



One cannot measure individual monoamines like serotonin or dopamine directly in humans. However, the binding potential (BP) of some receptors like serotonin₂ (5-HT₂) or dopamine₂ (D₂) receptors can be measured with PET brain imaging. The density of these receptor types increases when their respective neurotransmitter concentrations are low.

The top figure shows that during depressive episodes greater 5-HT₂ BP occurs when pessimism is greater. This is interpreted to argue that extracellular serotonin is lower when pessimism is greater during depressive episodes (taken from Meyer et al., Am J Psych 2003).

The lower figure shows that greater D₂ BP occurs when motor retardation is more severe during depressive episodes. This is interpreted to argue that extracellular dopamine is lowest in depression with more severe motor retardation (taken from Meyer et al., Am J Psych 2006).

