Customer Validation

Bodytrak

Challenge

- Customer validation trial in the Defence Services sector where participants completed an exercise while wearing a pilot flight suit and either a pair of over-ear headphones or a full-size pilot helmet.
- This was to determine the effectiveness of the Bodytrak system at measuring heart rate and core body temperature as well as user comfort and wearability.
- The trial took place in a controlled environmental lab set at 35°C/95°F with relative humidity of 55-60%. Participants wore a chest strap and ingested a gastrointestinal pill to act as the control measures for heart rate and core body temperature, respectively.

Results

- Participants were able to wear the device while wearing fighter pilot clothing and completing an interval cycling protocol for the complete trial.
- Heart rate data showed a strong correlation (r = 0.95) to the control with a mean absolute error of 2.87 bpm consisting of multiple quick changes between exercise and rest periods.
- The protocol led to all participants having a raised core body temperature with 38.4°C being the highest core body temperature observed.
- Core body temperature data had a mean absolute error of 0.18°C compared to the gastrointestinal pill (GI) which shows that the GI pill is not the only accurate method of measurement. Bodytrak is a reliable non-invasive alternative which is cost-effective and provides a comprehensive suite of additional features.

Final Summary

- The results show that the Bodytrak device aligns well with control measures for heart rate and core body temperature.
- The particpants demonstrated that the Bodytrak device can be worn with PPE and during exercise in a hot environment with a moderate-high physical workload.

For more information visit
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