



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Kendall A. Kissel	Project Number J1214
Project Title Running Away from Asthma: Does Running Improve Lung Capacity in Asthmatics?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals The purpose of this experiment was to see whether or not both vital capacity and tidal capacity improve by running in asthmatics. The hypothesis suggested both vital capacity and tidal capacity increase with running.</p> <p>Methods/Materials In this experiment, the subjects ran five, ten, and fifteen minute lengths. This experiment studied seven subjects including five asthmatics and two non-asthmatics. Lung capacity was measured with two devices: a peak flow meter which was used to measure lung capacity immediately after the run and a homemade spirometer which measured lung capacity three minutes after the run.</p> <p>Results The baseline measurement averaged to be 280 ml. After a five minute run, vital capacity improved to 304 ml on average. After a ten minute run, vital capacity improved from the original lung capacity to 340 ml on average. After a fifteen minute run, the vital capacity increased dramatically to 510 ml. The longer the asthmatic subjects ran, the higher their vital capacity was. These results may have occurred because of the #breaking point.# A #breaking point# is when asthmatics# lungs open up to be more like a normal lung.</p> <p>Conclusions/Discussion The hypothesis proved correct. Not only did the asthmatics# lung capacity improve, but the non-asthmatics (control group) lung capacity also improved. This experiment is important because it could lead to a cure for asthma. It also opens up so many more questions such as whether or not other exercise such as soccer, basketball, and swimming could improve asthma.</p>	
Summary Statement This project tested to see whether or not running improves lung capacity in asthmatics.	
Help Received Fellow students were test subjects	