

Genetic changes behind sweet tooth

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The substance ghrelin plays an important role in various addictions, such as alcoholism and binge-eating. It also impacts on sugar consumption, which is due, in part, to genetic factors, reveals new research from the University of Gothenburg, Sweden.

Ghrelin is a neuropeptide that both activates the brain's [reward system](#) and increases appetite. This means that when we are hungry, levels of ghrelin increase, activating the brain's reward system, and this, in turn, increases our motivation to look for food. Previous research from the Sahlgrenska Academy has linked ghrelin to the development of various dependencies, such as [drug addiction](#) and alcoholism.

In a new study published in the online version of the journal *Plos One*, researchers examined the genes of 579 individuals chosen from the general public. It emerged that people with certain changes in the ghrelin gene consume more sugar than their peers who do not have these changes. This link was also seen in people who consumed large amounts of both sugar and alcohol.

Trials have also been carried out using rats, where the researchers found that when ghrelin was blocked the rats reduced their consumption of sugar and were less motivated to hunt for sugar.

"This shows that ghrelin is a strong driver when it comes to tracking down rewarding substances such as sugar or alcohol," says researcher Elisabet Jerlhag from the Sahlgrenska Academy's Department of Pharmacology.

These results go hand in hand with the researchers' previous findings which showed that substances that block the ghrelin system reduce the positive effects of addictive drugs and that changes in the ghrelin gene are associated with high [alcohol consumption](#), weight gain in alcoholics and smoking.

The researchers are now a step closer to understanding what happens in the brain and the body in different types of addictive behavior. Understanding these mechanisms means that new drugs can be developed to block the ghrelin system and used to treat patients who are addicted to [alcohol](#) or who suffer from binge-eating disorders.

"This knowledge could also make it easier for society to view dependency as an illness and could mean that these people can get the treatment they need more readily," says Jerlhag.

Provided by University of Gothenburg

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