PSYCHOTIC DISORDERS

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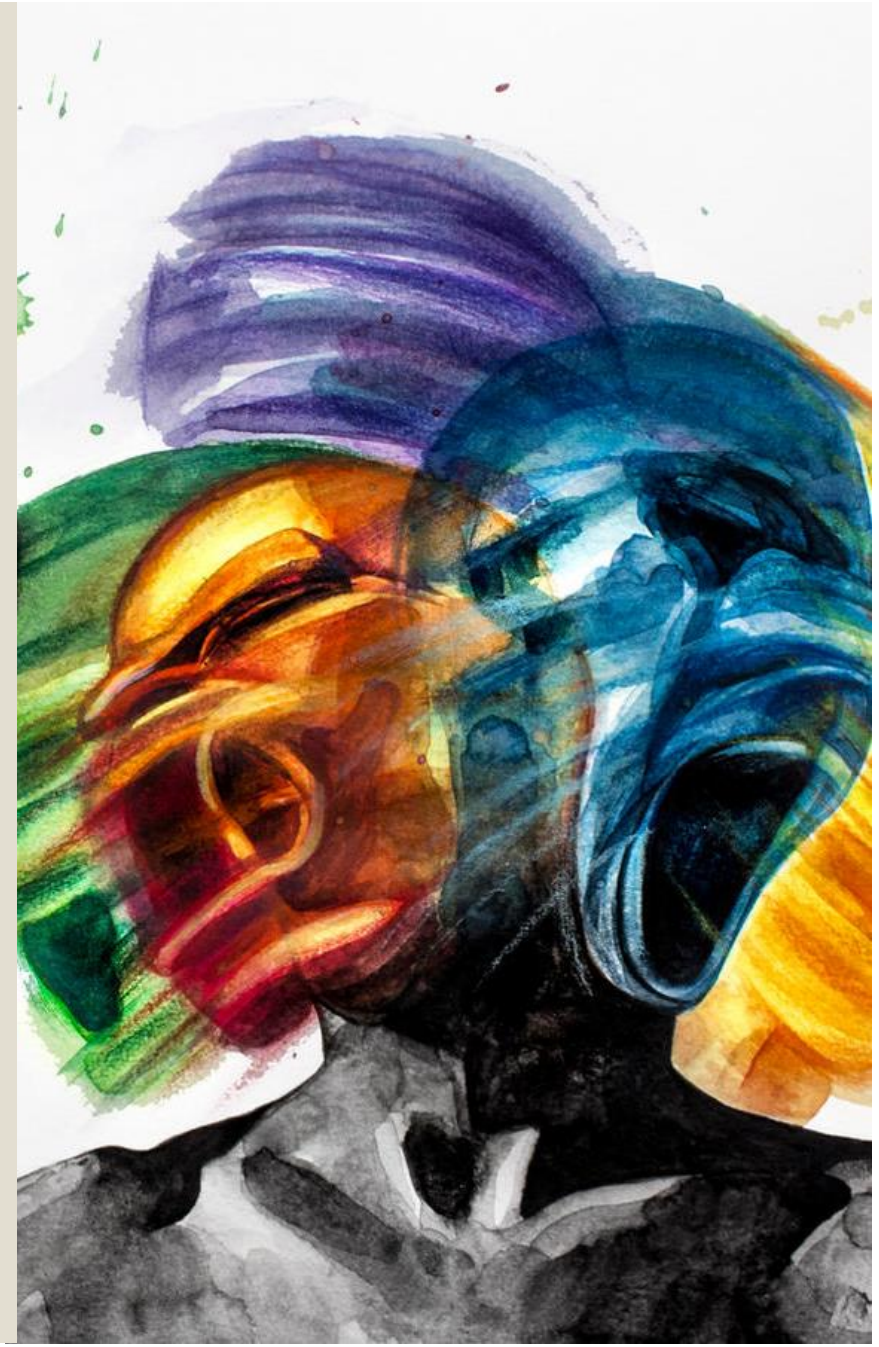
Psychosis

- Psychosis is a general term used to describe a distorted perception of reality. Poor reality testing may be accompanied by delusions, perceptual disturbances (illusions or hallucinations), and/or disorganized thinking/behavior.
- Can occur in patients with psychiatric illnesses or another medical conditions or secondary to substance and medication use.



Delusions

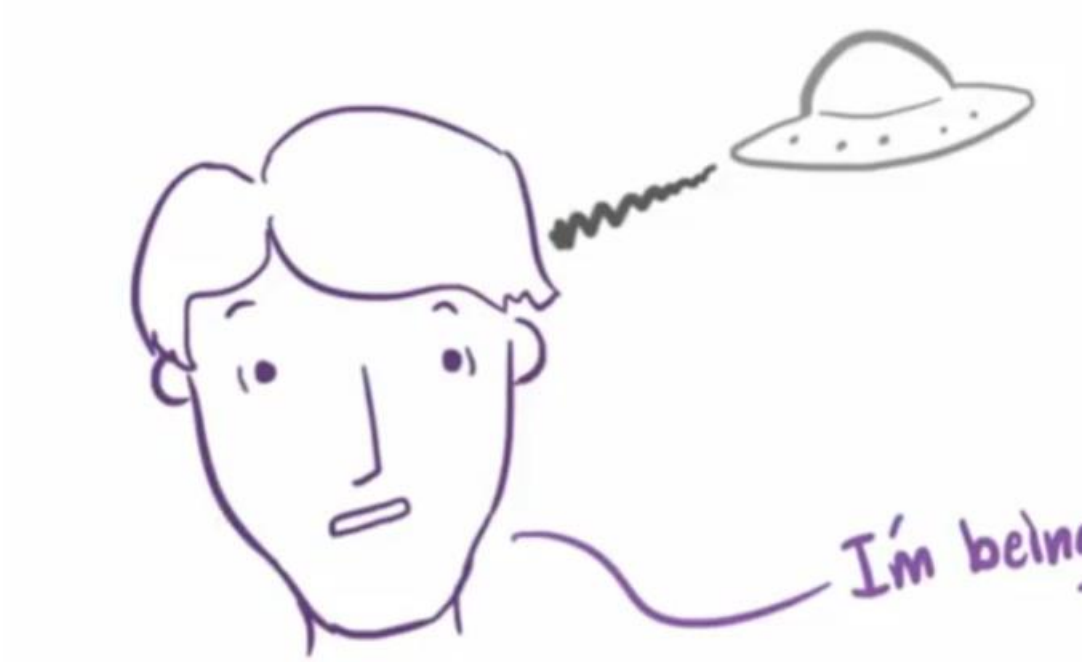
Fixed, false beliefs that persist despite evidence to the contrary and that do not make sense within the context of an individual's cultural background or religion.

They can be categorized as either bizarre or nonbizarre. A *nonbizarre* delusion is a false belief that is plausible but is not true. Example: "The neighbors are spying on me by reading my e-mail." A *bizarre* delusion is a false belief that is impossible. Example: "Aliens are spying on me through a Wi-Fi connection in my brain."

Delusion Themes

- ***Paranoid - Persecution delusions***: " someone is after me" , "The Central Intelligence Agency (CIA) is monitoring me and tapped my cell phone."
- ***Ideas of reference***: "The TV characters are speaking directly to me".
- ***Delusions of Control***: Includes **thought broadcasting** (belief that one's thoughts can be heard by others) and **thought insertion** (belief that outside thoughts are being placed in one's head).
- ***Grandiose delusions***: "I am a millionaire!" , "I am the all-powerful son of God".
- ***Delusions of Guilt***: "I am responsible for all the world's wars"
- ***Somatic delusions***: " I feel worms on my chest" , "A patient believing she is pregnant despite negative pregnancy tests and ultrasounds".
- ***Erotomanic delusions***: " Brad Pitt is in love with me".
- ***Mixed delusions***: two or more delusions occurring simultaneously; no delusion is predominant over the other
- ***Unspecified delusions***: a delusion that does not fit the criteria of other types or that cannot be clearly defined


WATCH OUT
FOR RAIN TONIGHT
They're sending
ME a message


I'm being

Perceptual Disturbances

- **Illusion**: Misinterpretation of an ***existing*** sensory stimulus (such as mistaking a shadow for a black cat).
- **Hallucination**: Sensory perception ***without*** an actual external stimulus.

Types of Hallucinations

Auditory – most commonly due to psychiatric illnesses (Schizophrenia) than neurological disease.

Visual: classically in neurological diseases (dementia), Delirium, or drug intoxication.

Tactile: secondary to drug use (cocaine crawlies) or alcohol withdrawal.

Olfactory: an aura associated with temporal lobe epilepsy (burning rubber).

Gustatory: in epilepsy

Hypnogogic /Hypnopompic: with Narcolepsy.

Psychotic Disorders Due to Another Medical Condition

- ***Central nervous system (CNS) disease*** (cerebrovascular disease, multiple sclerosis, neoplasm, Alzheimer disease, Parkinson disease, Huntington disease, tertiary syphilis, epilepsy [often temporal lobe], encephalitis, prion disease, neurosarcoidosis, AIDS).
- ***Endocrinopathies*** (Addison/Cushing disease, hyper/hypothyroidism, hyper/hypocalcemia, hypopituitarism).
- ***Nutritional/Vitamin deficiency states*** (B12, folate, niacin).
- ***Other*** (connective tissue disease [systemic lupus erythematosus, temporal arteritis], porphyria).

DSM-5 criteria for Psychotic Disorders Due to Another Medical Condition

- Prominent hallucinations or delusions.
- Symptoms do not occur only during an episode of delirium.
- Evidence from history, physical, or lab data to support another medical cause (i.e., not a primary psychiatric disorder).

Substance/Medication-Induced Psychotic Disorder

Prescription medications that may cause psychosis in some patients include **digitalis**, **anesthetics**, **anticholinergics**, **nonsteroidal anti-inflammatory drugs (NSAIDs)**.

Substances such as **alcohol**, **cocaine**, **hallucinogens** (LSD, ecstasy), **cannabis**, **benzodiazepines**, **barbiturates**, **inhalants**, and **phencyclidine** (PCP) can cause psychosis, either during intoxication or withdrawal.

What is Schizophrenia ?!

- It's not multi-personality disorder !

TABLE 3-1. Schizophrenia versus Delusional Disorder

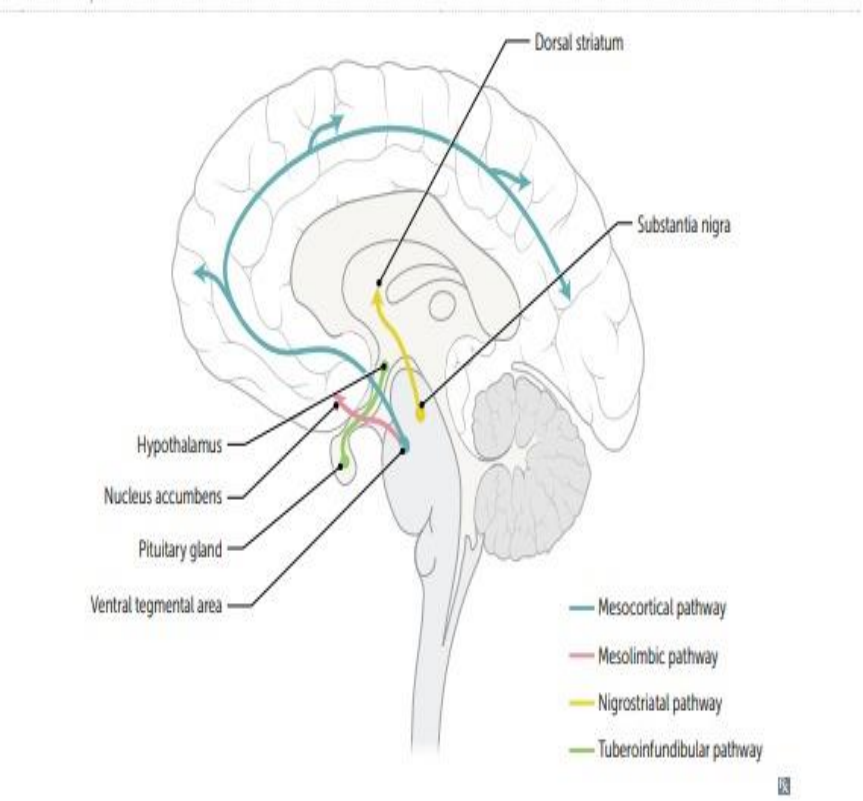
Schizophrenia	Delusional Disorder
■ Bizarre or nonbizarre delusions	■ Usually nonbizarre delusions
■ Daily functioning significantly impaired	■ Daily functioning not significantly impaired
■ Must have two or more of the following:	■ Does not meet the criteria for schizophrenia, as described in the left column
■ Delusions	
■ Hallucinations	
■ Disorganized speech	
■ Disorganized behavior	
■ Negative symptoms	

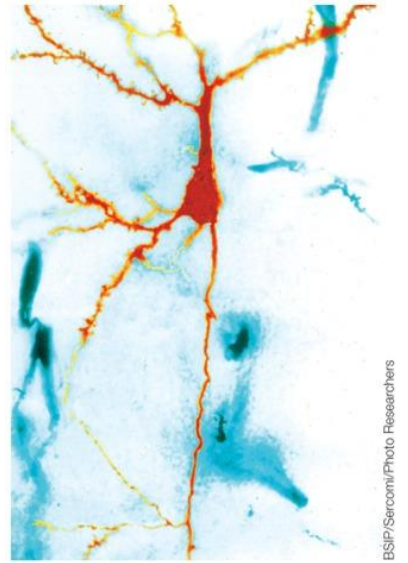
Schizophrenia

- a chronic psychiatric disorder characterized by a constellation of abnormalities in thinking, emotion, and behavior

Pathophysiology and Structural Changes of Schizophrenia

- Associated with altered dopaminergic activity.
- Associated with Ventriculomegaly and decreased dendritic branching.
- Heavy cannabis use in adolescents is associated with increased prevalence of Schizophrenia





Other Neurotransmitter Abnormalities Implicated In Schizophrenia

Elevated serotonin: Some of the second-generation (atypical) antipsychotics

(e.g., risperidone and clozapine) antagonize serotonin and weakly antagonize dopamine.

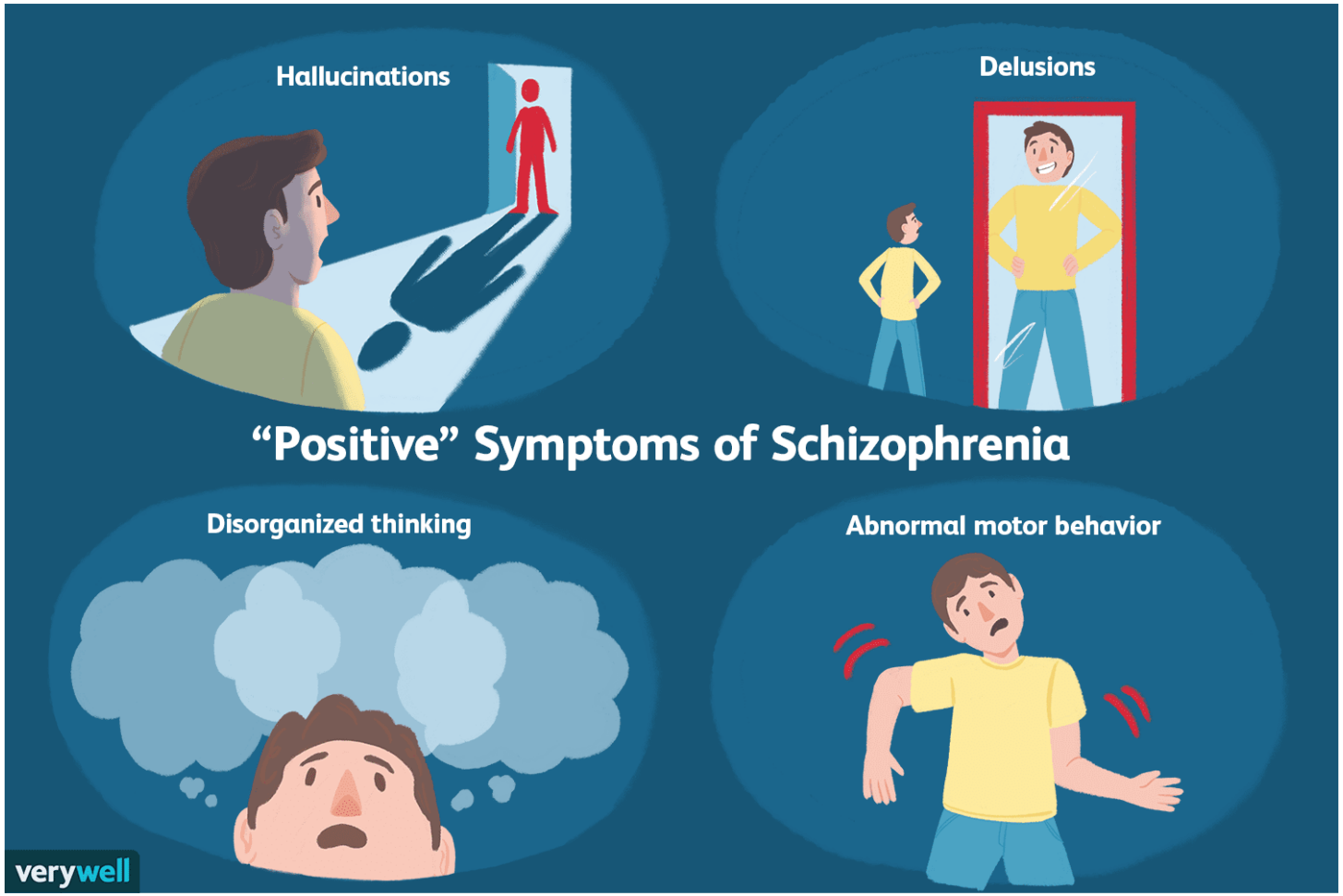
Elevated norepinephrine: Long-term use of antipsychotics has been shown to decrease activity of noradrenergic neurons.

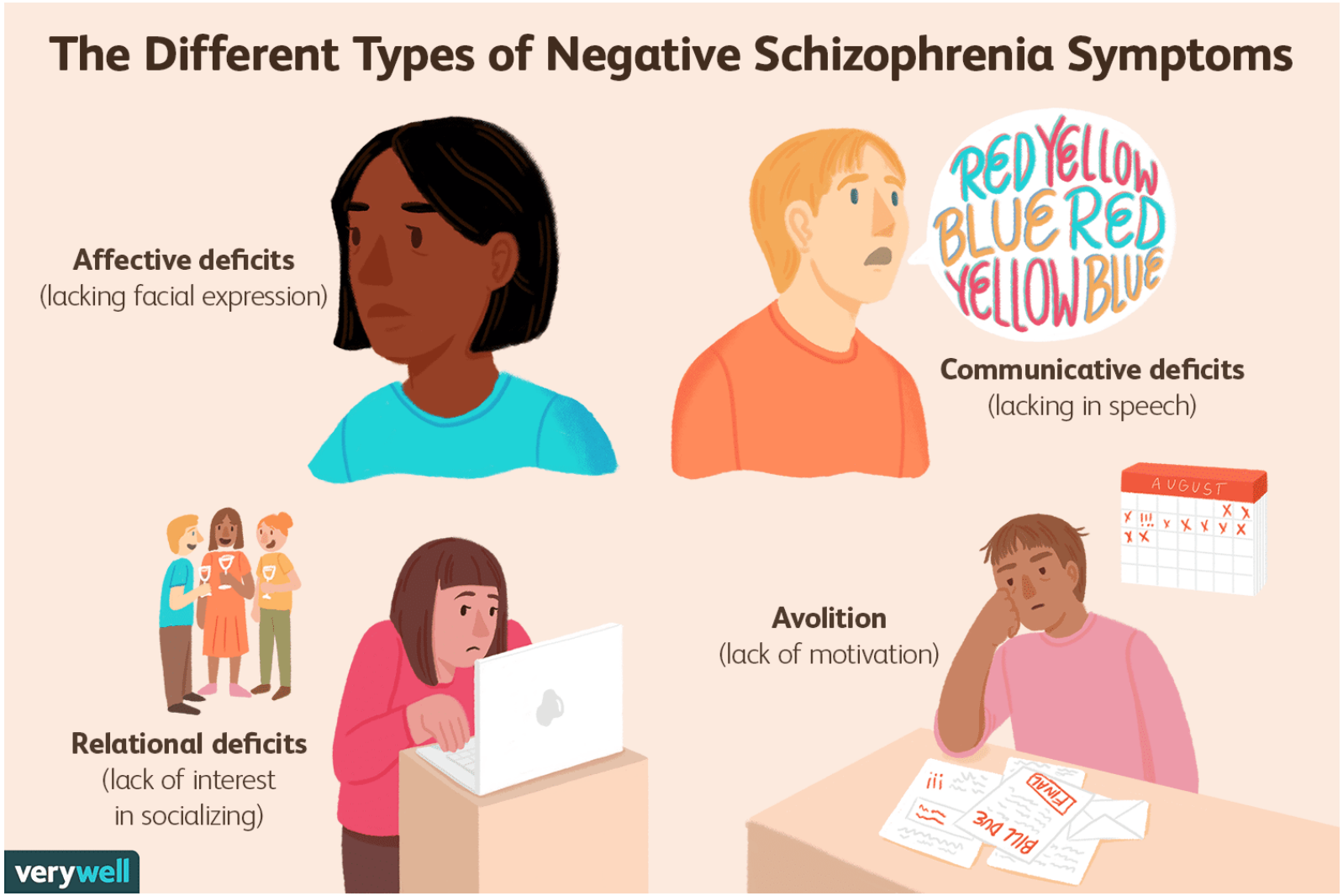
Low gamma-aminobutyric acid (GABA): There is lower expression of the enzyme necessary to create GABA in the hippocampus of schizophrenic patients.

Low levels of glutamate receptors: Schizophrenic patients have fewer NMDA receptors; this corresponds to the psychotic symptoms observed with NMDA antagonists like ketamine.

Positive Symptoms of Schizophrenia

- Excessive or distorted functioning , including Hallucinations, delusions, bizarre behavior, disorganized speech.
- These tend to respond more robustly to antipsychotic medications.





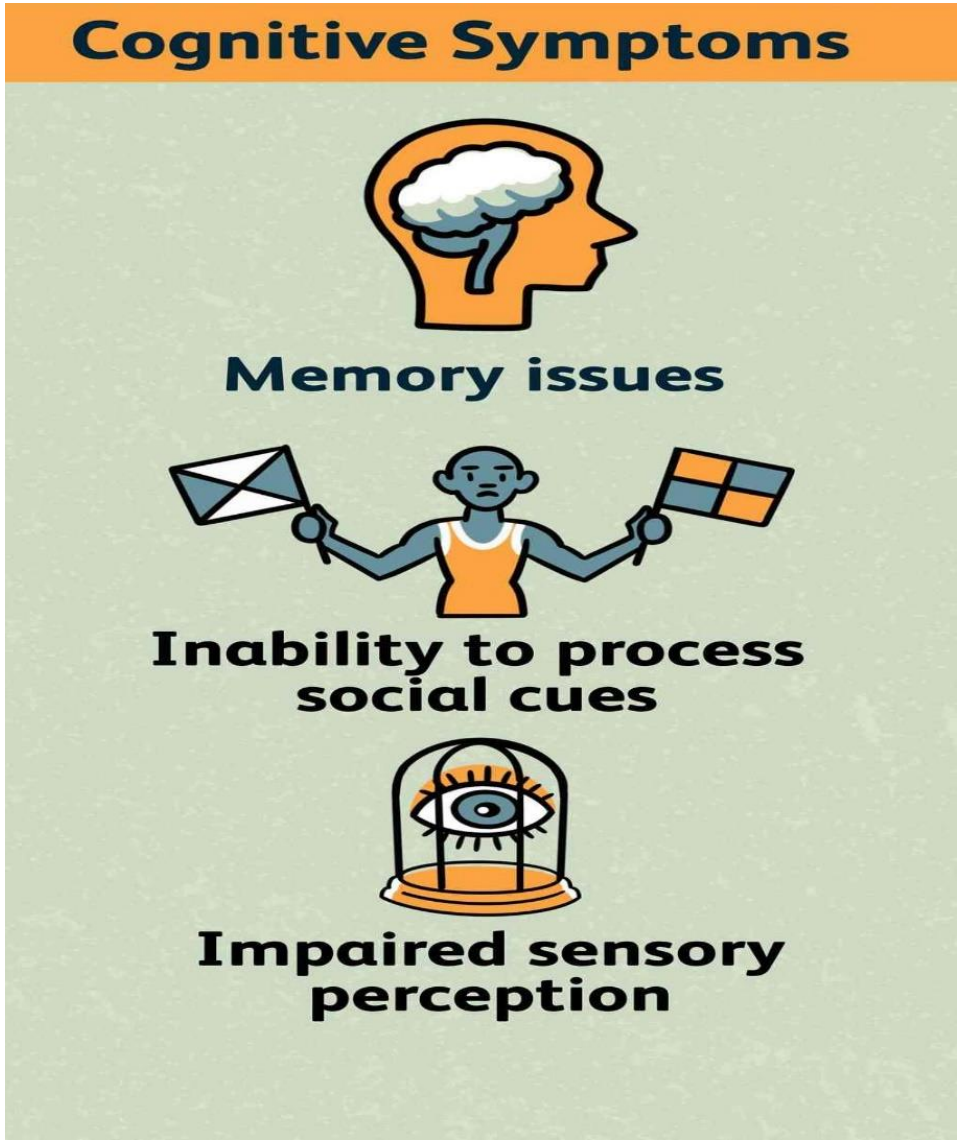
Negative Symptoms of Schizophrenia

- Flat or blunted affect, anhedonia (can't feel pleasure), apathy, alogia (lack of speech), and lack of interest in socialization.

Cognitive Symptoms of Schizophrenia

- Impairments in attention, executive function

(planning), and working memory



Phases of Schizophrenia

Prodromal: Decline in functioning that precedes the first psychotic episode.

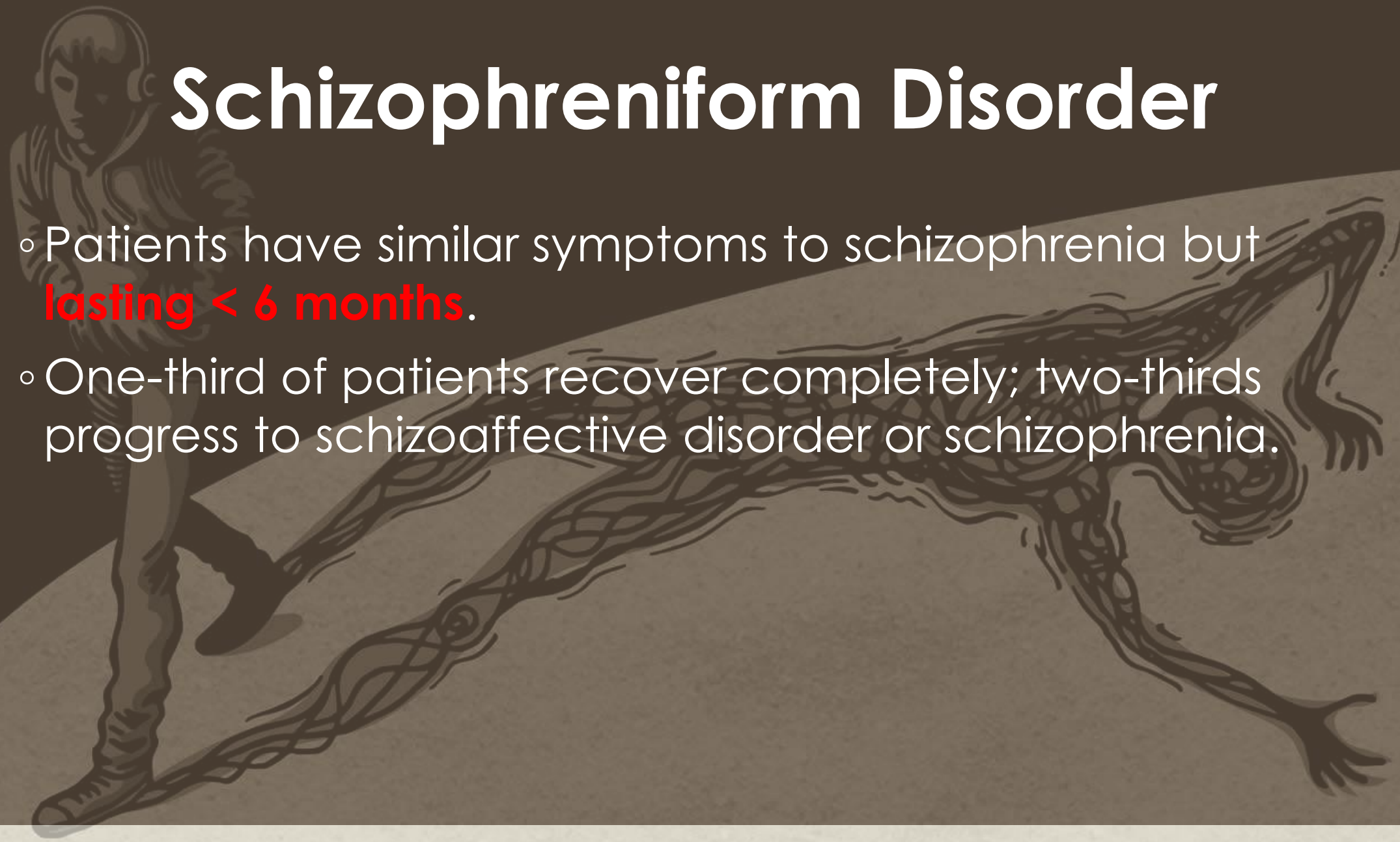
Psychotic: Perceptual disturbances, delusions, and disordered thought process/content.

Residual.

Diagnosis of Schizophrenia

- DSM-5 criteria:
- Diagnosis requires ≥ 2 of the following active symptoms, including ≥ 1 from symptoms #1–3:
  - 1. Delusions
  - 2. Hallucinations, often auditory
  - 3. Disorganized speech
  - 4. Disorganized or catatonic behavior
  - 5. Negative symptoms
- **Symptom onset ≥ 6 months prior to diagnosis; requires ≥ 1 month of active symptoms over the past 6 months**.

Schizophreniform Disorder



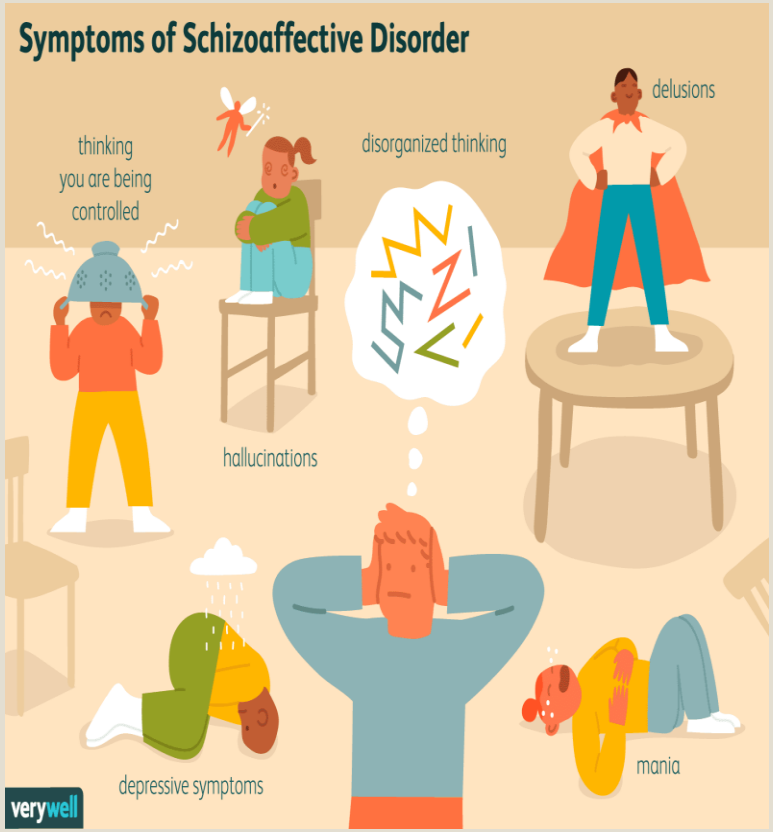
- Patients have similar symptoms to schizophrenia but **lasting < 6 months**.
- One-third of patients recover completely; two-thirds progress to schizoaffective disorder or schizophrenia.

Brief Psychotic Disorder

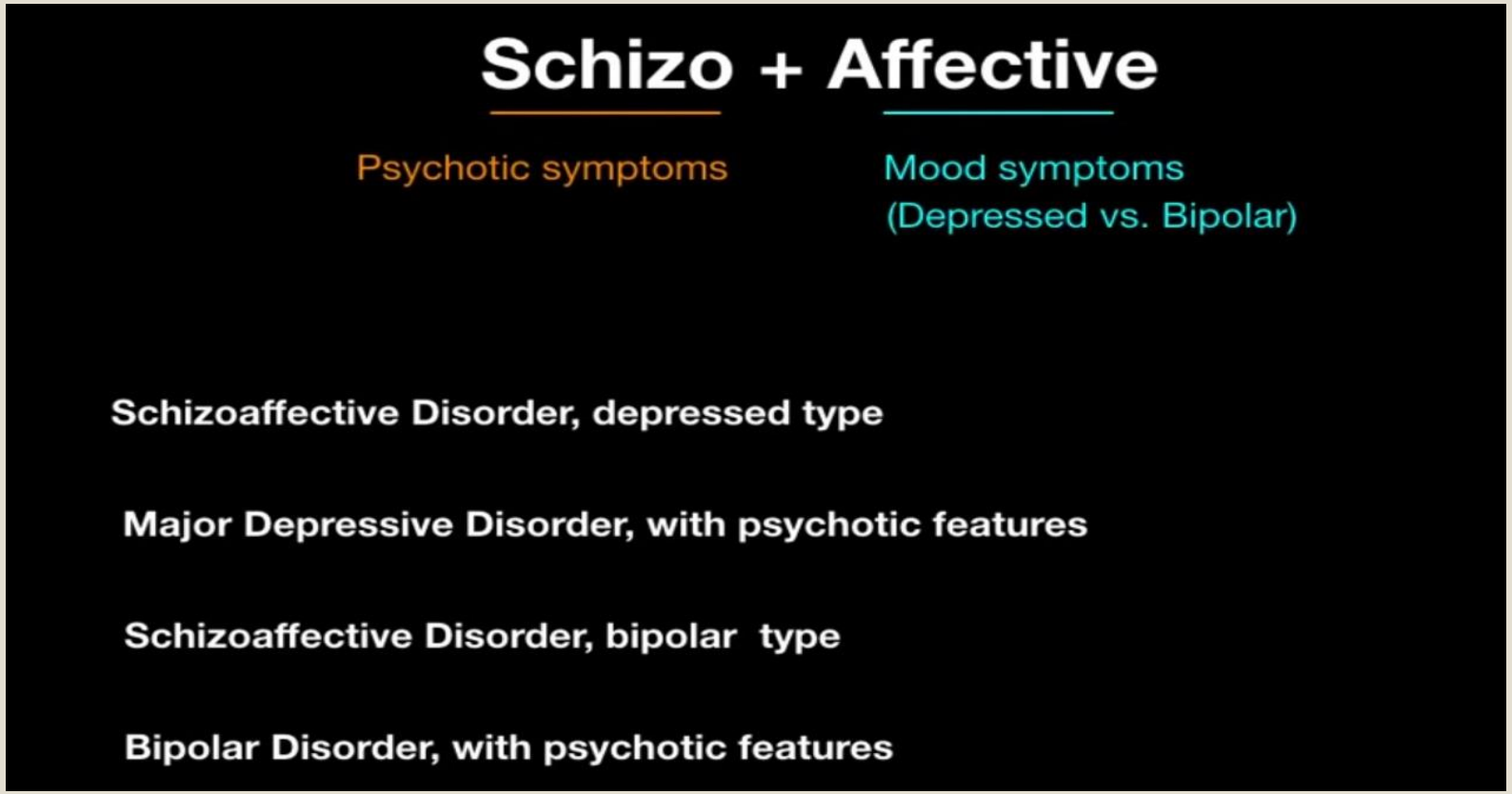
- ≥ 1 positive symptom(s) **lasting between 1 day and 1 month**, usually stress-related.
- High rates of relapse, but almost all completely recover.

Schizoaffective Disorder

- Shares symptoms with both schizophrenia and mood disorders (MDD or bipolar disorder). To differentiate from a mood disorder with psychotic features, **patient must have ≥ 2 weeks of psychotic symptoms without a manic or depressive episode**.
- Worse with poor premorbid adjustment, slow onset, early onset, predominance of psychotic symptoms, long course, and family history of schizophrenia

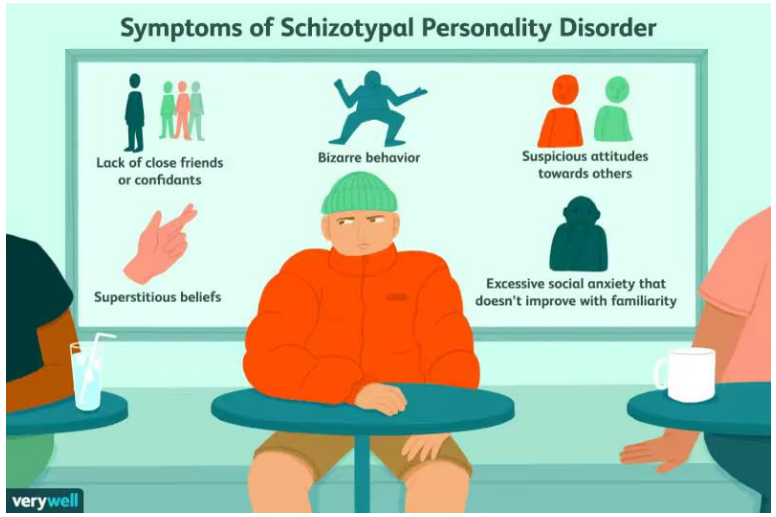


Schizoaffective Disorder



Time Course

<1 month—brief psychotic disorder.
1–6 months—schizophreniform disorder.
>6 months—schizophrenia.

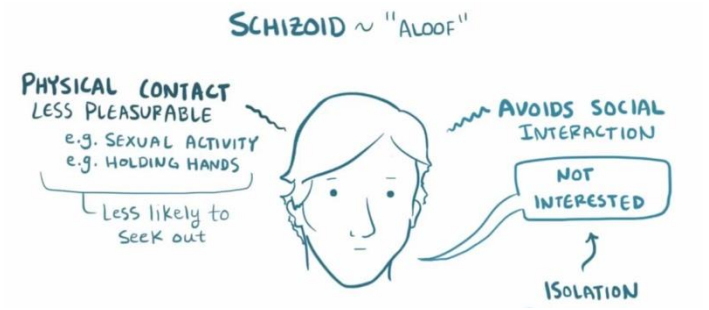


Schizo Presumed Disorders

- **Schizotypal**: personality disorder, Characterized by odd or magical beliefs, eccentric, lack of friends.
  - Most likely to transform to Schizophrenia.

Schizo Presumed Disorders

- **Schizoid**: personality disorder, with no interests in relationships (loner), tend to work in jobs that doesn't have many people, no psychosis.
- Schizoid Vs Avoidant.



Psychiatric Exam Of Patients With Schizophrenia

- The *typical* findings in schizophrenic patients include:
  - Disheveled appearance.
  - Flat affect.
  - Disorganized thought process.
  - Intact procedural memory and orientation.
  - Auditory hallucinations.
  - Paranoid delusions.
  - Ideas of reference.
  - Lack of insight into their disease.

Epidemiology of Schizophrenia

- Schizophrenia affects approximately 0.3–0.7% of people over their lifetime.
- Men and women are equally affected but have different presentations and outcomes: Men tend to present earlier than women + Men tend to have more negative symptoms and poorer outcome compared to women.
- Schizophrenia rarely presents before age 15 or after age 55.
- There is a strong genetic predisposition
  - 50% concordance rate among monozygotic twins.
  - 40% risk of inheritance if both parents have schizophrenia.
  - 12% risk if one first-degree relative is affected.
- Substance use is comorbid in many patients with schizophrenia. The most commonly abused substance is nicotine (>50%), followed by alcohol, cannabis, and cocaine.

Downward Drift

- Lower socioeconomic groups have higher rates of schizophrenia. This may be due to the **downward drift hypothesis**, which postulates that people suffering from schizophrenia are unable to function well in society and hence end up in lower socioeconomic groups. Many homeless people in urban areas suffer from schizophrenia.

Treatment of Schizophrenia

- **First-generation (or typical) antipsychotic medications** (e.g., *chlorpromazine*, *fluphenazine*, *haloperidol*, *perphenazine*)
  - Primarily dopamine (mostly D2) antagonists – increases cAMP-.
- **Second-generation (or atypical) antipsychotic medications** (e.g., *aripiprazole*, *asenapine*, *clozapine*, *iloperidone*, *lurasidone*, *olanzapine quetiapine*, *risperidone*, *ziprasidone*)
  - These antagonize serotonin receptors (5-HT2) as well as dopamine (D4>D2) receptors (aripiprazole is a partial D2 agonist).

Side Effects of Antipsychotics

Antihistaminic (Sedation), **Anti a1 adrenergic** (orthostatic hypotension), **Antimuscarinic** (Dry mouth, Constipation) → especially with low-potency antipsychotics (chlorpromazine, thioridazine).

Metabolic syndrome: weight gain, hyperglycemia, dyslipidemia, Highest risk with clozapine and olanzapine.

Endocrine: hyperprolactinemia (galactorrhea), oligomenorrhea, gynecomastia.

Cardiac: QT prolongation.

Neurologic: neuroleptic malignant syndrome (medical emergency, myoglobinurea, fever, encephalopathy, elevated CK, muscle rigidity –Lead pipe-)

Ophthalmologic: chlorpromazine—corneal deposits; thioridazine—retinal deposits.

Clozapine—agranulocytosis (monitor WBCs), seizures (dose related), myocarditis.

Side Effects of Antipsychotics

Extrapyramidal symptoms:

Hours to days:

- Acute Dystonia (muscle spasm, stiffness, oculogyric crisis). Treatment: benztropine, diphenhydramine.

Days to months:

- Akathisia (restlessness). Treatment: β-blockers, benztropine (anticholinergic that blocks M1 receptor), benzodiazepines.
- Parkinsonism (bradykinesia). Treatment: benztropine, amantadine.

Months to years:

- Tardive dyskinesia (chorea, especially orofacial). Treatment: benzodiazepines,

Prognosis of Schizophrenia

Even with medication, 40–60% of patients remain significantly impaired after their diagnosis, while only 20–30% function fairly well in society. About 20% of patients with schizophrenia attempt suicide and many more experience suicidal ideation.

Several factors are associated with a better or worse prognosis:

- **Associated with Better Prognosis**
  - Later onset.
  - Good social support.
  - Positive symptoms.
  - Mood symptoms.
  - Acute onset.
  - Female gender.
  - Few relapses.
  - Good premorbid functioning.
- **Associated with Worse Prognosis**
  - Early onset.
  - Poor social support.
  - Negative symptoms.
  - Family history.
  - Gradual onset.

- A 24-year-old male graduate student without prior medical or psychiatric history is reported by his mother to have been very anxious over the past 9 months, with increasing concern that people are watching him. He now claims to “hear voices” telling him what must be done to “fix the country.

1- *Important workup?*

2- *Likely diagnosis?*

3- Next step?

1- Comprehensive metabolic panel, urine drug screen, Consider brain imaging

2- *If workup is unremarkable, schizophrenia*

3- Antipsychotics

- Mr. Torres is a 21-year-old man who is brought to the ER by his mother after he began talking about “aliens” who were trying to steal his soul. Mr. Torres reports that aliens leave messages for him by arranging sticks outside his home and sometimes send thoughts into his mind. On exam, he is guarded and often stops talking while in the middle of expressing a thought. Mr. Torres appears anxious and frequently scans the room for aliens, which he thinks may have followed him to the hospital. He denies any plan to harm himself but admits that the aliens sometimes want him to throw himself in front of a car, “as this will change the systems that belong under us.” The patient’s mother reports that he began expressing these ideas a few months ago, but they have become more severe in the last few weeks. She reports that during the past year, he has become isolated from his peers, frequently talks to himself, and has stopped going to community college. He has also spent most of his time reading science fiction books and creating devices that will prevent aliens from hurting him. She reports that she is concerned because the patient’s father, who left while the patient was a child, exhibited similar symptoms many years ago and has spent most of his life in psychiatric hospitals.

- 1- ***What differential Diagnoses should be considered?***
- ***2- What is Mr. Torres’s most likely diagnosis?***

1- schizoaffective disorder, medication/substance-induced psychotic disorder, psychotic disorder due to another medical condition, and mood disorder with psychotic features.

2- Schizophrenia

THANK YOU