

Immune system molecule affects our weight

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Researchers at the Sahlgrenska Academy, University of Gothenburg, Sweden, have identified a molecule in the immune system that could affect hunger and satiety. The researchers hope that new treatments for obesity will benefit from this finding.

Interleukin-6 is a [chemical messenger](#) in our [immune system](#) that plays an important role in fighting off infection. However, recent research has, surprisingly, shown that it can also trigger weight loss. Researchers at Sahlgrenska Academy, University of Gothenburg, have been investigating and managed to identify the specific types of [brain cells](#) that are targeted by the interleukin-6 molecule.

The results show that the cells that are affected by interleukin-6 produce substances that not only affect our sense of hunger and fullness but also control the body's ability to burn fat. "Interleukin-6 increases levels of substances in the brain that trigger weight loss, which could explain why high levels of this molecule lead to weight loss," says [doctoral student Erik Schéle](#), who is presenting the results in his thesis.

It is known that our normally low levels of interleukin-6 in the brain increase dramatically during an infection, typically accompanied by reduced hunger and fatigue.

"Our previous findings would indicate that interleukin-6 can play a key role in regulating the metabolism of healthy individuals too," says Erik Schéle.

"This is clearly substantiated by our finding that mice which lack interleukin-6 get fat, and that the metabolism of rats injected with interleukin-6 directly into the brain increases."

Although it is not yet fully understood how interleukin-6 in the brain affects bodyweight, the researchers have concluded that anyone whose brain produces plenty of interleukin-6 could be protected against overweight. The thesis also shows that our [gut bacteria](#) indirectly affect the substances in the brain that regulate bodyweight.

"This is both surprising and new. It could in the long run lead to people fighting obesity by changing what they eat in line with how it affects the brain," says Erik Schéle.

Provided by University of Gothenburg

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