

Over 4 million deaths per year caused by obesity

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Novel obesity treatments such as modulation of the gut microbiome and gene therapy are underutilized and could help fight the obesity epidemic, according to a new manuscript published in the Endocrine Society's

journal, *Endocrine Reviews*.

Nearly half of the adults and 20 percent of children in the United States have [obesity](#), yet doctors are under prescribing effective weight loss medications and many patients are not receiving the treatment they need. The weight stigma that exists in healthcare settings makes people with obesity hesitant to seek care until comorbidities develop and reach a dangerous stage. Lack of insurance coverage and cost issues are another factor that creates barriers to obesity treatment.

"Obesity is the epidemic crisis of our time. The disease leads to serious comorbidities such as diabetes, [fatty liver disease](#) and cardiovascular disease and significantly shortens a person's length and quality of life," said Christos S. Mantzoros, M.D., Sc.D., of Beth Israel Deaconess Medical Center in Boston, Mass. "Until recently we did not understand the genetic and hormonal causes of obesity and how obesity leads to these comorbidities. We have recently started to understand the causes of obesity in humans, which is a big discovery that has led to designing effective therapies."

In the article, the researchers map out the molecular and hormonal pathways that lead to obesity and the disease's related comorbidities. This data gives researchers the insights they need to design, test and implement new obesity therapies.

The researchers highlight the need for safer and more effective obesity therapies, including new drug delivery systems, vaccines, modulation of the gut microbiome and [gene therapy](#). Novel medications, including combinations of gastrointestinal hormones and other molecules, are being tested and are expected to lead to significant percentages of weight loss with less side effects once available. As our understanding of obesity improves, more effective medications with fewer side effects will be developed.

Recently approved medications such as semaglutide, a modified gastrointestinal hormone administered once a week, can lead to 15% weight loss when combined with lifestyle changes. Bariatric surgery can lead to up to 40% weight loss, but it is invasive and linked to complications.

"Insurance companies need to pay attention to data from studies and the scientific progress we are making and start covering the medications that are and will be approved soon, given that currently only a small minority of patients with obesity have coverage for the medications and medical care they need," Mantzoros said. "It would be much more cost effective to cover treatments early instead of waiting for comorbidities and their complications to develop."

More information: Angeliki M Angelidi et al, Novel Non-invasive Approaches to the Treatment of Obesity: From Pharmacotherapy to Gene Therapy, *Endocrine Reviews* (2021).
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