

# Jog your memory: brain cell secrets explored

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*January 20, 2010*

THE health benefits of a regular run have long been known, but scientists have never understood the curious ability of exercise to boost brain power.

Now researchers think they have the answer. Neuroscientists at Cambridge University have shown that running stimulates the brain to grow fresh grey matter and it has a big effect on mental ability.

A few days of running led to the growth of hundreds of thousands of brain cells that improved the ability to recall memories without confusing them, a skill that is crucial for learning and other cognitive tasks, researchers said.

The new brain cells appeared in a region that is linked to the formation and recollection of memory. The work reveals why jogging and other aerobic exercise can improve memory and learning, and potentially slow down the deterioration of mental ability in old age.

The research builds on a body of work that suggests exercise plays a vital role in keeping the brain healthy by encouraging the growth of brain cells. Previous studies have shown "neurogenesis" is limited in people with depression, but that their symptoms can improve if they exercise regularly.

Scientists are unsure why exercise triggers the growth of grey matter, but it may be linked to increased blood flow or higher levels of hormones that are released while exercising. Exercise might also reduce stress, which inhibits new brain cells through a hormone called cortisol.

The Cambridge researchers joined forces with colleagues at the US National Institute on Ageing in Maryland to investigate the effect of running.

They studied two groups of mice, one of which had unlimited access to a running wheel throughout. The other mice formed a control group.

After training sessions the mice in the exercising group scored almost twice as highly as the other mice in a repeated memory test for a sugar reward, a report in the *Proceedings of the National Academy of Sciences* said. The sedentary mice got steadily worse at the test.