

Red wine: Exercise in a bottle?

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As strange as it sounds, a new research study published in the *FASEB Journal*, suggests that the "healthy" ingredient in red wine, resveratrol, may prevent the negative effects that spaceflight and sedentary lifestyles have on people. The report describes experiments in rats that simulated the weightlessness of spaceflight, during which the group fed resveratrol did not develop insulin resistance or a loss of bone mineral density, as did those who were not fed resveratrol.

According to Gerald Weissmann, M.D., Editor-in-Chief of the [FASEB Journal](#), "There are overwhelming data showing that the human body needs physical activity, but for some of us, getting that activity isn't easy. A low [gravity environment](#) makes it nearly impossible for astronauts. For the earthbound, barriers to physical activity are equally challenging, whether they be disease, injury, or a desk job. Resveratrol may not be a substitute for exercise, but it could slow deterioration until someone can get moving again."

Scientists studied rats that underwent simulated weightlessness by hindlimb tail suspension and were given a daily oral load of resveratrol. The control group showed a decrease in soleus muscle mass and strength, the development of [insulin resistance](#), and a loss of [bone mineral density](#) and resistance to breakage. The group receiving resveratrol showed none of these complications. Study results further demonstrated some of the underlying mechanisms by which resveratrol acts to prevent the wasting adaptations to disuse-induced mechanical unloading. This study also suggests that resveratrol may be able to prevent the deleterious consequences of sedentary behaviors in humans.

"If resveratrol supplements are not your cup of tea," Weissmann added, "then there's good news. You can find it naturally in red wine, making it the toast of the Milky Way."

More information: Iman Momken, Laurence Stevens, Audrey Bergouignan, Dominique Desplanches, Floriane Rudwill, Isabelle Chery, Alexandre Zahariev, Sandrine Zahn, T. Peter Stein, Jean Louis Sebedio, Estelle Pujos-Guillot, Maurice Falempin, Chantal Simon, Véronique Coxam, Tany Andrianjafiniony, Guillemette Gauquelin-Koch, Florence Picquet, and Stéphane Blanc. Resveratrol prevents the wasting disorders of mechanical unloading by acting as a physical exercise mimetic in the rat. *FASEB J.* [doi: 10.1096/fj.10-177295](https://doi.org/10.1096/fj.10-177295)

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