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Humans Have Previously Undiscovered 'Beige Fat'



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Having the right amount of body fat can be healthy, but most Americans have too much of it. A team of researchers led by a biologist at the University of California San Francisco has been investigating the cellular composition of this fat in order to engineer fat-burning drugs in the future that might help curb the obesity epidemic. The study was published recently in *Nature Medicine*.

The unhealthy kind of fat linked to diabetes and obesity is called white fat, and consists of big cellular blobs that predominantly just store energy. The "good" fat is brown fat—the cells are much smaller and they have mitochondria built in to quickly convert the fat into energy. Brown fat is what is typically identified as "baby fat" and is also found in hibernating animals. Researchers knew that adults had brown fat, too, but they weren't sure if this was the same brown fat as we were born with, or something different.

In the study, the researchers collected and cloned brown fat cells from two adult humans. After conducting a genetic and protein analysis of the cells, the researchers found that the cells were recruitable, which means that they could burn bad white fat and turn it into good brown fat. The researchers called it "beige fat."

With this understanding, the researchers can now tinker with the conditions to understand what kicks the beige fat into action. The ultimate goal, the researchers said, is to create drugs that convert bad fat to good fat.