

Commentary

More exciting confirmation about the potential positive health impact of Resveratrol. Synterra AM™ contains therapeutic amounts of clinically active Resveratrol.

The Healthy Skinny Pill

A new drug proves effective in fighting obesity and related diseases while increasing stamina in mice.

By Brittany Sauser

A pill that delivers the health benefits of diet and exercise without any of the effort is one step closer to becoming a reality. European scientists have found that mice fed a high-fat, high-calorie diet and prevented from exercising regularly can be protected from weight gain and metabolic disorders when given a drug that targets a gene linked to longevity. The treatment even increases the animals' running endurance.

The drug was developed last year by [Sirtris Pharmaceuticals](#), based in Cambridge, MA, and preliminary studies of the compound showed it to be [effective in treating mice models of type 2 diabetes](#), a disease that results in an impaired ability to produce or process insulin, the risk of which increases with age. Now scientists led by professor Johan Auwerx at Ecole Polytechnique Federale de Lausanne ([EPFL](#)), in Switzerland, have shown that the compound involved, known as SRT1720, also blocks weight gain and obesity-related disorders and increases muscle stamina.

In the study, scientists fed the mice a high-fat, high-calorie diet mixed with doses of SRT1720 for approximately 10 weeks. The mice were given 100 or 500 milligrams of fat per kilogram of body weight each day (a high dose even for humans). The mice did not exercise regularly, although the scientists tested the animals' exercise capacity, or endurance, by making them run on a treadmill. "The mice treated with the compound ran significantly longer," says Auwerx. The

drug also protected the animals from the negative effects of high-calorie diets: metabolic disorders, obesity-related diseases, and insulin resistance. It even improved the mice's cholesterol.

It is significant that the drug mimics the effects of a calorie-restricted diet, since this has previously been tied to increased life expectancy, says [William Evans](#), a professor of geriatric medicine, nutrition, and physiology at the University of Arkansas for Medical Sciences.

It's as if the couch-potato mice underwent a strict diet and exercise regime, says [David Sinclair](#), a biologist at Harvard Medical School, in Boston, who is one of the cofounders of Sirtris but was not involved in the current study. The new study "is a major step forward, showing that we can design and synthesize potent, druglike molecules that could slow down the aging process," says Sinclair.

The effects of the compound are similar to those of resveratrol, a molecule found in red wine that has previously been shown to [extend life span](#) and have [health benefits](#) in mice.

SRT1720, like resveratrol, works by targeting a gene known as sirtuin 1, or SIRT1, which many scientists believe plays a fundamental role in [regulating life span](#). SIRT1 encodes for a class of proteins known as sirtuins, and it is a central controller of mitochondrial activity (mitochondria are the powerhouse energy providers to the cells). "[Firing up mitochondria](#) is one of the best treatments against diabetes and obesity because you burn off extra energy instead of storing it," notes Auwerx.

The findings in the new study, which is published in the November issue of the journal *Cell Metabolism*, also answer a big scientific question: whether scientists [searching for ways](#) to combat aging have been targeting the right gene.