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Acute Cardiovascular Response to Cell Phone Use in College Students

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Recent studies suggest college aged students average 8-10 hours of screen time per day. Furthermore, the restriction of wireless devices is known to induce anxiety in college students regardless of their daily screen time. In spite of this we do not fully understand the physiological implications that this potentially addictive type of behavior can have on our bodies, particularly our cardiovascular system. We hypothesized that when subjects do not have access to their phone, heart rate (HR) and blood pressure (BP) rise due to stress and anxiety. **PURPOSE:** To examine changes in HR and BP in college aged subjects with and without access to their cellphones. **METHODS:** Subjects (3 men and 6 women; age=21.2±2.3 years) sat through two 20-minute trials, one with their cellphone and one without any access to their phone. We asked each subject to share their daily screen time usage as recorded by their phone. When our subject did not have access to their phone it was placed on a table and was visible but out of their reach. During either of the sessions our subjects did not have any communication with our testers and were required to sit quietly. Blood pressure (BP) was measured every two minutes by an automated BP cuff while electrocardiography (EKG) was measured continuously via a 3-lead EKG. A paired T-test was used to determine differences in the data between trials. A Pearson's Correlation was used to determine a relationship between both HR and BP and each subject's daily screen time. Data is shown as mean ± SE. Significance was set to p<0.05 **RESULTS:** Subjects reported 8.4±1.5hrs/day of daily screen time. HR increased by 23±2.1BPM (p<0.05) and mean arterial pressure rose 11.2±4.4mmHg (p<0.05) during sessions with phone vs. no phone. Further, there was no correlation between screen time and either HR or BP. **CONCLUSION:** The findings of this study countered our original hypothesis. Acute cellphone use increased both BP and HR, which is perhaps indicative of a stress response caused by the cellphone. Further, the amount of daily screen time did not change this result.