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Vitamin D deficit doubles risk of stroke in whites, but not in blacks

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Low levels of vitamin D, the essential nutrient obtained from milk, fortified cereals and exposure to sunlight, doubles the risk of stroke in whites, but not in blacks, according to a new report by researchers at Johns Hopkins.

Stroke is the nation's third leading cause of death, killing more than 140,000 Americans annually and temporarily or permanently disabling over half a million when there is a loss of blood flow to the brain.

Researchers say their findings, to be presented Nov. 15 at the American Heart Association's (AHA) annual Scientific Sessions in Chicago, back up evidence from earlier work at Johns Hopkins linking vitamin D deficiency to higher rates of death, heart disease and peripheral artery disease in adults.

The Hopkins team says its results fail to explain why African Americans, who are more likely to be vitamin D deficient due to their darker skin pigmentation's ability to block the sun's rays, also suffer from higher rates of stroke. Of the 176 study participants known to have died from stroke within a 14-year period, 116 were white and 60 were black. Still, African Americans had a 65 percent greater likelihood of suffering such a severe bleeding in or interruption of blood flow to the brain than whites, when age, other risk factors for stroke, and vitamin D deficiency were factored into their analysis.

"Higher numbers for hypertension and diabetes definitely explain some

of the excess risk for stroke in blacks compared to whites, but not this much risk," says study co-lead investigator and preventive cardiologist Erin Michos, M.D., M.H.S., an assistant professor at the Johns Hopkins University School of Medicine and its Heart and Vascular Institute. "Something else is surely behind this problem. However, don't blame vitamin D deficits for the higher number of strokes in blacks."

Nearly 8,000 initially healthy men and women of both races were involved in the latest analysis, part of a larger, ongoing national health survey, in which the researchers compared the risk of death from stroke between those with the lowest blood levels of vitamin D to those with higher amounts. Among them, 6.6 percent of whites and 32.3 percent of blacks had severely low blood levels of vitamin D, which the experts say is less than 15 nanograms per milliliter.

"It may be that blacks have adapted over the generations to vitamin D deficiency, so we are not going to see any compounding effects with stroke," says Michos, who notes that African Americans have adapted elsewhere to low levels of the bone-strengthening vitamin, with fewer incidents of bone fracture and greater overall bone density than seen in Caucasians.

"In blacks, we may not need to raise vitamin D levels to the same level as in whites to minimize their risk of stroke" says Michos, who emphasizes that clinical trials are needed to verify that supplements actually do prevent heart attacks and stroke. In her practice, she says, she monitors her patients' levels of the key nutrient as part of routine blood work while also testing for other known risk factors for heart disease and stroke, including blood pressure, glucose and lipid levels.

Michos cautions that the number of fatal strokes recorded in blacks may not have been statistically sufficient to find a relationship with vitamin D deficits. And she points out that the study only assessed information on

deaths from stroke, not the more common "brain incidents" of stroke, which are usually non-fatal, or even mini-strokes, whose symptoms typically dissipate in a day or so. She says the team's next steps will be to evaluate cognitive brain function as well as non-fatal and transient strokes and any possible tie-ins to nutrient deficiency.

Besides helping to keep bones healthy, vitamin D plays an essential role in preventing abnormal cell growth, and in bolstering the body's immune system. The hormone-like nutrient also controls blood levels of calcium and phosphorus, essential chemicals in the body. Shortages of vitamin D have also been tied to increased rates of breast cancer and depression in the elderly.

Michos recommends that people maintain good vitamin D levels by eating diets rich in such fish as salmon and tuna, consuming vitamin-D fortified dairy products, and taking vitamin D supplements. She also promotes brief exposure daily to the sun's vitamin D-producing ultraviolet light. And to those concerned about the cancer risks linked to too much time spent in the sun, she says as little as 10 to 15 minutes of daily exposure is enough during the summer months.

If vitamin supplements are used, Michos says that daily doses between 1,000 and 2,000 international units are generally safe and beneficial for most people, but that people with the severe vitamin D deficits may need higher doses under close supervision by their physician to avoid possible risk of toxicity.

The U.S. Institute of Medicine (IOM) previously suggested that an adequate daily intake of vitamin D is between 200 and 600 international units. However, Michos argues that this may be woefully inadequate for most people to raise their vitamin D blood levels to a healthy 30 nanograms per milliliter. The IOM has set up an expert panel to review its vitamin D guidelines, with new recommendations expected by the end

of the year. Previous results from the same nationwide survey showed that 41 percent of men and 53 percent of women have unhealthy amounts of vitamin D, with nutrient levels below 28 nanograms per milliliter.

Provided by Johns Hopkins Medical Institutions