

eCelsius Medical brochure

A system for reliable and accurate core body temperature monitoring

Solution FDA cleared (N° K210924)

Scientifically validated
Gold standard for core body temperature monitoring

Summary

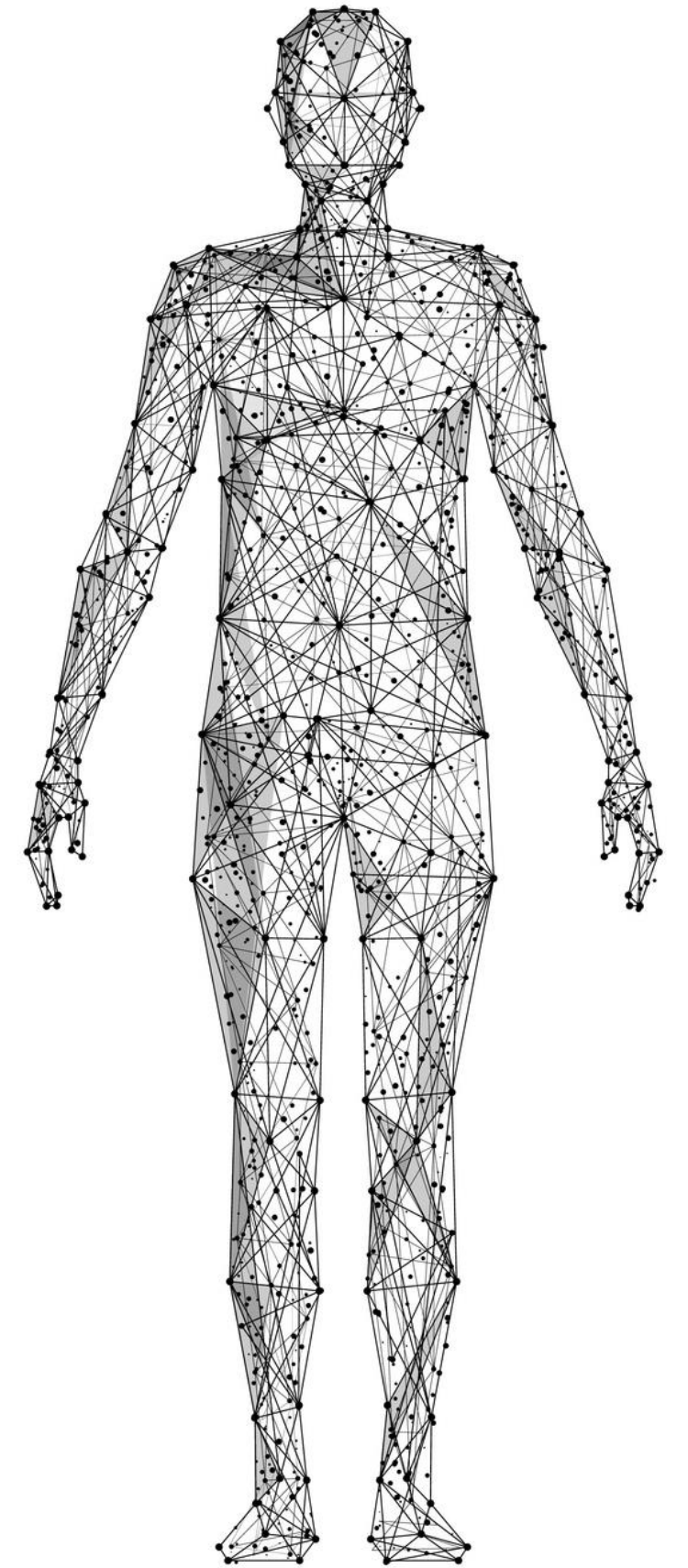
1 Current medical applications **slide 3**

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3 eCelsius Medical added value **slide 8**

4 Examples of medical applications **slide 9-12**

Current medical applications



Current medical applications

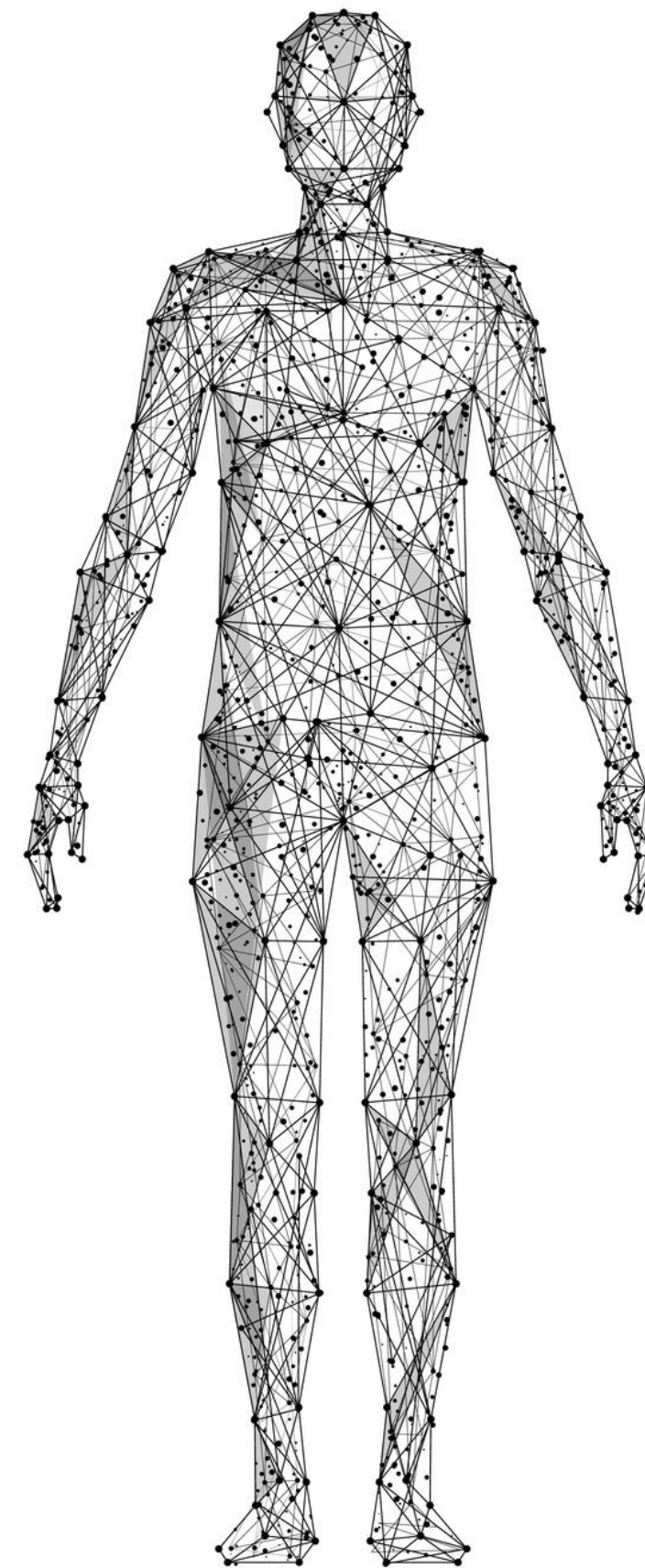
Few examples



Core body temperature monitoring is a key parameter for many medical applications:

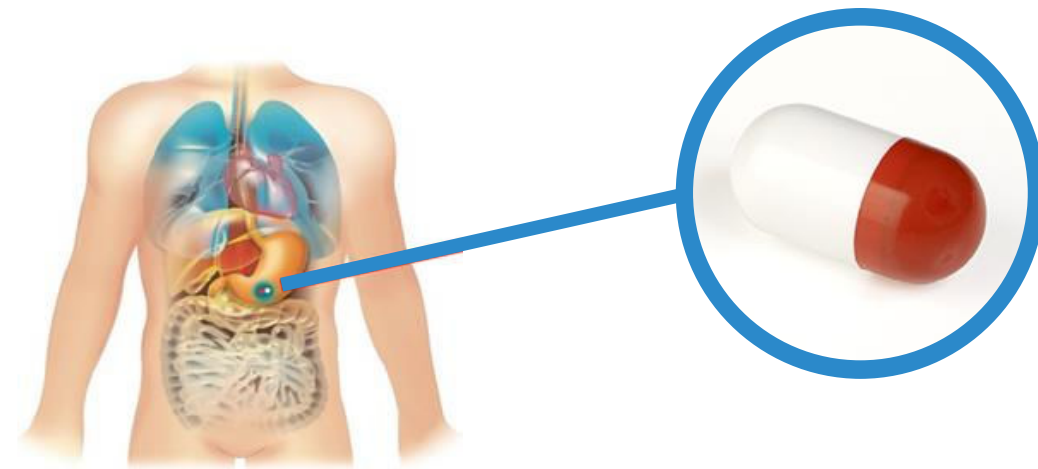
- Oncology care
- Infectious diseases
- Sleep disorders
- Chronobiology and circadian rhythm monitoring
- Drug/vaccine development

About eCelsius Medical



Introduction

eCelsius Medical: the essentials

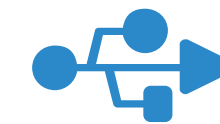


eCelsius Medical capsule

RF
433Mhz



eViewer Medical
monitor



Secured USB stick



Activation box to turn on the capsule



eCelsius Manager
software

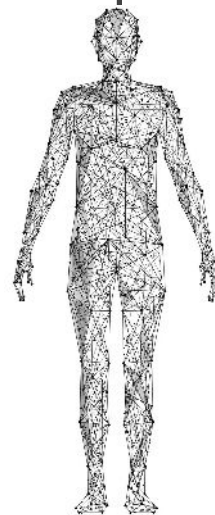
Communication range in real time: around 1m (patient & environment depending)

About eCelsius Medical Specifications

eCelsius Medical CAPSULE SPECIFICATIONS

Capsule cleaning and sterilization	Cleaned and sterilized with ethylene oxide
Size (diameter x length)	17.7mm x 8.9mm
Weight	1.7g
Temperature accuracy	+/- 0.1°C for patient physiological range 36-41°C, ±0.13°C outside of the physiological range
Temperature resolution	0.01°C
Life duration	20 days
Shelf life	2 years
Measurement period available	30s
Temperature range	25° - 45°C (77 - 113°F)

Minimum weight 40kg



Equipement

eCelsius Medical ACTIVATOR SPECIFICATIONS: to turn on the capsule



Size	69mm x 59mm x 31mm
Able to activate a large number of capsules	

eViewer Medical MONITOR SPECIFICATIONS: to visualize and record the data



Size	120mm x 70mm x 15mm
Number of capsules associated	Up to 3 capsules
Storage	150 000 data per capsules
Autonomy	24/36h



Few parameters may impact the communication range of the system:

- The patient morphology,
- The environment (metal,...),
- Your own protocol.

We can advise & help you define the best configuration for your uses.

eCelsius Medical added value

Technical specifications:



CAPSULE INTERNAL MEMORY

Embedded memory in the capsule allows to continuously store the last 2000 collected data in FIFO mode.



SIMPLE WAY OF WORKING

After activation and ingestion, the capsule automatically collects and transmits accurate and reliable temperature data to the eViewer Medical monitor.



ACCURATE DATA

eCelsius Medical guarantees you an accuracy of +/- 0.1 °C, for patient physiological range 36-41°C, ±0.13°C outside of the physiological range.

Medical advantages:



NO DATA LOSS

No data loss even if the patient is out of the communication range for a while.



REAL TIME & A POSTERIORI DATA RECOVERY

If the monitor is in the communication range of the capsule, you can collect real time data. If not, the monitor will synchronize the missing data as soon as the capsule and the monitor are back in their communication range.



TIME SAVER

Save time thanks to quick and easy implementation. Data accuracy facilitate decision.



RELIABLE DATA COLLECTION

Accurate data with a resolution of 2 digits.

Other:



ADD MARKERS

Markers can be added all along the experiment to highlight a specific event.



ALARM THRESHOLDS

Minimum and maximum temperature thresholds may be used to trigger a visual alarm.



LIGHTWEIGHT & TINY

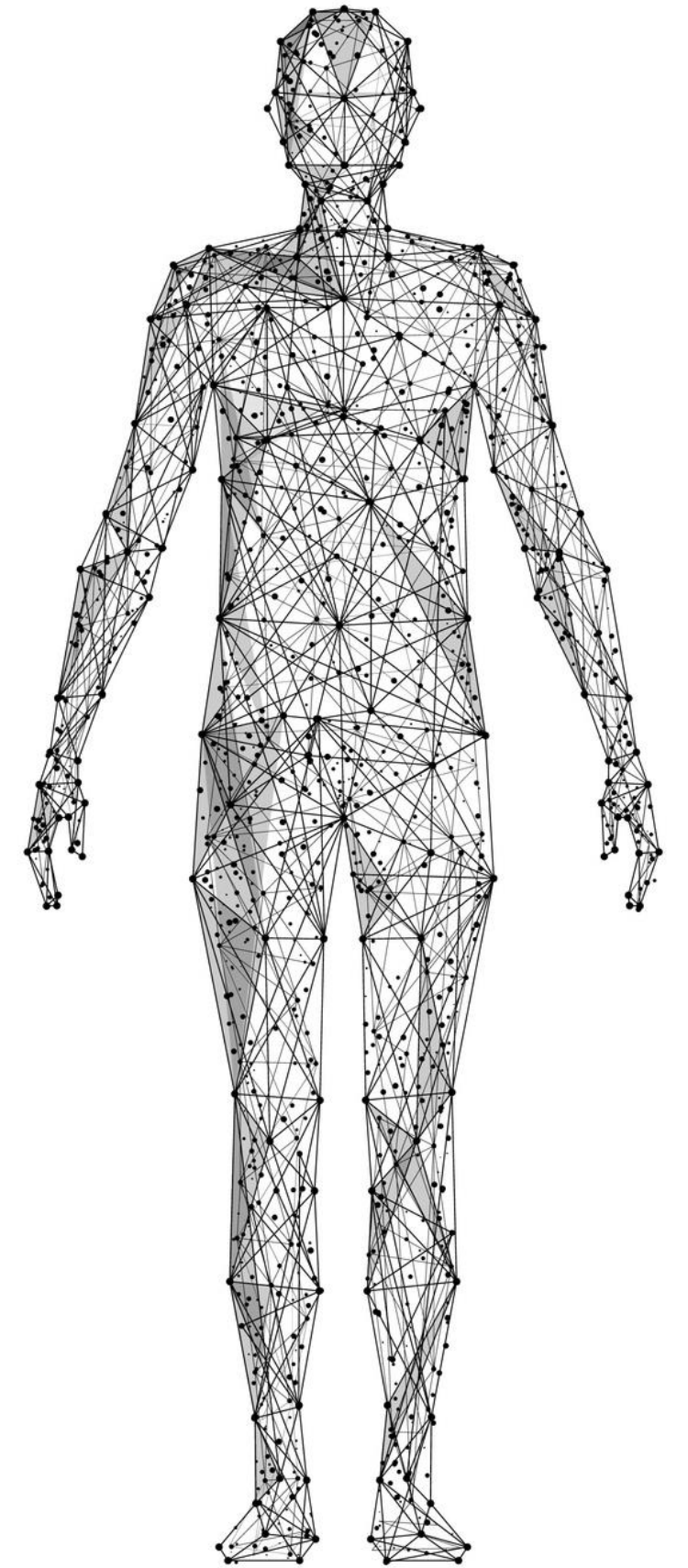
Capsule is lightweight 1.7g and measures 17.7mm x 8.9mm.



DESIGNED FOR PATIENT

Designed only for patient with a minimum weight of 40kg.

Example of medical applications



Example of medical applications

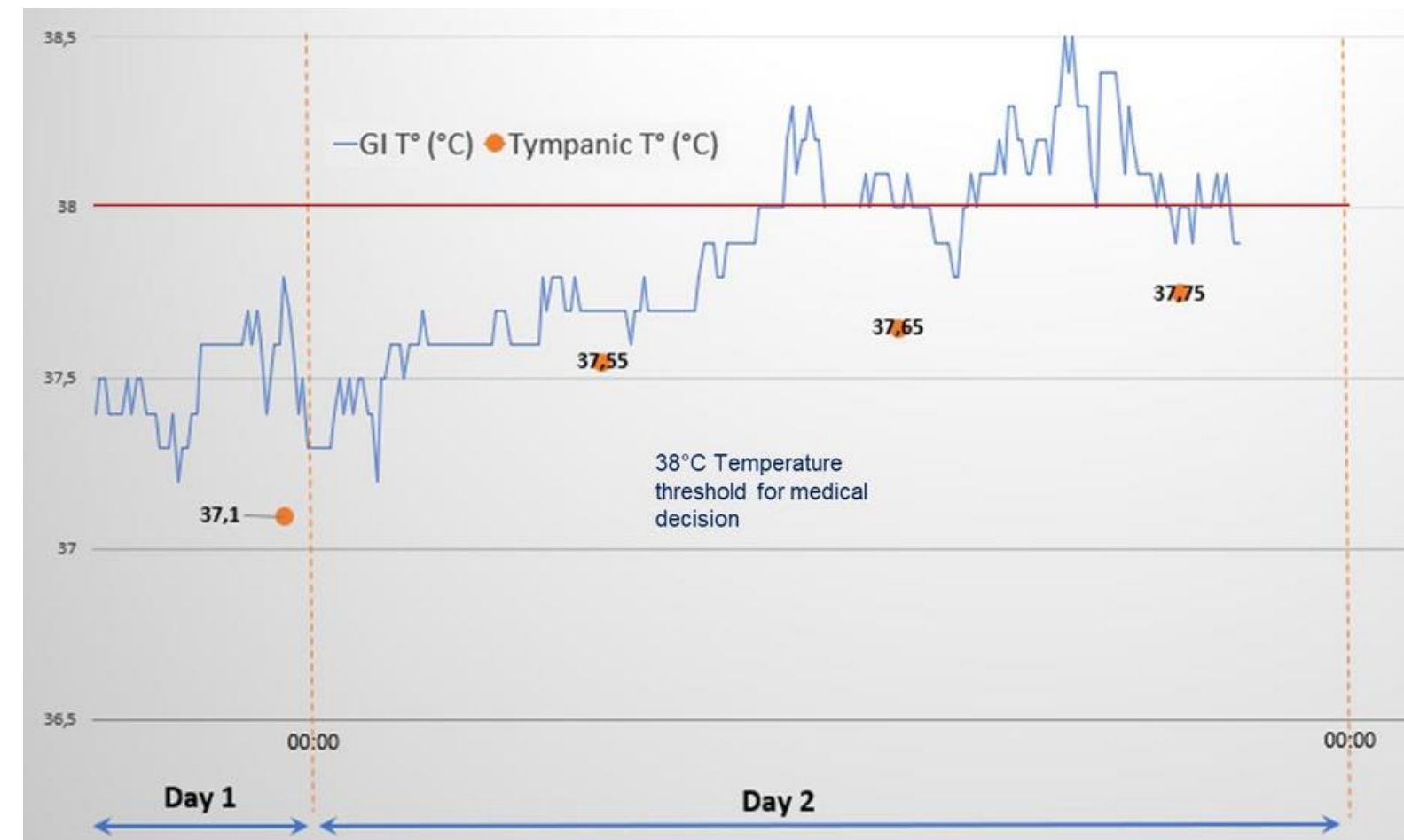
Clinical trials in oncology

eCelsius Medical ADDED VALUE

- 1 Continuous monitoring without any constraints for patients and operator
- 2 Save time allocated to data collection
- 3 Enhance monitoring accuracy
- 4 Limit human mistakes

This clinical trial allows to demonstrate that a proper and continuous core temperature monitoring is able to reduce the delay for treatment initiation.

PATIENT IN ONCOLOGY HEMATOLOGY



Physician: Pr Fabrice Jardin PUPH
Center: Hematology Department - Centre UNICANCER - H. Becquerel- Rouen (France)

Example of medical applications

Clinical trials in infectiology

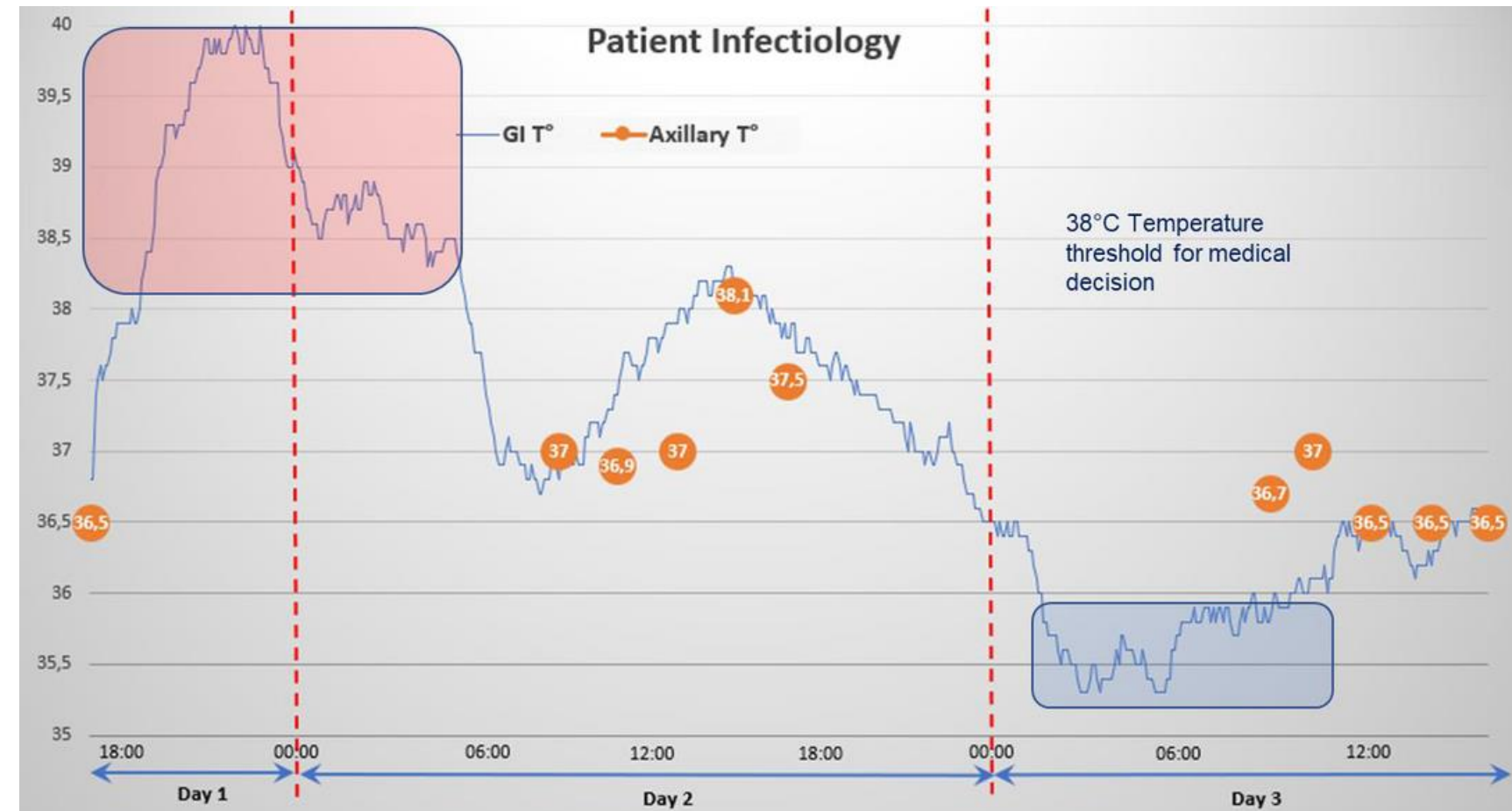
eCelsius Medical ADDED VALUE

- 1 Limit the contact with infected patient
- 2 Save time allocated to data collection
- 3 Enhance monitoring accuracy
- 4 Limit human mistakes

To preserve patient comfort, the medical staff does not collect the temperature during the night. This clinical trial allows to demonstrate the interest for a proper and continuous core temperature monitoring to detect inappropriate night events.

Publication:

Huang et al., (2019), Ingestible sensors correlate closely with peripheral temperature measurements in febrile patients.



Physician: Pr Philippe Brouqui - PUPH
Center: IHU Méditerranée - AP - HM Marseille
(France)

Example of medical applications

Clinical trials in sleep / chronobiology

eCelsius Medical ADDED VALUE

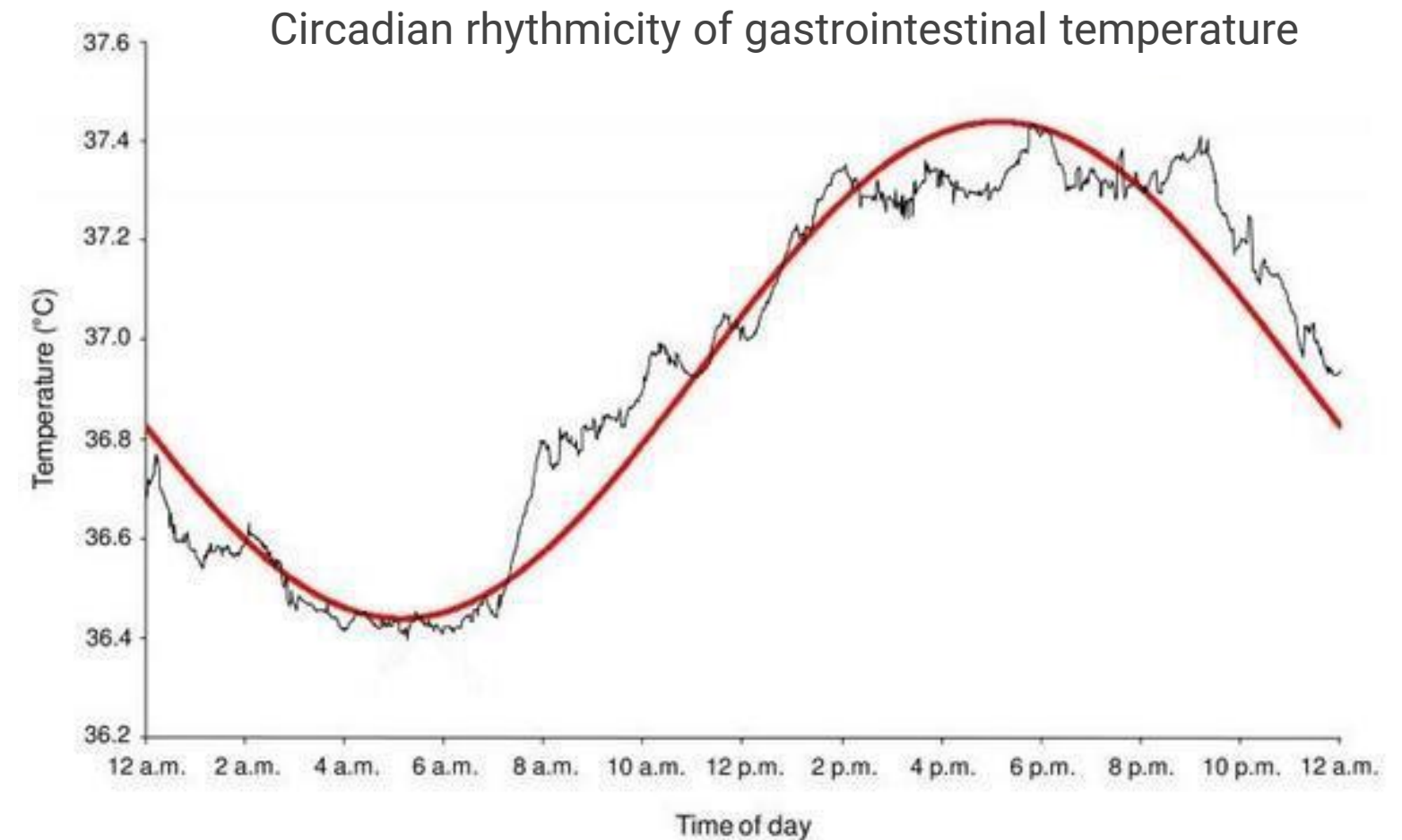
- 1 Individual core temperature rhythm collection
- 2 Preservation of comfort and mobility
- 3 Enhance monitoring accuracy
- 4 Limit human mistakes

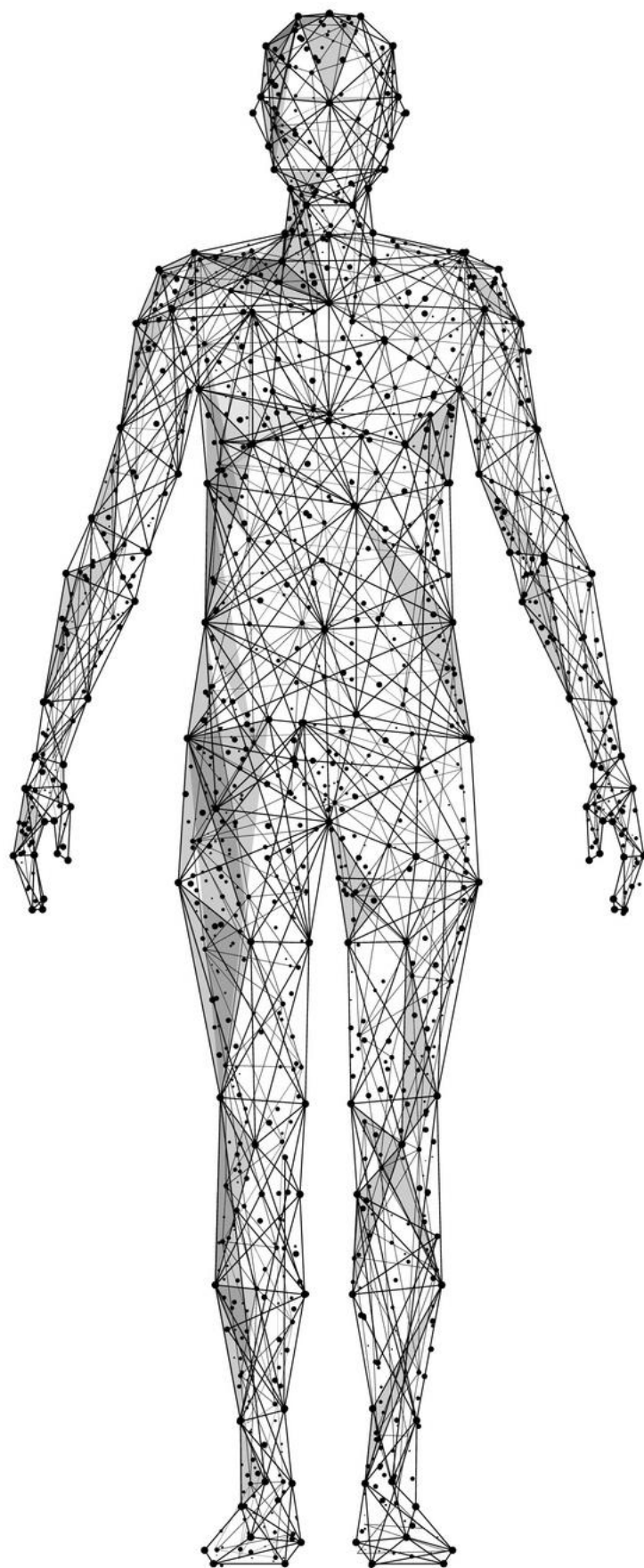
The core body temperature is a key indicator of the biological rhythmicity of the patients. Continuous monitoring of this variable allows to characterize the circadian rhythm of the core body temperature, which is an essential tool for sleep analysis and the diagnosis of sleep disorders.

Publications:

Komarzynski et al., (2019), Predictability of individual circadian phase during daily routine for medical applications of circadian clocks.

Dominiak et al., (2020), The effect of a short burst of exercise during the night on subsequent sleep.





Reach Out to Us

Email address

contact@bodycap.io

Mailing address

BodyCAP
3 rue du Docteur Laennec
14200 Hérouville Saint-Clair
FRANCE

Phone number

+33 (2) 61 53 03 29

Follow us on social media

