

California-based Cooltech Marketing has launched three new sportswear garments that are designed to keep the wearer's core body temperature within comfortable ranges in hot environments or during body heat-generating activities.

How to be cool and stay cool

Cooltech launched in 2004 with a wine cooling product called Wine by Degrees, which became known as "a wine cellar in a sleeve". The company is now looking to expand its body cooling winter warming apparel and accessories collection. Its Cooling Tee, Cooling Sports Bra, and Cooling Cami contain lightweight, controlled temperature cool packs that the company believes will benefit amateur and professional athletes alike.

If the body overheats, the following problems can develop: heat cramps caused by painful spasmodic contraction of the muscles, usually in the abdomen or legs; heat syncope, which is fainting or sudden loss of strength because of excessive heat gain; heat exhaustion, which can cause heavy perspiration, weakness, fainting, vomiting, and cold, pale and clammy skin; and heat stroke, which can cause the skin to be hot, dry and red. Other symptoms include rapid heartbeat, confusion and loss of consciousness.

Steady temperature

The new garments can be worn for any number of sports applications, ranging from extreme sports to daily workouts. The company also believes they can be used to help Multiple Sclerosis (MS) sufferers, women experiencing hot flushes during the menopause, and people that are exposed or vulnerable to heat stress.

"The controlled temperature technology contained in the inside pockets of our cooling sportswear endeavours to keep the body's core temperature within 'normal ranges' during exercise, not necessarily 'cool' the body," company founder and president, Rebecca Lee, reveals. She explains that even relatively small deviations in body temperature can become life-threatening. If body temperature rises more than eight degrees farenheight above normal, she says, the person who would be in very real danger.

The Cooling Sports Bra is one of three new cooling garments for use in sports from Cooltech Marketing.

 Cooltech





The Cooling Cami (left) and CoolingTee (right). The packs are designed to stay cool for more than two hours and could benefit Multiple Sclerosis sufferers and menopausal women.

 Cooltech

According to Cooltech, the garments are made from a moisture-wicking, highly breathable stretch fabric. "We are currently testing special weave breathable and wickable stretch polyesters, Supplex nylon, microfibres and mesh for our sportswear garments, Ms Lee explains. She adds that as new fibres are introduced to the marketplace, the company plans to expand its range in order to continually improve comfort levels.

The temperature control garments can be worn either as underwear or as outer garments. Each item contains inside pockets—one running horizontally across the chest and one vertically down the spine. The cool packs are inserted into these pockets. The non-toxic, non-flammable formula contained in the polymer cool packs, is blended to set and hold a 58°F (14°C) temperature. The packs weigh 15 ounces (425 grammes) in the women's garments and 27.6 ounces (782 grammes) in the Cooling Tee.

Cooler for longer

Ms Lee says the technology was developed in response to inquiries from the public such as: "Can you keep my driver cool this racing season? The cockpit reaches 140° F", "I exercise during my lunch hour and can't cool down when I return to my desk" and "I want to exercise, but I have Multiple Sclerosis and am not supposed to get overheated."

The packs can be placed in the refrigerator for 30 minutes or immersed in ice water for 15 minutes and they are said to stay cool for more than two hours. According to Ms Lee, controlled temperature technology is better than other portable body cooling products that use ice, frozen gel or evaporative cooling. "The body quickly becomes acclimatised to the coolness," Ms Lee claims. "The wearer soon begins to feel the heat being drawn from the body and absorbed into the cool packs. It is an

unusual but soothing sensation."

She says that the crystalline alkane (paraffin) blends used not only stay cool longer than ice or gel of the same volume or weight, but that the packs are able to maintain a constant temperature from the beginning to the end of the cooling cycle. Furthermore, she says evaporative cooling products require warm, dry circulating air to be effective and that the garments are always damp against the skin, which can cause garment mildew, bacteria and unpleasant odours to build up. Ms Lee claims this is absolutely not the case with the company's controlled temperature technology.

Lightening the load

One of the most important elements of the development process was to come up with a product that would serve its purpose without being heavy, bulky or restricting movement. This is important for those wearing the garments for sports, and for people using the cooling systems for medical reasons. "Typically, cool packs in these phase change vests can weigh up to six pounds; that's just too bulky and heavy to be comfortable," Ms Lee says. She adds: "Individuals suffering from Multiple Sclerosis—twice as many women as men—now have a more discreet, lightweight alternative to industrial-looking cooling vests."

She acknowledges that reducing the weight of the cool packs by decreasing the volume of formula used means that the tops do not stay cool for as long as others in the range. However, the company believes the effects will last long enough for the vast majority of applications. "Two hours is enough time to win a race or free MS sufferers from the confines of their homes on a hot day," explains the company founder. "The lighter weight cool packs contained in the sportswear offer cooling combined with mobility. Very important for athletes." 