

New molecule may help fight obesity by converting 'bad' fat to 'good' fat

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New research, published online in *The FASEB Journal*, suggests that activation of a chemical called Beta-LGND2 by the estrogen receptor Beta (ER-Beta) reduces obesity and metabolic diseases in mice by converting bad fat (white fat) to good fat (brown fat). This is significant as brown fat increases metabolism and may facilitate weight loss.

"Although there is a general misperception that [obesity](#) is not a life-threatening condition, obesity is the underlying cause for several diseases that could result in mortality," said Ramesh Narayanan, Ph.D., M.B.A., a researcher involved in the work from the Department of Medicine and Director of the Center for Cancer Drug Discovery at the University of Tennessee Health Science Center in Memphis, Tennessee. "Safe and effective treatment for obesity is highly needed, and targeting ER- β might be one of the strategies to safely combat obesity."

To make their discovery, Narayanan and colleagues used three groups of mice. One group was fed with normal rodent diet, while two groups were fed with high-fat diet (HFD) to make them obese. One of the two HFD-fed groups was treated with vehicle, while the other HFD-fed group was treated with beta-LGND2. Beta-LGND2-treated mice were significantly leaner than the other mice fed an HFD. Beta-LGND2-treated mice had higher body temperature and oxygen consumption, indicating higher metabolism rate.

"As both the prediabetes condition of metabolic syndrome as well as obesity itself continue to threaten the health of millions of people in

many parts of the world, we need all the new findings dedicated researchers can give us," said Thoru Pederson, Ph.D., Editor-in-Chief of *The FASEB Journal*. "The notion that the fat in our bodies comes in two physiological forms has long been known, but here we have the intriguing prospect of a beneficial pharmacological switch."

More information: S. Ponnusamy et al, Pharmacologic activation of estrogen receptor increases mitochondrial function, energy expenditure, and brown adipose tissue, *The FASEB Journal* (2016). [DOI: 10.1096/fj.201600787RR](https://doi.org/10.1096/fj.201600787RR)

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