

Effect of FIR athletic apparel on oxygen consumption during exercise

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Athletic apparel are commercially available that contain fabrics with far-infrared radiation (FIR) properties. If such apparel are capable of inducing positive physiological effects, then there may be important implications when worn by athletes during exercise. The purpose of this study was to examine whether FIR apparel had an effect on oxygen consumption during cycling at submaximal intensities. Twelve male cyclists completed a submaximal incremental cycling test. Each subject was tested on 4 separate days, twice while wearing a full body Control garment, and twice while wearing a similar garment made out of FIR fabric. Throughout each cycling test, the volume of oxygen uptake was calculated using data obtained from a breathing mask connected to a metabolic analysis cart. At lower cycling intensities, the subjects consumed statistically significantly ($p < 0.05$) less oxygen when wearing the FIR apparel compared to the Control garment, despite performing the same amount of mechanical work. Additional research is required to determine the implication of this effect for training or competing athletes, however the results show that this apparel technology does elicit a physiological effect. Support for this study was provided by Hologenix LLC in collaboration with adidas International. Neither source had a role in study design, testing, or interpretation.