Sedentary lifestyle has been identified as an independent predictor of chronic diseases including heart disease, stroke, type 2 diabetes, and some cancers. The present study looked at the impact of sedentary behavior, independent from physical activity, on bone health among females (adolescents, young adults, middle-aged adults, and older adults). Interestingly, increased amount of time spent in sitting/lying impacted bone mineral density at the femoral neck in older females, while 60 minutes of daily moderate-to-vigorous intensity physical activity impacted on bone health in adolescent girls. Reducing the amount of prolonged sitting is an important step to combat bone loss.