

Cortisol is released into circulation during times of stress, which exercise elicits, and has been shown to assist in the progression of osteoporosis in athletes. The primary goal of the current study was to compare circulating cortisol levels in different groups of athletes, endurance runners, baseball players, and power lifters. A secondary goal was to evaluate other extrinsic lifestyle factors aside from the stress of exercise that could be associated with an increased salivary cortisol level. It attempted to identify these components and allow for recommendations to be made as to how athletes can preserve his or her bone health while still exercising regularly. It was hypothesized endurance runners would exhibit the greatest cortisol concentrations during exercise given the nature of the exercise itself. Participants were given a survey to assess his or her current lifestyle and six saliva samples were collected from each participant at pre-determined times to evaluate each person's salivary cortisol level. Data was analyzed and compared to the participant's survey answers. Cortisol concentration was found to be elevated and statistically significant ($p < 0.05$) in runners during exercise, supporting the hypothesis. In addition, baseball players showed statistically significant results ($p < 0.05$), however power lifters did not ($p > 0.05$). Analysis of the survey responses indicated a significant relationship ($p < 0.05$) between cortisol concentration and the average hours of sleep a participant receives per night. More servings of meats, fruits, vegetables, and sugary foods were seen to also have significant relationships ($p < 0.05$) with salivary cortisol concentration.