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[Society for Experimental Biology](#)

## Mice run faster on high-grade oil

Between the 1932 and 2008 Olympic Games, world record times of the men's 100m sprint improved by 0.6 seconds due to improved training techniques and technological advances. Imagine if this improvement could be achieved by a simple change in diet. Scientists at the Research Institute of Wildlife Ecology in Austria have managed to achieve an equivalent feat in mice fed on a diet high in polyunsaturated fatty acids.

Polyunsaturated fatty acids are important dietary components which mammals cannot synthesize de novo. The research, to be presented on 29th June 2009 at the Society for Experimental Biology Annual Meeting, has shown that mice fed for two weeks on a diet high in sunflower oil, which contains n-6 polyunsaturated fatty acids, ran on average 0.19m/s faster than mice fed a diet rich in linseed oil, which is high in n-3 fatty acids. This means that, over a 2 second sprint, a mouse fed on a high n-6 fatty acid diet would have a 0.4m advantage. This represents a 6.3% improvement which equals that achieved in the 100m world records over more than 75 years. For a mouse, or other small mammal, this would be significant in evolutionary terms when escaping from a predator or catching prey. "The results of the current study on mice suggest that moderate differences in dietary n-6/n-3 polyunsaturated fatty acid intake can have a biologically meaningful effect on maximum running speed", says Dr Christopher Turbill who will be presenting the research.

A previous study by the group, which looked at a range of mammal species, found that those with a relatively high n-6 fatty acid content in their skeletal muscles had a greater maximum running speed. Combined, these two studies suggest that diets enriched in these fatty acids "could also affect the maximum (or burst) running speed of other vertebrates, including humans" says Dr Turbill. "The application of this research to the performance of elite athletes (specifically those in sports that involve short distance sprints, including cycling) is uncertain, but in my opinion certainly deserves some further attention" he says.

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