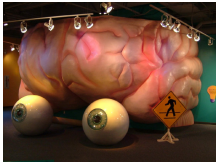


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By: Stefan Anitei, Science Editor



New Cocktail Makes the Brain Grow

It increases the number of synapses

You have to eat well to function well. To grow muscles you need proteins in your food. We stimulate our brain with various products, from caffeine to lecithin. But what about a cocktail making your brain grow?

A MIT team has discovered that a cocktail made of 3 chemicals, normally found in the blood stream, boosts the formation of new synapses (brain cell connections), improving cognitive skills in rodents, as it is detailed in the research published in "Brain Research". The drug is on trial with Alzheimer's patients and it can also cure other brain conditions and injuries.

The mix contains DHA (a type of omega-3 fatty acids, not synthesized in the body, but found in various types of food, like fish, eggs, flaxseed and meat from grass-fed animals), choline (synthesized in the body and comprised in meat, nuts and eggs) and uridine (not found in food, but synthesized in the human body as part of breast milk).

Alzheimer (old-age dementia, affecting about 5 million Americans) is characterized by the loss of synapses. In the last 30 years, studies have focused on the clumps of misfolded proteins, called amyloid beta plaques, forming in the brain of Alzheimer's patients, but with no effective treatment discovered.

"Nobody has demonstrated that if you prevent formation of the amyloid, people get better." said senior author Richard Wurtman, the Cecil H. Green Distinguished Professor of Neuropharmacology.

Cognitive decline occurring with Alzheimer's patients is rather provoked by the loss of brain synapses. Restoring lost synapses can improve patients' state, just like L-dopa in the case of Parkinson's patients.

"Such treatments don't cure the disease but can restore significant brain function," said Wurtman.

Synapses, transmitting data between neurons, are essential in learning and for memory. Rats given a cocktail multiplied the number of dendritic spines and received information from the postsynaptic neuron.

"That indicates that synapse regeneration has occurred, which is unusual. Synapse regrowth could also prove an effective treatment for other brain diseases, such as Parkinson's, or for brain injuries," said Wurtman.

Rats receiving the cocktail scored much better on cognitive ability tests (in this research, orientation in a water maze). Some rats received the whole cocktail, others just one component of the cocktail, but the best results were found with the rats that had been given the complete cocktail.