

Obesity clues in humans may be unearthed first in a worm

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Obesity is not regarded as an epidemic among tiny worms that dine on bacteria — but for humans battling weight gain with seemingly insatiable appetites, research on a soil-dwelling roundworm may lead to clues for weight loss.

The nematode worm *C. elegans* — which is clearly visible only under magnification — has something to teach us about how we become overweight, according to UCSF researcher Kaveh Ashrafi, PhD.

C. elegans has fewer than 1,000 cells, but despite the worm's simplicity, Ashrafi has identified more than 300 worm genes that play a role in feeding behaviors, metabolism and fat storage. Most of these genes have human counterparts.

It's not pot bellies, per se, that Ashrafi sees when he peers at [worms](#) through the microscope — but he does measure fat accumulation in “lipid droplets” with the aid of a red fluorescent dye.

Through gene-deleting experiments Ashrafi is tracking down biochemical pathways and proteins that affect feeding and [fat](#) storage. In addition, he is screening off-the-shelf chemicals – drug prototypes in some cases. In the process his lab team already has identified an unforeseen drug target and a starting point for what might be a new class of fat-fighting pharmaceuticals for the future. Results to date validate his research approach, Ashrafi says.

Provided by University of California, San Francisco

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