

# SCSU tests polar mask

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The Polar Wrap Exchanger Mask offers a new way to keep warm this winter.

Bruce McCormik, president of Polar Wrap, asked the SCSU Human Performance Lab to test the efficiency of the product. "There is not a lot of data out on breathing and we needed to verify the benefits of our product," McCormik said.

The Polar Wrap Exchanger Mask has a thermal exchange device that goes over your mouth. Inside is copper, which collects moisture and heat as you exhale which is then taken in as you inhale.

"It (Polar Wrap Exchanger Mask) significantly reduces cardiac stress," said John Seifert, the study director and associate professor in the health, physical education, recreation and sports science department.

Unlike cold-weathered mammals which have long snouts and enlarged sinuses to heat the air as they breath, cold air goes straight to humans' inner cores. Their respiratory systems must heat the air. When they breathe out, heat and water vapor are exhaled. More than 40 percent of body heat can be lost by breathing.

As the body cools, it preserves heat for the vital organs. Blood vessels constrict and less blood flows to the muscle, skin and superficial tissue. That is why fingers and toes get numb first.

Since the blood vessels are constricted the heart and pulmonary system must work harder to circulate blood. This can be a problem for older people or those with heart problems. It can even induce heart attacks.

Also, when moisture is lost from the mucus membrane it becomes vulnerable to viruses and bacteria.

The University Performance Lab did two series of tests. One was done on asthmatic people and another on non-asthmatic people. First, the subjects sat peacefully for 10 minutes in 23 degrees celsius before taking the basic information like blood

pressure and heart rate. The subjects then bundled up in insulated boots, pants, coat, a hat and mittens. They went inside a cooler at -20 degrees celsius and rested for 30 minutes. More data was collected. They then did the trial with the Polar Wrap and compared data. The test was also done with the subjects exercising on a stationary bike.

The most significant success was seen in asthmatic subjects. Normal blood pressure for a college student is about 120/80. When asthmatic subjects went in the cold without the mask their blood pressure rose to 145/95.

However, when the mask was worn in the cold their blood pressure was the same as it was in a warm environment.

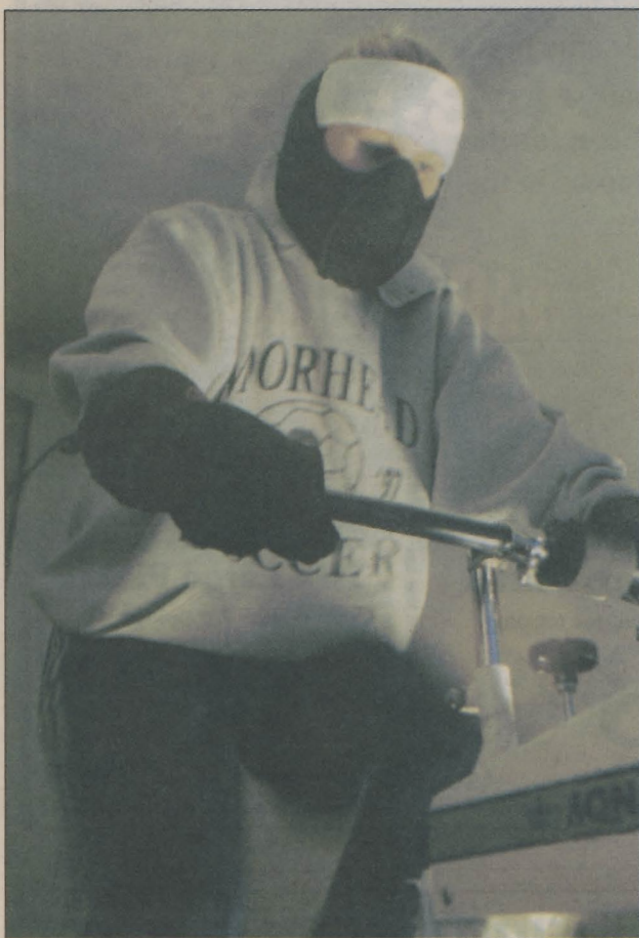
They are currently studying the effects of the mask on athletic performance. They want to find out if exchanger masks affect the muscular system as well as the pulmonary system. Subjects will be using the Polar Wrap exchanger mask while they ride a stationary bike for 45 minutes.

Subjects are usually SCSU students but some are from the community. They get paid for their time and effort. The masks have been around since the 1980s but are recently gaining popularity. They run between \$40 and \$75 and can be found at outdoors and sporting goods stores. They are available in St. Cloud at Cabela's and Fleet Farm. Gander Mountain and Scheel's Sport Shop probably will not be getting more until next year.

The masks come in a variety of styles — some just covering the face and others that extend to cover the neck and shoulders.

Seifert advised, "The best thing is to wear an exchanger mask where there is trapping of heat and water vapor. The second best option is to wear a scarf because you'll at least capture moisture. You should definitely wear something, though."

If you are interested in participating in this study you can call Seifert at the Human Performance Lab at 255-3637. You can find Polar Wrap exchanger masks and more information about the SCSU study of them at [www.polarwrap.com](http://www.polarwrap.com).



SCSU senior Niki Green participates in a study conducted by John Seifert in a frigid trailer near Halenbeck Hall.

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