

New evidence that fat cells are not just dormant storage depots for calories

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Scientists are reporting new evidence that the fat tissue in those spare tires and lower belly pooches — far from being a dormant storage depot for surplus calories — is an active organ that sends chemical signals to other parts of the body, perhaps increasing the risk of heart attacks, cancer, and other diseases.

They are reporting discovery of 20 new hormones and other substances not previously known to be secreted into the blood by human fat cells and verification that fat secretes dozens of hormones and other chemical messengers. Their study appears in ACS' monthly [Journal of Proteome Research](#).

Anja Rosenow and colleagues note that excess body fat can contribute to [heart disease](#), diabetes, cancer and other diseases. Many people once thought that fat cells were inert storage depots for surplus calories. But studies have established that fat cells can secrete certain hormones and other substances much like other organs in the body. Among those hormones is leptin, which controls appetite, and adiponectin, which makes the body more sensitive to insulin and controls blood sugar levels. However, little is known about most of the proteins produced by the billions of fat cells in the adult body.

The scientists identified 80 different proteins produced by the fat cells. These include six new proteins and 20 proteins that have not been previously detected in human fat cells. The findings could pave the way for a better understanding of the role that hormone-secreting [fat cells](#)

play in heart disease, diabetes, and other diseases.

More information: "Identification of novel human adipocyte secreted proteins by using SGBS cells", *Journal of Proteome Research*.

Provided by American Chemical Society

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