

Resveratrol falls short in health benefits

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Studying healthy, middle-aged women, researchers found that supplementation with resveratrol, an ingredient in red wine, does not offer the medical benefits previously thought. Credit: Robert Boston

Resveratrol, an ingredient in red wine thought to improve insulin sensitivity, reduce risk of heart disease and increase longevity, does not appear to offer these benefits in healthy women, new research at Washington University School of Medicine in St. Louis indicates.

The study, reported online Oct. 25 in [Cell Metabolism](#), involved 29 post-menopausal women who did not have [type 2 diabetes](#) and who were reasonably healthy. For 12 weeks, half took an over-the-counter resveratrol supplement, and the rest got a placebo, or sugar pill.

"Resveratrol supplements have become popular because studies in cell systems and rodents show that resveratrol can improve [metabolic function](#) and prevent or reverse certain health problems like diabetes, [heart disease](#) and even cancer," says senior investigator Samuel Klein, MD, director of Washington University's Center for [Human Nutrition](#). "But our data demonstrate that resveratrol supplementation does not have metabolic benefits in relatively healthy, middle-aged women."

The results were somewhat surprising because earlier studies suggested that drinking red wine lowers the risk of health problems.

"Few studies have evaluated the effects of resveratrol in people," Klein explains. "Those studies were conducted in people with diabetes, older adults with impaired [glucose tolerance](#) or obese people who had more metabolic problems than the women we studied. So it is possible that resveratrol could have beneficial effects in people who are more metabolically abnormal than the subjects who participated in the study."

Klein, the Danforth Professor of Medicine and Nutritional Science, directs the Division of Geriatrics and Nutritional Science and the Center for Applied Research Sciences. He says many people who have heard about red wine's health benefits want to take resveratrol supplements to get the benefits of red wine without consuming large amounts of alcohol. In recent years, annual U.S. sales of resveratrol supplements have risen to \$30 million.

As part of the study, Klein and his colleagues gave 15 post-menopausal women 75 milligrams of resveratrol daily, the same amount they'd get from drinking 8 liters of red wine, and compared their [insulin sensitivity](#) to 14 others who took a placebo.

The team measured the women's sensitivity to insulin and the rate of glucose uptake in their muscles, infusing insulin into their bodies and

measuring their metabolic response to different doses.

"It's the most sensitive approach we have for evaluating insulin action in people," he says. "And we were unable to detect any effect of resveratrol. In addition, we took small samples of muscle and fat tissue from these women to look for possible effects of resveratrol in the body's cells, and again, we could not find any changes in the signaling pathways involved in metabolism."

But if resveratrol doesn't have a health benefit, then why are red wine drinkers less likely to develop heart disease and diabetes? Klein says there may be something else in red wine that provides the benefit.

"The purpose of our study was not to identify the active ingredient in red wine that improves health but to determine whether supplementation with resveratrol has independent, metabolic effects in relatively healthy people," he says. "We were unable to detect a metabolic benefit of resveratrol supplementation in our study population, but this does not preclude the possibility that resveratrol could have a synergistic effect when combined with other compounds in [red wine](#)."

Provided by Washington University School of Medicine

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