

Transmitter	Acetylcholine	Glutamate	GABA	Norepinephrine	Dopamine	Serotonin	Histamine
Type	Biogenic Amine	Amino Acid	Amino Acid	Biogenic Amine	Biogenic Amine	Biogenic Amine	Biogenic Amine
Direction	Ascending	Descending	All Over	Ascending			
Location	Cortex, Amygdala, Hippocampus	Basal Ganglia, Thalamus, Hippocampus, Cerebellum	Short Interneurons	Locus Coeruleus → Cortex, Hippocampus, Cerebellum	Substantia Nigra; Ventral Tegmental → Nucleus Accumbens, Frontal Cortex	Raphe Nucleus → Cortex, Thalamus, Basal Ganglia, All Over	Tuberomammill- ary nucleus of Hypothalamus
Function	Cognition, Movement	Fast synaptic excitatory transmission	Synaptic inhibition	PNS: Stimulate heart; CNS: Attentiveness, Mood	Movement (SN); Mood, Reward (FC)	Mood, Sleep	Wake / Sleep Cycle
Disorders	Parkinson's (+)	Epilepsy (+) Huntington's (+)	Epilepsy (-)	Depression (-) Withdrawal (+)	Parkinson's (-) Schizophrenia (+)	Depression (-) Sleep Disorder (-) Migraines Anxiety (-)	