



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

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Project Title Look Cool or Be Cool: Which Sports Material Cools Your Body Temperature Down the Fastest?	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals We both play sports and spend a lot of money on sports apparel. We came up with this project to see what sports material allows a body to cool down the fastest.</p> <p>Methods/Materials We manufactured a silicon block. Then we heated the silicon block to 110°F in a convection oven. The ambient temperature was controlled at 74°F. We measured the temperature of the silicon block with a digital thermometer. Then we monitored the temperature of the silicon every ten seconds from 105°F down to 97.5°F, while it was covered alternately with five different sports materials. We chose this temperature range based on a marathon runner's body temperature of 103.8°F, and a weight lifter's body temperature of 101°F and a normal body temperature of 98.6°F.</p> <p>Results Our results showed that the more synthetic materials there are in the active wear, the faster you will cool down. It also shows that the most expensive shirts don't always perform the best.</p> <p>Conclusions/Discussion The polyester material of the Champion shirt performed the best because it cooled down the fastest. The Under Armour shirt was ranked better in manufacturer reviews because of its 82% Cationic Polyester and 18% Elastane, but in our study it was beat by both Champion (100% Polyester) and Nike (56% Nylon, 32% Polyester, 12% Spandex). The Speedo (100% Cotton) material took the longest to cool down, as the natural material did not allow our test block to cool as rapid as synthetic materials. All the synthetic sports material, were the top performers in our experiment.</p>	
Summary Statement Our project is about the cooling rate of body temperature with sports materials covering them.	
Help Received We would like to thank our parents for helping us put our board together and creating graphs on the computer. Allflex USA provided us with the highly accurate GLA thermometer.	