



gSKIN® Body Temp Patch

Data Sheet



This page is solely used to inform the international research community about greenTEG's heatflux sensors and patches to support current research efforts in regards to COVID-19. greenTEG does not produce nor sell any medical devices. B2B customers refer to our main page to get educated on the potential integration or white labelling of our sensor solutions

GENERAL DESCRIPTION

greenTEG's gSKIN® Elevated BODY Temp Patch is the only non-invasive, continuous, and accurate core body temperature monitoring solution for research and evaluation purposes. The solution consists of a wireless patch and an Android application for downloading recorded data via Bluetooth and real time visualization of core body temperature. Multiple patches can be operated with the same smartphone.

This innovative sensor has the advantage, that it compensates very nicely external influences like temperature changes or even wind.

With its medical grade tape (consumable) the patch is biocompatible. For disinfection, the patch can be immersed in an alcohol bath.

This patch is not CE or FDA certified and must not be used for diagnostic purposes.

An example of gSKIN® Body Temp Patch predicting core body temperature can be found in Figure 1.

FEATURES

- Compact sensor solution
- High accuracy
- Non-invasive
- Enabling continuous monitoring
- Mountable to numerous body positions
- Biocompatible

USE CASES

- Elevated body temperature monitoring
- Elevated body pattern identification
- Sepsis screening
- Healthcare staff monitoring
- Worker safety
- Patient monitoring
- Circadian cycle
- Early diagnosis of thermoregulatory diseases

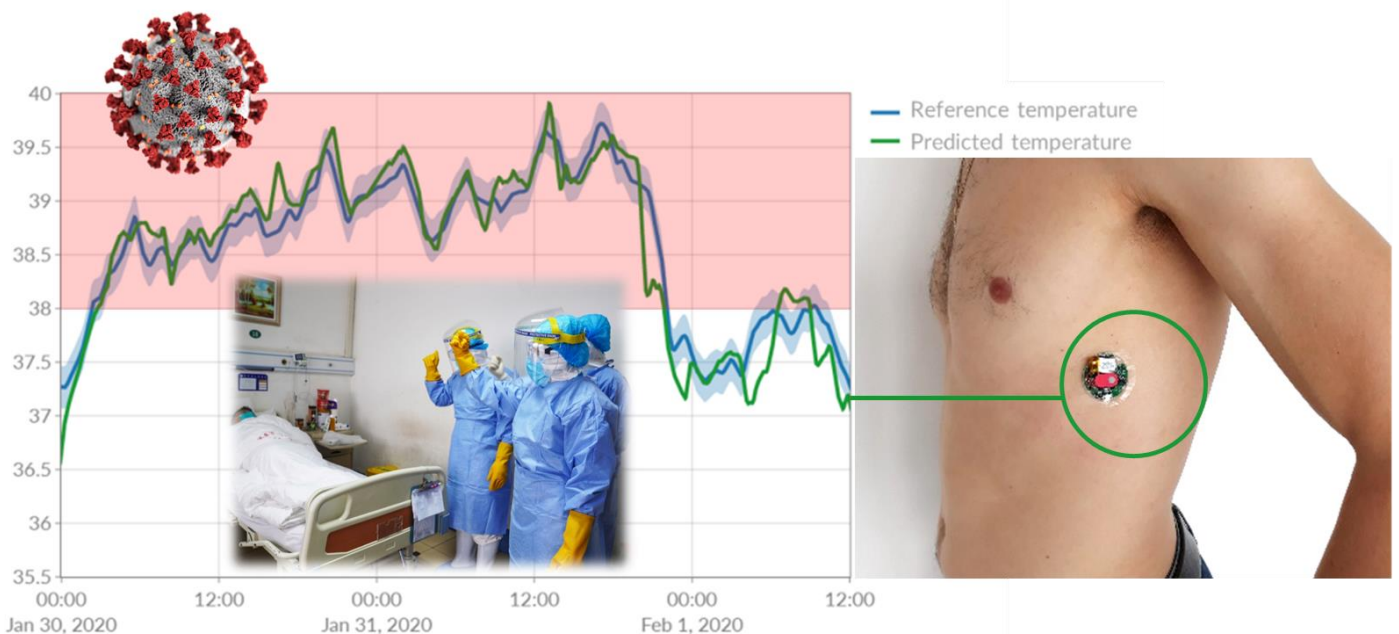


Figure 1 Core body temperature of a subject before and during an elevated body temperature. The blue curve representing reference temperature measured with an ingestible pill and the green curve is core body temperature measured with gSKIN® Body Temp Patch.

CLINICALLY VALIDATED SOLUTION

The accuracy of the gSKIN® Body Temp Patch monitoring solution has been validated through an independent clinical study and numerous internal case studies.

The algorithm was tested on: (9 unknown people) 4 females, and 16 males in the age between 22 and 53 (mean: 34) and a BMI between 20.5 and 28.9 (mean: 24) under normal live conditions with a duration of 24h to 72h. For the reference ingestible radio temperature pills were used.

The accuracy based on the above-mentioned conditions is shown in Figure 2. It leads to a mean absolute deviation of 0.26°C, a 95% limit of agreement (LoA) of 0.67 °C and a correlation factor of 0.86. As a comparison, a standard ear thermometer shows a confidence interval of 0.5 °C but only when measured by a professional, at low activity and at room temperature.

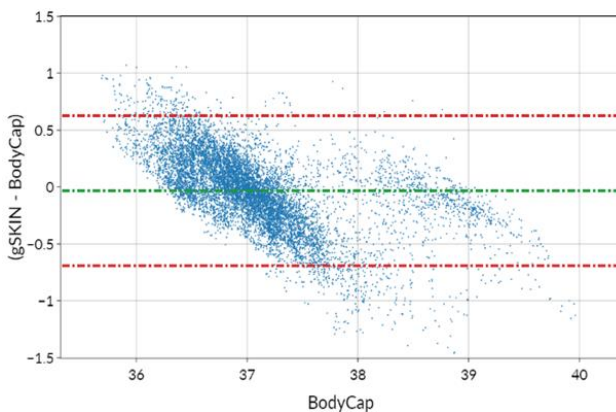


Figure 2: Bland-Altman plot showing the bias and the confidence interval for different core body temperature measurements of the patch compared to the reference (ingestible temperature pill from BodyCap)

Device handling

The device is easy to use. It consists of an easy to clean surface which is stacked via a onetime-use medical tape (hydrocolloid) to the body. Shaving and alcohol cleaning of the body part prior improves the adhesion (see Fig. 3 for handling).

When on body, the sensor can be started with an Android application, which displays the live skin temperature and body temperature values. The full measurement setup takes less than 5 min.

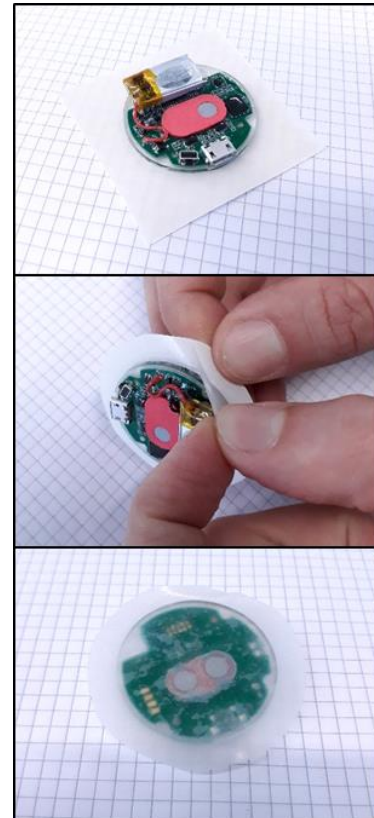


Figure 3: Patch preparation steps. Top: device placed on the sticky side of the tape; Center: removal of the second protective tape layer; Bottom: patch with correctly applied adhesive tape.

greenTEG AG @ a glance

At greenTEG we are focused on delivering the highest quality thermal sensing solutions.

Founded as a spin-off from ETH Zürich, greenTEG's expertise in thermal sensing solutions has been developed for more than 10 years through partnerships with our international customer base.

greenTEG develops, manufactures and markets thermal sensor solutions for a growing customer base active in photonics, building physics, MedTech, automotive, processing industry, and R&D.



Product Name	gSKIN® Body Temp Patch
Article Number	A-165127
gSKIN® Body Temp Patch includes	<ul style="list-style-type: none"> 1 gSKIN® Body Temp Patch 20 medical grade double-sided adhesive tapes 1 Android App for data download 1 Micro-B USB charging cable
Technical Data	
Structure	The Patch consists of a reusable sensor core and a disposable double-sided adhesive. The adhesive is double-sided and medical grade.
Dimensions (diameter x thickness) [mm]	36 x 8
Mass including battery [g]	6
Power supply	Rechargeable lithium-polymer battery (via USB)
Minimum (typical) Battery life [days]	> 3 (5)
Data storage capacity [hours]	84
Data output streams	Core body temperature, skin temperature, device orientation (X Y Z acceleration)
Sampling rate [Hz]	1
Skin temperature accuracy [°C]	± 0.1
Body temperature accuracy [°C]	± 0.26 (chest)
Calibration	Hardware calibration is performed at the factory with +/- 0.1°C accuracy.
Charging time	> 2 hours (full battery)
Special features	<ul style="list-style-type: none"> - Smartphone application (Android) - Live display of current skin and body temperature (via app)