

## Important Neurotransmitters to Know

<i>Neurotransmitter</i>	<i>Function</i>	<i>Problems with Excess, Deficit</i>
Acetylcholine (ACh)	<ul style="list-style-type: none"> <li>• critical to motor movement (deliver messages from neurons to muscles)</li> <li>• learning</li> <li>• memory</li> </ul>	<ul style="list-style-type: none"> <li>• deficits in ACh production in Alzheimer's disease</li> </ul>
Dopamine	<ul style="list-style-type: none"> <li>• motor movement</li> <li>• alertness, attention</li> </ul>	<ul style="list-style-type: none"> <li>• deficit: Parkinson's disease</li> <li>• excess: schizophrenia               <ul style="list-style-type: none"> <li>○ schizophrenia often treated with <i>antipsychotic drugs</i>: block dopamine receptors, limiting the amount of dopamine being transmitted across synapse</li> </ul> </li> </ul>
Endorphins	<ul style="list-style-type: none"> <li>• pain control, stress reduction</li> <li>• feelings of pleasure</li> <li>• "natural opiates"</li> </ul>	<ul style="list-style-type: none"> <li>• deficits potentially involved in addiction?</li> </ul>
GABA (gamma-aminobutyric acid)	<ul style="list-style-type: none"> <li>• brain's major inhibitory neurotransmitter</li> </ul>	<ul style="list-style-type: none"> <li>• deficit: seizures, insomnia</li> </ul>
Glutamate	<ul style="list-style-type: none"> <li>• brain's major excitatory neurotransmitter</li> <li>• creates links between neurons that form basis of learning, long-term memory</li> </ul>	<ul style="list-style-type: none"> <li>• excess: overstimulation of brain (seizures?) (This is why people avoid food with MSG. MSG = monosodium <b>glutamate</b>)</li> </ul>
Norepinephrine (aka. noradrenaline)	<ul style="list-style-type: none"> <li>• "fight or flight"</li> <li>• controls alertness, arousal</li> <li>• elevates heart rate, circulation, respiration, etc.</li> <li>• mood elevation</li> </ul>	<ul style="list-style-type: none"> <li>• deficit: depressed mood</li> </ul>
Serotonin	<ul style="list-style-type: none"> <li>• mood regulation</li> <li>• hunger, sleep</li> </ul>	<ul style="list-style-type: none"> <li>• deficit: depressed mood               <ul style="list-style-type: none"> <li>○ depression often treated with <i>selective serotonin reuptake inhibitors (SSRIs)</i>: prevent serotonin from being reabsorbed in uptake, thus leaving more serotonin in synapses</li> </ul> </li> </ul>