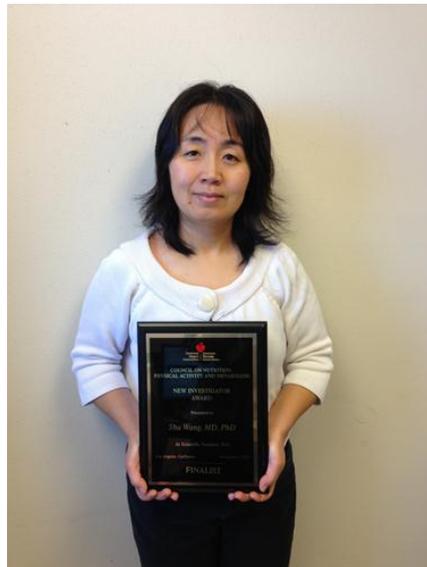


Congratulation to Dr. Shu Wang (NHR): One of three finalists for the American Heart Association's Council on Nutrition, Physical Activity & Metabolism-2012 Young Investigator Award



Dr. Shu Wang has been selected as one of three finalists for the American Heart Association's Council on Nutrition, Physical Activity & Metabolism-2012 Young Investigator Award. The finalists selected are as follows:

Quinn R Pack (Mayo Clinic), Shu Wang (Texas Tech University), & Wing Tak Wong (Stanford Univ, Stanford, CA; and Chinese Univ of Hong Kong, Hong Kong, Hong Kong)

The following abstract has been published on Circulation (Impact factor 14.8)

Effect of Atherogenic Diets with Different Ratios of Omega-6 Polyunsaturated Fatty Acids to Eicosapentaenoic Acid Plus Docosahexaenoic Acid on Lipid Content and Inflammatory Response in Hepatic and Visceral Adipose Tissue in LDL Receptor Null Mice

Shu Wang¹; Bradley Miller²; Nirupa R Matthan³; Dayong Wu⁴; Alice H Lichtenstein³

¹ Nutrition, Texas Tech Univ, Lubbock, TX,

² Pathology, Texas Tech Univ, Lubbock, TX,

³ Cardiovascular Nutrition, Tufts Univ, Boston, MA,

⁴ Nutritional Immunology, Tufts Univ, Boston, MA

BACKGROUND: Although lower omega (ω)-6 polyunsaturated fatty acids: eicosapentaenoic acid (EPA) plus docosahexaenoic acid (DHA) ratio diets have hypolipidemic, anti-inflammatory, and anti-

atherosclerotic properties, the potential for the hepatic and visceral adipose tissue to mediate these effects has not been studied. LDL receptor null (LDLR^{-/-}) mice were used to assess the effect of atherogenic diet with different ratios of ω -6:EPA+DHA on the lipid content and inflammatory response in hepatic and visceral adipose tissue.

METHODS AND RESULTS: One group of mice (n=10) were fed a low saturated and cholesterol (LF) diet, and 4 groups of mice (n]10/group) were fed a high saturated fat and cholesterol (HSF) diet without EPA and DHA (HSF ω -6), or with ω -6:EPA+DHA at ratios of 20:1 (HSF R = 20:1), 4:1 (HSF R = 4:1), and 1:1 (HSF R = 1:1) for 32 weeks. The fatty acid profile in hepatic and visceral adipose tissue reflected that of the diets. The HSF R = 1:1 compared to HSF ω -6 diet significantly lowered the hepatic content of total cholesterol (TC) and cholesteryl ester, and triglyceride content in visceral adipose tissue. Aortic TC content was correlated with hepatic TC content and triglyceride content in hepatic and visceral adipose tissue. The HSF R = 1:1 compared to HSF ω -6 diet significantly decreased the gene expression of interleukin-6 (IL-6), tumor necrosis factor alpha (TNF α), and monocyte chemoattractant protein-1 (MCP-1), CD68, F4/80, fatty acid binding protein 5 (FABP5) and 3-hydroxy-3-methylglutaryl-Coenzyme A reductase (HMGCR) in visceral adipose tissue, and cytochrome P450 7A1 (CYP7A1) in livers. The gene expression of TNF α , CD68, F4/80, and FABP5 in visceral adipose tissue was 2-fold lower in the HSF R = 1:1 relative to LF diet group.

CONCLUSIONS: These data suggest that the HSF diet increases, and lower ω -6:EPA+DHA ratio diets decrease lipid accumulation and inflammatory response in hepatic and visceral adipose tissue, which may partially contribute to the lower systemic inflammatory and anti-atherosclerotic response.