**Study Title:** HIV Body Composition, Bone, and Vitamin D Status in South African Women

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**Objective:** This study aimed to assess the magnitude of HIV and antiretroviral (ARV)-associated changes in areal bone mineral density (aBMD), size-adjusted bone mineral content (SA-BMC), and vitamin D status in adult premenopausal women living in Johannesburg, South Africa.

**Study Design:** The study was longitudinal, with 98 HIV-negative (Nref) and 149 HIV-positive women participating. The HIV-positive group was divided into those eligible to start ARV (Plow, n=75) and those unlikely to require ARV (Ppres, n=74) during a 12-month follow-up period. Participants were assessed at 0, 6, and 12 months for body composition, bone measures, and dietary assessment. Blood and urine samples were collected for the evaluation of relevant musculoskeletal analytes, including 25(OH)D, at each time point.

**Results:** At baseline, there were no significant differences in aBMD or SA-BMC between groups. Plow had significantly lower serum albumin and higher serum phosphate concentrations. Over 12 months, Plow subjects experienced significant decreases in aBMD and SA-BMC of the order of 2-3% at total hip, femoral neck, and lumbar spine. There were no significant differences in mean vitamin D status between groups at any time point.

**Conclusions:** HIV infection in South African women is associated with differences in body composition but not with differences in bone measures or vitamin D status at baseline. However, being in the Plow group and ARV exposure were associated with significant decreases in mean aBMD and SA-BMC over 12 months. Further studies are warranted to assess skeletal effects over a longer time in HIV-positive, ARV-exposed, and ARV-naïve women.

[Bone Mineral Density, Body Composition, and Mineral Homeostasis Over 24 Months in Urban South African Women With HIV Exposed to Antiretroviral Therapy - PMC (nih.gov)](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7202419/)