

Telomere Length and Response to Vitamin D Supplementation in Black People

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Abstract:

There is new and emerging evidence that low levels of Vitamin D may increase the development of severity of complications of Covid-19 and increase mortality, especially in Black individuals. Shorter telomeres are associated with premature cellular aging. In the literature, shorter telomeres have been associated with increased severity of COVID 19. These data, together with data implicating that, in boys, higher vitamin D is related to longer telomeres, suggests that telomere length is a biomarker for vitamin D status and can reflect when this status has been restored to normal.

We are running a virtual health promotion campaign for the London Met community to increase awareness of the importance of Vitamin D and supplementation in Black participants who are not already taking Vit D supplementation (n=200). Volunteers will donate saliva which will be collected together with phenotype data including COVID history, age, BMI, gender at birth and ethnicity. Additionally, this is the first stage of an intervention study to test whether systemic vitamin D levels can be increased. This will be evaluated by blood spot analysis, before and after three months of supplementation.

DNA will be extracted from saliva samples, before and after Vit D supplementation

and telomere length (TL) measured by qPCR. We will look for association of TL with COVID status and severity of illness and correlation with the response to vitamin D intervention. Understanding how telomere length is involved will provide a novel biomarker and help elucidate some of the molecular mechanisms that underlie how Vit D can mitigate COVID outcome in Black individuals and restore cells to normal aging patterns.