Carnegie Mellon University Study

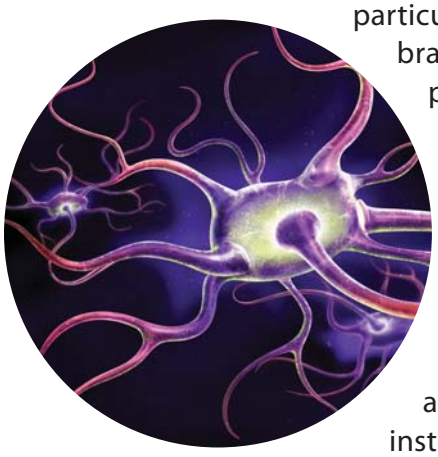
Study shows dyslexic brains can be permanently rewired with 100 hours of intensive cognitive skills training.

A 2008 Carnegie Mellon University brain imaging study found that the brains of dyslexic students and other poor readers were permanently rewired to overcome reading deficits after 100 hours of intensive remedial instruction.

Neuroscientist Marcel Just, the director for Carnegie Mellon's Center for Cognitive Brain Imaging, was the senior author of the study. In an article in the 7 August 2008 issue of Science Daily he explained that focused instruction (such as cognitive skills training) can use the plasticity of the brain (its ability to change) to gain educational improvement.

How did the study work?

The neuroscientists used special tools to study the brain activity patterns of two groups of children: poor readers and a control group. They found that before the intensive instruction, one particular area of the brain called the parietotemporal region was less activated among the poor readers than in the control group.



Immediately after intensive instruction, however, many of the poor readers' brain areas activated at near-normal levels with only a few areas underactive.

Perhaps most significant, after one year, the original poor readers were brought back in to be reevaluated. The results? The activation differences between good and poor readers were almost completely gone! The theory behind the results is that neural gains were strengthened over time, likely just due to the students simply engaging in more reading activities more often.

What type of intensive training was used?

The poor readers worked in groups of three for an hour a day using specialized training that included word decoding exercises and reading comprehension strategies.

As Marcel Just summarized, "when poor readers are learning to read, a particular brain area is not performing as well as it might, and remedial instruction helps to shape that area up."

The study backs up the 20+ years of work by Dr. Ken Gibson, founder of BrainRx. Gibson created the various cognitive skills training programs for the company based on his findings related to the brain's plasticity and the ability of cognitive skills therapy to rewire the brain to create better learners.

BrainRx™