

New findings about the brain lead to treatment for eating disturbances

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The discovery of the brain's so-called melanocortin system and its central role in controlling appetite has paved the way for entirely new possibilities for treating obesity and anorexia. In the latest issue of the prestigious journal *Nature Reviews Drug Discovery*, Uppsala University researcher Jarl Wikberg and one of his associates present a review of pioneering research in this field that he and other scientists have conducted over nearly two decades.

The mapping of the melanocortin system was made possible by the cloning of genes for five different melanocortin receptors, which was performed by Jarl Wikberg in collaboration with other researchers in the early 1990s.

“The melanocortin system monitors the energy balance and regulates how much we eat and how much energy the body uses. The result of all of this is that we maintain our body weight,” says Jarl Wikberg.

But things can go wrong. It is a highly complex system, and even tiny imbalances can entail major changes. For instance, the melanocortin system is exposed to great genetic variations, and many mutations lead to extreme obesity in early ages. Such mutations are found in 3–6 percent of children who have these problems.

“There are also mutations that affect the system in the opposite direction, and these may be an explanation for anorexia.”

These discoveries have prompted most major drug companies to develop drugs that target melanocortin receptors, for the treatment of eating disorders. Interestingly, the same system has also been shown to be involved in the regulation of sexual behavior, and this has resulted in the creation of drugs for treating diminished sex drive as well.

“In men such treatment has become accepted, but it is still controversial to treat women. It will be interesting to see how an effective treatment for diminished sex drive will be received in the future,” says Jarl Wikberg.

Source: Uppsala University

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