

## NO Bioaction

NO has been implicated in numerous biological functions, including immune defense, smooth muscle contraction, retinal transduction, circadian rhythms, and memory. Because of its wide-ranging actions, we will focus on NO's role in smooth muscle contraction (specifically in blood pressure regulation) and in memory.

Nitric oxide has been found to decrease blood pressure by relaxing the smooth muscle tissue surrounding blood vessels. Smooth muscle contraction is dependent upon intracellular calcium ion concentration, and NO mediates muscle relaxation by lowering the calcium ion concentration in the cell. Certain cardiovascular diseases have been traced to faults with this mechanism.

Nitric oxide has been identified as a non-classical neurotransmitter that is released postsynaptically and acts on surrounding synapses. It has been connected to LTP, which may be involved in the cellular basis of learning and memory. The actual mechanism by which NO works is unknown.