

Acute Effect of Sauna on Blood Composition

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ABSTRACT

Sauna therapy has previously shown to benefit cardiovascular health. Nevertheless, the impact of sauna therapy on blood properties has not been described thus far. **PURPOSE:** The purpose of this study was to investigate the impact of a bout of sauna therapy on hemoglobin, hematocrit, and plasma volume. **METHODS:** Six healthy young adults (ages 18-36; n=5 male, n=1 female) underwent a total of 40 min of sauna exposure in two 20 min increments. A baseline blood draw was performed pre-sauna. Participants underwent sauna exposure, and blood draws were performed directly post 40 mins of sauna, as well as after a 90-minute recovery period. Hemoglobin and hematocrit levels were measured, and total plasma volume was calculated using the Dill and Costill equation. Esophageal, muscle, and skin temperatures were recorded throughout the experiment. **RESULTS:** Sauna exposure had no effect on hematocrit or hemoglobin. There was no significant difference in hematocrit or hemoglobin ($p = 0.776$, $p = 0.179$, respectively), pre vs. post sauna. Though not statistically significant at this time, the total plasma volume tended to decrease. There was a significant increase in esophageal, muscle, and skin temperatures ($p < 0.001$). **CONCLUSION:** Though acute sauna exposure does not cause a significant difference in hemoglobin and hematocrit, there was a significant increase in esophageal, muscle, and skin temperatures pre vs. post sauna. There are no impacts on blood variables other than a trend for plasma volume decreasing.