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1) Early Onset Osteopenia Assessments in College Aged Students

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Introduction: Osteopenia and osteoporosis are diseases of severe bone mineral density loss. Approximately fifty-million individuals in the United States over the age of fifty suffer from osteopenia or osteoporosis; with seventy-five percent of cases effecting women. There has been a noted thirty-five percent increase in diagnoses of osteopenia and osteoporosis since 2008, with a dramatic increase in cases regarding women under thirty years of age. Typically, the onset of osteopenia and osteoporosis in women has occurred around fifty years of age, making these recent diagnoses of osteopenia and osteoporosis in young females quite alarming. As early onset osteopenia and osteoporosis are characterized by bone fragility, the potential for long-term consequences later in life due to structural deterioration is severe; particularly in the lower lumbar spine, pelvis, and femoral neck-head regions. As such, it is essential to implement early bone mineral density detection to facilitate the maintenance of healthy bone density and the remediation of deteriorating bone mineral density. **Methods:** Two-hundred and fifty, male and female, graduate and undergraduate students, of diverse racial backgrounds, between the ages of eighteen and thirty, were recruited for participation in the bone mineral density assessments. Assessments were conducted on an Encore Dual X-Ray Absorptiometry (DEXA) scanner. The Total-Body DEXA scan provided a complete densitometry assessment of bone mineral density by all regional sites, including head, arms, legs, ribs, spine, and pelvis. **Data Analysis:** Independent Sample T-tests were applied to assess participants bone mineral density in relation to known healthy values based on age and gender.