WWD

Study Shows 37.5 Cooling Technology Increases Athletic Efficiency

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Jeff Bowman, chief executive officer of Cocona Inc., said "we're just scratching the surface" of the potential of its 37.5 cooling technology, but the results of a new study could only add momentum. Cocona on Monday announced the results from a blind university study that shows wearing 37.5 technology can improve thermoregulation during exercise, which impacts performance.

By reducing the increase in core temperature during exercise, similar to wearing a cooling vest circulating cold water, the added cooling from 37.5 technology increases energy efficiency and output.

The study, "Beneficial Effects of Cooling during Constant Power Non-steady State Cycling" conducted at the University of Colorado at Boulder, shows that 37.5 technology extends an athlete's performance at their lactate threshold, lowers core temperature during exercise, increases efficiency so an athlete uses less energy to do the same amount of work and decreases the rate of core temperature build up.

"We had a meeting on Tuesday with the Army — they've been field-testing the technology for some time now — and they are very interested in the results, and it correlated with what they've been seeing, as it does with a number of other customers who've been doing wear testing and we hope it actually translates into first sale for them," Bowman said.

Rossignol with 37.5 technology. *(Photo courtesy of Rossignol)*

Managing core temperature is a key factor in determining performance and efficiency, Bowman explained. The study used three cases to determine the effects of cooling on physiological indicators for human subjects. The cases were a typical wicking T-shirt available from the major athletic brands, an otherwise identical 37.5 T-shirt, and an ice vest and sleeves.

The two shirts were blinded to the investigators and the participants. Each case delivered a different level of cooling to athletes who were requested to maintain an exercise intensity on a stationary bicycle that resulted in increasing heat

stress. The athletes were tested for a range of physiological parameters before, during and after the requested activity. Core temperature, skin temperature, sweat rate, oxygen intake, carbon dioxide output and blood levels were closely monitored and measured.

Previously, 37.5 technology was marketed under the Cocona brand name, as the original active carbon particles were derived from coconut shells. The technology has since been expanded to use additional natural materials.

Bowman explained that the company had been selling fabric and clothing directly with the technology, which he said tended to "alienate customers who felt we were either in competition with them or didn't have that expertise."

When Bowman joined Cocona three years ago, he began to change the business model. "Now our new business model has us working with brands and fabric mills and we are intimately involved with helping our customers design fabrics to incorporate our technology," Bowman said. "We license the brands to use our trademark, we require them to buy fabrics from certified mills and yarn spinners, and we work with the mills to ensure they only sell to the licensed partners and that they meet our quality criteria."

The name of the technology is derived from research that shows the average person's body strives to maintain an ideal core body temperature of 37.5 degrees Celsius. Comfort in clothing is greatly influenced by the temperature and humidity next to skin known as the micro-climate and people are most comfortable when the micro-climate next to the skin has a relative humidity close to 37.5 percent. This combination creates an ideal performance zone and 37.5 technology works to enhance the body's natural cooling mechanism — the body puts out sweat to cool it down and 37.5 technology removes it from the micro-climate.

Fabrics made with 37.5 technology are said to dry up to five times faster than similar fabrics, diminishing wet cling. The technology is made with naturally derived materials so there are no harsh chemicals to irritate the skin, and 37.5 active particles are permanently embedded into yarn.

Among the company's largest customers are Carhartt, which is using 37.5 in a large group in its collection; Bauer Hockey, which was one of the first to use it with many of the National Hockey Players who wear it's gear, and Tommy Bahama, which launched a product a few months ago "that transforms a silk shirt into something that's comfortable," Bowman said.

"For a long time people talked about wicking, but that concept is outdated," he added. "We're trying to delay the onset of sweating by helping the body more efficiently cool itself, or warm itself as the case may be, while making sure you're drying as soon as possible. The industry in general and consumers are starting to understand there's more to life than wicking and that's fueling some of the innovation we're starting to see."