

Simple blood test predicts obesity

October 31 2008

According to new research from the Monell Center, the degree of change in blood triglyceride levels following a fatty meal may indicate susceptibility to diet-induced obesity. The findings open doors to new methods of identifying people, including children, who are at risk for becoming obese.

Triglycerides are a form of fat that is transported in the blood and stored in the body's fat tissues. They are found in foods and also are manufactured by the body.

"These findings suggest we may someday be able to use a simple blood test to identify those at risk for obesity," said senior author Mark Friedman, PhD, a behavioral physiologist at Monell. "The ability to identify more susceptible individuals would make it possible to target obesity-prevention resources on those who need them most."

The global obesity epidemic is thought to be caused in part by consumption of a diet high in fat and carbohydrates, which promotes weight gain. This propensity to gain weight and become obese when consuming a high-fat diet is at least partially controlled by genes, with some individuals gaining more than others while eating the same diet.

In the study, published in the *International Journal of Obesity*, Friedman and lead author Hong Ji, PhD, screened rats for vulnerability to diet-induced obesity by measuring the increase in blood triglyceride levels following a single high-fat meal. They then fed the rats a diet high in fat over the next four weeks.

The researchers were able to predict which animals would become obese over the four-week period by examining the earlier metabolic response to the high-fat meal: the smaller the triglyceride change, the greater the weight gain.

There currently are no simple biomarkers for predicting susceptibility to diet-induced obesity, and thus no clinical tests that assist physicians in identifying those at risk for becoming obese. The current findings suggest that a change in blood triglyceride levels may someday be used as such a tool.

Future studies will entail a thorough investigation of the mechanism behind differences in the change in blood triglycerides.

"The differences in weight gain associated with high-fat diets indicate that genetically-determined factors contribute to obesity," notes Friedman. "We have shown that these genetic factors are related to the body's ability to burn fat. We now need a better understanding of how this relates to blood triglyceride levels."

Longer term, Friedman, who received a 2008 Guggenheim Fellowship to pursue his studies on diet and obesity, hopes to determine whether such a blood test is predictive of future weight gain in humans.

Source: Monell Chemical Senses Center

Citation: Simple blood test predicts obesity (2008, October 31) retrieved 18 April 2024 from <https://medicalxpress.com/news/2008-10-simple-blood-obesity.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is

provided for information purposes only.