

New Technology in Deep Brain Stimulation for Tremors



Shaking of the hands or head can impact a person's life in many ways. There can be several reasons for these tremors, from brain injury to illness, but the most common one is called simply "essential tremor."

Source: <http://cron.labroots.com/trending/neuroscience/6352/technology-deep-brain-stimulation->

Approximately 7 million people in the United States alone are affected by essential tremor.

Researchers at the University of Washington have come up with a new method of treating tremors. They have combined sensors on top of the brain that can pick up signals of movement in other parts of the body, like the hands and arms, with a Deep Brain Stimulation (DBS) electrode. When these signals are detected, the electrode will fire. Having the electrode rely on brain signals from sensors before firing is a first in DBS technology and hopefully will allow patients to have better control of their tremors with the targeted treatment. The research conducted by scientists and ethicists at the Center for Sensorimotor Neural Engineering (CSNE) will be published in a future issue of the journal IEEE Transactions on Neural Systems and Rehabilitation Engineering. The device could even be fine-tuned by the patient, for times when more or less stimulation is needed.

A Non-Invasive Brain Device for Parkinson's Disease

For treating Parkinson's disease (PD) Deep Brain Stimulation (DBS) is a preferable method. A system is implanted in the brain and connected to a transmitter also implanted, usually in the chest area, and electrical impulses are delivered directly to the area of the brain where PD tremors originate. The surgery to implant the electrodes, wires and transmitter is tricky, however, not every patient is a candidate for surgery. Scientists at the Massachusetts Institute of Technology (MIT) in collaboration with Beth Israel Deaconess Medical Center (BIDMC) and the IT'IS Foundation in Zurich have developed a form of DBS that is non-invasive.



Using electrodes placed on the scalp, their system could allow patients with PD or to get relief without having to undergo a risky surgery of opening the skull to place electrodes deep into brain tissue.

The system is quite customizable, just by changing the number and location of the electrodes on the scalp to fine tune the frequency and aiming or altering the currents to target specific neurons and networks in the brain. The system was tested on mice at MIT's Picower Institute for Learning and Memory and researchers there found that it was possible to stimulate small regions deep within the brain.

Source: <https://www.labroots.com/trending/neuroscience/6365/non-invasive-brain-device-parkinson-s>

Why is Eye Contact Difficult for People with Autism?

Eye contact is an important aspect of verbal communication. Yet, for some people with autism, the act of making eye contact is exceedingly difficult, and these people tend to avoid looking directly at another person in the eye. But this is not because people with autism are disinterested or indifferent. Rather, a new

research suggests that avoiding eye contact is a stress coping mechanism. Eye contact causes quite severe distress in people with autism. Paradoxically, they look away to actually engage in the conversation because breaking eye contact relieves the anxiety that stems from over activation in a particular part of the brain.

Source: <http://cron.labroots.com/videos/2951/why-eye-contact-is-difficult-for-people-with-autism>

Rare Genetic Mutation Makes People More Prone to Colds



Are you someone who frequently catches cold, whenever or whatever cold virus that's going around? Well, scientists now say that genetics could be blamed. The investigation into cold virus susceptibility was prompted by the case of a little girl who in her five

year lifespan has had numerous, often life-threatening, infections with the human rhinovirus, which causes the common cold. Researchers at the National Institute of Allergy and Infectious Diseases (NIAID) suspected a defect in her immune system. When they began probing her genetic profile in the hopes of finding a culprit, they discovered that indeed the 5-year-old girl had a mutation in a gene known as IFIH1. IFIH1 provides the instructions for the production of the MDA5 protein, which helps cells detect and recruit other proteins to fight off viral infections. In the case of the child, the mutation caused her body to produce an abnormal form of the MDA5 protein, which obstructed her cells from recognizing and launching an attack on human rhinoviruses (HRVs).

Fortunately, the mutation in the child is very rare; researchers reported a minor allele frequency of 0.06 percent. Furthermore, the mutation is found most commonly in East and South Asian populations.

Source: <https://www.labroots.com/trending/clinical-and-molecular-dx/6252/rare-genetic-mutation-makes-people-prone-colds>

The Brain Needs to Forget too!!

One of the crucial parts of the brain's function is to learn things and store what's necessary, so it's available for recall. In a process that isn't fully understood yet, the brain seems to realize what needs remembering and what can be forgotten. Recent research at the University of Toronto and the Hospital for Sick Children, however, suggests that the ability of the brain to forget information is just as important as what it stores in permanent long-term memories.

details. That finding is significant because these new neurons are often prevalent in younger people, which could be why many people have a difficult time remembering events that happened in early childhood. Forgetting some things is a necessary process in the brain, however. There is simply no room for everything!

In neuroscience, the function of memory in the brain, at the cellular level, is called "persistence" which happens when the neurons, via certain mechanisms, will store important memories long-term. It's a common focus in research. Another cellular process in the brain which doesn't get much notice in research studies is called "transience" and it deals with the fact that forgetting something isn't just a lapse in the memory-making process, but a separate process at its own.

It was found in the study that new neurons that grow in the hippocampus are involved in the brain forgetting some

Source: <https://www.labroots.com/trending/neuroscience/6427/brain-forget>

