HIV Ages Immune Cell DNA by 14 Years

April 22, 2015

Untreated HIV causes changes to cellular DNA that are akin to 14 years of aging, which may partially explain the early onset of age-related diseases among people living with the virus. Publishing their findings in PLOS ONE, researchers compared DNA extracted from stored white blood cells of treatment-naive HIV-positive men between 20 and 56 years old with that of age-matched HIV-negative men, for a total of 96 samples.

The researchers compared changes to cellular DNA that are strongly linked with aging to changes that take place during HIV disease, and used the overlap to estimate the age of the HIV-positive individuals who gave samples. They found that, according to their cellular DNA, these men seemed to be 14 years older than their chronological age.

“This number is in line with both anecdotal and published data suggesting that treated HIV-infected adults can develop the diseases of aging mentioned above, approximately a decade earlier than their uninfected peers,” Beth Jamieson, PhD, a professor of medicine in the division of hematology and oncology at the David Geffen School of Medicine at UCLA and one of the study’s senior authors, said in a press release.

The researchers could not determine if antiretroviral therapy reverses such genetic changes, nor could they tell whether HIV treatment itself contributes to these changes.

To read the press release, click here.

To read the study, click here.