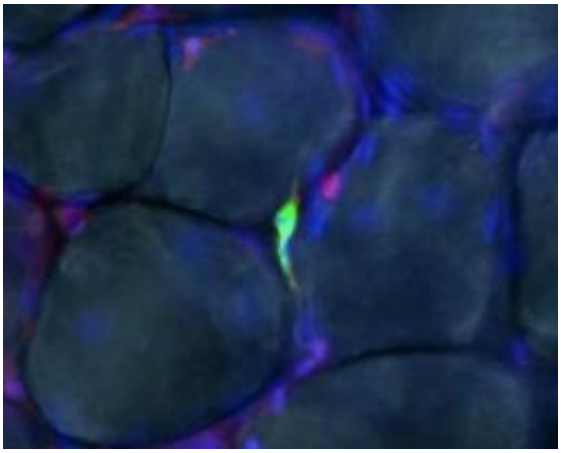
How training gets your fat fit

February 28 2012



(Medical Xpress) -- Researchers at the Universities of Bath, Oxford and Toulouse have been looking at how adipose tissue (fat) plays a dynamic and active role during exercise and physical activity.

An extensive review has been published in *Physiological Reviews*, an invitation-only flagship journal of the American Physiological Society which only publishes 35-40 papers per year.

For the first time, the authors have evaluated current understanding of how adipose tissue responds to exercise and physical activity. By combining the evidence from their own research with that of other people they have been able to draw up some new conclusions.

In contrast to popular belief, fat, technically-known as adipose tissue, is much more than just 'fat'. Indeed, up to 40 per cent of the tissue is made up of non-fat cells.

Dr Dylan Thompson, Senior Lecturer in the Department for Health at the University of Bath said:

"Many people increase their physical activity in order to lose weight. Exercise certainly will help to lose adipose tissue because the fat cells (adipocytes) within the tissue shrink, as the fat stored within them is used for metabolism."

However, in this review, led by Dr Thompson, the authors show that adipose tissue doesn't just shrink with increased physical activity, it actually responds in other ways which have a benefit on the body.

For example, it causes increased blood flow within the tissue and actively releases chemical messengers such as Interleukin-6 for several hours after an acute bout of exercise has finished. These have health benefits for the adipose itself but also affect other tissues, like telling muscles to use more fat as a fuel.
This review also shows that adipose tissue becomes better at doing its job as physical activity is increased. It becomes more responsive to other signals such as hormones – an important characteristic of good metabolic health. In some ways, your fat becomes fitter over time.

Dr Thompson said: "Just looking at the weighing scales when you increase your physical activity will only tell you part of the story – your adipose tissue may be doing some quite amazing things underneath, even without getting any smaller.

"Adipose tissue has been relatively neglected for many years, and a better understanding of these processes will not only lead to improved

exercise guidelines, but also new targets for therapies and treatments."

Physiological Reviews is the number one ranking journal in physiology with an impact factor of around 30. This places the journal around 20th position out of more than 8,000 journals.

The University of Bath will be hosting the 39th Adipose Tissue Discussion Group in December and is expecting up to 150 delegates from around the UK to attend and hear the latest updates on adipose tissue physiology.

More information: The full citation can be accessed at opus.bath.ac.uk/28474/

Provided by University of Bath