

## Who knew? Compound in apples fights obesity, diabetes and fatty liver disease

Source: John Phillip, *NaturalNews.com*

Overweight and obesity continue to plague a majority of men, women and children alike, placing them at considerable risk for heart disease, diabetes and fatty liver disease as a result of chronic metabolic dysfunction. Alternative health practitioners understand that the problem is the result of much more than a simple 'calories-in, calories-out' equation, as refined, synthetic foods provide the dominant source of calories in most modern diets. Our genetic structure does not support a high yield of calories from unnatural sources, and we rapidly become metabolically 'broken.'

Researchers from the *University of Iowa*, publishing the result of their work in the journal *PLoS ONE*, have found that a substance known as ursolic acid reduces obesity and its associated health problems by increasing the amount of muscle and brown fat, two tissues recognized for their calorie-burning properties. Ursolic acid is highly concentrated in the skin of apples, and can now be added to the growing list of natural compounds (including green tea and green coffee bean extracts) that increase metabolism and directly influence gene expression to aid weight management and health issues.

### **Ursolic acid from apple skins triggers weight loss and improves metabolic dysfunction**

The study, conducted on mice that have demonstrated similar metabolic characteristics to humans, involved feeding a high-fat diet over a period of three weeks to test for weight gain or loss, and comparing to a control group. Prior studies have shown that the active natural compound, ursolic acid, increases muscle mass and also stimulates the production of metabolically active brown adipose tissue. Recent studies have shown that this type of fatty tissue is associated with reduced body weight as compared to white adipose cells known to expand and store excess body weight.

The lead study author, Dr. Christopher Adams commented *"Since muscle is very good at burning calories, the increased muscle in ursolic acid-treated mice may be sufficient to explain how ursolic acid reduces obesity. However, we were surprised to find that ursolic acid also increased brown fat, a fantastic calorie burner."* The mice that received a high-fat diet along with ursolic acid derived from apples gained less weight and their blood sugar level remained near normal. Ursolic acid-treated mice also failed to develop obesity-related fatty liver disease, a common and currently untreatable condition.

Dr. Adams concluded *"Our study suggests that ursolic acid increases skeletal muscle and brown fat leading to increased calorie burning, which in turn protects against diet-induced obesity, pre-diabetes and fatty liver disease."* The researchers used a low concentration of ursolic acid equivalent to eating one or two apples each day to conduct their study. An apple a day, along with a natural food diet void of refined carbohydrates and hydrogenated fats may be just what the naturopathic doctor ordered to

control obesity and prevent metabolic syndrome and fatty liver disease.

**Sources for this article include:**

<http://www.plosone.org>