6.10: VI Glossary

**Acetylcholine:** A neurotransmitter that stimulates nicotinic and muscarinic receptors in the parasympathetic nervous system.

**Adrenergic agonists:** Substances that stimulate SNS receptors and cause effects similar to epinephrine and norepinephrine.

**Adrenergic antagonists:** Substances that block SNS receptors.

**Agranulocytosis:** Extremely low white blood cell count and an adverse effect of clozapine and antipsychotic medication.

**Anticholinergics:** Substances that block the effects of PNS receptors.

**Black Box Warning:** A significant warning from the Food and Drug Administration (FDA) that alerts the public and health care providers to serious side effects, such as injury or death.

**Catecholamines:** Substances that include epinephrine, norepinephrine, and dopamine and are responsible for the body's “fight-or-flight” response.

**Central nervous system (CNS):** The brain and spinal cord.

**Cholinergics:** Substances that stimulate nicotinic and muscarinic receptors and cause effects similar to acetylcholine (ACh).

**Controlled substance:** Drugs regulated by federal law that can cause dependence and abuse.
Dopamine: A neurotransmitter that plays an essential role in several brain functions, including learning, motor control, reward, emotion, and executive functions.

Extrapyramidal side effects: Involuntary or uncontrollable movements, tremors, and muscle contractions that can occur with antipsychotic medications.

Gamma-aminobutyric acid and Glycine: Inhibitory neurotransmitters that act like brakes in a car by slowing down overexcited nerve cells. Low levels of GABA are associated with seizures, anxiety, mania, and impulse control. Pregabalin is an anticonvulsant that mimics the effects of GABA and is used to treat generalized anxiety disorder.

Glutamate: An excitatory neurotransmitter. Elevated levels of glutamate are associated with psychosis that can occur with schizophrenia, as well as with illicit drug use such as methamphetamines. Conversely, lamotrigine, a medication used to treat bipolar disorder, inhibits glutamate.

Histamine: A substance that mediates homeostatic functions in the body, promotes wakefulness, modulates feeding behavior, and controls motivational behavior. For example, diphenhydramine, a histamine antagonist, causes drowsiness.

Hypertensive crisis: A condition that can be caused by MAOIs with severe hypertension (blood pressure greater than 180/120 mm Hg) and evidence of organ dysfunction. Symptoms may include occipital headache (which may radiate frontally), palpitations, neck stiffness or soreness, nausea or vomiting, sweating, dilated pupils, photophobia, shortness of breath, or confusion.

Lithium toxicity: Lithium has a narrow therapeutic range of 0.8 to 1.2 mEq/L. Levels above this range cause lithium toxicity. Signs of early lithium toxicity include diarrhea, vomiting, drowsiness, muscular weakness, and lack of coordination. At higher levels, giddiness, ataxia, blurred vision, tinnitus, and a large output of dilute urine may occur.

Neuroleptic malignant syndrome (NMS): A rare but fatal adverse effect that can occur at any time during treatment with antipsychotics. It typically develops over a period of days to weeks and resolves in approximately nine days with treatment. Signs include increased temperature, severe muscular rigidity, confusion, agitation, hyperreflexia, elevation in white blood cell count, elevated creatinine phosphokinase, elevated liver enzymes, myoglobinuria, and acute renal failure.

Neurotransmitters: Chemical substances released at the end of a neuron by the arrival of an electrical impulse. They diffuse across the synapse and cause the transfer of the impulse to another nerve fiber, a muscle fiber, or other structure. Neurotransmitters interact with specific receptors like a key and a lock.

Norepinephrine and Epinephrine: Substances that stimulate alpha- and beta-receptors in the sympathetic nervous system.

Opiates: Powerful analgesics prescribed to treat moderate to severe pain (such as morphine and oxycodone). Opiates also include illicit drugs (such as heroin).

Opioid receptors: Mu, delta, and kappa receptors that are stimulated by endogenous peptides released by neurons (such as endorphins) and exogenous opiates.
**Opioid system:** A system in the brain that controls pain and reward and addictive behaviors.

**Parasympathetic Nervous System (PNS) receptors:** Nicotinic and muscarinic receptors that are stimulated by acetylcholine (ACh).

**Serotonin:** A neurotransmitter that modulates multiple neuropsychological processes such as mood, sleep, libido, and temperature regulation. Abnormal levels of serotonin have been linked to many mental health disorders such as depression, bipolar disorder, and anxiety. Many psychotropic medications target serotonin.

**Serotonin syndrome:** A syndrome caused by the combination of multiple medications that affect serotonin. It typically develops within 24 hours from the combination of medication and can range from mild to a life-threatening syndrome. Signs of serotonin syndrome include mental status changes (e.g., agitation, hallucinations, coma), autonomic instability (e.g., tachycardia, labile blood pressure, hyperthermia), incoordination, or gastrointestinal symptoms (e.g., nausea, vomiting, diarrhea). Serotonin syndrome, in its most severe form, can resemble neuroleptic malignant syndrome (NMS).

**SLUDGE:** A mnemonic for anticholinergic side effects: Salivation decreased, Lacrimation decreased, Urinary retention, Drowsiness/dizziness, GI upset, Eyes (blurred vision/dry eyes).

**Sympathetic Nervous System (SNS) receptors:** Alpha-1, Alpha-2, Beta-1, and Beta-2 receptors that are stimulated by epinephrine and norepinephrine.

**Tardive dyskinesia:** A syndrome of movement disorders associated with antipsychotic medications that persists for at least one month and can last up to several years despite discontinuation of the medications.