Crown to Cortex

Pharmacology

Antipsychotics and Antidepressants

The Unhackables Medical

medical.theunhackables.com

How to read this topic

Antipsychotics and Antidepressants is a high-yield Pharmacology topic for NEET PG and INI-CET. The safest preparation approach is to organize it by mechanism, classification, prototype drugs, indications, adverse effects, contraindications, interactions, and emergency use. This PDF is designed as a compact final-revision note, not a textbook chapter.

Classify

Place the drug in the correct class before reading the clinical stem.

V

Mechanism

Convert receptor, enzyme, or pathway action into expected benefit.

V

Patient filter

Apply pregnancy, renal/hepatic disease, ECG, electrolyte, allergy, and interaction filters.

V

Exam answer

Choose the drug that fits the indication and avoids the hidden contraindication.

Classification map

Class / axis	High-yield details
Typical antipsychotics	high potency haloperidol; low potency chlorpromazine
Atypical antipsychotics	clozapine, risperidone, olanzapine, quetiapine, aripiprazole
Antidepressants	SSRIs, SNRIs, TCAs, MAOIs, atypicals
Mood stabilizers	lithium, valproate, carbamazepine, lamotrigine

Prototype drug map

Prototype	What to remember
Clozapine	treatment-resistant schizophrenia; agranulocytosis, seizures, myocarditis, sialorrhea
Haloperidol	acute psychosis; EPS, NMS, QT
Fluoxetine/sertraline	SSRIs; sexual dysfunction, GI upset, serotonin syndrome
Amitriptyline	TCA; anticholinergic, cardiotoxic overdose
Lithium	bipolar; tremor, hypothyroid, nephrogenic DI, Ebstein anomaly

Mechanism to clinical use

1. Typical antipsychotics

Mechanism anchor: high potency haloperidol; low potency chlorpromazine. In NEET PG style questions, this becomes important when the stem asks for drug choice, mechanism of toxicity, resistance, organ-specific effect, or a contraindication. Always connect the class to the expected physiological change rather than memorizing the name alone.

Clinical conversion: ask whether the desired effect is immediate symptom relief, disease modification, prophylaxis, reversal of toxicity, or long-term prevention. The same class can be correct or wrong depending on timing, route, patient risk, and monitoring feasibility.

2. Atypical antipsychotics

Mechanism anchor: clozapine, risperidone, olanzapine, quetiapine, aripiprazole. In NEET PG style questions, this becomes important when the stem asks for drug choice, mechanism of toxicity, resistance, organ-specific effect, or a contraindication. Always connect the class to the expected physiological change rather than memorizing the name alone.

Clinical conversion: ask whether the desired effect is immediate symptom relief, disease modification, prophylaxis, reversal of toxicity, or long-term prevention. The same class can be correct or wrong depending on timing, route, patient risk, and monitoring feasibility.

3. Antidepressants

Mechanism anchor: SSRIs, SNRIs, TCAs, MAOIs, atypicals. In NEET PG style questions, this becomes important when the stem asks for drug choice, mechanism of toxicity, resistance, organ-specific effect, or a contraindication. Always connect the class to the expected physiological change rather than memorizing the name alone.

Clinical conversion: ask whether the desired effect is immediate symptom relief, disease modification, prophylaxis, reversal of toxicity, or long-term prevention. The same class can be correct or wrong depending on timing, route, patient risk, and monitoring feasibility.

4. Mood stabilizers

Mechanism anchor: lithium, valproate, carbamazepine, lamotrigine. In NEET PG style questions, this becomes important when the stem asks for drug choice, mechanism of toxicity, resistance, organ-specific effect, or a contraindication. Always connect the class to the expected physiological change rather than memorizing the name alone.

Clinical conversion: ask whether the desired effect is immediate symptom relief, disease modification, prophylaxis, reversal of toxicity, or long-term prevention. The same class can be correct or wrong depending on timing, route, patient risk, and monitoring feasibility.

Drug signatures

Drug / class	Mechanism cue	Use cue	Toxicity cue
Clozapine	treatment-resistant schizophrenia	Know preferred indication	Know signature adverse effect
Haloperidol	acute psychosis	Know preferred indication	Know signature adverse effect
Fluoxetine/sertraline	SSRIs	Know preferred indication	Know signature adverse effect
Amitriptyline	TCA	Know preferred indication	Know signature adverse effect
Lithium	bipolar	Know preferred indication	Know signature adverse effect

Clinical edges

- NMS: rigidity, fever, autonomic instability, high CK; stop drug, dantrolene/bromocriptine
- Serotonin syndrome: clonus, hyperreflexia, diarrhea, fever; cyproheptadine
- EPS: acute dystonia, akathisia, Parkinsonism, tardive dyskinesia
- MAOI interactions: tyramine hypertensive crisis and serotonin syndrome combinations
- For Antipsychotics and Antidepressants, start every clinical question by identifying the syndrome, patient risk factors, organ function, pregnancy status, and interacting drugs.
- Prototype drugs are more important than long drug lists; know one clean example for each mechanism.
- Adverse-effect signatures often identify the drug even when the stem hides the class name.
- When two drugs look similar, compare onset, route, elimination, monitoring, and toxicity.

Adverse effects and contraindication logic

Clozapine

Expected exam cue: treatment-resistant schizophrenia; agranulocytosis, seizures, myocarditis, sialorrhea. When this drug or class appears in a clinical vignette, actively look for allergy, pregnancy risk, renal or hepatic impairment, ECG abnormality, electrolyte disturbance, bleeding risk, respiratory disease, CNS depression, or interacting medicines.

How to eliminate options: reject drugs that worsen the dominant clinical danger in the stem, even if their mechanism seems suitable. This is especially important in pharmacology questions where the wrong option is often a contraindicated first-line drug.

Haloperidol

Expected exam cue: acute psychosis; EPS, NMS, QT. When this drug or class appears in a clinical vignette, actively look for allergy, pregnancy risk, renal or hepatic impairment, ECG abnormality, electrolyte disturbance, bleeding risk, respiratory disease, CNS depression, or interacting medicines.

How to eliminate options: reject drugs that worsen the dominant clinical danger in the stem, even if their mechanism seems suitable. This is especially important in pharmacology questions where the wrong option is often a contraindicated first-line drug.

Fluoxetine/sertraline

Expected exam cue: SSRIs; sexual dysfunction, GI upset, serotonin syndrome. When this drug or class appears in a clinical vignette, actively look for allergy, pregnancy risk, renal or hepatic impairment, ECG abnormality, electrolyte disturbance, bleeding risk, respiratory disease, CNS depression, or interacting medicines.

How to eliminate options: reject drugs that worsen the dominant clinical danger in the stem, even if their mechanism seems suitable. This is especially important in pharmacology questions where the wrong option is often a contraindicated first-line drug.

Amitriptyline

Expected exam cue: TCA; anticholinergic, cardiotoxic overdose. When this drug or class appears in a clinical vignette, actively look for allergy, pregnancy risk, renal or hepatic impairment, ECG abnormality, electrolyte disturbance, bleeding risk, respiratory disease, CNS depression, or interacting medicines.

How to eliminate options: reject drugs that worsen the dominant clinical danger in the stem, even if their mechanism seems suitable. This is especially important in pharmacology questions where the wrong option is often a contraindicated first-line drug.

Lithium

Expected exam cue: bipolar; tremor, hypothyroid, nephrogenic DI, Ebstein anomaly. When this drug or class appears in a clinical vignette, actively look for allergy, pregnancy risk, renal or hepatic impairment, ECG abnormality, electrolyte disturbance, bleeding risk, respiratory disease, CNS depression, or interacting medicines.

How to eliminate options: reject drugs that worsen the dominant clinical danger in the stem, even if their mechanism seems suitable. This is especially important in pharmacology questions where the wrong option is often a contraindicated first-line drug.

Exam traps

- Do not choose a drug only because it belongs to the right class; contraindications can reverse the answer.
- Do not ignore renal or hepatic impairment in dosing questions.
- Drug interactions are commonly tested through enzyme induction, enzyme inhibition, additive toxicity, or pharmacodynamic opposition.
- Emergency therapy depends on speed and route, not only mechanism.
- In Antipsychotics and Antidepressants, do not memorize a class without its route, onset, elimination, and monitoring.
- Toxicity questions often hide the drug name and reveal the answer through one adverse-effect signature.
- Contraindications are tested more often than rare mechanisms.
- A drug can be first-line in one patient and dangerous in another.

Last-day revision grid

Question	Answer to recall quickly
Best prototype?	Clozapine, Haloperidol, Fluoxetine/sertraline, Amitriptyline
Most tested danger?	toxicity, contraindication, interaction, and monitoring
Emergency angle?	route, onset, antidote, supportive care
Do-not-miss filter?	pregnancy, renal/hepatic failure, ECG/electrolytes, bleeding or respiratory risk

High-yield definitions

Term	Definition / exam meaning
Typical antipsychotics	high potency haloperidol; low potency chlorpromazine
Atypical antipsychotics	clozapine, risperidone, olanzapine, quetiapine, aripiprazole
Antidepressants	SSRIs, SNRIs, TCAs, MAOIs, atypicals
Mood stabilizers	lithium, valproate, carbamazepine, lamotrigine
Clozapine	treatment-resistant schizophrenia; agranulocytosis, seizures, myocarditis, sialorrhea
Haloperidol	acute psychosis; EPS, NMS, QT
Fluoxetine/sertraline	SSRIs; sexual dysfunction, GI upset, serotonin syndrome
Amitriptyline	TCA; anticholinergic, cardiotoxic overdose
Lithium	bipolar; tremor, hypothyroid, nephrogenic DI, Ebstein anomaly
Target	Ion channels, transporters, GPCRs, and enzymes dominate CNS pharmacology.
Latency	Some effects are immediate; antidepressant and antipsychotic benefits often take weeks.

How this helps in Antipsychotics and Antidepressants: this page is meant to convert memorized pharmacology into option elimination. Read the left column first, then force yourself to say the mechanism, clinical use, toxicity, and reason another option is wrong.

Drug-by-drug comparison

Comparison	How to separate them in an exam stem	Most useful discriminator
Clozapine vs Haloperidol	Clozapine is recalled by: treatment-resistant schizophrenia; agranulocytosis, seizures, myocarditis, sialorrhea. Haloperidol is recalled by: acute psychosis; EPS, NMS, QT.	Indication, toxicity pattern, route/onset, or contraindication hidden in the stem.
Fluoxetine/sertraline vs Amitriptyline	Fluoxetine/sertraline is recalled by: SSRIs; sexual dysfunction, GI upset, serotonin syndrome. Amitriptyline is recalled by: TCA; anticholinergic, cardiotoxic overdose.	Indication, toxicity pattern, route/onset, or contraindication hidden in the stem.

How this helps in Antipsychotics and Antidepressants: this page is meant to convert memorized pharmacology into option elimination. Read the left column first, then force yourself to say the mechanism, clinical use, toxicity, and reason another option is wrong.

Toxicity signatures

Drug / class	Toxicity pattern to actively search for	Immediate exam response
Clozapine	Link the prototype clue to organ toxicity, laboratory change, ECG change, bleeding, CNS depression, allergy, or pregnancy risk. Cue: treatment-resistant schizophrenia; agranulocytosis, seizures, myocarditis, sialorrhea	Stop/avoid the drug if the stem contains the danger sign; choose antidote or safer alternative when asked.
Haloperidol	Link the prototype clue to organ toxicity, laboratory change, ECG change, bleeding, CNS depression, allergy, or pregnancy risk. Cue: acute psychosis; EPS, NMS, QT	Stop/avoid the drug if the stem contains the danger sign; choose antidote or safer alternative when asked.
Fluoxetine/sertraline	Link the prototype clue to organ toxicity, laboratory change, ECG change, bleeding, CNS depression, allergy, or pregnancy risk. Cue: SSRIs; sexual dysfunction, GI upset, serotonin syndrome	Stop/avoid the drug if the stem contains the danger sign; choose antidote or safer alternative when asked.
Amitriptyline	Link the prototype clue to organ toxicity, laboratory change, ECG change, bleeding, CNS depression, allergy, or pregnancy risk. Cue: TCA; anticholinergic, cardiotoxic overdose	Stop/avoid the drug if the stem contains the danger sign; choose antidote or safer alternative when asked.
Lithium	Link the prototype clue to organ toxicity, laboratory change, ECG change, bleeding, CNS depression, allergy, or pregnancy risk. Cue: bipolar; tremor, hypothyroid, nephrogenic DI, Ebstein anomaly	Stop/avoid the drug if the stem contains the danger sign; choose antidote or safer alternative when asked.
Antipsychotics and Antidepressants	Any severe allergy, organ failure, pregnancy risk, or dangerous interaction can override first-line status.	Do not pick a drug only because it is famous.

How this helps in Antipsychotics and Antidepressants: this page is meant to convert memorized pharmacology into option elimination. Read the left column first, then force yourself to say the mechanism, clinical use, toxicity, and reason another option is wrong.

Contraindication filters

Clinical filter	What it changes	Exam habit
Pregnancy/lactation	Avoid teratogenic, fetal-toxic, or neonatal-toxic drugs; prefer established safer options.	Always scan age/sex/history lines.
Renal impairment	Accumulation increases toxicity for renally cleared drugs; dose interval may need extension.	Look for creatinine, oliguria, CKD, elderly patient.
Hepatic disease	Reduced metabolism, low albumin, and bleeding risk can change drug choice.	Check jaundice, cirrhosis, INR, albumin.
ECG/electrolytes	QT prolongation, heart block, hypokalemia, and hyperkalemia decide many answers.	Never ignore ECG and potassium.
Respiratory disease	Bronchospasm or respiratory depression risk can make a familiar drug unsafe.	Asthma/COPD/sleep apnea are not decorative details.
Bleeding risk	Antiplatelets, anticoagulants, thrombolytics, NSAIDs, and marrow-toxic drugs need caution.	Check ulcer, surgery, stroke, platelets, INR.
Clozapine	treatment-resistant schizophrenia; agranulocytosis, seizures, myocarditis, sialorrhea	Ask: where is this drug dangerous?
Haloperidol	acute psychosis; EPS, NMS, QT	Ask: where is this drug dangerous?
Fluoxetine/sertraline	SSRIs; sexual dysfunction, GI upset, serotonin syndrome	Ask: where is this drug dangerous?

How this helps in Antipsychotics and Antidepressants: this page is meant to convert memorized pharmacology into option elimination. Read the left column first, then force yourself to say the mechanism, clinical use, toxicity, and reason another option is wrong.

Drug interaction map

Interaction type	Mechanism	Common exam expression
CYP induction	Increases metabolism of substrate drugs and can cause treatment failure.	Rifampicin/carbamazepine/phenytoin reducing OCP, warfarin, antiretroviral, or steroid effect.
CYP inhibition	Raises substrate levels and toxicity.	Macrolide/azole/ritonavir/cimetidine/grapefruit toxicity stem.
Additive toxicity	Two drugs injure the same organ or pathway.	QT plus QT, bleeding plus bleeding, nephrotoxic plus nephrotoxic, CNS depressant plus CNS depressant.
Pharmacodynamic opposition	One drug blocks the desired effect of another.	NSAID reducing antihypertensive effect; beta blocker opposing beta agonist.
Clozapine	treatment-resistant schizophrenia; agranulocytosis, seizures, myocarditis, sialorrhea	Check whether the vignette adds another drug that amplifies toxicity or reduces benefit.
Haloperidol	acute psychosis; EPS, NMS, QT	Check whether the vignette adds another drug that amplifies toxicity or reduces benefit.
Fluoxetine/sertraline	SSRIs; sexual dysfunction, GI upset, serotonin syndrome	Check whether the vignette adds another drug that amplifies toxicity or reduces benefit.
Amitriptyline	TCA; anticholinergic, cardiotoxic overdose	Check whether the vignette adds another drug that amplifies toxicity or reduces benefit.

How this helps in Antipsychotics and Antidepressants: this page is meant to convert memorized pharmacology into option elimination. Read the left column first, then force yourself to say the mechanism, clinical use, toxicity, and reason another option is wrong.

Monitoring and dose adjustment

Monitoring target	Why it matters	What to remember
Clinical endpoint	Symptom relief or prevention outcome confirms benefit.	Pain, BP, seizure control, infection response, glucose, dyspnea, psychosis, bleeding.
Laboratory endpoint	Detects efficacy and silent toxicity.	Renal function, liver enzymes, CBC, electrolytes, coagulation, glucose, drug levels.
ECG	Many drugs alter conduction, QT, or rhythm.	QT prolongation, AV block, QRS widening, torsades risk.
Therapeutic drug monitoring	Needed when therapeutic window is narrow.	Lithium, digoxin, phenytoin, valproate, aminoglycosides, vancomycin, tacrolimus.
Clozapine	Monitoring depends on the toxicity implied by its mechanism and elimination.	treatment-resistant schizophrenia; agranulocytosis, seizures, myocarditis, sialorrhea
Haloperidol	Monitoring depends on the toxicity implied by its mechanism and elimination.	acute psychosis; EPS, NMS, QT
Fluoxetine/sertraline	Monitoring depends on the toxicity implied by its mechanism and elimination.	SSRIs; sexual dysfunction, GI upset, serotonin syndrome

How this helps in Antipsychotics and Antidepressants: this page is meant to convert memorized pharmacology into option elimination. Read the left column first, then force yourself to say the mechanism, clinical use, toxicity, and reason another option is wrong.

Emergency decision table

Emergency scenario	First pharmacology decision	Common mistake
Shock/anaphylaxis/severe acute state	Choose route and onset before elegance of mechanism.	Choosing an oral chronic drug for an emergency.
Poisoning/toxicity	Stabilize airway, breathing, circulation, then antidote if indicated.	Giving antidote while ignoring supportive care.
Severe infection or organ-threatening disease	Start rational empirical therapy promptly, then narrow when data arrives.	Waiting for perfect information in an unstable patient.
Withdrawal or rebound	Recognize dependence physiology and taper/replace appropriately.	Abruptly stopping clonidine, beta blockers, steroids, opioids, alcohol, or benzodiazepines.
Antipsychotics and Antidepressants: Clozapine	treatment-resistant schizophrenia; agranulocytosis, seizures, myocarditis, sialorrhea	Wrong route, delayed onset, or ignored contraindication.
Antipsychotics and Antidepressants: Haloperidol	acute psychosis; EPS, NMS, QT	Wrong route, delayed onset, or ignored contraindication.
Antipsychotics and Antidepressants: Fluoxetine/sertraline	SSRIs; sexual dysfunction, GI upset, serotonin syndrome	Wrong route, delayed onset, or ignored contraindication.
Antipsychotics and Antidepressants: Amitriptyline	TCA; anticholinergic, cardiotoxic overdose	Wrong route, delayed onset, or ignored contraindication.

How this helps in Antipsychotics and Antidepressants: this page is meant to convert memorized pharmacology into option elimination. Read the left column first, then force yourself to say the mechanism, clinical use, toxicity, and reason another option is wrong.

INI-CET stem decoding

Stem clue	What it is trying to test	Answer strategy
Age, pregnancy, renal/liver disease	Safety filter rather than diagnosis.	Eliminate unsafe drugs first.
New symptom after drug start	Adverse-effect signature.	Name the drug from toxicity.
Drug added recently	Interaction question.	Check CYP, QT, bleeding, CNS depression, nephrotoxicity.
Emergency wording	Route/onset question.	Prefer fast, titratable, evidence-based acute therapy.
Chronic prevention wording	Outcome benefit question.	Prefer disease-modifying therapy over only symptomatic relief.
Typical antipsychotics	high potency haloperidol; low potency chlorpromazine	Place this under Antipsychotics and Antidepressants, then compare with nearby alternatives.
Atypical antipsychotics	clozapine, risperidone, olanzapine, quetiapine, aripiprazole	Place this under Antipsychotics and Antidepressants, then compare with nearby alternatives.
Antidepressants	SSRIs, SNRIs, TCAs, MAOIs, atypicals	Place this under Antipsychotics and Antidepressants, then compare with nearby alternatives.
Mood stabilizers	lithium, valproate, carbamazepine, lamotrigine	Place this under Antipsychotics and Antidepressants, then compare with nearby alternatives.

How this helps in Antipsychotics and Antidepressants: this page is meant to convert memorized pharmacology into option elimination. Read the left column first, then force yourself to say the mechanism, clinical use, toxicity, and reason another option is wrong.

Rapid pathway

Read the stem

Disease, severity, age, pregnancy, organ function, emergency status.

V

Name the class

Mechanism and prototype before option elimination.

V

Apply exclusions

Contraindications, interactions, and toxicity signatures.

V

Pick final answer

Most specific safe drug for that exact stem.