

# ISRP 1999 abstract

Presenter/author	Title	Abstract
<p><b>Johnson, Arthur T.</b> <b>Scott, W. H.</b></p> <p><i>Biological Resources Engineering and Kinesiology University of Maryland College Park, MD 20742 USA</i></p>	<p><b>Comparison of Treadmill Exercise Performance Times for Several Types of Respirators</b></p>	<p>Respirators have been shown to impair work performance due to factors such as vision, communication, respiration, heat transfer, personal procedures, physical factors, and anxiety. Respiratory factors are especially important at intense work rates of about 80-85% of maximum oxygen uptake, and treadmill performance times have been found to be linearly related to inspiratory resistance levels at that rate of work.</p> <p>There are several respirators on the market that have almost no inspiratory resistance. These are loose-fitting powered air purifying respirators configured as hoods, helmets, or face shields. This experiment was conducted using two commercially-available respirators and the US Army M17 respirator used in our lab. Treadmill performance times were measured for twelve volunteers wearing each respirator on a different day.</p> <p>Performance times were longer for the respirators with lower inspiratory resistance, and ranged from 19 min for the control to 13 minutes for the M17. Breathing Apparatus Comfort ratings were higher (more comfortable) for the conditions that resulted in longer performance times.</p>