

People With Lifelong HIV Are More Likely to Have Metabolic Problems

Older HIV drugs are in part to blame for the rising rate, but newer medications, like integrase inhibitors, are not.

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People who were born with HIV or acquired the virus in early childhood have markedly higher rates of metabolic abnormalities, including insulin resistance, high triglycerides and unfavorable [weight gain](#), according to a study published in the [Journal of the Acquired Immune Deficiency Syndrome](#).

It is well known that people who acquire HIV as adults are more prone to metabolic problems, weight gain and abdominal fat accumulation, which have been attributed to HIV itself, inflammation and side effects of antiretroviral (ARV) treatment. But little is known about the long-term effects of chronic HIV and ARV exposure in people who have lived with the virus for most of their life.

Seynt Jiro Sahagun, working with Colleen Hadigan, MD, at the National Institute of Allergy and Infectious Diseases, and colleagues pulled data spanning 2000 to 2019 from an ongoing longitudinal study of 70 people who acquired HIV perinatally or through blood transfusions early in life. The study also included 47 HIV-negative people who served as matched controls.

The researchers measured the participants' body mass and composition using DEXA scans and other methods. They calculated trunk-to-limb fat and waist-to-hip ratios to assess abdominal, or central, obesity. They also evaluated changes in body composition and antiretroviral exposure over time in a subset of 40 people with HIV during a median follow-up period of seven years.

The participants were a median of 26 years old, more than half (59%) were women, half were Black, 18% were Latino and 3% were Native American or American Indian. People living with HIV had been on antiretroviral treatment for a median of 16 years, 54% had an undetectable viral load (below 50 copies) and 49% had ever met the diagnostic criteria for AIDS (below 200 CD4 cells).

The researchers found that overall weight and body mass index (BMI) were comparable between people with and without HIV. This was also the case for systolic blood pressure (the top number in a blood pressure reading), fasting glucose, total cholesterol and low-density lipoprotein ("bad cholesterol") levels.

But some differences indicated that people with HIV were more prone to [metabolic syndrome](#), a cluster of conditions including excess abdominal fat, abnormal blood sugar and blood fat levels and high blood pressure that raises the risk for diabetes, heart disease and strokes.

People living with HIV had higher diastolic blood pressure (the bottom number), higher insulin levels, greater insulin resistance (a precursor to diabetes) and higher triglycerides than HIV-negative people. Meanwhile, high-density lipoprotein (“good cholesterol”) levels were lower in people with HIV.

In addition, people living with HIV had a higher hip-to-waist ratio and trunk-to-limb fat ratio. A higher waist-to-hip ratio was associated with the use of nucleoside reverse transcriptase inhibitors (NRTIs), non-nucleoside reverse transcriptase inhibitors and protease inhibitors. A higher trunk-to-limb fat ratio, though, correlated only with NRTI use. Of note, the NRTI tenofovir disoproxil fumarate—which has been linked to weight loss in some studies—was associated with higher hip-to-waist and trunk-to-limb fat ratios. And integrase inhibitors—which have been linked to weight gain—were not associated with an increase in either ratio.

Over a median seven years of follow-up, participants with HIV saw their good cholesterol levels rise, while the rest of the laboratory measurements remained the same. Waist-to-hip ratio and trunk-to-limb fat ratio also increased over time, but these changes were not associated with specific HIV meds or drug classes. The researchers attributed this potentially to the “residual lipotropic effects of extensive ARV use since early childhood and adolescence.”

“These findings underscore the long-term persistence and associated risk factors of central adiposity among PLWH who have lifelong ARV exposure,” Sahagun and colleagues wrote, “which may translate to increased metabolic disturbances and enhanced risk of cardiovascular disorders in future decades.”

Click here to read the [study abstract](#).

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