

Resveratrol May Boost Eye Health: Study

By Stephen Daniells, 28-Jun-2010

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The vascular benefits of resveratrol – a compound found in red wine, blueberries and peanuts – may include reducing the risk of blindness for diabetics and seniors, says a new study.

According to findings published in the *American Journal of Pathology*, [resveratrol](#) can reverse the abnormal formation of blood vessels in the retina of mice subjected to a laser treatment.

Scientists from Washington University School of Medicine in St. Louis identified a pathway called the eukaryotic elongation factor-2 kinase (eEF2) regulated pathway, which they proposed may be responsible for resveratrol's protective effects.

"We have identified a novel pathway," said lead researcher, Rajendra Apte, MD, PhD, *"and we believe the pathway may be involved both in age-related eye disease and in other diseases where angiogenesis plays a destructive role."*

Apte and his co-workers note that this was a surprise. The anti-aging potential of resveratrol was proposed to occur via a different pathway.

"A great deal of research has identified resveratrol as an [anti-aging](#) compound, and given our interest in age-related eye disease, we wanted to find out whether there was a link," said Apte. *"There were reports on resveratrol's effects on blood vessels in other parts of the body, but there was no evidence that it had any effects within the eye,"* he added.

Study Details

For their study, Washington University researchers exposed mouse retinas to a laser treatment that initiated blood vessel formation, or angiogenesis. When resveratrol was fed to the mice, however, the researchers observed that angiogenesis was inhibited and that abnormal blood vessels were eliminated.

The effects were identified as occurring via the eEF2 pathway.

Apte stressed that the animal model of macular degeneration they used is not the same as the human version of the disease. Furthermore, the mice received large doses of resveratrol, he said, much more than would be found in several bottles of red wine. If resveratrol is to be effective in people, said Apte, it would need to be given in pill form because of the high doses required.

Eyes on the potential

The researchers note that the findings could have potential for both age-related macular degeneration (AMD) and diabetic retinopathy. AMD is a degenerative retinal disease that causes central vision loss and leaves only peripheral vision, and the leading cause of legal blindness for people over 55 years of age in the Western world, according to AMD Alliance International.

According to the National Institute of Health, between 40 and 45 percent of Americans diagnosed with diabetes already have some stage of diabetic retinopathy, a major cause of blindness in people with diabetes and one of the most feared diabetic complications.

Source: *American Journal of Pathology*; July 2010, Volume 177, Pages 481-492, doi: 10.2353/ajpath.2010.090836; "Resveratrol regulates pathologic angiogenesis by a eukaryotic elongation factor-2 kinase-regulated pathway." Authors: A.A. Khan, D.S. Dace, A.G. Ryazanov, J. Kelly, R.S. Apte