined by either of the following:
    - A need for markedly increased amounts of alcohol to achieve intoxication or desired effect.
    - A markedly diminished effect with continued use of the same amount of alcohol.
  - **Withdrawal**, as manifested by either of the following:
    - The characteristic withdrawal syndrome for alcohol (refer to Criteria A and B of the criteria set for alcohol withdrawal, pp. 499–500).
    - Alcohol (or a closely related substance, such as a benzodiazepine) is taken to relieve or avoid withdrawal symptoms.

# Alcohol Use Disorder

- Twelve-month prevalence varies markedly across race/ethnic subgroups of the U.S. population
- **For 12- to 17-year-olds**
  - Hispanics (6.0%)
  - Native Americans and Alaska Natives (5.7%)
  - Whites (5.0%),
  - African Americans (1.8%),
  - Asian Americans and Pacific Islanders (1.6%).
- **Among adults**, the 12-month prevalence of alcohol use disorder
  - Native Americans and Alaska Natives (12.1%)
  - Whites (8.9%)
  - Hispanics (7.9%)
  - African Americans (6.9%)
  - Asian Americans and Pacific Islanders (4.5%).

# Alcohol Use Disorder

- The following are disorders associated with a markedly increase rate of alcohol use disorder:
  - Bipolar disorders
  - Schizophrenia
  - Antisocial personality disorder
  - Several anxiety and depressive disorders

# Alcohol Use Disorder

- Alcohol may be used to:
  - Alleviate the *unwanted effects* of other substances
  - To *substitute* for them when they are not available

- Symptoms of conduct problems, depression, anxiety, and insomnia frequently accompany heavy drinking and sometimes precede it

# Alcohol Use Disorder

- Repeated intake of high doses of alcohol can affect nearly every organ system, especially the *gastrointestinal tract*, *cardiovascular system*, and the *central and peripheral nervous systems*

  (Schuckit 2006b; Schuckit 2011)

- Gastrointestinal effects include:
  - Gastritis, stomach or duodenal ulcers, and, in about 15% of individuals who use alcohol heavily, liver cirrhosis and/or pancreatitis
  - There is also an increased rate of cancer of the esophagus, stomach, and other parts of the gastrointestinal tract

# Alcohol Use Disorder

- One of the most commonly associated conditions is low-grade hypertension
- Cardiomyopathy and other myopathies are less common but occur at an increased rate among those who drink very heavily
- These factors, along with marked increases in levels of triglycerides and low-density lipoprotein cholesterol, contribute to an elevated risk of heart disease.

# Alcohol Use Disorder

- Peripheral neuropathy may be evidenced by muscular weakness, paresthesias, and decreased peripheral sensation.

- More persistent central nervous system effects include:
  - Cognitive deficits
  - Severe memory impairment
  - And degenerative changes in the cerebellum

- These effects are related to the direct effects of alcohol or of trauma and to vitamin deficiencies (particularly of the B vitamins, including thiamine).

# Alcohol Use Disorder

- One devastating central nervous system effect is the relatively rare alcohol-induced persisting amnestic disorder, or **Wernicke-Korsakoff syndrome**, in which the ability to encode new memory is severely impaired.

# Alcohol Use Disorder

- Alcohol use disorder is an important contributor to **suicide risk** during severe intoxication and in the context of a temporary alcohol-induced depressive and bipolar disorder.

- There is an *increased rate* of **suicidal behavior as well as of completed suicide** among individuals with the disorder.

# Alcohol-Induced Disorders

- The alcohol-induced disorders are an important part of the differential diagnoses for the independent mental conditions.
  - Independent *schizophrenia*, *major depressive disorder*, *bipolar disorder*, and *anxiety disorders*, such as panic disorder, are likely to be associated with much longer-lasting periods of symptoms and often require longer-term medications to optimize the probability of improvement or recovery.

- The *alcohol-induced conditions*, on the other hand, are likely to be much shorter in duration and disappear within several days to 1 month after cessation of severe intoxication and/or withdrawal, even without psychotropic medications.

# Opioid Use Disorder

## Diagnostic Criteria

- A problematic pattern of opioid use leading to clinically significant impairment or distress, as manifested by at least two of the following, occurring within a 12-month period:
  - Opioids are often taken in larger amounts or over a longer period than was intended.
  - There is a persistent desire or unsuccessful efforts to cut down or control opioid use.
  - A great deal of time is spent in activities necessary to obtain the opioid, use the opioid, or recover from its effects.
  - Craving, or a strong desire or urge to use opioids.
  - Recurrent opioid use resulting in a failure to fulfill major role obligations at work, school, or home.
  - Continued opioid use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of opioids.
  - Important social, occupational, or recreational activities are given up or reduced because of opioid use.
  - Recurrent opioid use in situations in which it is physically hazardous.
  - Continued opioid use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.
  - Tolerance, as defined by either of the following:
    - A need for markedly increased amounts of opioids to achieve intoxication or desired effect.
    - A markedly diminished effect with continued use of the same amount of an opioid.
  - **Note:** This criterion is not considered to be met for those taking opioids solely under appropriate medical supervision.
  - Withdrawal, as manifested by either of the following:
    - The characteristic opioid withdrawal syndrome (refer to Criteria A and B of the criteria set for opioid withdrawal, pp. 547–548).
    - Opioids (or a closely related substance) are taken to relieve or avoid withdrawal symptoms.

# Opioid Use Disorder

**Prevalence**

- The 12-month prevalence of opioid use disorder is approximately 0.37% among adults age 18 years and older in the community population

  (Compton et al. 2007)

- This may be an underestimate because of the large number of **incarcerated** individuals with opioid use disorders

  (Compton et al. 2010)

- Rates are **higher in males than females** (0.49% vs. 0.26%)
- With the male-to-female ratio
  - Typically **1.5:1** for opioids other than heroin

    (i.e., available by prescription)
  - And **3:1** for heroin
- Female adolescents may have a higher likelihood of developing opioid use disorders

  (Wu et al. 2009)

# Opioid Use Disorder

**Prevalence**:

- The prevalence decreases with age
  - With the prevalence highest (0.82%) among adults age 29 years or younger
  - Decreasing to 0.09% among adults age 65 years and older

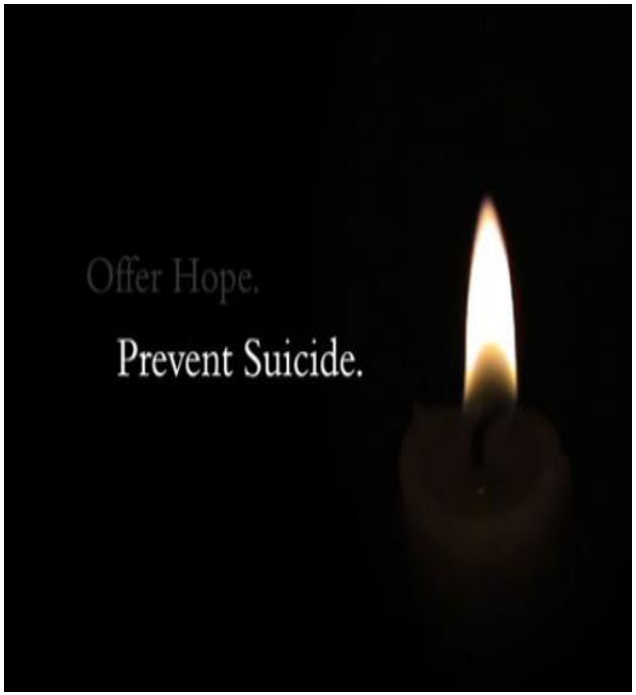
- Among adults, the prevalence of opioid use disorder is lower among
  - African Americans at 0.18%
  - Overrepresented among Native Americans at 1.25%.
  - It is close to average among whites (0.38%),
  - Asian or Pacific Islanders (0.35%),
  - Hispanics (0.39%)

(Wu et al. 2009)

# Opioid Use Disorder

**Suicide Risk:**

- Similar to the risk generally observed for all substance use disorders:
  - Opioid use disorder is associated with a **heightened risk for suicide** attempts and completed suicides
  - Particularly notable are both *accidental and deliberate* opioid overdoses.
- Some suicide risk factors overlap with risk factors for an opioid use disorder.



# Opioid Use Disorder

**Suicide Risk**

- In addition, *repeated opioid intoxication or withdrawal* may be associated with severe depressions that, although temporary, can be intense enough to *lead to suicide attempts and completed suicides*.

- Available data suggest that *nonfatal accidental opioid overdose* (which is common) and *attempted suicide* are distinct clinically significant problems that should not be mistaken for each other

# Opioid Use Disorder

**Comorbidity**

- The most common medical conditions associated with opioid use disorder are:
  - Viral (e.g., HIV, hepatitis C virus)
  - Bacterial infections
  - Particularly among users of opioids by injection.

- These infections are less common in opioid use disorder with prescription opioids.

# Opioid Use Disorder

- Opioid use disorder is often associated with other substance use disorders, especially those involving
  - Tobacco
  - Alcohol
  - Cannabis
  - Stimulants
  - Benzodiazepines,
- Which are often taken to **reduce symptoms** of opioid **withdrawal or craving** for opioids
- Or to **enhance the effects** of administered opioids

# Opioid Use Disorder

- Individuals with opioid use disorder are at risk for the development of mild to moderate depression that meets symptomatic and duration criteria for persistent depressive disorder (dysthymia) or, in some cases, for major depressive disorder

  (Compton et al. 2005)

- These symptoms may represent an opioid-induced depressive disorder or an exacerbation of a preexisting primary depressive disorder.

- Periods of depression are *especially common during chronic intoxication* or in association with physical or psychosocial stressors that are related to the opioid use disorder.

# Opioid Use Disorder

- Insomnia is common, especially during withdrawal.
- Antisocial personality disorder is much more common in individuals with opioid use disorder than in the general population

  (Compton et al. 2005)
- Posttraumatic stress disorder is also seen with increased frequency

  (Price et al. 2004)
- A history of conduct disorder in childhood or adolescence has been identified as a significant risk factor for substance-related disorders, especially opioid use disorder.

# Opioid Use and Depression

*Increased Risk of Depression Recurrence After Initiation of Prescripti. on Opioids in Noncancer Pain Patients*. Scherrer JF et al. J pain. 2016 Apr; 17 (4): 473-82

- A retrospective cohort design
- Using patient data from the Veterans Health Administration (VHA; n = 5,400) from 2002 to 2012
- And Baylor Scott & White Health (BSWH; n = 842) from 2003 to 2012
- Their results suggest opioid use doubles the risk of depression recurrence even after controlling for pain, psychiatric disorders, and opioid misuse
- Further work is needed to determine if risk increases with duration of use.
- **Take away point:** Repeated screening for depression after opioid initiation may be warranted

# Opioid Use and Depression

*Prescription Opioid Duration, Dose, and Increased Risk of Depression in 3 Large Patient Populations*. Ann Fam Med. 2016 Jan-Feb;14(1):54-62. doi: 10.1370/afm.1885 Scherrer JF et al

- Retrospective cohort design
- Patient data from:
  - 2000 to 2012 from the Veterans Health Administration (VHA),
  - 2003 to 2012 from both Baylor Scott & White Health (BSWH) and the Henry Ford Health System (HFHS).
- Their results suggest: Opioid-related new onset of depression is associated with longer duration of use but not dose
- Opioid analgesic use, not just pain, should be considered a potential source when patients report depressed mood
- **Take away point:** Practitioners should be aware that opioid analgesic use of longer than 30 days imposes risk of new-onset depression

# Opioid Use and Depression

Symptoms of Depression Are Associated With Opioid Use Regardless of Pain Severity and Physical Functioning Among Treatment-Seeking Patients With Chronic Pain. J Pain. 2015 Sep;16(9):844-51. doi: 10.1016/j.jpain.2015.05.010. Epub 2015 Jun 12 Goesling J et al

- This study investigated the association among opioid use, pain, and depression in patients evaluated at a university-based outpatient pain clinic
- Increased pain severity was associated with increased probability of taking opioids; however, this was moderated by depression
- For *non-depressed patients*, the predicted probabilities of opioid use increased as pain severity increased
- among patients *with symptoms of depression*, the probability of taking opioids did not change based on pain severity
- although increased physical function was associated with increased probability of opioid use, this was moderated by depression
- Patients *with symptoms of depression* were more likely to be taking opioids at higher levels of functioning
- **Take away point:** Depression emerged as a moderator of the relationship among opioid use, pain severity, and physical functioning

# How long does it take for substance induced mental disorders to go away?

A. 1 week
B. 2 weeks
C. 1 month
D. 2 months

There is an increased rate of suicidal behavior as well as of completed suicide among individuals with Alcohol Use Disorder but NOT with Opioid Use Disorder

A. True
B. False

Practitioners should be aware that opioid analgesic use of longer than what time period imposes risk of new-onset depression?

A. 1 week
B. 2 weeks
C. 3 weeks
D. 4 weeks

# Conclusion

- Screen for Substance Use
- Screen for Suicidality
- Screen for depression with Opioid Use

Always feel free to consult with your friendly psychiatrist next door