How Coconut Oil Reduces Type II Diabetes

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A new study in animals demonstrates that a diet rich in coconut oil protects against ‘insulin resistance' (an impaired ability of cells to respond to insulin) in muscle. The diet also avoids the accumulation of body fat caused by other high fat diets of similar calorie content. Together these findings are important because obesity and insulin resistance are major factors leading to the development of Type 2 diabetes.

The study is also interesting because it helps explain human studies showing that people who incorporate medium chain ‘fatty acids', such as those found in coconut oil, into their diets can lose body fat.

Dr Nigel Turner and Associate Professor Jiming Ye, from Sydney's Garvan Institute of Medical Research, compared fat metabolism and insulin resistance in mice fed coconut oil and lard based diets. Their findings are now published online in the international journal *Diabetes*.

"The medium chain fatty acids, like those found in coconut oil, are interesting to us because they behave very differently to the fats normally found in our diets," said study leader Nigel Turner.

"Unlike the long chain fatty acids contained in animal fats, medium chain fatty acids are small enough to enter mitochondria - the cells' energy burning powerhouses - directly, where they can then be converted to energy."

"Unfortunately the downside to eating medium chain fatty acids is that they can lead to fat build up in the liver, an important fact to be taken into consideration by anyone considering using them as a weight loss therapy."

Fat storage is determined by the balance between how much fat is taken in by cells and how much of this fat is burned for energy. When people eat a high fat diet, their bodies attempt to compensate by increasing their capacity to oxidise fat. The medium chain fatty acid (coconut oil) diet was more effective at increasing the oxidative capacity of muscle than the long chain fatty acid (lard) diet leading to less fat storage in muscle and better insulin action.

According to Turner, the lard-based diet used in this research is similar to the diet eaten by people in the Western world. "Its fatty acid composition is about 40% saturated fats, 40% monounsaturated fats and 20% polyunsaturated fats, of which the vast proportion is omega-6, rather than omega-3," he said.

"Obese humans usually eat 40-50% of their calories as fat. Our mice were fed 45% of their calories as fat."

"No high fat diet is good, and the normal dietary combination of long chain fats leads to an overload that our bodies can't cope with. Therefore high consumption of common dietary fats is contributing directly towards

the global escalation of obesity and Type 2 diabetes."

"If someone is trying to prevent weight gain, we can see they may benefit from substituting oils containing medium chain fatty acids for other oils in their diet, as long as consideration is given to the potential problem of excess fat in the liver. Other natural dietary alternatives, such as fish oil, might be helpful because the fatty acids in fish oil are thought to exert a lot of their beneficial effects through improving fat oxidation in the liver."

ABOUT GARVAN

The Garvan Institute of Medical Research was founded in 1963. Initially a research department of St Vincent's Hospital in Sydney, it is now one of Australia's largest medical research institutions with nearly 500 scientists, students and support staff. Garvan's main research programs are: Cancer, Diabetes and Obesity, Immunology and Inflammation, Osteoporosis and Bone Biology, and Neuroscience. The Garvan's mission is to make significant contributions to medical science that will change the directions of science and medicine and have major impacts on human health. The outcome of Garvan's discoveries is the development of better methods of diagnosis, treatment, and ultimately, prevention of disease.

Type II Diabetes and IR in Horses are closely related. Feeding your horse coconut Oil in the form of PowerStance may help him to overcome metabolic problems.