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Vitamin E May Boost Return to Healthy Hearts in Former Smokers

By Alexandra Sifferlin | April 25, 2013 | [Add a Comment](#)

Smoking can harm the heart, and while quitting is the most powerful way to avoid heart disease, taking vitamin E after putting out the cigarettes may speed the process along.

Studies show that it can take a decade or more after smokers stop lighting up for their hearts to resemble those of non smokers. That's how long it takes for some of the damage due to inflammation to subside, and to return blood vessels back to their elastic, flexible selves so they're no longer contributing to an increased risk of heart problems. So in an effort to find ways to accelerate the process, researchers from Ohio State University focused on vitamin E, since it works as an antioxidant to combat damage — to tissues like blood vessels — caused by free radicals.

“Vitamin E is regarded as a very effective antioxidant that protects against damage to fats in the body. Smokers are well-known to have oxidation of those fats in the body and based on prior studies, vitamin E has been touted as a nutrient that can help mitigate that damage,” says Richard Bruno, an associate professor of human nutrition at Ohio State University and senior author of the study.

Bruno and his colleagues recruited 30 smokers in their 20s who smoked at least a pack a day of cigarettes for a year. All the smokers quit for one week, and 16 of the participants received 500 mg a day of a vitamin E supplement called gamma tocopherol.

At the start and at the end of the study, the researchers measured the participants' blood for signs of inflammation. They also measured the participants' vascular function — the blood vessels' ability to dilate — by taking ultrasound images of an upper arm artery before and after circulation was temporarily stopped.

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Vitamin E comes in eight naturally-occurring forms, but the investigators chose to measure gamma tocopherol because it is the most common form of E in the American diet, found in soybeans, canola oil, pistachios, pecans, cashews and peanuts.

“We used the gamma tocopherol type in contrast to virtually all other vitamin E studies that use alpha tocopherol,” says Bruno. “Alpha tocopherol is the one that we know the most about. It is the form that we know is required for humans, but gamma tocopherol is the most abundant form. We used the gamma tocopherol form because not only does it have antioxidant activity, like alpha tocopherol, but recent evidence indicates that it also has effective ability to lower inflammation and also trap what we call reactive nitrogen species. These are chemicals generated in the body that can lead to damage to various proteins.”

After the week, all of the participants showed a 2.8% increase in vascular function owing to the fact that they had quit smoking, but those who also took a vitamin E supplement enjoyed an additional 1.5% boost in vascular function. Although the study was small and the smokers only quit for a brief period of time, the researchers say the results are meaningful given that prior work showed that every 1% increase in vascular function translated into



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Participants who took the vitamin E supplement also had lower levels of proteins closely linked to the body’s inflammatory system that can contribute to heart disease, which Bruno says suggests that vitamin E is accelerating the return of blood vessel function back to a healthier state — possibly by reversing some of the damage caused by smoking.

“Ultimately everyone should be encouraged to quit smoking. We are not disputing that, and I would say that quitting smoking is the number one agenda item for smokers, but if we can enhance the effectiveness of smoking cessation and lower the risk of future heart disease, I think we will have a significant impact from a public health perspective,” says Bruno.

The research was presented Tuesday at the Experimental Biology 2013 meeting in Boston.



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