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Running Against The Temperature

This project was designed to determine the effects of temperature on heart and lung function during a period of activity. It was hypothesized that lung and heart function would be optimal at room temperature. 10 human subjects were chosen to run in both a cold and warm location. Prior to the test, the lung capacity (Peak Efficiency Flow, measured with peak flow meter) and heart rate of each subject was recorded. Each subject ran for six minutes in both the cold and warm temperatures at a consistent pace, roughly measured using a pedometer. Immediately after the subjects finished running, their peak efficiency flow (lung capacity) and heart rate was recorded. The data collected did support the original hypothesis in that the difference between resting lung capacity in 72.5F and post-exercise lung capacity was minimal. The difference between the resting lung capacity and post-exercise lung capacity was 3.5 PEF (peak efficiency flow), while the average difference found in the other temperatures was 20.82 PEF. Heart rate was barely affected by the change of temperatures. The post-exercise rate was relatively normal in each temperature, around 134 bpm (beats per minute). However, it rose slightly to 159 bpm in the warm temperatures. The results illustrate that 72.5F is the optimal temperature for the lungs and heart to function at their best during exercise because the difference between resting lung capacity and post-exercise lung capacity is minimal and heart rate is scarcely affected by this temperature.