SOUTHWESTERN NEWS

Contact: Bridgette Rose McNeill
(214) 648-3404
or e-mail: bmcnei@mednet.swmed.edu

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UT SOUTHWESTERN SCIENTISTS PINPOINT GENE THAT MAY UNRAVEL OBESITY COMPLICATIONS

DALLAS – February 28, 1998 – Researchers at UT Southwestern Medical Center at Dallas have pinpointed the location of a human gene that causes some individuals to lose body fat, a discovery that may aid people with obesity-related illnesses, such as adult-onset diabetes, hypertension and cholesterol disorders.

Localization of the gene for familial partial lipodystrophy (FPLD) is reported in the March issue of *Nature Genetics* by Dr. Abhimanyu Garg, Dr. Anne Bowcock and their colleagues. FPLD is a genetic disorder characterized by abnormal body-fat distribution.

At the onset of puberty, patients with FPLD lose subcutaneous body fat — fat under the skin — from their extremities and trunk area, which results in a very muscular appearance, but they gain excess fat in the head, neck and abdomen. Those affected are often insulin resistant, glucose intolerant, and have diabetes, high triglycerides and low levels of high-density lipoproteins (HDL), the "good" cholesterol.

"We know that obesity is strongly related to these metabolic disorders, but the mechanisms involved are not known," said Garg, one of the senior authors and associate professor of internal medicine. Garg is a senior investigator in the Center for Human Nutrition at UT Southwestern.

Because FPLD patients also have obesity-related illnesses, identifying the molecular basis of FPLD may be relevant to other patients with obesity.

"By studying this single-gene disorder we also may be able to understand why individuals with truncal obesity — those who are apple-shaped or pot-bellied — are more prone to

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complications than those with lower-body obesity, often called pear-shaped obesity," Garg said.

Investigators performed genetic screenings on five families with FPLD and located the gene on the long arm of human chromosome 1.

Bowcock, associate professor of pediatrics and the report's other senior author, said, "All the affected members in the families we studied inherited the same region of chromosome 1, suggesting that this particular disorder may be caused by only one defective gene."

This is the first successful genetic mapping of a lipodystrophy gene and is an important step toward identifying defective genes for obesity-related disorders.

The research was a collaborative effort among UT Southwestern's General Clinical Research Center, Eugene McDermott Center for Human Growth and Development, and the Center for Human Nutrition. Others authors on the paper included: medical scientist trainee John Peters; programmer analyst Robert Barnes; fellow Dr. Lynda Bennett; and Dr. William Gitomer, assistant professor of internal medicine.

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