

Vigorous exercise may help prevent vision loss

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There's another reason to dust off those running shoes. Vigorous exercise may help prevent vision loss, according to a pair of studies from the U.S. Department of Energy's Lawrence Berkeley National Laboratory. The studies tracked approximately 31,000 runners for more than seven years, and found that running reduced the risk of both cataracts and age-related macular degeneration.

The research, which is among the first to suggest that vigorous exercise may help prevent vision loss, offers hope for people seeking to fend off the onset of eye disease.

"In addition to obtaining regular eye exams, people can take a more active role in preserving their vision," says Paul Williams, an epidemiologist in Berkeley Lab's Life Sciences Division who conducted the research. "The studies suggest that people can perhaps lessen their risk for these diseases by taking part in a fitness regimen that includes vigorous exercise."

A cataract, which is a cloudy opacity of the eye lens, is the leading cause of blindness. More than one-half of people in the U.S. over the age of 65 suffer from some form of cataracts. Age-related macular degeneration, which is damage to the retina, is the leading cause of irreversible vision loss in older white Americans, affecting 28 percent of people aged 75 and older.

The diseases have several known risk factors, such as sunlight exposure

and diabetes in the case of cataracts, but few interventions. Now, it appears that vigorous cardiovascular exercise may be one way to derail the diseases.

To conduct the research, Williams analyzed data collected in the National Runners' Health Study, which he established in 1991 to determine the health benefits of running.

In this case, he followed approximately 29,000 male runners and 12,000 female runners for more than seven years. Of these people, 733 men reported being diagnosed with cataracts on a questionnaire filled out at the end of the study. Too few women reported cataracts to track.

Men who ran more than 5.7 miles per day had a 35 percent lower risk of developing cataracts than men who ran less than 1.4 miles per day. The study also analyzed men's 10-kilometer race performances, which is a good indicator of overall fitness. The fittest men boasted one-half the risk of developing cataracts compared to the least-fit men.

A second study found that running appeared to reduce the risk of age-related macular degeneration. In the study, 152 men and women reported being diagnosed with the disease. Compared to people who ran less than 1.2 miles per day, people who averaged between 1.2 and 2.4 miles per day had a 19 percent lower risk for the disease, and people who ran more than 2.4 miles per day had between 42 percent and 54 percent lower risk of the disease.

"These findings are compelling because of the large size of the study, and the fact that we are looking at something that is fairly well defined: vigorous exercise, as opposed to more moderate exercise," says Williams.

Most of the runners in the study exceeded the current public health

recommendations for physical activity, which is at least 30 minutes of moderate-intensity activities such as brisk walking five days a week, or smaller doses of more vigorous exercise such as running. It is unclear whether people might also lower their risk for cataracts and age-related macular degeneration by walking.

"We know there are important health benefits to walking, including lowering heart disease risk," says Williams. "It is quite likely that the studies' results might apply to a lesser extent to smaller doses of more moderate exercise."

Williams also adds that further research is needed to explore why there is a link between vigorous exercise and a decreased risk for eye disease.

"We know some of the physiological benefits of exercise, and we know about the physiological background of these diseases, so we need to better understand where there's an overlap," says Williams.

The studies are published in the January 2009 issue of *Investigative Ophthalmology and Visual Science*.

Source: Lawrence Berkeley National Laboratory

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