

Scientists discover new fat cell

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As if fat weren't troublesome enough, a research team at the University of Colorado School of Medicine has discovered a new type of fat cell with potentially harmful characteristics.

The new fat cells arise from [stem cells](#) in the bone marrow that travel through the blood stream to fat tissue. They are termed bone marrow progenitor-derived adipocytes. The discovery also revealed that male and female subjects accumulate the new fat cells differently. The research also may help to explain the link between types of obesity and heart disease and other illnesses.

The findings by Dwight J. Klemm, PhD, and Susan M. Majka, PhD, are reported this week in the *Proceedings of the National Academy of Science* of the United States of America.

"Our results explain why the accumulation of fat in certain body locations harms health," Klemm said.

According to Majka, the research "may identify ways to prevent those adverse effects as people age or gain weight."

The body stores energy in fat - either white or brown cells. But over time too much fat can cause health issues. Previously, the researchers at the University of Colorado Anschutz Medical Campus had traced certain fat cells back to bone marrow. It appeared likely that a type of stem cell (the hematopoietic cell) was getting into the blood stream and settling somewhere else.

The latest research, which used laboratory mice but applies to humans, demonstrates that is the case. It shows that these stem cells travel through the blood stream into fat tissue and tend to accumulate in deep abdominal fat, primarily of females. This new type of fat may affect the body's ability to dispose of fats and sugars, and produces inflammatory problems. The results also help explain why fat in different parts of the body behaves differently. The research team now is detailing the health threats these fat cells cause and looking for ways to halt the formation and accumulation of harmful fat.

Faculty at the University of Colorado's School of Medicine work to advance science and improve care. These faculty members include physicians, educators and scientists at University of Colorado Hospital, The Children's Hospital, Denver Health, National Jewish Health, and the Denver Veterans Affairs Medical Center. Degrees offered by the School of Medicine include doctor of medicine, doctor of physical therapy, and masters of physician assistant studies. The School is located on the Anschutz Medical Campus, one of four campuses in the University of Colorado system. For additional news and information, please visit the UC Denver newsroom online.

The University of Colorado Anschutz Medical Campus is a model for the type of interdisciplinary research in translational medicine that will take basic discovery "from the bench to the bedside."

Provided by University of Colorado Denver

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