ANTICIPATED RESULTS: As of 10/18/24, a total of 53 were enrolled, with 52 eligible for the study and were between the ages of 30–75 years. 51 identified as women and 1 identified as nonbinary. 21 (40.4%) identified as Black, 30 (57.7%) identified as White, 2 (3.8%) identified as Hispanic, and 1 (1.9%) identified as mixed race. Of the total enrolled, 25 (48.1%) met criteria to meet with a genetic counselor. Twelve (23.1%) have been scheduled to with meet with a genetic counselor and 2 (3.8%) of this group completed their appointment, but did not pursue genetic testing. 28 (53.8%) completed the survey and reported that they were satisfied with the service. Of the 16 people who screened positive and completed the survey, all 16 (100%) stated that they intended on proceeding with testing. Our study is still ongoing. DISCUSSION/SIGNIFICANCE OF IMPACT: While this model has demonstrated acceptability so far, there are still possible barriers to genetic counseling and testing after the referral has been provided that need to be explored. However, this approach could provide a novel framework for combining risk assessment with screening mammography for all women nationwide.

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Sarcopenia severity in males between the ages of 3 to 20 years old with duchenne muscular dystrophy (DMD) in Puerto Rico

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OBJECTIVES/GOALS: Objectives/Goals (300 characters): Sarcopenia is a progressive skeletal muscle disorder associated with adverse outcomes. There is a gab of having objective measures upon performing interventions in patients with muscular dystrophies. The object of the present study is to describe the severity of sarcopenia in DMD patients in Puerto Rico. METHODS/STUDY POPULATION: Methods/Study Population (700 characters): Forty to 30 patients with DMD who are followed in MDA Care Center in the "Instituto De Rehabilitacion del Caribe." Diagnosis will be confirmed with genetic testing and/or muscle biopsy. Lean muscle mass will be measured with a Whole Body Dexa (WBD) in a Nuclear Medicine Lab. Hand grip, elbow flexor, and knee extensor muscles strength will be measures with an isometric dynamometer. Patients' functionality will done using the North Star Ambulatory Assessment scale and Brook and Vignos scales, which have been validated for patients with DMD and neuromuscular disease respectively. Correlations will be made with lean body mass (independent variable) and muscle strength and functionality (dependent variable). RESULTS/ANTICIPATED RESULTS: Results/Anticipated Results (700 characters): We expect to find severe sarcopenia in patients with DMD in PR and that it will be more severe with older age. There will be a direct correlation between lean muscle mass and muscle strength, and functionality in DMD patients. DISCUSSION/SIGNIFICANCE OF IMPACT: Discussion/Significance of Impact (300 characters): The findings of our study can help us to explore the possibility that Whole Body DEXA can serve as a potential biomarker for future studies since there is a need to develop noninvasive biomarkers that correlate with disease progression and interventions in DMD patients.

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Intestinal CD4:CD8 ratio and systemic inflammatory parameters in suppressed HIV-1 infection

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OBJECTIVES/GOALS: To determine the heterogeneity in CD4:CD8 ratio in a well-characterized cohort of PWH and to investigate the predictors of intestinal CD4:CD8 ratio reconstitution (CD4:CD8>1) and its impact on systemic inflammation. METHODS/STUDY POPULATION: We enrolled 52 PWH on ART and with peripheral HIV-RNA RESULTS/ANTICIPATED RESULTS: PWH had a lower CD4:CD8 ratio both in the peripheral blood [p1. This subset of PWH was more likely female (62% vs. 38%, p = 0.0158), diagnosed with HIV for a longer time [p = 0.0347] have longer duration of most recent viral suppression [p = 0.0365] higher CD4+ T cells at enrollment [p = 0.0262] and higher CD4+ T cell nadir. Multiple logistic regression showed that duration of HIV infection [OR 1.13 (95% C.I. 1.02–1.3)] and CD4 = T cell nadir[OR 1.01 (95% C.I. 1.001–1.016)] were associated with colonic CD4:CD8 >1. Colonic CD4:CD8 ratio partially correlated with the peripheral blood CD4:CD8 ratio (r = 0.274, p = 0.068) and with the pro-inflammatory cytokines IL-20 (r = -0.413, p = 0.036) and SLAMF-1 (r = -0.329, p = 0.074). DISCUSSION/SIGNIFICANCE OF IMPACT: In PWH, CD4:CD8 ratio

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Elucidating the epigenetic regulation of estrogen receptor-positive breast cancer cells by parathyroid hormone-related protein (PTHrP)

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OBJECTIVES/GOALS: We have shown that parathyroid hormone-related protein (PTHrP) is enriched at the LIFR promoter in breast cancer cells and inhibits the expression of dormancy-associated genes including LIFR. The objective of this study is to define where all PTHrP binds DNA and identify pathways that are regulated by PTHrP that promote breast cancer colonization of the bone. METHODS/STUDY POPULATION: In this study, we use human estrogen receptor-positive MCF7 breast cancer cells which we and others have reported lie dormant in the bone. MCF7 cells were engineered to express either PTHrP with an HA-tag (MCF7P), or a vector control (MCF7V). We use Cleavage Under Targets and Release Using Nuclease (CUT&RUN), a method of mapping protein-DNA interactions, to define where PTHrP binds DNA. Here, an HA-specific antibody identifies regions of DNA that are bound to PTHrP in MCF7P cells compared to MCFV cells. Next, we perform DNA sequencing and gene set enrichment analysis (GSEA) on genes identified by CUT&RUN to identify pathways that are regulated by PTHrP. These experiments will determine how PTHrP regulates dormancy and breast cancer colonization in the bone. RESULTS/ANTICIPATED RESULTS: We completed IgG (-control),

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