

Newly discovered brown fat cells hold possibilities for treating diabetes, obesity

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Obesity and diabetes have become a global epidemic leading to severe cardiovascular disease. Researchers at the University of Utah believe their recent identification of brown fat stem cells in adult humans may lead to new treatments for heart and endocrine disorders, according to a new study published in the peer-reviewed journal *Stem Cells*.

The study was led by Amit N. Patel, M.D. M.S., director of Clinical Regenerative Medicine and Tissue Engineering, and associate professor in the Division of Cardiothoracic Surgery at the University of Utah School of Medicine.

Prior to Patel's study, it was thought that brown fat stem cells did not exist in adults. Children have large amounts of brown fat that is highly metabolically active, which allows them to eat large amounts of food and not gain weight. Patel notes, adults generally have an abundance of white fat in their bodies, which leads to weight gain and [cardiovascular disease](#) but this is not seen in brown fat. As people age the amount of white fat increases and brown fat decreases which contributes to diabetes and [high cholesterol](#).

"If you have more brown fat, you weigh less, you're metabolically efficient, and you have fewer instances of diabetes and high cholesterol. The unique identification of human brown fat stem cells in the chest of patients aged from 28 to 84 years is profound. We were able to isolate the human stem cells, culture and grow them, and implant them into a pre-human model which has demonstrated positive effects on glucose

levels," said Patel.

The new discovery of finding brown fat stem cells may help in identifying potential drugs that may increase the body's own ability to make brown fat or find novel ways to directly implant the [brown fat stem cells](#) into patients.

More information:

onlinelibrary.wiley.com/doi/10.1002/stem.1595/pdf

Provided by University of Utah Health Sciences

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