SOUTHWESTERN NEWS

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$1.6 MILLION NIH GRANT TO FUND RESEARCH INTO BODY-FAT DISORDERS

DALLAS—April 12, 1999—The National Institutes of Health has awarded a $1.6 million grant to researchers at UT Southwestern Medical Center to study rare body-fat diseases, research that may also expand understanding of common forms of obesity.

The four-year grant from the National Institute of Diabetes and Digestive and Kidney Diseases will allow investigation into the genetic and metabolic basis of inherited forms of lipodystrophy, disorders characterized by a partial or complete lack of body fat. Researchers will search for the genes responsible for two conditions – congenital generalized lipodystrophy and familial partial lipodystrophy – Dunnigan variety (FPLD).

Individuals with congenital lipodystrophy are born with almost no body fat. Those with FPLD lose subcutaneous fat from their extremities and trunk at the onset of puberty, but gain excess fat in the head, neck and abdomen. Both groups appear extremely muscular yet suffer the same complications as obese people: insulin resistance, glucose intolerance, diabetes and high lipids.

A year ago, UT Southwestern researchers pinpointed the location of the gene that causes FPLD on chromosome 1, but they have not yet isolated the gene. Studies are under way to find the location of the gene that causes congenital lipodystrophy.

"If we can find out why these genetic defects cause loss of fat and also cause complications associated with insulin resistance, hopefully we will learn more about common types of obesity," said Dr. Abhimanyu Garg, associate professor of internal medicine and researcher in the Center for Human Nutrition. Garg is principal study investigator.

The disorders are extremely rare, with congenital lipodystrophy affecting roughly one in 12.5 million people, and familial partial lipodystrophy affecting roughly one in 25 million. Obesity, on the otherhand, affects more than half the population in many countries. About 97 million American adults are classified as overweight or obese.

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"The identification of gene defects will allow us to define the normal role of these genes in the growth and development of body fat during embryonic life and at the start of puberty," Garg said. "We will also elucidate how these genes affect the action of insulin on the fat cells, which will lead to a better understanding of how common obesity causes insulin resistance and other metabolic complications."

Researchers will study dozens of families in the General Clinical Research Center, testing them for glucose and fat metabolism. Whole-body magnetic resonance imaging will be employed to characterize the extent and location of fat loss – a technique developed at UT Southwestern. DNA samples from family members will be used to find genes responsible for these disorders.

Other investigators on the project include: Dr. Anne Bowcock, associate professor of internal medicine; Dr. Ronald Peshock, professor of radiology and internal medicine; and Dr. Peter Snell, assistant professor of internal medicine.

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