Predicting the Risk for Fragility Fractures in People With HIV

With a $2.4 million grant, researchers will develop a tool to calculate an HIV-positive person's probability of a fracture.

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People living with HIV are more likely than their HIV-negative counterparts to experience fragility fractures, which occur as a result of minimal force and are often a sign of osteoporosis, or weakened bones. But what are the HIV-related risk factors, and can the likelihood of fragility fractures be measured? A $2.4 million grant from the National Institutes of Health will help two researchers at the Yale School of Medicine and the Yale School of Nursing develop a tool to assess the likelihood that a person with HIV will experience such fractures within a year.

Fragility fractures in people living with HIV add up to over $99 million in excess costs nationwide every year, according to a Yale School of Medicine press release.

"These fractures are associated with increased rates of hospital and nursing home admissions, along with long-term physical disability, social isolation and death," said co–principal investigator Evelyn Hsieh, MD, PhD, an assistant professor of medicine at Yale School of Medicine. "We know that most of these fractures occur in middle age, so they can also cause economic hardship and poor health outcomes as these patients age."

The study's other co–principal investigator, Julie Womack, PhD, CNM, FN, associate professor of nursing at Yale School of Nursing, elaborated: "Because of the numerous ramifications of these fractures, we are setting out to create and test a risk assessment tool based on the Fracture Risk Assessment Tool (FRAX) that will incorporate the HIV-relevant risks into the model."

Risk factors to consider for the HIV population include coinfections (including hepatitis B and C), substance use disorder and polypharmacy, meaning taking multiple medications at one time.

The researchers' goal is to create, test and disseminate an assessment tool similar to FRAX—which is used in the general population—but tailored for people living with HIV and will calculate the probability that a person will experience a fragility fracture within a year.

Bone mineral density loss is a growing concern among people with HIV, especially those aging with the virus. Last year, researchers found that people with HIV had a 1.5-fold increased risk for any

fracture and a nearly fourfold higher risk for a fragility fracture. What's more, the loss of bone mineral density could explain only 15% of the increased risk for fragility fractures. To learn more, see "What's the Skinny on Bone Health for People With HIV?"

And in other HIV-related research grants, see "Long COVID and 'Gut Leakiness' in People Who Have HIV" and "NIH Makes Substantial New Investment of Over $265M in HIV Cure Research."

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