TYPES OF NEUROTRANSMITTERS

Chemical messengers that that traverse the synaptic gap between neurons

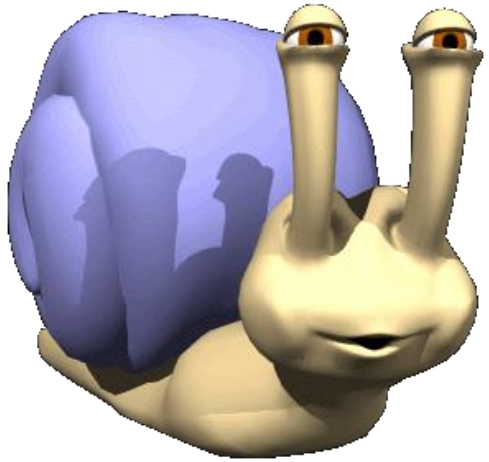
Agonist – mimic neurotransmitters
**Example: Morphine mimics endorphins

Antagonist – block neurotransmitters
**Example: Poison blocks muscle movement

Did you know? Botox is an antagonist that paralyzes facial muscles!

Acetylcholine (ACH)

- Deals with motor movement and memory.
- Triggers muscle contraction
- Lack of ACH has been linked to Alzheimer's disease.



Dopamine

- Deals with motor movement and alertness.
- Lack of dopamine has been linked to Parkinson's disease.
- Too much has been linked to schizophrenia.
- Think "Awakenings" L-Dopa

Serotonin

- Involved in mood control.
- Lack of serotonin has been linked to clinical depression.

Endorphins

- Involved in pain control.
- linked to pain control and to pleasure
- Many of our most addictive drugs deal with endorphins.

Neural Communication

TABLE 2.1

SOME NEUROTRANSMITTERS AND THEIR FUNCTIONS

Neurotransmitter	Function	Examples of Malfunctions
Acetylcholine (ACh)	Enables muscle action, learning, and memory	Undersupply, as ACh-producing neurons deteriorate, marks Alzheimer's disease
Dopamine	Influences movement, learning, attention, and emotion	Excess dopamine receptor activity linked to schizophrenia; starved of dopamine, the brain produces the tremors and decreased mobility of Parkinson's disease
Serotonin	Affects mood, hunger, sleep, and arousal	Undersupply linked to depression; Prozac and some other antidepressant drugs raise serotonin levels
Norepinephrine	Helps control alertness and arousal	Undersupply can depress mood
GABA (gamma-aminobutyric acid)	A major inhibitory neurotransmitter	Undersupply linked to seizures, tremors, and insomnia
Glutamate	A major excitatory neurotransmitter; involved in memory	Oversupply can overstimulate brain, producing migraines or seizures (which is why some people avoid MSG, monosodium glutamate, in food)