How Vitamin D Levels Affect Diabetes Risk

Too little vitamin D could increase the risk for diabetes for Black Americans.

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Black Americans with low levels of vitamin D could face a higher risk of developing diabetes, according to two new studies.

Vitamin D is often referred to as the “sunshine vitamin” because, although it can also be found in foods, the body produces it in response to exposure to sunlight.

The studies found a connection between low vitamin D levels in the blood and a resistance to insulin, which is a precursor to diabetes.

It had already been established that low levels of vitamin D in the blood "are associated with an increased risk of diabetes in white populations, but our research strongly suggests that this relationship also holds true for African Americans," said Amaris Williams, PhD, a coauthor on both studies and a postdoctoral scholar in the Division of Endocrinology, Diabetes and Metabolism at Ohio State University, in a HealthDay article.

This is significant because people with darker skin, such as African Americans, produce more melanin, which impedes the body’s ability to produce vitamin D. Indeed, a study by The Cooper Institute suggests that as many as 76% of African Americans have a vitamin D deficiency.

Researchers examined two major heart-health studies that tested patients’ blood for 25-hydroxyvitamin D, the biological “precursor” of active vitamin D.

First, researchers examined vitamin D levels in more than 3,300 Black adults in the Jackson Heart Study. Results showed that over a median of 7.7 years, 584 people developed diabetes.

To confirm these results, researchers went on to examine 5,600 participants in the Multi-Ethnic Study of Atherosclerosis (MESA) study, which included various racial and ethnic groups, including Black, Latino, white and Chinese Americans.

After observing participants throughout a nine-year period, the MESA study found a person’s odds of developing diabetes increased as their blood levels of vitamin D decreased. Williams noted that

this result was “similar across races and ethnicities.”

The authors of the Jackson Heart Study concluded: “Given the increased prevalence of diabetes in the AA [African-American] population, it is important to develop biomarkers of diabetes risk and targets for diabetes prevention therapies. Thus the further investigation of the role of vitamin D in diabetes is warranted to advance diabetes equity.”

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