

# Video: Delivering critical medicines into the body by way of vitamin B12

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Chemists in the College of Arts and Sciences know the importance of taking their vitamins. Provided by Syracuse University

Just ask Professor Robert Doyle, who has been leading a team of interdisciplinary scientists in the search for more effective ways of delivering critical medicines into the body by way of vitamin B12.

Their findings are the subject of a groundbreaking article in the journal *Endocrinology*. Much of the piece, which is co-written by Doyle with his collaborator Christian Roth at Seattle Children's Research Institute, looks at how B12 interacts with a gut hormone known as YY3-36.

Produced in the intestines, YY3-36 has the distinction of being able to "switch off" hunger by activating a hypothalamic pathway in the brain. It's for this reason that Doyle and others think YY3-36 could be the [magic bullet](#) for anti-obesity medication, if not for the fact it's unstable in blood and degrades rapidly in the stomach.

Enter B12. When Doyle combined the nutrient with YY3-36, he found that it didn't just carry the peptide through the [gastrointestinal tract](#); it enabled YY3-36 to send messages from there, telling the brain it was full.

"These findings demonstrate a stronger, more consistent and longer inhibition of food intake, following injections of the peptide YY3-36 bonded with vitamin B12," says Doyle, whose research draws on chemistry and biology. "The work also shows a greater reduction in body weight gain, over the first three days the new drug was administered."

Doyle's research is funded by a major grant from the National Institute of Diabetes and Digestive and Kidney Diseases at the National Institutes of Health.

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