Psychosis and Substance Use in Adolescents and Young Adults

Laura K Grubb MD MPH
laurakgrubbconsulting@yahoo.com

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Learning Objectives

Define psychosis and identify core psychotic symptoms—including delusions, hallucinations, disorganized thinking or behavior, and negative symptoms—in adolescents and young adults.

Describe the epidemiology and natural history of psychotic disorders in adolescents and young adults, including duration of untreated psychosis.

Explain the relationship between substance use and psychosis, including mechanisms by which substances may precipitate psychosis or mask an underlying primary psychiatric disorder.

Summarize current evidence linking specific substances to psychosis, with emphasis on cannabis and stimulant use, age of initiation, dose or potency, and prognostic implications.

Introduce and **familiarize participants with clinical, community, and early** psychosis resources to support adolescents and young adults with psychotic symptoms in the context of substance use.

Case Presentation

A 23 y/o female presents to clinic with altered mental status. She has been seeing this provider for about 7 years and has no known history of mental illness. She did total a car about a month ago while under the influence of alcohol.

- Speech is slow, is struggling to find words.
- Poor recall (does not remember conversation with Mass Helpline)
- Feels like everyone is staring at her.
- Denies hearing auditory hallucinations.
- Can name date and day, location, states name.
- No self harm. No SI.

Additional Information

Patient has polysubstance use disorder:

- Revealed illicit use of Adderall for 5 years (max 20-30 mg/day), buys from friends
- Alcohol use disorder (CRAFFT score 6/6)
- Marijuana use – a lot of every day

Recent MVA while intoxicated 10 days ago, restrained driver

- No LOC, dizziness, headache
- Small laceration on left index finger and middle finger, no other injuries

ROS:

- Positive: Paranoia, Anxiety (in counseling), Eating Disorder (no? not sure). Body Image considers self overweight. Mood Swings. Tinnitus R> L
- Negative: Suicidal Ideation, Hyperactivity, Mental or Physical Abuse

Parents endorse auditory hallucinations, patient denies them

Other information

Both parents (divorced) are in attendance.

Father says this cognition is a significant improvement than in the past week when she was confused in the morning, pacing, paranoid (especially around her phone). Struggling to function in open spaces.

Parents say she is not calm, but not aggressive.

Mother reports that she was not able to sort out the commentary of a hockey game and that she was confused, had difficulty following along.

Parents report **at times that she reports hearing things in her head**.

General Appearance

Vital signs are normal

General Appearance

well-developed, well-hydrated, well-nourished

well-groomed

no acute distress

alert and oriented

speech is significantly slowed

struggling to recall information/express herself

often is staring out, poor eye contact

Physical Examination

Mood/Affect: blunted, guarded, appears anxious.

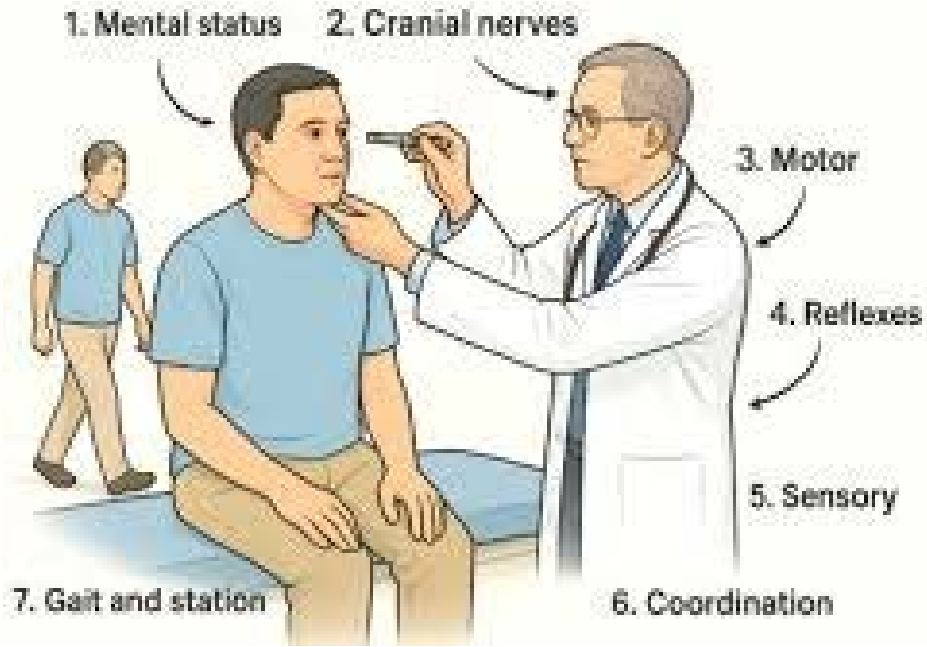
HEENT Normocephalic, atraumatic. Sclera clear, conjunctiva pink, perrla, eomi, MMM, OP clear, B TM clear, B fundoscopic exam with normal disc margins, no hemorrhage.

Rest of physical exam is normal

Psych: no suicidal or homicidal ideation.

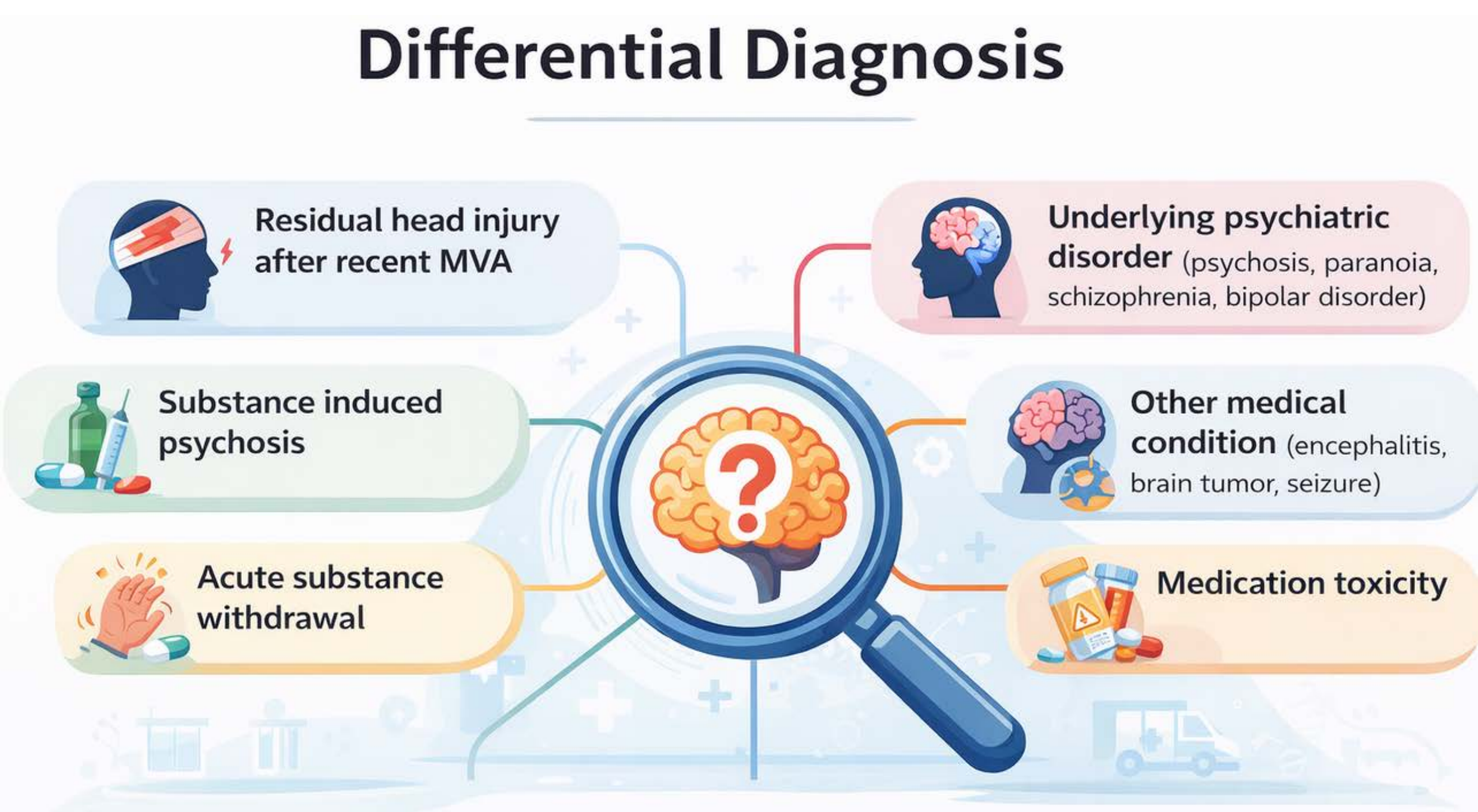
Neurological Exam

Cerebellar: intact, normal finger to nose (but slow), normal slow alternating movements.
Coordination: normal.
Cranial Nerves: normal.
Gait: normal.
Head Lag: none.
Involuntary Movements: none.
Mental Status: oriented.
Motor: good motor strength.
Muscle Bulk: normal.
Reflexes: 2+, symmetric.
Sensory: normal.
Speech: speech is slowed, at times she stops talking mid sentence, struggling to answer questions.
Tone: normal.
Tremor: none.



What do you think is going on?

Differential Diagnosis



What do you do next?

What about workup?

Patient Triaged to ED

In the ED, reports paranoia for a few weeks, decreased marijuana and alcohol consumption around the same time.

Denies SI/ HI/ AH/ VH but reports that she has been hearing voices. They are not harmful. Denies visual hallucinations.

Father is at bedside and reports that pt believes that someone hacked her phone, that she is being watched, and that ppl are following her. He does think that she is embarrassed by MVA on 6/10 and does not want people to find out about accident making her paranoid.

He does report that family also felt as if pt was "deteriorating" in terms of memory loss and word findings since accident.

He does, however, report that she seemed to have some improvement this morning. Pt does report that while playing soccer 7 days ago, he head bumped the goalie by accident. Felt worse for a couple of days after in terms of headache but has been improving.

Our patient’s workup:

In Adolescent Clinic:

- Urine tox: **THC**
- Urine pregnancy test: negative

In the Emergency Department:

- CT head: negative
- Labs: CBC wnl, K 3.5 otherwise Chem wnl
- Psychiatry consultation

She was cleared for discharge by Psychiatry and went home with parents.

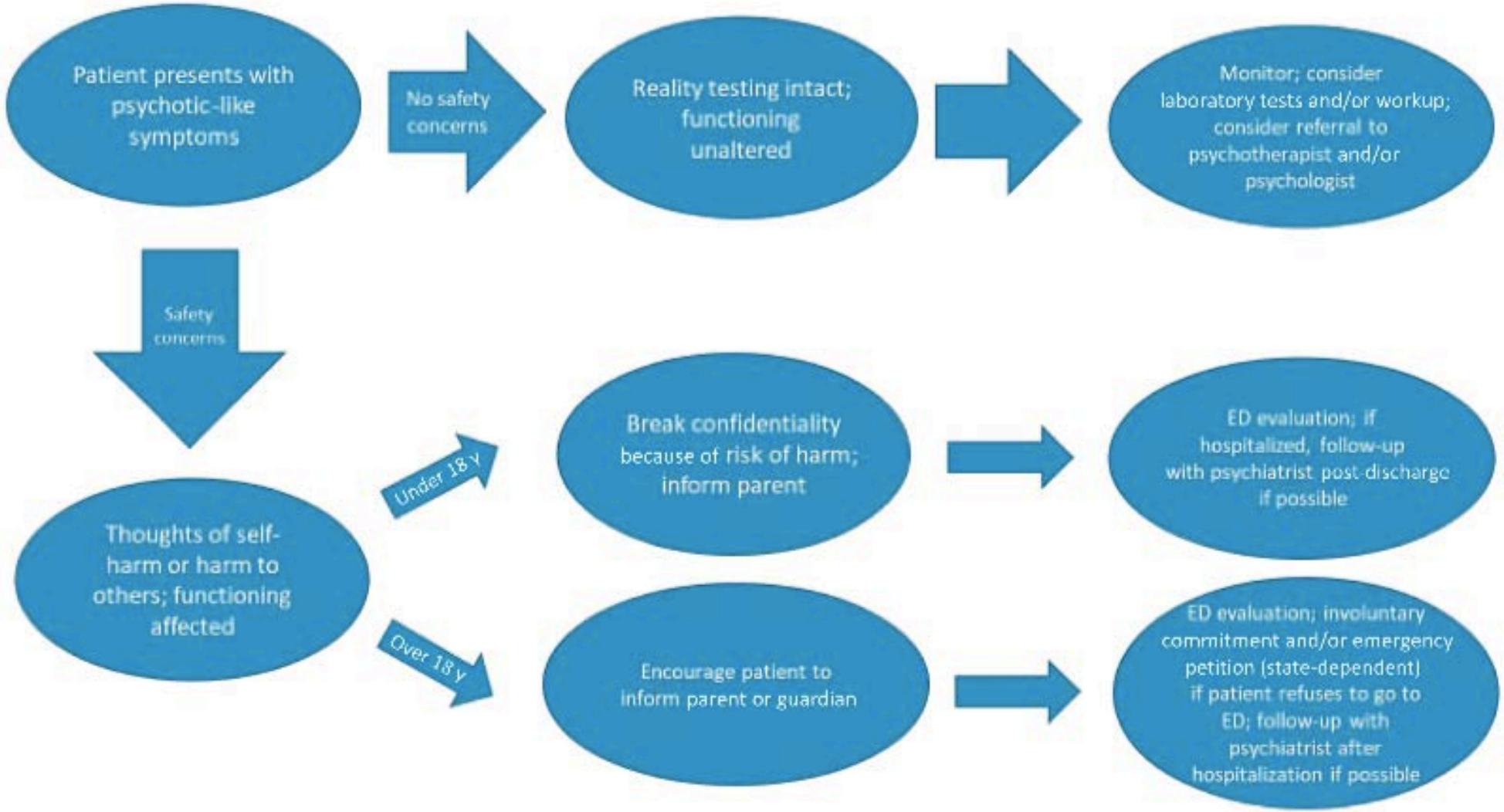


FIGURE 1
Basic algorithm to determine next steps when a patient presents with psychotic-like symptoms.

Case evolution

6/17 – Mom called with concerns of increasing paranoia about using her phone, increased confusion in the morning and evening

- Started on hydroxyzine for sleep

6/20 – Admitted to OSH after jumping out of a moving car

- Took a ”green pill” from her friend earlier that evening
- Reports feeling depressed with thoughts of suicide
- Urine tox screen positive for THC
- CT chest, abdomen, pelvis, cervical/ lumbar/ thoracic spine: negative
- CT head: negative
- EKG: sinus rhythm, rate 62, normal QRS and QTc

Case continues

6/22 - Transferred to psychiatric floor

- Started on Seroquel, parents report no improvement during this admission

6/30 - Transferred to a dedicated psychiatric hospital

7/1 - Started on atypical antipsychotic (aripiprazole?)

- Peer support, Group sessions, parents happy with care

7/6 – Still no diagnosis, taking Ativan (per mom)

- Intermittently lucid over the weekend, mom finally felt like she was talking to the patient for the first time in weeks
- Alternating between episodes of sobbing and depression to seeming almost manic on the phone with mom
- Patient cannot determine if she is hearing voices vs. overhead announcements in hospital

Psychotic Disorders DSM V

Independent	Mood Associated	External Factors
Brief Psychotic Disorder	Schizophreniform Disorder	Substance/Medication-Induced Psychotic Disorder
Delusional Disorder	Schizophrenia	Psychotic Disorder due to Another Medical Condition
	Schizoaffective Disorder	

Psychosis

Positive Symptoms

- Delusions
- Hallucinations
- Disorganized Thinking (Speech)
- Grossly Disorganized or Abnormal Behavior (inc. Catatonia)

Negative Symptoms:

- Diminished emotional expression
- Avolition (motivation)
- Alogia (speech)
- Anhedonia (pleasure)
- Asociality

UNDERSTANDING PSYCHOTIC BREAKS

A COMPREHENSIVIE GUIDE

What is a Psychotic Break?

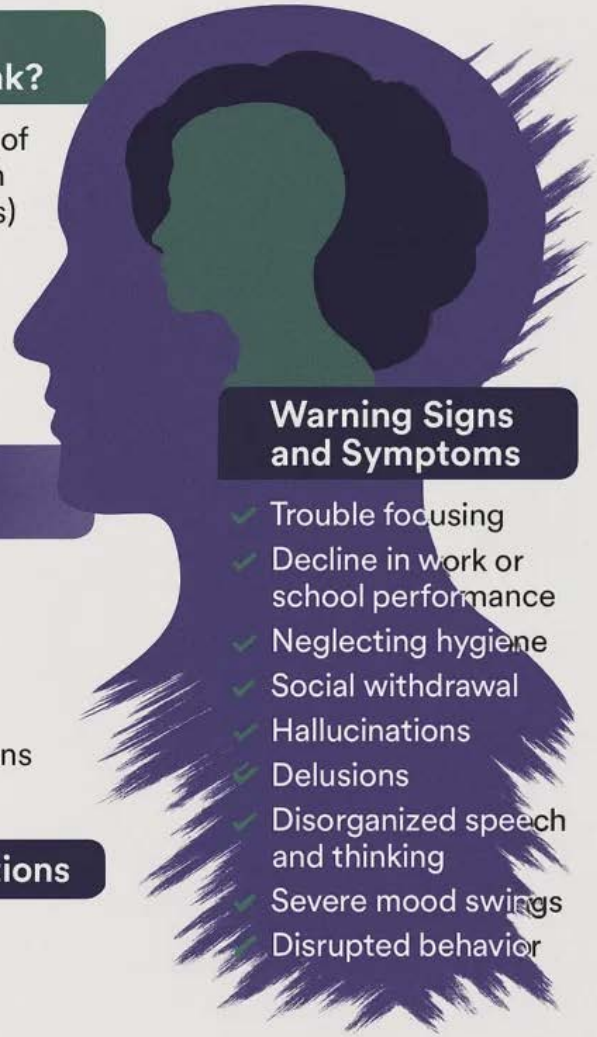
- ✓ Sudden episode of losing touch with reality (psychosis)
- ✓ May involve hallucinations, delusions, or disorganized thinking

Causes & Risk Factors

- ✓ Genetics
- ✓ Brain chemistry
- ✓ Stress & trauma
- ✓ Substance use
- ✓ Medical conditions
- ✓ Environment

Treatment Options

- ✓ Medication
- ✓ Therapy
- ✓ Hospitalization
- ✓ Support services



Warning Signs and Symptoms

- ✓ Trouble focusing
- ✓ Decline in work or school performance
- ✓ Neglecting hygiene
- ✓ Social withdrawal
- ✓ Hallucinations
- ✓ Delusions
- ✓ Disorganized speech and thinking
- ✓ Severe mood swings
- ✓ Disrupted behavior

Get help now. Contact us today!

WE LEVEL UP
WASHINGTON

Epidemiology of Psychosis Disorders

1.5%–3.5% of the population

Annual incidence of first affective and nonaffective psychotic episodes:

- 15–29 years of age : 86 per 100,000 per year
- 30–59 years of age: 43 per 100,000

Schizophrenia: 15 per 100,000 (annual)

PSYCHOTIC DISORDER STATISTICS

~3% OF THE PEOPLE OF THE U.S. EXPERIENCE AT LEAST 1 PSYCHOTIC EPISODE DURING THEIR LIVES

~100,000 TEENS EACH YEAR EXPERIENCE THEIR 1ST PSYCHOTIC EPISODE

AVERAGE AGE OF PSYCHOSIS ONSET IS 24

The median duration of untreated psychosis (DUP) was approximately 74 weeks from a sample of patients (15–40 years of age) in community mental health centers.

NAPLS (North American Prodrome Longitudinal Study) found teenagers and young adults in whom psychotic disorder is diagnosed have about a 24-times greater 12-month mortality rate than their peers.

DSM-5 Diagnostic Criteria for Substance/Medication-Induced Psychotic Disorder

A. Presence of one or both of the following symptoms:

- Delusions
- Hallucinations

B. Evidence from 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.

C. The disturbance is not better explained by a psychotic disorder not induced by a substance/medication. Such evidence might include:

- Symptoms preceded the onset of substance/medication use.
- Symptoms persist for a substantial period (e.g., about 1 month) after the cessation of acute withdrawal or severe intoxication.
- Evidence suggests an independent non-substance-induced psychotic disorder (e.g., history of recurrent episodes).

D. The disturbance does not occur exclusively during the course of a delirium.

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

Some specific considerations

Substances Involved: Commonly includes alcohol, cannabis, stimulants (cocaine, amphetamines), hallucinogens, inhalants, and various medications (e.g., anesthetics, corticosteroids).

Onset/Duration: Symptoms typically resolve with abstinence, though they may persist for up to a month.

Distinction: Unlike schizophrenia, this disorder is directly linked to the ingestion of a substance.

Demographics of Substance Induced Psychosis

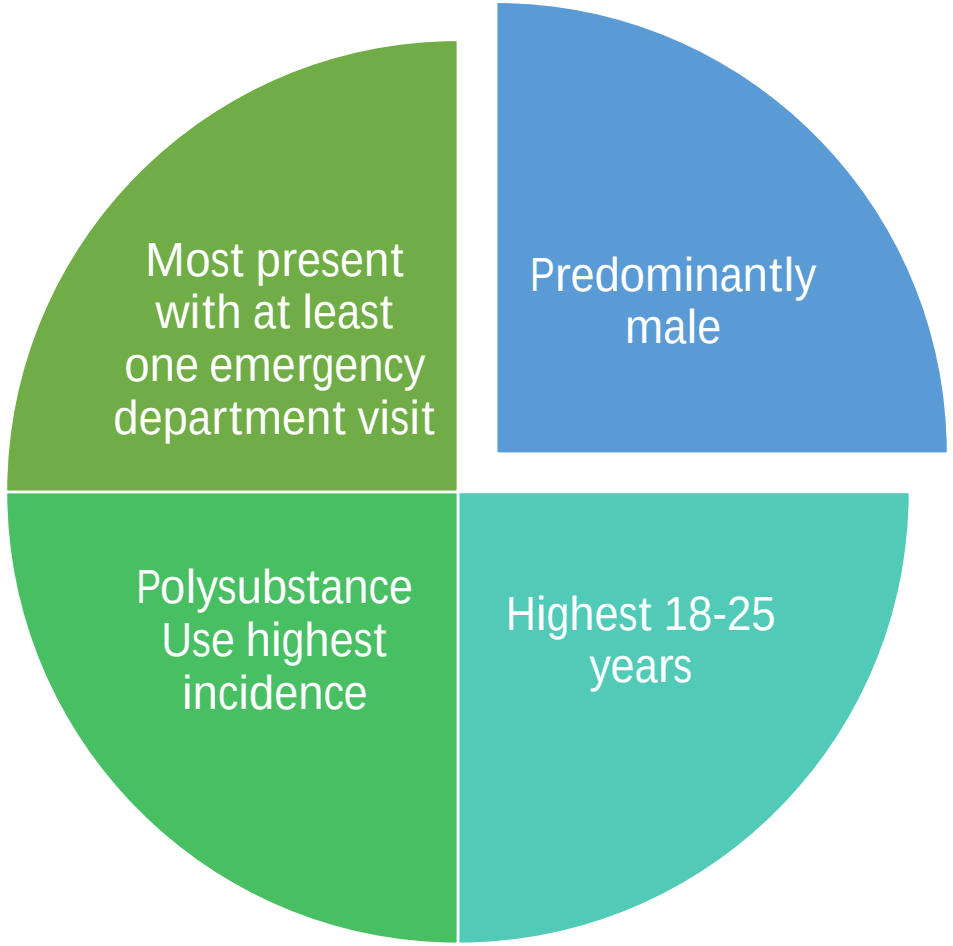
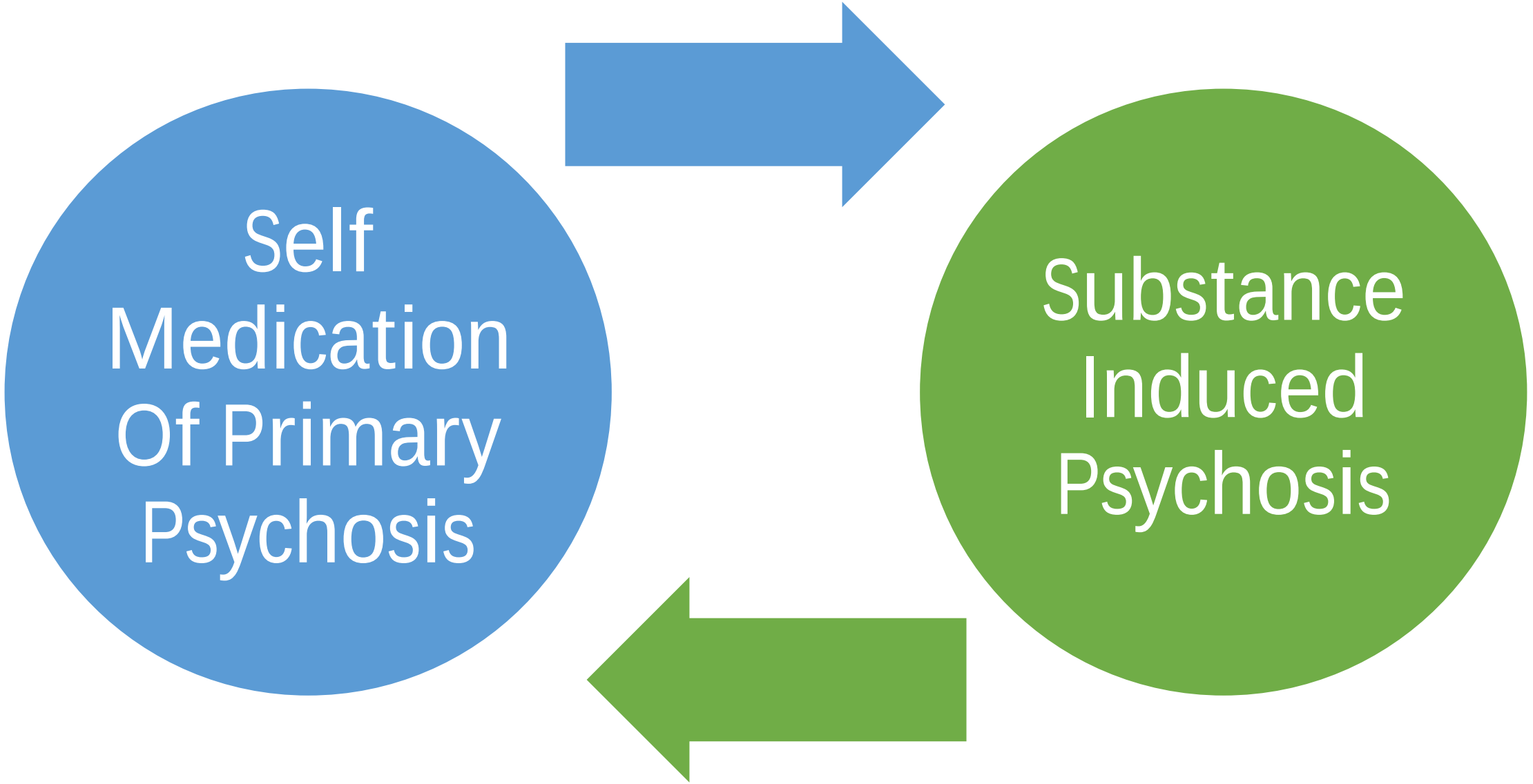


TABLE 2 | Summary of major mechanism of action, nature of evidence and prevalence of psychotic symptoms for each substance.

Substance	Major mechanism of action	Nature of evidence	Prevalence of psychotic symptoms
Cannabinoids	Partial agonist activity on CB1	Partial agonist activity on CB1	0.8–10% (14)
Synthetic cannabinoids	Agonist activity on CB1	Case reports	NA
Synthetic catinones	Increase of dopamine release and inhibition of the reuptake of monoamines (15–19).	Cross-sectional studies	NA
Cocaine	SERT, DAT, and NET block (20), antagonism of the 5-HT3 receptor (21), and block of sodium channels (22)	Cross-sectional studies	Across the lifespan: 60.0–86.5% (23, 24)
Methamphetamines	Increase DA concentration by reversing VMAT2 and DAT (25)	Cross-sectional studies	17–37.1% (26, 27)
Hallucinogens	Increase 5-HT concentration, through agonist or partial agonist activity on 5HT receptors (28)	Case reports	NA
Entactogens	Increase 5-HT concentration through the inhibition of SERT and by reversing SERT, NA concentration, through the inhibition of NET and by reversing NET and DA concentration through the inhibition of DAT (28, 29).	Cross-sectional studies	NA
Phencyclidine and ketamine-induced psychosis	Antagonist activity on NMDA receptors Agonist activity on D2	Cross-sectional studies, randomized placebo-controlled clinical trial	NA

How do we differentiate between an organic psychotic disorder and extrinsic disorder?



Positive and Negative Syndrome Scale (PANSS)

Positive (p)	Negative (n)	Cognitive or general psychopathology (g)
P1. delusions	**N1.** Blunted affect	**G1.** somatic concern
P2. conceptual disorganization	**N2.** emotional withdrawal	**G2.** anxiety
P3. hallucinatory behavior	**N3.** poor rapport	**G3.** guilt feelings
P4. excitement	**N4.** passive / apathetic social withdrawal	**G4.** tension
P5. grandiosity	**N5.** difficulty in abstract thinking	**G5.** mannerism and posturing
P6. suspiciousness / persecution	**N6.** lack of spontaneity and flow of conversation	**G6.** depression
P7. hostility	**N7.** stereotyped thinking	**G7.** motor retardation
		G8. uncooperativeness
		G9. unusual thought content
		G10. disorientation
		G11. lack of judgment and insight
		G12. disturbing of volition
		G13. poor impulse control
		G14. poor attention
		G15. active social avoidance

Table 2. Clinical Characteristics of Substance-Induced and Primary Psychotic Disorder Groups

Finding	Baseline Findings by Diagnosis Category, Mean (SD)		*P* Value
	Primary Disorder (n = 217)	Substance-Induced Disorder (n = 169)	
PAS score	0.32 (0.14)	0.31 (0.14)	.34
PANSS			
Positive subscale score	18.62 (7.26)	14.30 (5.36)	<.001
Negative subscale score	14.16 (6.24)	11.67 (4.74)	<.001
General psychopathology score	33.29 (10.46)	28.44 (6.86)	<.001
SUMD			
Unawareness of symptoms	2.79 (1.52)	1.98 (1.74)	<.001
Misattributions for symptoms	2.99 (1.77)	2.36 (2.00)	<.001
Age of onset of drug use, y	17.17 (4.14)	16.83 (5.19)	.47

Abbreviations: PANSS, Positive and Negative Syndrome Scale; PAS, Premorbid Adjustment Scale; SUMD, Scale to Assess Unawareness of Mental Disorders.

Primary Psychosis vs. Substance Induced

Primary Psychosis

More severe psychiatric symptoms associated with less insight

Greater impairment across a range of cognitive domains

- Verbal, episodic and visual memory
- Visuo-spatial abilities
- Processing speed
- Attention
- Executive functions

Substance Induced Psychosis

More severe forms of substance use disorders

Long periods of substance use, multiple drugs

Severe psychosocial problems

Greater dependence

Visual hallucinations

Substance-induced Psychosis Compared to Primary Psychosis

- Significantly later age of onset of psychosis
- Greater conjugal ties
- Greater antisocial personality disorder comorbidity
- More frequent homelessness
- Poorer family support
- More subjects had a parent with a substance abuse problem

Substance-induced Psychosis

Weaker family history of psychotic disorders

A greater degree of insight

Fewer positive and negative symptoms

More depressive symptoms

More anxiety

Subjects who presented psychotic symptoms after substance abuse seemed to have a higher risk of the development of a primary psychotic illness.

More likely to develop a schizophrenia spectrum disorder or a primary psychotic disorder

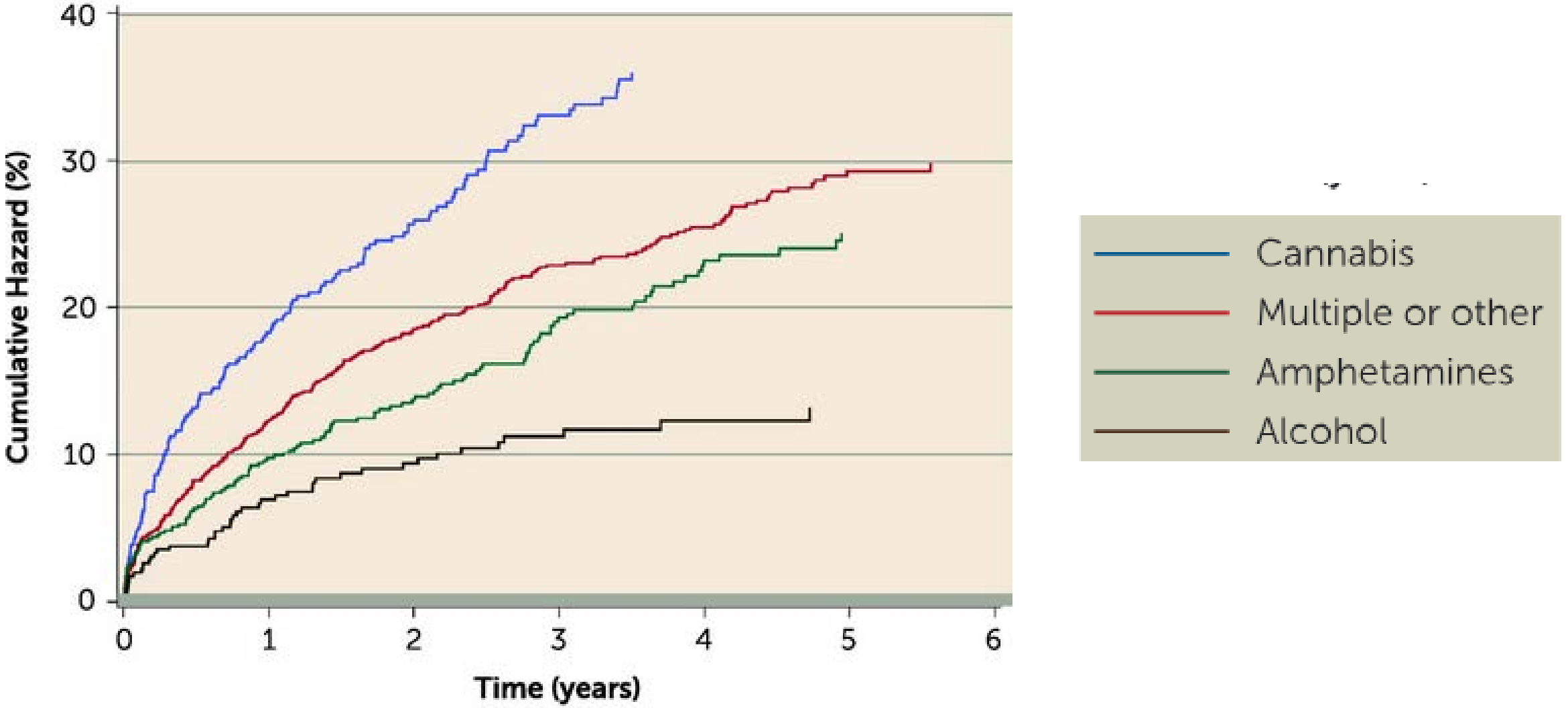
18-38% of substance-induced psychoses may convert to either schizophrenia or bipolar disorder

30-43% experience brief, atypical psychosis

More emergency department visits during psychosis associated with transition.

Class of substance	Number of studies	Rates of transition to schizophrenia		
		Estimate	Lower bound	Upper bound
Brief, atypical and NOS	34	36%	30%	43%
Combined	**-**	**25%**	**18%**	**38%**
Cannabis	6	34%	25%	46%
Hallucinogens	3	26%	14%	43%
Amphetamines	5	22%	14%	34%
Opioid	3	12%	8%	18%
Sedative	3	10%	7%	15%
Alcohol	9	9%	6%	15%

A. Transition to Schizophrenia Spectrum Disorder



Conversion to Primary Psychotic Disorder

Cannabis induced psychosis has highest risk of transition to chronic psychotic disorder

The prevalence of psychotic features varies greatly depending on the content of THC in the cannabis

THC level direct relation with psychotic symptoms

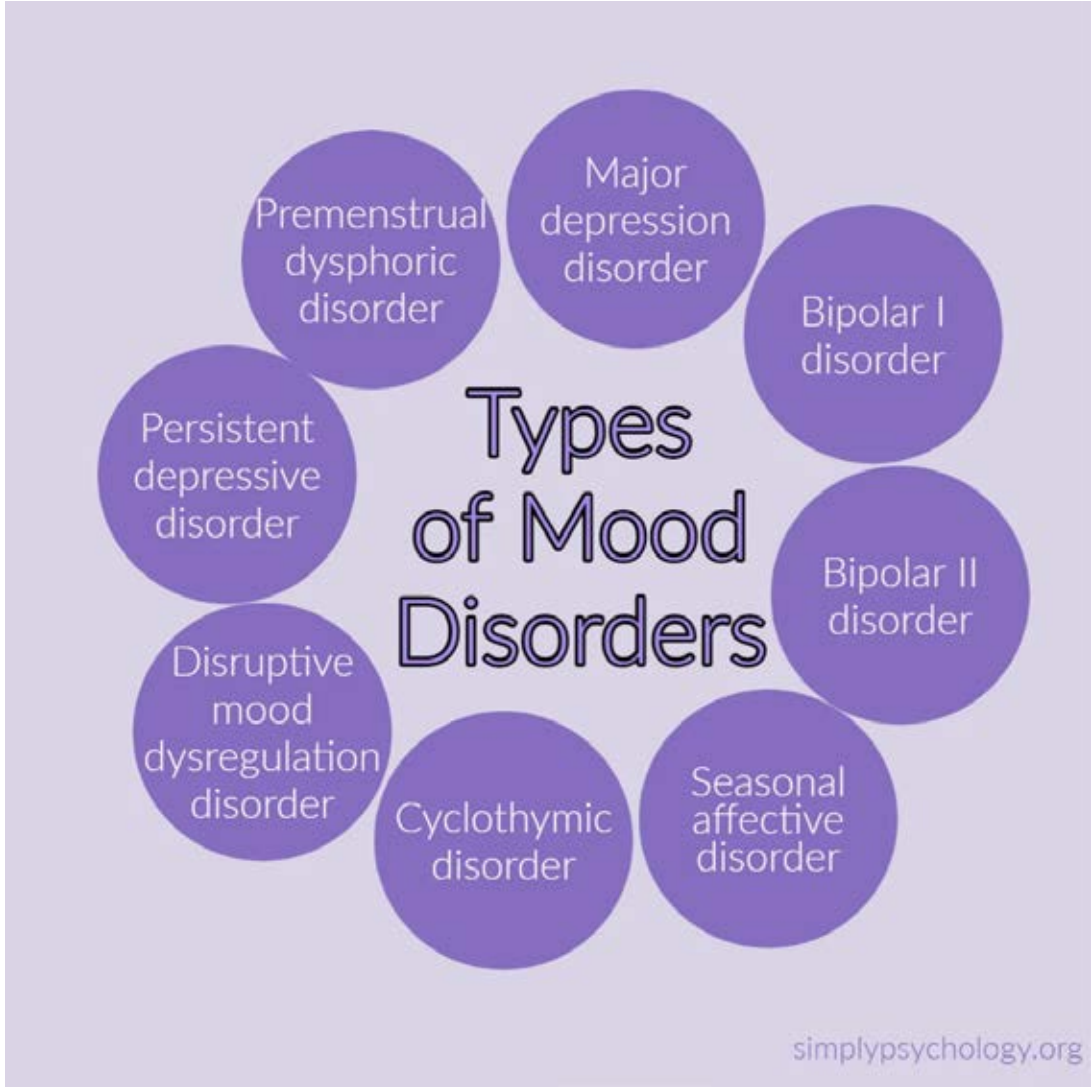
Length of cannabis use is important factor

Conversion to Primary Psychotic Disorder

Half the patients who developed non-affective psychosis progressed to an independent psychotic disorder (e.G., Schizophrenia)

7.7% of patients who developed predominantly affective psychosis developed an Independent disorder.

Importance of distinguishing non-affective from affective cannabis-induced psychosis in clinical practice.



HEALTH

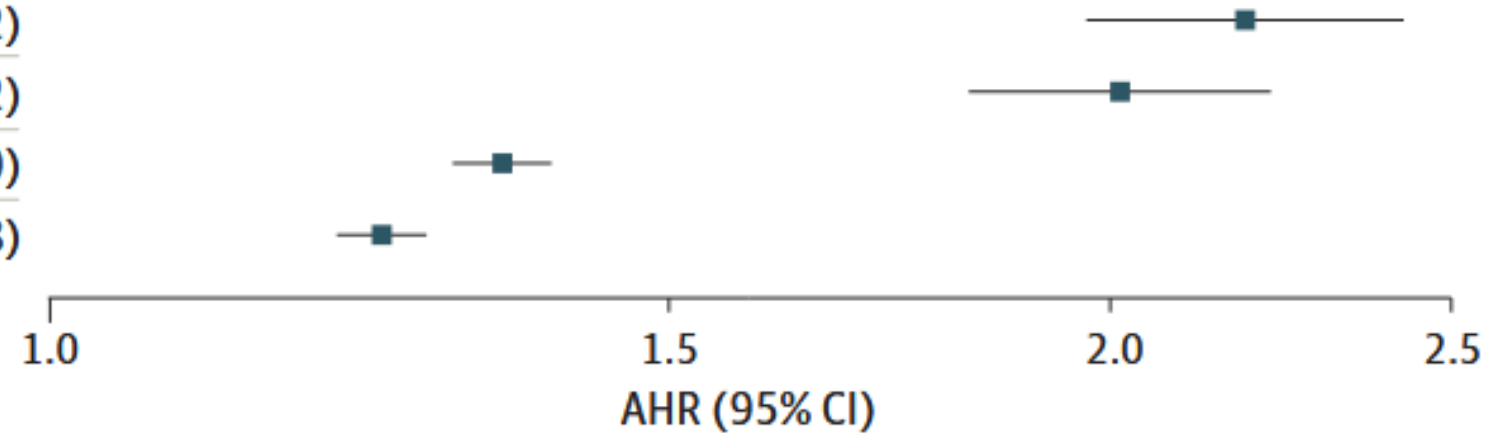
A huge study finds a link between cannabis use in teens and psychosis later

FEBRUARY 21, 2026 · 7:44 AM ET

HEARD ON WEEKEND EDITION SATURDAY

Figure. Forest Plot of Associations of Self-Reported Past-Year Cannabis Use Among 463 396 Adolescents Aged 13 to 17 Years and Incident Psychiatric Disorders Up to Age 26 Years

Outcome	Diagnoses, No.	AHR (95% CI)
Psychotic disorder	4105	2.19 (1.97-2.42)
Bipolar disorder	4061	2.01 (1.82-2.22)
Depressive disorder	62 137	1.34 (1.30-1.39)
Anxiety disorder	73 096	1.24 (1.21-1.28)



JAMA Health Forum. 2026;7(2):e256839. doi:10.1001/jamahealthforum.2025.6839

Case Resolution

- Patient undergoes twice weekly ECT while inpatient
- Discharged home after more than 4 weeks
- Outpatient ECT every two weeks
- Abstinence from all substances
- Reports feeling much better
- No hallucinations, still things cognition is fuzzy

Take homes

Those with underlying abnormal psychiatric features are more likely to experience conversion regardless of particular substance

Cannabis has the highest conversion rate

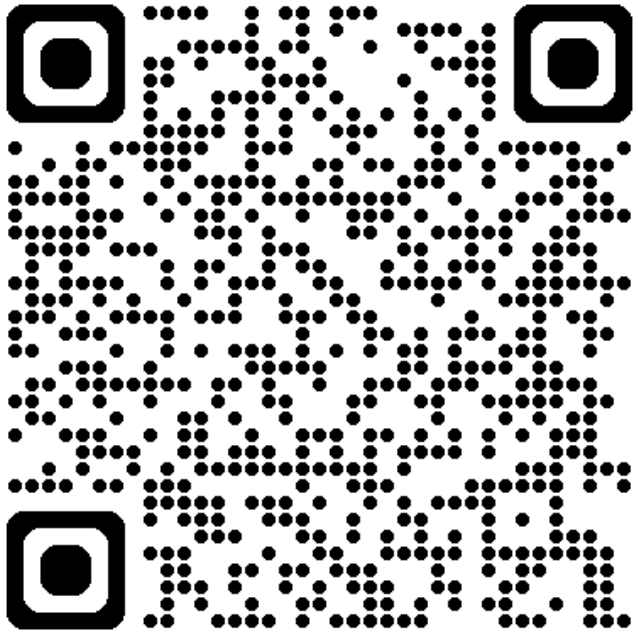
Cocaine produces the most acute psychotic symptoms

Misuse of new drugs (i.e., synthetic cannabinoids, synthetic cathinones) has increased the prospect of secondary psychoses.

Resources

SAMHSA's National Helpline at 1-800-662-HELP (4357)

- Free, confidential, 24/7, 365-day-a-year treatment referral and information service (in English and Spanish) for individuals and families facing mental and/or substance use disorders.
- Home - FindTreatment.gov offers additional resources.
- **https://www.samhsa.gov/substance-use/treatment**



American Academy of Pediatrics Substance Use and Prevention

Resources to Address the Opioid Epidemic

Access a collection of resources from the AAP related to the prevention, intervention and treatment of opioid use disorder in adolescents and young adults.

Substance Use, Brief Intervention and Referral to Treatment

Resources for incorporating substance use screening, brief intervention and referral to treatment (SBIRT) approaches into the practice setting.

Training to Treat Opioid Use Disorder

Access online and live options at no cost.

Nicotine and Tobacco Resources

Research, education, policy and advocacy initiatives related to nicotine and tobacco.

Mental Health Initiatives

Information and guidance to support healthy mental development of children, adolescents and families.

CLINICAL REPORT Guidance for the Clinician in Rendering Pediatric Care

American Academy of Pediatrics

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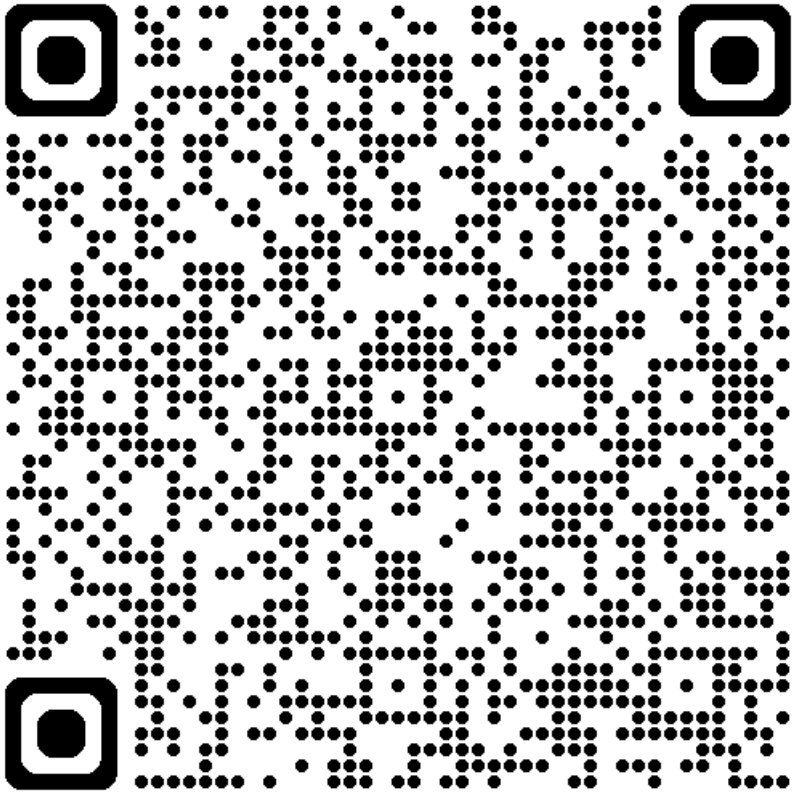
Collaborative Care in the Identification and Management of Psychosis in Adolescents and Young Adults

Liwei L. Hua, MD, PhD, COMMITTEE ON ADOLESCENCE



Collaborative Care in the Identification and Management of Psychosis in Adolescents and Young Adults

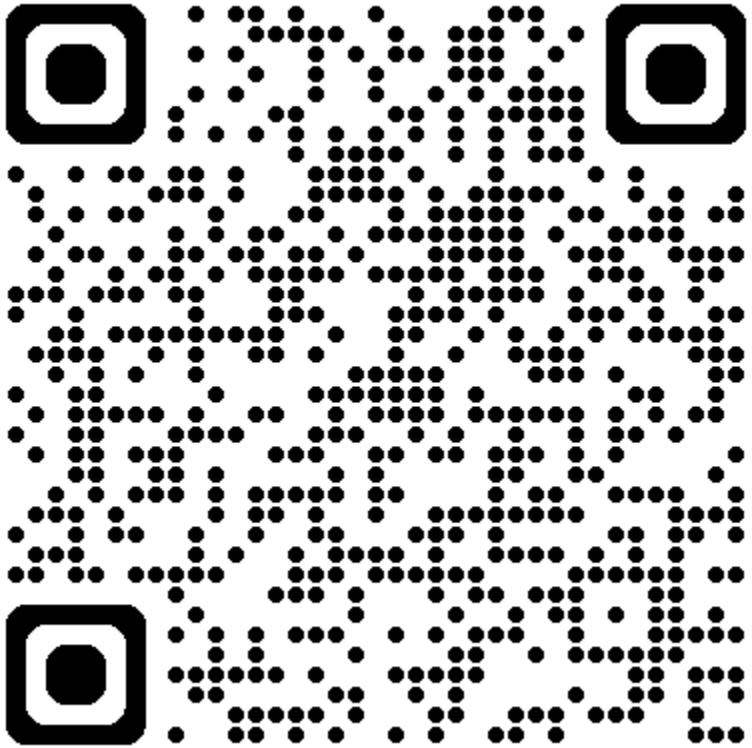
NAMI

National Alliance on Mental Illness

https://www.nami.org/

EPINET
Early Psychosis Intervention Network

Accelerating advances in early psychosis care, recovery outcomes, and scientific discovery through a national early psychosis learning health care partnership



[Resources for Early Psychosis – EPINET Early Psychosis Intervention Network]

NNCPAP
National Network of
Child Psychiatry Access Programs

Maine Pediatric
& Behavioral Health
Partnership

[Maine — NNCPAP National Network of Child Psychiatry Access Programs]

Questions?

- Laura K Grubb MD MPH on behalf of CCSME
- laurakgrubbconsulting@yahoo.com