



Researchers Discover Uncharted Channel in the Brain Finding may help improve ALS, Alzheimer's, Parkinson's and Huntington's

Smart Sugars Lesson #66

by JC Spencer

It's an exciting adventure to make a discovery of uncharted territory. I know the feeling.

Today's technology allows us to make discoveries that yesteryear were unthinkable. An uncharted part of the brain is now ready to be mapped. Perhaps I should use the word "traced" instead of "mapped" because the river was there all along. We just did not know it carries a jet stream of fluid.

It was a thrill for me as a teenager in the 1950s to discover an uncharted waterfall in one of our country's largest caves, Marvel Cave at Branson, Missouri. I organized a spelunking expedition, hired a guide, and leased the cave for one night. We transcended the giant cathedral, then went quite off the tourist path. We crawled through a long narrow tunnel filled with bats and fresh guano. Like ants in single file, we scaled down a deep crevasse and floated on an inner tube to the other side of an underground lake. On the far shore, we saw various species of fish and translucent crawling life forms that had never seen the light of day. Beyond this cold, dark, wet chamber, we discovered the waterfall not yet listed on the maps.

Neuroscientists have just explored something far more surprising and significant than an uncharted waterfall in a giant cave. This historic discovery is an uncharted cleansing river inside the brain. It is believed that this stream coursing through the nervous system is capable of helping clear the brain of toxic detritus. The fluid stream is capable of flushing down the drain buildup of amyloid proteins associated with Alzheimer's, Huntington's, and other neurodegenerative disorders.

Scientists report several surprises in the cranial cleansing system study. One surprise includes jets of cerebrospinal fluid passageways coursing through the brain. Never before had scientists known the brain was capable of flushing larger size particles down the drain. Another surprise was to learn that nearly 40% of the fluid is actually recycled back to the brain.

The researchers, based at the University of Rochester (U.R.), University of Oslo and Stony Brook University, describe this new system in the journal *Science Translational Medicine*. The study adds to the evidence that the star-shaped cells called astrocytes play a leading role in keeping the nervous system in good working order.

The brain's major energy reserve is located in astrocytes. Research is showing the energy demands of activated astrocytes is high and very complex which causes a rise in consumption of blood glucose and oxygen. A mismatch of glucose and oxygen gives strong support to the hypothesis for causing and compounding oxidative stress.

These astrocyte star-shaped cells provide support to the neurons of the central nervous system, the brain, and spinal cord that are linked to the excitatory neurotransmission system. Protection of the astrocytes cells is of paramount importance to human health.

Astrocytes under oxidative stress are known to turn from nurturers to killers causing motor and mental neuron dysfunction leading to Alzheimer's, Parkinson's, Huntington's, ALS, and other neurodegenerative diseases.

Ability to overcome oxidative stress is monumental in human health, slowing down the aging process, and maintaining mental clarity. Evidence is conclusive that the sugar Trehalose strengthens and protects cell membrane from oxidative stress. Other Smart Sugars, especially mannose, modulate the immune system and contribute to helping overcome oxidative stress.

Sources:
http://www.scientificamerican.com/article.cfm?id=brain-cleaning-discovery&WT.mc_id=SA_DD_20120816
Expand Your Mind - Improve Your Brain
<http://www.endowmentmed.org/content/view/full/826/106/>
Change Your Sugar, Change Your Life
<http://DiabeticHope.com>
Smart Sugars Lesson #66
<http://www.endowmentmed.org/pdf/SmartLesson66>
http://EzineArticles.com/?expert=JC_Spencer
© The Endowment for Medical Research, Inc.
www.endowmentmed.org