

Here's one of the reasons obese people have trouble losing weight

Obesity rates in the U.S. and abroad have soared: The world now has more overweight people than those who weigh too little. One reason relates to the way the body reacts to its own fat stores by setting in motion a set of molecular events that impede the metabolic process that normally puts a damper on hunger. A new [study](#) published August 22 in Science Translational Medicine provides details of how this process occurs.

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Produced by fat cells, [the hormone leptin] communicates with a brain region called the hypothalamus, which reins in hunger cravings when our energy stores are full. Yet as we gain weight our bodies become less sensitive to leptin, and it becomes harder and harder to slim down.

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In an experiment using mice that became obese on a high-fat diet, an international team found obesity increases the activity of an enzyme called matrix metalloproteinase-2, or MMP-2.

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MMP-2 cleaves off a portion of the leptin receptor in the hypothalamus, impairing the hormone's signaling and its ability to suppress appetite.

The study also revealed that disabling MMP-2 with a gene-silencing technique—one in which a stretch of RNA was injected directly into the hypothalamus—had the effect of reducing weight gain in obese mice and preventing leptin receptor cleavage.

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[Researchers hope to identify a drug] that can reach the hypothalamus and specifically block MMP-2 activity.

Read full, original post: [A Molecular Reason Why Obese People Have Trouble Losing Weight](#)