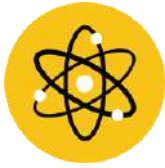


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Weight-loss drugs could end the obesity epidemic. But they won't stop there



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The weight-loss drugs Wegovy and Mounjaro, made by Novo Nordisk and Eli Lilly respectively, have taken the world by storm. Their active ingredients are known as glucagon-like peptide 1 (GLP-1) agonists. Originally developed to treat diabetes, these drugs mimic the hormones the body produces after a meal, thus regulating glucose in the blood.

As an added benefit, GLP-1 drugs also help patients suppress their appetites. They do this by slowing down the rate at which a person's stomach empties after a meal, keeping them feeling fuller for longer. Patients end up eating less overall.

With close to half the world's population expected to be obese or overweight by 2030, according to the World Obesity Federation, demand for these drugs is soaring. Sales for weight-loss drugs are estimated to hit \$80bn per year by the end of the decade. People are seriously talking about an end to obesity.

So far only three GLP-1 drugs have been approved to treat obese or overweight individuals. But competition is on its way, as my colleague Shailesh Chitnis writes this week in the Science section. Almost 100 new drugs are in the development pipeline. Most of them hope to outperform

Wegovy and Mounjaro by being easier to take, causing fewer side-effects or delivering more effective weight loss. There is even hope that future GLP-1 drugs could treat more conditions than just obesity.

Both Wegovy and Mounjaro require weekly injections, theoretically for life, to keep the weight off. Switching to tablets would make the drugs more tolerable (and not just for those who hate needles). Both Novo Nordisk and Eli Lilly have pills for weight-loss drugs in clinical trials. Another drawback of GLP-1-based medicines is that patients do not just shed fat, they also lose lean muscle mass. This is a serious concern, especially for older people. To counter this, companies are trying out medicines originally designed to treat muscle atrophy alongside their GLP-1 drugs.

GLP-1 drugs are already proving useful for more than just obesity. A recent clinical trial by Novo Nordisk, for example, found that semaglutide, the active ingredient in Wegovy, cut the risk of serious heart issues like heart attacks, strokes or death from heart disease by 20%. In March semaglutide was approved by the US Food and Drug Administration for reducing the risk of heart disease in obese or overweight people, the first time a weight-loss medication has been approved for this purpose. Other weight-loss drugs in development have shown promising results in being able to treat liver diseases.

It doesn't stop there. Scientists have also found that these drugs can have anti-inflammatory properties in the brain and immune system, by interacting with GLP-1 receptors in those parts of the body. That opens the door to potential treatments for neurodegenerative conditions such as Alzheimer's and Parkinson's diseases, both of which are characterised by inflammation in the brain.

The appetite-suppressing effects of these drugs have also raised interest in their ability to curb cravings more generally. This is a much more experimental idea but there are hints the drugs could be useful for certain groups of people with alcohol-use disorder. Researchers are also exploring whether the drugs could have an impact on how people use other addictive substances such as tobacco or marijuana.

GLP-1 drugs are well on their way to becoming the next blockbuster drugs.

And once they've reached that status, they'll just keep on getting bigger.

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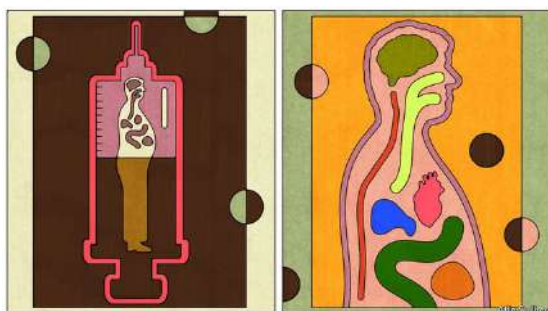
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