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Fine-tuning treatments for depression

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New research clarifies how neurotransmitters like norepinephrine, serotonin, and dopamine, are regulated - a finding that may help fine-tune therapies for depression.

Current drugs for depression target the regulatory process for neurotransmitters, and while effective in some cases, do not appear to work in other cases.

Recent findings suggest that synucleins, a family of small proteins in the brain, are key players in the management of neurotransmitters -- specifically, alpha- and gamma-synuclein. Additionally, researchers have found elevated levels of gamma-synuclein in the brains of both depressed animals and humans.

In a study presented at the 39th annual meeting of the Society for Neuroscience, Georgetown University Medical Center researchers observed increased depressive-like behavior in mice where gamma-synuclein acts alone to regulate neurotransmitters, confirming earlier studies by this group.

"These findings show the importance of, and clarify a functional role for, gamma synuclein in depression and may provide new therapeutic targets in treatment of this disease," says Adam Oaks, a student researcher in the Laboratory of Molecular Neurochemistry at GUMC. "Understanding how current therapies work with the synucleins is important because the drugs don't work for all patients, and some are associated with side effects including an increased risk of suicide."

Source: Georgetown University Medical Center (news : web)