In the news

WORKING OUT FOR BRAINY BABIES

Whether it is best for pregnant mothers to rest or to exercise is a frequently asked question that a study in mice may go some way towards answering. Increased neuronal production resulting from exercise has previously been shown in adult rodents, and, says Gerd Kempermann, who led a study on the effects of exercise during pregnancy on mouse pups at the Max Delbrück Center for Molecular Medicine in Berlin, Germany, “Now we’ve established that it seems to be transmissible to offspring” (*New Scientist*, 11 March 2006).

Kempermann and his team showed that although pups born to mice that had been active during pregnancy developed fewer neurons prenatally, they then developed up to 40% more hippocampal neurons — which are vital for learning and memory — during the first few weeks after birth than did the pups of inactive mothers. By 7 weeks of age, the difference in neuronal production rate had balanced out, but the researchers propose that the early variation could have long-term effects.

These results, says Kempermann, are “surprising and amazing” (*News@Nature.com*, 6 March 2006), although he acknowledges that we cannot assume that exercise during pregnancy has similar effects in humans.

The reasons for the variations in neuronal production are unknown, and given that exercise produces stress hormones, and that stress during pregnancy is known to depress neuronal production in mouse pups, these results are surprising. It could be that a combination of factors is involved. For example, exercising mothers may be healthier, and other differences in their behaviour — such as increased licking and grooming — might stimulate neuronal production in their newborn pups. As Elizabeth Gould, who studies neuronal production at Princeton University in New Jersey, USA, says, “There’s not just one magic bullet” (*News@Nature.com*).

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