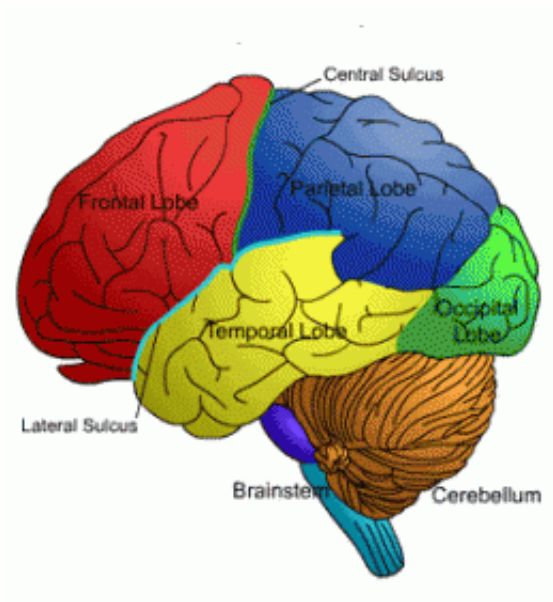


Research shows adult brains capable of rapid new growth

April 5 2011, by Bob Yirka



Brain diagram. Credit: dwp.gov.uk

(PhysOrg.com) -- In a paper published in *Proceedings of National Academy of Sciences*, Veronica Kwok, Li-Hai Tan, and their colleagues at the University of Hong Kong, conclude that the adult human brain is capable of new rapid growth when exposed to stimuli similar to what babies experience as they are learning from their environment.

The researches subjected 19 adult volunteers to a study where colored cards (2 shades of green and 2 blue) were shown to them; each with

nonsensical names. The participants were then asked to accept the new words as actual descriptors for the new colors and to memorize them so that they could reply with the correct color name at a later date and to match them when asked. After the conditioning was carried out (over three days with five sessions; total time less than two hours) the subjects all underwent MRI scans, where it was revealed that new grey matter had formed in the left hemisphere of their brains. It's not yet clear if the new matter was comprised of new neuron formation or if they were simply dendrites (branches).

Previous research has shown that new brain growth is possible over periods of time, but until now, it was thought that the human brain was incapable of adding [grey matter](#) over such a short period of time.

It appears the key lies in the name differentiation, and how the subjects perceived the colors based on the names they were given; something much deeper than say, asking subjects to simply memorize a list of names. It was a change in perception. This is backed up by the fact that the areas of the brain that grew new matter were parts of the brain known to process color and vision, but more importantly, perception.

The researchers were surprised by the findings as they'd set out to try to find answers to the long standing question of whether people come to perceive the world in certain ways depending on which language they happen to speak. Though they may not have solved that particular riddle, the results of their research might one day lead to new ways to help people with learning disabilities, or perhaps, even those with [brain](#) damage.

More information: Learning new color names produces rapid increase in gray matter in the intact adult human cortex, *PNAS*, Published online before print April 4, 2011, [doi:10.1073/pnas.1103217108](https://doi.org/10.1073/pnas.1103217108)

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