Evolutionary origins of human dietary patterns

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William Leonard has conducted extensive research on the diets and ways of prehistoric populations. A paper on his research will be presented Friday, Feb. 15, at the annual meeting of the American Association for the Advancement of Science (AAAS). The research shows that the transition from subsistence to a modern, sedentary lifestyle has created energy imbalances that have increased rapidly—evolutionarily speaking—in recent years and now play a major role in obesity.

Leonard, chair and professor of anthropology in the Weinberg College of Arts and Sciences at Northwestern University, was scheduled to present his research. However, in his absence, the presentation of his paper, "Metabolic Challenges of the Modern World: Evolution and Human Nutritional Health," will be given by his colleague. The presentation is part of the symposium "The Scars of Human Evolution" .

The presenter will discuss Leonard's work examining the evolutionary origins of human dietary and activity patterns and their implications for understanding modern health problems. Drawing on data from the U.S. and traditional, subsistence-level societies, the presenter will examine the roles of both diet and energy expenditure in contributing to the rising obesity rates in the modern world.

Over the last 25 years, evolutionary perspectives on human dietary consumption and nutritional health have received greater attention among both anthropologists and nutritional scientists. Humans have evolved distinctive nutritional characteristics associated with the high

metabolic costs of our large brains.

"The evolution of larger hominid brain size necessitated the development of foraging strategies that both provided high quality foods and required larger ranges and activity budgets," Leonard said.

"Over time, human subsistence strategies have become more efficient in obtaining energy with minimal time and effort. Today, populations of the industrialized world live in environments characterized by low levels of energy expenditure and abundant food supplies contributing to growing rates of obesity."

Leonard's research has focused on biological anthropology and the adaptability, nutrition and growth and development of people in South America, Siberia and the United States. He has extensive field experience and has traveled the world to conduct research.

In October 2011, the Discovery Channel aired "I Caveman." Leonard was a consultant on the program, which examined how well modern-day humans could adapt to a traditional hunting and gathering way of life in high-altitude Colorado. He evaluated changes in body weight and health status in the participants over the course of the experiment. The 10 participants all lost weight, experienced significant improvements in blood pressure, cholesterol and blood glucose levels, while following a typical Paleolithic lifestyle-consuming a diet of game, fish and wild plant foods.

Provided by Northwestern University

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