Colored LED Strip Lights vs. Blood Pressure

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LED lights are found in most modern technology such as electronics, indoor and outdoor lighting, and novelty items. Because they are so common, they could be affecting our health. The focus of this study was to measure the effects of LEDs on the blood pressure of teenagers. The LED lights chosen for the study were white, red, green, and blue. Because red is perceived as an “angrier” color, it was hypothesized red light would make blood pressure rise; and since blue is perceived as a “calmer” color, it would cause blood pressure to lower. To test these hypotheses, subjects were placed in a dark room where LED strip lights were already placed on ceilings and walls. The participants were exposed to each color of light separately for two minutes. Blood pressure was taken before, during, and after each color of light was presented. This study suggests that all LED lights cause blood pressure to rise, with white LED light having the greatest effect of 12.03% increase in blood pressure. Blood pressure increased 7.30 % after being exposed to green light, 5.70% after blue light, and 4.29% in red light. Today’s society has a large population that suffers from hypertension. These people could benefit from minimizing their exposure to LED lights, and red would be preferred if LED light is needed. Further experiments will clarify if blood pressure rises with different exposure times and/or different colors of light.

Awards Won: