

UNDER THE SKIN OF WALERO'S GAMECHANGER

No sweat: NASA technology can combat dehydration and keep you cool in the cockpit by proactively absorbing body heat

There were many products launched, unveiled and fawned over at the AUTOSPORT International Show in January, but can you remember the name of the temperature-controlling, flame-retardant underwear that has been heavily influenced by NASA?

Ask that question again in 12 months' time and the answer may well be different. After a year and a half in the making, mid-January marked the official launch of the new product Walero hopes will become an essential part of every driver's kit.

Anybody who has driven in anger knows what it's like in a cockpit environment, confined or open, with multiple layers and minimal airflow. Dehydration and discomfort swiftly follow.

"The usual methods of cooling the body can't work with much effectiveness within the environment of a car," explains Walero founder Fiona James, a GT driver and British Women Racing Drivers' Club Gold Star pursuer. "The body's most effective method of cooling is evaporation, but this is largely compromised due to the protective clothing you have to wear, like a racesuit and helmet, and the enclosed environment and limited airflow within the car."

"A good proportion of your body is also covered by a race seat, which is definitely not breathable! I'd experienced first-hand the extreme temperatures inside a race car and wasn't happy with any of the options available..."

That, in short, is the inspiration for Walero. It spent around 18 months in development before the launch in January 2015. The use of patented Outlast technology was key to this, with the implementation of special materials developed for NASA to protect astronauts from temperature fluctuations while in their

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spacesuits. Work also started with a company called Fantex, which has a new type of environmentally friendly antimicrobial product, which works as an anti-fungal, anti-bacterial and anti-viral agent, keeping the underwear fresh.

But it's the Outlast element that makes the Walero underwear unique. Outlast reckons its 'Thermocules' technology is "comparable to ice in a drink"; it absorbs the heat as the skin warms up to cool the user, maintaining body temperature in more extreme conditions. When the skin begins to cool again – who hasn't experienced that uncomfortable chill when you get out of the car and the sweat patches beneath the suit clash with the cold? – the material releases that heat. Not that you'll be sweating in Walero gear – such is the advanced nature of the material, it works proactively, and the absorption of heat in the first place removes the body's need to sweat.

Your temperature is regulated all the time, which aids comfort and boosts concentration – it's climate control for the average racing driver. This sort of benefit is often underrated. Keeping cool (literally) is a key part of closed-cockpit endurance racing, but the benefits are felt in equal measure with single-seater racing in sunnier climes such as Bahrain, Malaysia, India and Abu Dhabi.

"Fluid loss is a huge thing for a driver," attests 13-time Formula 1 race winner David Coulthard. "Regular body temperature is, what, 37 degrees? In Malaysia it would go up to 39 or 40 degrees – that would be medically unsafe. And absolutely there would be a performance drop-off."

"As you get dehydrated, your ability to make decisions isn't as good. The fitter you are, the more able you are to maintain a good level of decision-making and deal with the stress."

To add some science to that, the temperature window in which the average person feels comfortable is relatively narrow: when the body core temperature



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of 37 degrees fluctuates only two degrees upwards or downwards we are subject to fever or hypothermia. Muscle fatigue, lapses of concentration and even loss of consciousness can occur at 39 degrees.

This is where that temperature regulation is key. The Outlast technology in the Walero underwear reduces temperature swings and influences the comfort zone efficiently; you sweat less (up to 33 per cent, so quality control tests indicate) and are less chilled. You feel not too hot, not too cold.

It's a far cry from Coulthard's memories of the early Malaysian rounds.

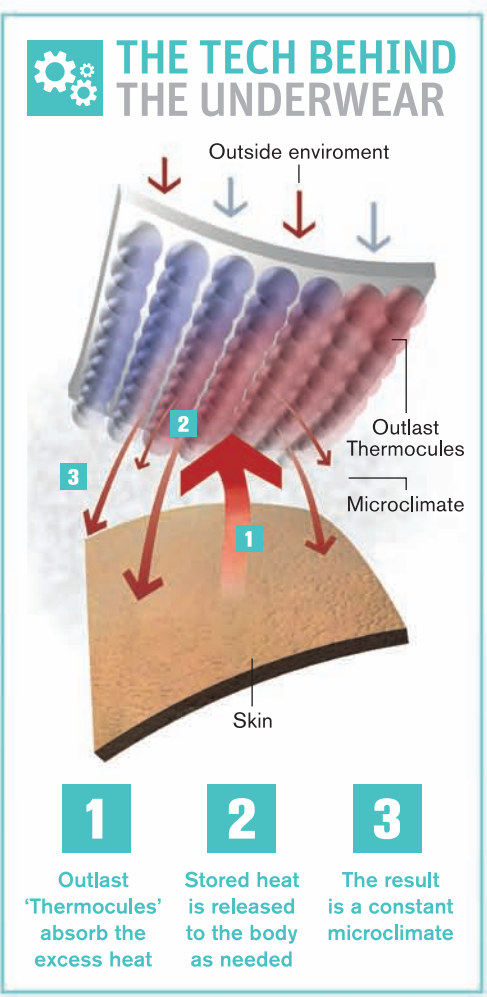
"We didn't have to wear the full Nomex – some drivers had T-shirts and short balaclavas, so you knew if you had a fire you would be in trouble," he recalls. "The suit would be undone as well. It really wasn't that sophisticated."

The same cannot be said for Walero's temperature-controlled racewear. In fact, it has the potential to make a time like Coulthard's a distant memory.

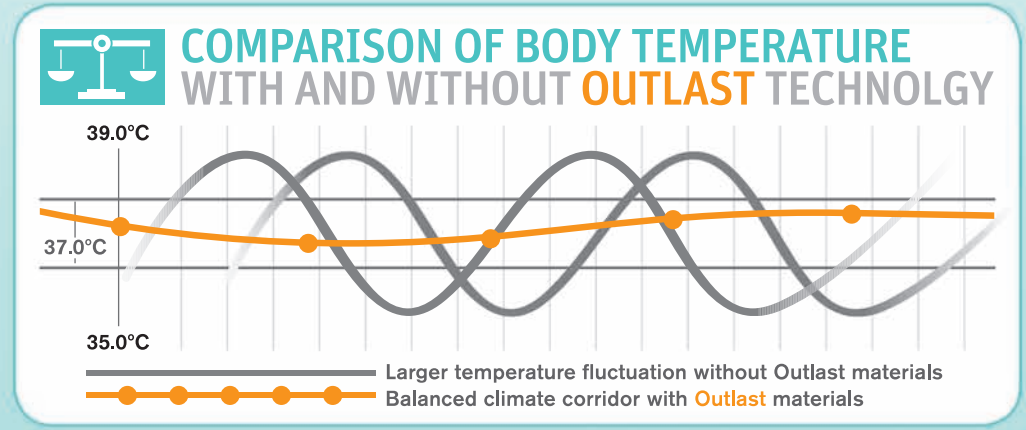


Treated with Fantex anti-microbial agent, Walero next-to-skin base layers keep you fresher for longer

Walero garments are tailored for a superior fit, with flat-lock seams and supersoft fabric for maximum comfort under race conditions



Developed by NASA for off-world applications, Outlast fabric technology actively regulates your body temperature despite changes in your environment, effectively reducing sweat by 30 per cent



3kg
The weight an F1 driver can lose to fluid loss in Malaysia