

DYLAN ANDERSON, JOSEPH IERULLI, THANNA ODDO, COLIN BLACKWELL, CHAD KUHNS and NATALIA OMELCHENKO, Dept of Natural Sciences and Mathematics, West Liberty University, West Liberty, WV, 26074. Blood Pressure Variations During the Day.

Changes in blood pressure/pulse reflect the body ability to adapt to changes in the environment. The aim of the project is to evaluate the changes in the blood pressure/pulse during the day and compare magnitude of changes in blood pressure across different individuals. Male and female volunteers (19-23 years old) who have not been diagnosed/experienced health conditions that modify blood pressure (including no Rx or OTC medications), were provided with a personal digital blood pressure monitor. For the next 3-4 days, they measured their own blood pressure about every 2-3 hours (night time excluding). The subjects also recorded some basic information about the daily routine (meals (time, description), exercise activities (time, intensity), class/exam schedules (time, stress levels related to quizzes/exams)), and the measures completed within 30 min of an event that may increase blood pressure were excluded from analysis. The mean arterial pressure (MAP) was calculated for each individual for different time points of the day. A mathematical model was used to determine the daily high point of the blood pressure. After that, the data was compared across all days and all individuals. We believe that our analysis of daily changes in blood pressure may provide us with important insight regarding human evolution. Indeed, a daily peak of blood pressure is likely to coincide with preferential time for hunts for hominids. The data can also have important biomedical significance as they determine time of the day when individuals have the highest blood pressure measures.