

HUMAN NUTRITION

Title: Protein Intake in Potentially Insulin Resistant Adults: Impact on Glycemic and Lipoprotein Profiles - **NPB #01-075**

Investigator: Gail Gates, PhD, RD/LD

Institution: Oklahoma State University

Date Received: 7/1/2002

I. Abstract:

Adults who are insulin resistant may improve their blood sugar control without elevating blood lipids if they consume a high protein diet, such as lean pork. To address this hypothesis, we examined cross-sectional data from the Third National Health and Nutrition Examination Survey (1988-1994). A total of 13,794 adults met at least one of the following criteria that places them at increased risk for insulin resistance: overweight (BMI ≥ 27); abdominal obesity (waist circumference >97 cm for women or 102 cm for men); family history of type 2 diabetes; elevated fasting blood sugar (>110 mg/dL); or moderately elevated serum triglyceride (150-499 mg/dL). Subjects were divided into quartiles of total and animal protein intake. Differences in blood sugar and lipid concentrations by protein quartiles were analyzed using SUDAAN after adjusting for sex, age, BMI, waist circumference, fat, carbohydrate, and alcohol intake, physical activity, and number of risk factors. Adults who ate the most total and animal protein intake had the lowest serum total and high density lipoprotein (HDL) cholesterol. Adults who were in the second lowest quartiles of total and animal protein intake had the lowest insulin concentrations ($P < 0.05$). Serum low density lipoprotein (LDL) cholesterol, triglycerides, glucose, and glycated hemoglobin were not significantly related to protein intake after adjusting for the confounding variables. Therefore, total and animal protein intakes were not consistently associated with blood sugar control or indicators of cardiovascular risk.

These research results were submitted in fulfillment of checkoff funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer reviewed

For more information contact:

National Pork Board, P.O. Box 9114, Des Moines, Iowa USA

800-456-7675, Fax: 515-223-2646, E-Mail: porkboard@porkboard.org, Web: <http://www.porkboard.org/>