Core Body Temperature monitoring for well-being and safety at work

greenTEG AG

2020

Study

Core body temperature monitoring for well-being and safety

Goal:

- Core body temperature monitoring on the chest using CORE
- Demonstrate that CORE can be used for monitoring core temperature in conditions similar to a healthcare setting

Activity: Free-living

Position: Chest (apical)

Reference: Ingestible radio pill

Data collected: >6 million data points

Calibration: No calibration required

First reading: After 4 minutes

♂	♀	AGE	BMI	
75%	25%	23 – 63 avg: 34.3	20 – 34 avg: 24.7	24 – 72h

Sleeping

Working

Eating

Commuting

Results

Core body temperature monitoring for well-being and safety

Results:

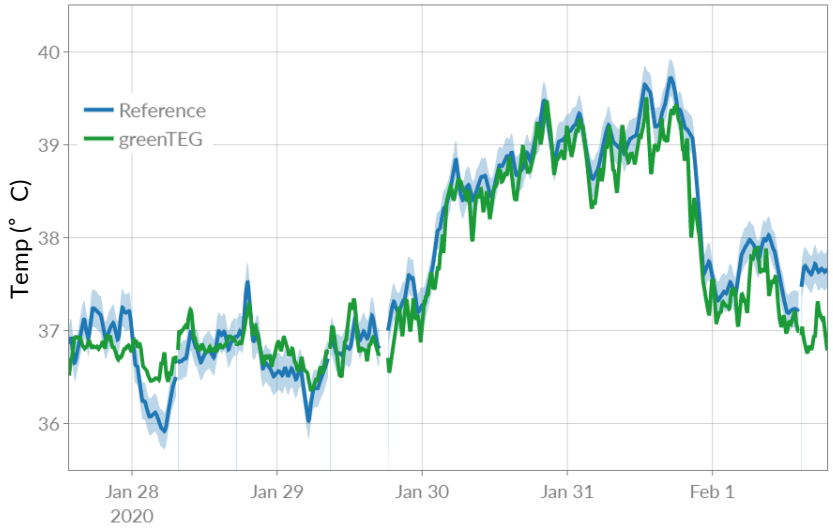
- High accuracy of core body temperature monitoring on the chest
- Good compensation of any thermal influences in the environment

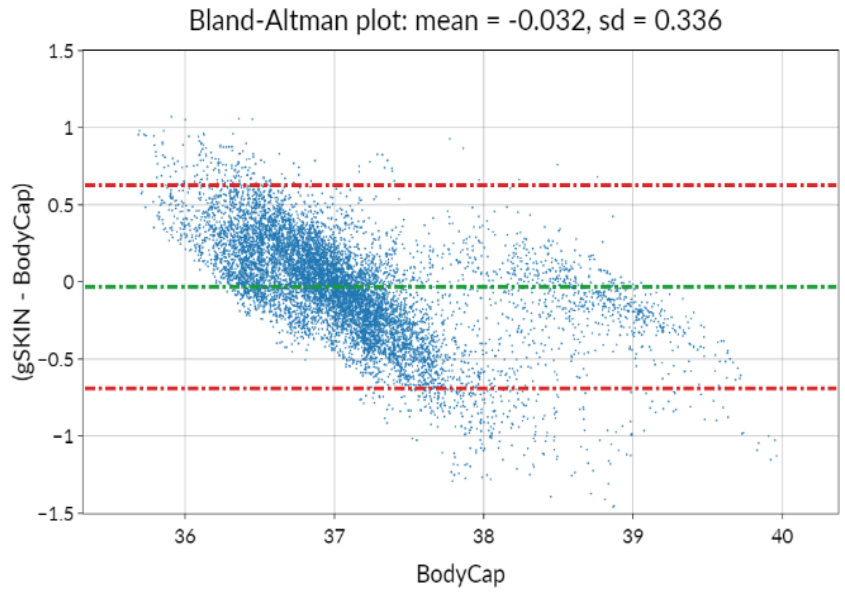
Statistics (over all measurements):

- Mean absolute deviation: 0.26 °C
- Standard deviation: 0.34 °C
- Correlation factor: 0.86

Calibration: No calibration required

First reading: After 4 minutes





Comparison to state-of-the-art solutions

Ear Temperature sensors:

+ Accurate
+ Medical verified
- Not wearable
- Not continious
- Needs stable environment

Skin Temperature sensors:

+ Wearable
+ Continiuous
- Not accurate
- Needs stable environment