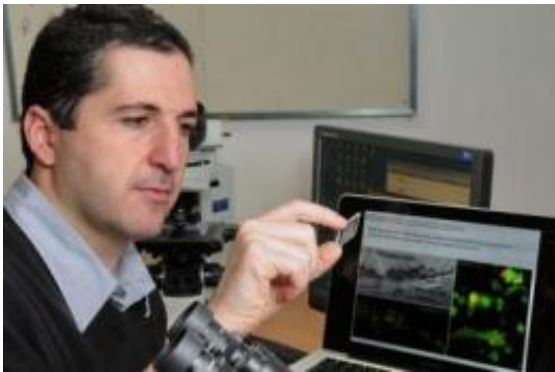


New pre-meal dietary supplement can overcome fat and sugar problems

May 23 2011



This is Yaakov Nahmias of the Hebrew University of Jerusalem. Credit: Hebrew University of Jerusalem photo

A little bitter with a little sweet, in the form of a nano-complex dietary supplement taken before meals, can result in a substantial reduction of fat and sugar absorption in the body, Hebrew University of Jerusalem and Harvard University researchers have found.

The researchers previously showed that naringenin, the molecule responsible for the bitter taste in grapefruits, could potentially be used in the treatment of diabetes, [arteriosclerosis](#) and hyper-metabolism.

However, the absorption of naringenin in its natural form is very low. To overcome this obstacle, the Hebrew University-Harvard research team, led by Dr. Yaakov Nahmias of the Benin School of Engineering and

Computer Science at the Hebrew University and his graduate student, Maria Shulman, has now created, through further research, a nano-complex of naringenin within a ring of [sugar](#) called cyclodextrin. This complex increased the absorption of naringenin by 11 times.

What the researchers found is that a single dose of this complex, taken just before a high fat and high sugar meal given to rats, was able to reduce the generation of VLDL ([bad cholesterol](#)) by 42%, and increase [insulin sensitivity](#) by 64%.

This is the first demonstration that a [dietary supplement](#) can change the way our body can react beneficially to a meal. The discovery is detailed in an article that has been published in the scientific journal, PLoS One.

"The complex is special in that it is taken just before a meal, as a preventative measure. In comparison, existing medications are given only after the chronic development of abnormal lipid levels in the blood," said Dr. Nahmias.

The scientists say that considering the sugary taste of cyclodextrin, naringenin, the cause of the bitter taste in grapefruit, is "no longer such a bitter pill to swallow."

Patents for the development have been applied for by Harvard University and Yissum, the technology transfer company of the Hebrew University, and [clinical tests](#) are now under way in the United States.

Provided by Hebrew University of Jerusalem

Citation: New pre-meal dietary supplement can overcome fat and sugar problems (2011, May 23) retrieved 11 June 2026 from <https://medicalxpress.com/news/2011-05-pre-meal-dietary-supplement-fat-sugar.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.