



Modernization of Monoamine Theory of Depression (A) Monoamine release in a synapse during health (B) During a major depressive episode, monoamine oxidase A (MAO-A) density is elevated resulting in greater metabolism of monoamines such as serotonin, norepinephrine and dopamine in the brain. Outcomes range from (C) to (D). (C) If the monoamine transporter density for a particular monoamine is low during a major depressive episode, the effect of elevated MAO-A upon reducing that particular monoamine in extracellular space is somewhat attenuated resulting in a moderate loss of monoamine. This eventually results in a moderate severity of symptoms associated with chronic loss of that particular monoamine. (D) If the monoamine transporter density for a particular monoamine is not low during a major depressive episode, then there is no protection against the effect of elevated MAO-A. The extracellular concentration of the monoamine is severely reduced and symptoms associated with chronic loss of that particular monoamine eventually become severe. Adapted from Meyer et al., Archives of General Psychiatry Nov. 2006.