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OPINION | COMMENTARY

Vitamin D and Coronavirus Disparities

Supplements may promote immunity, especially in people with darker skin.

By Vatsal G. Thakkar

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Black Americans are dying of Covid-19 at a higher rate than whites. Socioeconomic factors such as gaps in access to health care no doubt play a role. But another possible factor has been largely overlooked: vitamin D deficiency that weakens the immune system.

Researchers last week released the first data supporting this link. They found that the nations with the highest mortality rates—Italy, Spain and France—also had the lowest average vitamin D levels among countries affected by the pandemic.



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Vitamin D is produced by a reaction in the skin to the ultraviolet rays in sunlight. Many Americans are low in vitamin D, but those with darker skin are at a particular disadvantage because melanin inhibits the vitamin's production. As an Indian-American, my skin type is Fitzpatrick IV, or "moderate brown." Compared with my white friends, I need double or triple the sun exposure to synthesize the same amount of vitamin D, so I supplement with 5,000 international units of vitamin D3 daily, which maintains my level in the normal range. Most African-Americans are Fitzpatrick type V or VI, so they would need even more.

This requires further study, but earlier research is suggestive. In 2018 a longitudinal study by researchers at Massachusetts General Hospital looked at whether vitamin D supplementation had any health benefits, specifically in regard to heart disease and cancer. The overall conclusion was that it didn't, for most people. Yet buried in the results was one that should have made headlines: Vitamin D supplementation in African-Americans reduced cancer risk 23%. How? Cancer cells develop regularly in most animals, including humans, as the result of

toxic injuries or glitches in DNA replication, but a healthy immune system destroys them. There is evidence that low vitamin D levels make the immune system go blind.

Dozens of studies confirm that deficiency is a risk factor for cardiovascular disease, which disproportionately afflicts African-Americans. A major contributor to heart disease is inflammation that targets blood vessels, forming the plaques that block blood flow. (Raising vitamin D levels with supplements hasn't been shown to reverse this effect.)

Black Americans are also twice as likely to develop Type 2 diabetes as whites. Here, too, we find an immune connection. Insulin resistance, the harbinger of Type 2 diabetes, appears linked to high levels of circulating cytokines, the same pro-inflammatory proteins implicated in Covid-19 mortality. Many scientists are coming to view Type 2 diabetes as an autoimmune disorder, like Type 1.

History can also be a guide. A 2009 study examined sun exposure and fatality rates during the 1918-19 Spanish flu pandemic, which killed an estimated 50 million world-wide. Disparities in access to health care were minimal then, since treatment consisted mostly in supportive measures and convalescence. Antivirals, vaccines, intensive-care units and ventilators didn't exist.

The U.S. erected emergency hospitals—one of which, the Camp Brooks Open Air Hospital in Massachusetts, had the unique distinction of being an outdoor recovery unit. The mortality rate for patients there fell from 40% to 13% when they were moved outside. Sunlight might have proved to be literally the best disinfectant.

Dr. Thakkar, a psychiatrist, is founder of Reimbursify.

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