

Walero base layer case study

Purpose

Walero's motorsport base layers use Outlast® fabric technology that claims to regulate body temperature in a racing environment for optimal driver performance.

The aim of this investigation was to establish whether wearing Walero's base layers makes a physiological difference to the driver in a controlled racing environment when compared to other base layer brands.

Testing protocol

The test subject was a Gulf Racing professional racing driver who competes in the World Endurance Championship.

The driver completed 2X30 minute stints of the Spa-Francorchamps circuit on the Position One Motorsport simulator. The first stint was completed wearing the Walero base layers and the second stint was completed wearing alternative base layers.

Resting heart rate and blood pressure were both recorded and the second stint could not begin until the driver had returned to these levels.

The simulator was set at a controlled ambient temperature of 30 degrees Celsius. This temperature was chosen because it represents the upper limit of what cockpit temperature is permitted in the World Endurance Championship.

Bodyweight (kg) was measured before and after stints on the simulator and water intake was controlled in order to carry out accurate sweat-testing procedures.

Heart rate and core body temperature were then recorded every 60 seconds in real-time using the BioCOM physiological monitoring system during the 30-minute stints on the simulator.

Results

Driver core temperature remained consistent over both stints at 37.2 degrees Celsius.

The stint wearing the Walero base layers produced a body mass reduction of 0.27% over the 30-minute duration, which equated to 0.4L/hour sweat rate. This would typically be considered as a low sweat-rate.

The stint wearing the alternative base layers produced a body mass reduction of 0.56% over the 30-minute duration, which equated to 0.8L/hour sweat rate. This would typically be considered as a normal sweat-rate.

The driver's average heart rate was also 4% lower when wearing the Walero base layers.

Comments

This investigation has provided benchmark data, but to truly quantify the data a broader sample of drivers need to be assessed in the controlled simulator environment.

However, the low sweat-rate, minimal body mass reduction and lower average heart rate values do suggest that the Walero base layers were more efficient at maintaining homeostatic balance than the alternative base layers.