

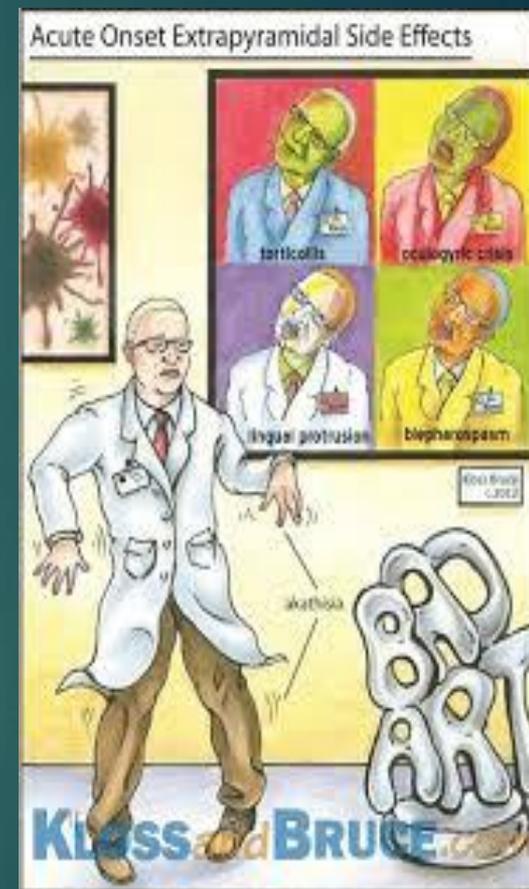


Extrapyramidal Symptoms

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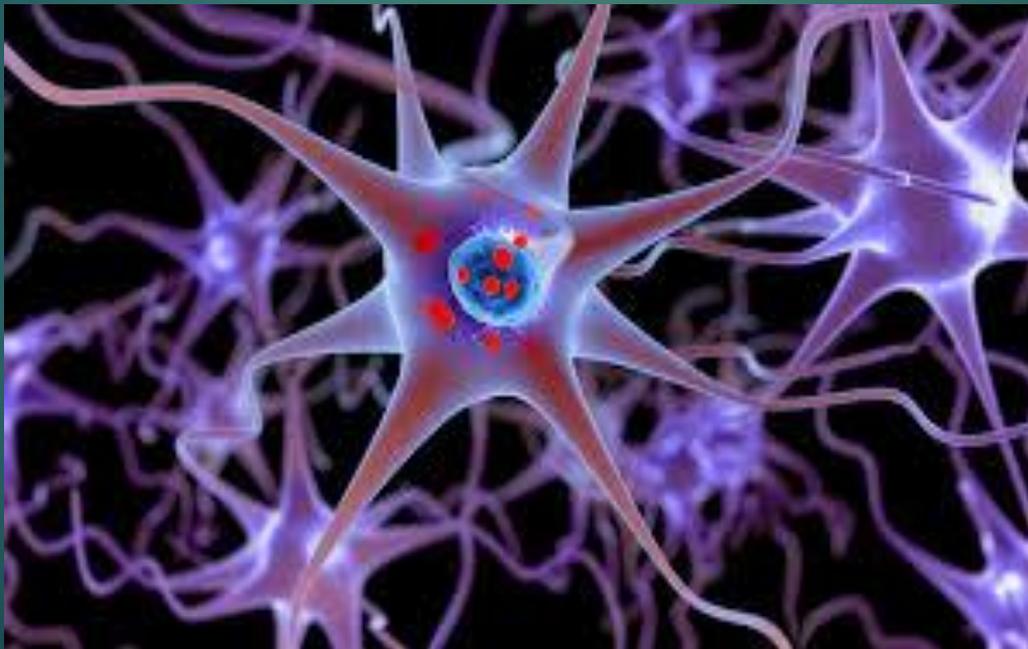
What are Extrapyramidal Symptoms?

Extrapyramidal symptoms (EPS) are a group of side effects that occur due to the use of certain medications, particularly antipsychotic drugs. These symptoms affect the motor system and can include involuntary movements, muscle stiffness, tremors, and more. Other medications such as metoclopramide, droperidol, prochlorperazine, lithium, SSRIs, stimulants, and tricyclic antidepressants can induce extrapyramidal symptoms.



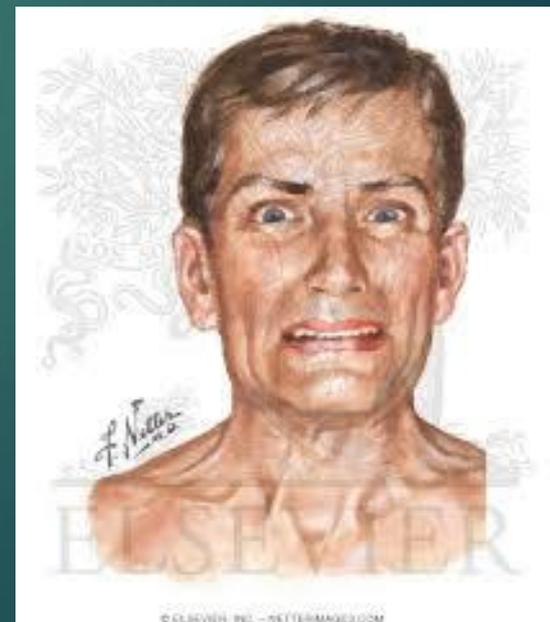
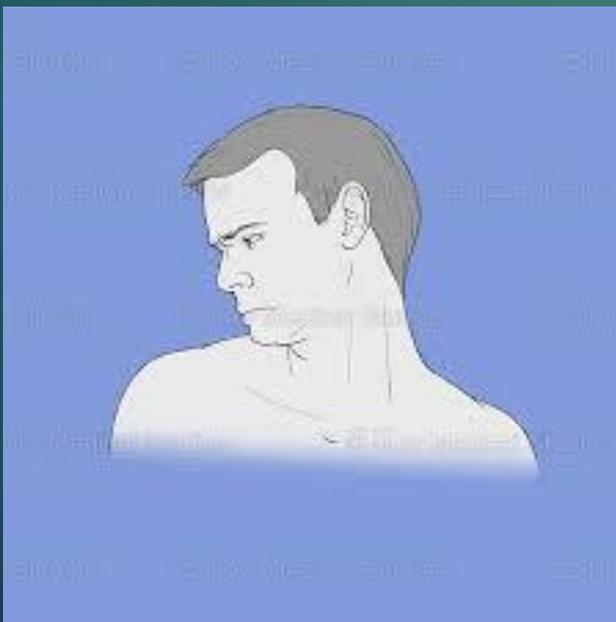
HOW do MEDECATIONS CAUSE EPS?

■ Medications like antipsychotics and others work on the dopamine system, their actions cause a dopamine blockade or depletion in the basal ganglia, a region in the brain involved in motor control.



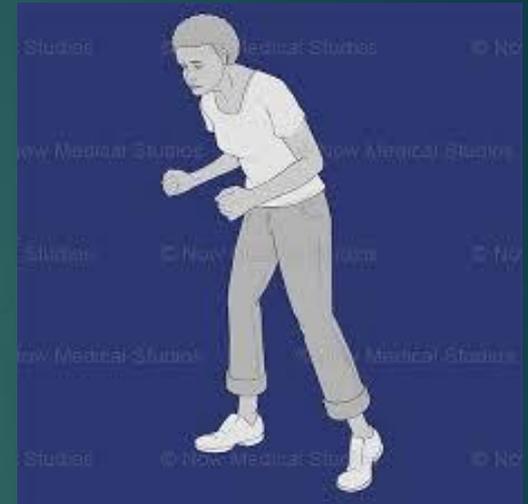
ACUTE MANIFESTATIONS of EPS

- ▶ **Tremor**- Tremor is an involuntary, rhythmic muscle contraction and relaxation involving oscillations or shaking movements of one or more body parts. It can affect the hands, arms, head, face, voice, trunk, and legs.
- ▶ **Acute Dystonia**- Manifests with involuntary muscle contractions resulting in abnormal posturing or repetitive movements. It may affect muscles in different body parts, including the back and extremities, neck, jaw, eyes, abdominal wall, pelvic muscles, and facial and tongue muscles. It occurs within 48 hours of drug exposure in 50% of cases and within 5 days in 90% of cases.

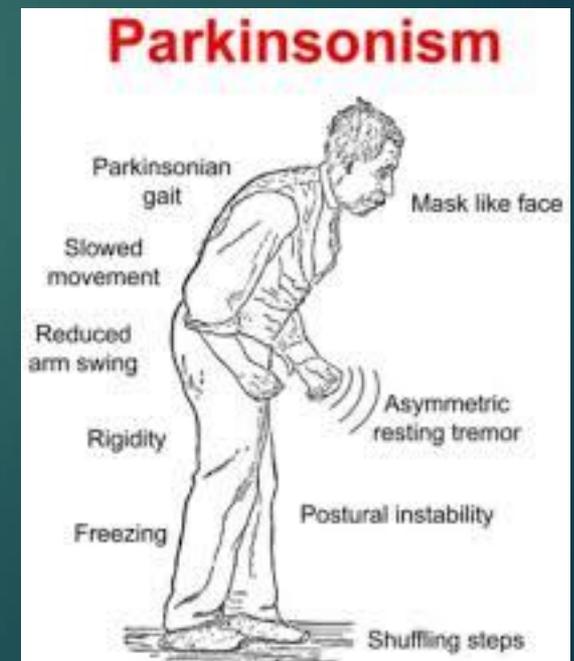


ACUTE MANIFESTATIONS of EPS

▶ **Akathisia**- is characterized by a subjective feeling of internal restlessness and a compelling urge to move resulting in repetitive movements such as leg crossing, swinging, or shifting from one foot to another. The onset is typically within 4 weeks of starting or increasing the medication dosage. Due to its often vague and nonspecific presentation of nervousness and discomfort, akathisia is often misdiagnosed as anxiety, restless leg syndrome, or agitation. Patients may also experience suicidal ideation due to symptoms.



▶ **Parkinsonism**- presents as tremors, rigidity, and slowing of motor function in the in the body and extremities. The classic appearance is an individual with masked facies, stooped posture, and a slow shuffling gait.



CHRONIC MANIFESTATIONS of EPS

- ▶ **Tardive Dyskinesia**- Manifests as involuntary movements affecting face, mouth, and tongue muscles, and less commonly, the trunk and extremities. Although symptoms are typically not painful, they may impede social interaction and cause difficulty in chewing, swallowing, and talking.



- ▶ **Tardive Dystonia and Tardive Akathisia**- usually develops with a latency of months to years of chronic medication use. The definition of a tardive syndrome requires a minimum of 6 weeks of drug intake, but it has also been reported with shorter periods

How to TREAT EPS

- ▶ **Acute dystonic reactions** are treated first by discontinuing the offending medication. First line treatments include anticholinergic drugs like Benztropine and antihistamines like Diphenhydramine. Second line treatments include benzodiazepines. When starting a new antipsychotic medication, an anticholinergic medicine such as benztropine can be used for the first week of treatment and then tapered slowly to prevent an acute dystonic reaction.
- ▶ **Tardive dystonia** treatment options include benzodiazepines; botulinum toxin for facial dystonia; muscle relaxants, such as baclofen; and dopamine-depleting agents, such as tetrabenazine; For refractory cases, advanced interventions such as consideration of deep brain stimulation or pallidotomy may be considered.
- ▶ **Akathisia** treatment strategies include stopping or reducing the dosage of the offending medication administering an β -blocker (propranolol), benzodiazepines, mirtazapine or other non-selective post-synaptic 5-HT₂ blockers. Some studies have shown vitamin B₆ (pyridoxine) can also be helpful in alleviating symptoms, but further research needs to be done.

How to TREAT EPS

- ▶ **parkinsonism** is managed by discontinuing or reducing the dosage of the causative medication, and administering antiparkinsonian medications, including amantadine, anticholinergic medications, L-dopa, and selegiline.
- ▶ **Tardive Dyskinesia** is treated by gradually tapering or discontinuing the causative medication. There may be transient worsening of symptoms during withdrawal of the causative medication. Anticholinergic medications and antiparkinsonian medications should be discontinued, as they may worsen tardive dyskinesia. Patients may be switched to second-generation antipsychotic medications such as quetiapine or clozapine with a lower risk of tardive movements. Dopamine-depleting medications known as vesicular monoamine transporter 2 (VMAT2) inhibitors are the first medications approved by the Food and Drug Administration to treat tardive syndromes. These medications include valbenazine and deutetrabenazine. Tetrabenazine a VMAT2 inhibitor approved for dyskinesias in Huntington's disease and has been used off-label for tardive syndromes

Works Cited

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