

## Challenge

- A paper mill wanted to understand the physiological burden of their environment on workers.
- A trial was conducted at a paper production facility, over a six-hour focused period where paper mill workers were tasked with carrying out an intensive monthly maintenance programme on the mill.
- Prior to the routine maintenance, the paper mill was shut down and allowed to cool to make the environment less hazardous for the workers. Having the machine unoperational is very costly due to its high output so as soon as the temperature inside the mill reaches an acceptable level, the maintenance begins. However, the temperature in the mill can still reach more than 104°F/40°C, which creates an extreme physiological burden.
- Six team members were fitted with Bodytrak devices and ingested GI pills to understand the effectiveness of both means to monitor the individuals and detect any potential physiological burden as a result of the environment in which they operate.

## Results

- Feedback from the participants confirmed that the Bodytrak earpiece was comfortable to wear and that the CommPack and cable did not inhibit their mobility.
- The hottest CBT recorded was 100.94°F/38.3°C and two team members exceeded the preset thresholds and triggered red alerts which indicated an elevated CBT and increased risk of heat-related illness.
- Of these two team members, one of the participants was a new recruit and had not yet acclimatized to the paper mill environment. Often new employees can be at a higher risk while they adapt to a new working environment, including the level of hydration required to replace lost fluid, and because they work hard to get off to a good start.
- The second participant was of a much older age than the average worker. Those of an older age are often more vulnerable to heat illness due to holding less water through the ageing process and a less efficient thermoregulatory system.

## Final Summary

- Our detailed analysis showed there was an absolute mean error of 0.18°C from Bodytrak's core body temperature data compared to the GI pill during this on-site trial. This supports that the GI pill is not the only accurate method of measurement and Bodytrak is a reliable non-invasive alternative which is cost-effective and provides a comprehensive suite of additional features.
- With real-time data analysis, supervisors were able to easily access the Bodytrak Platform to observe any alerts generated by the team members.



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