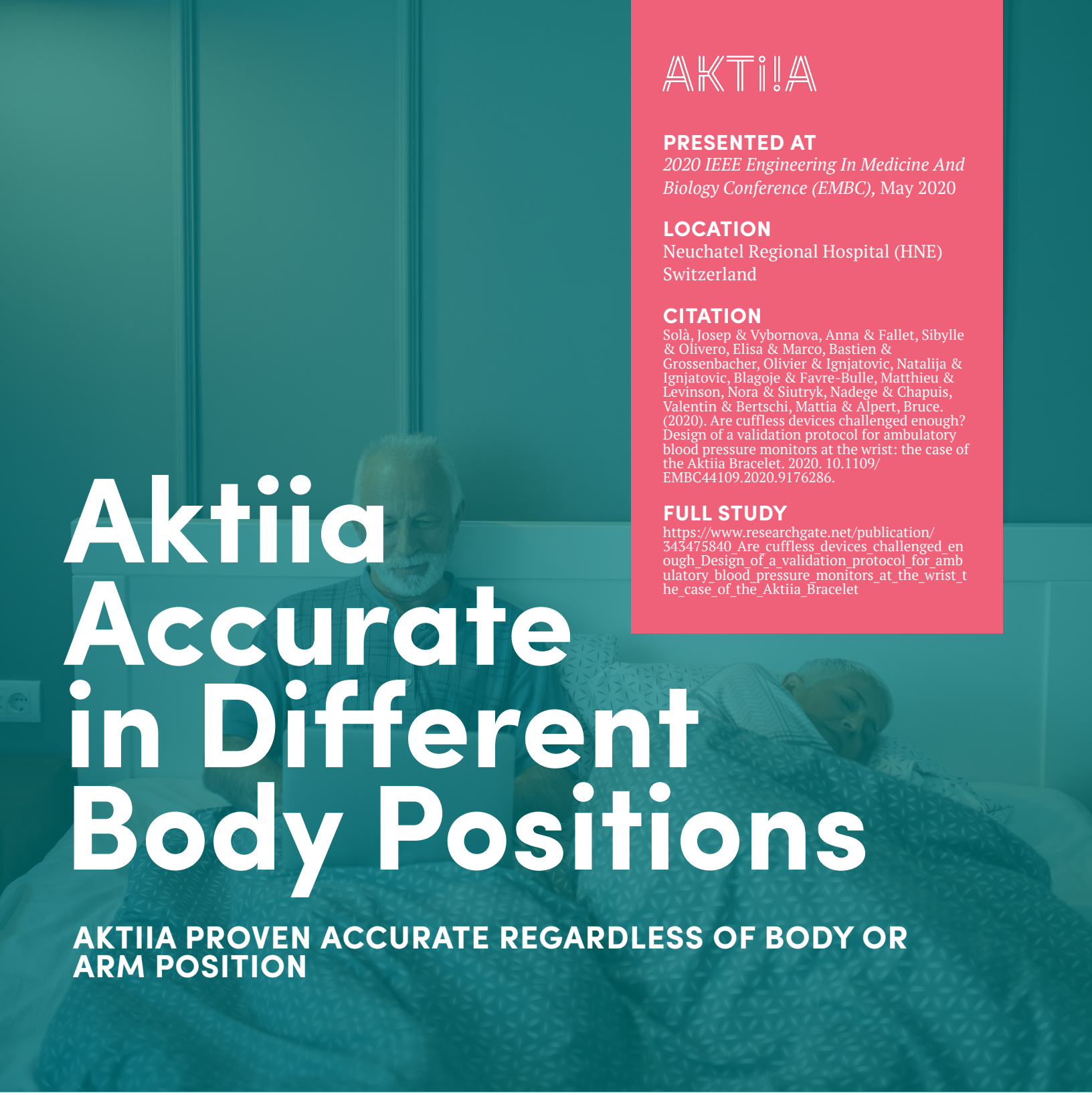

AKTiiA

PRESENTED AT
2020 IEEE Engineering In Medicine And Biology Conference (EMBC), May 2020

LOCATION
Neuchatel Regional Hospital (HNE)
Switzerland

CITATION
Solà, Josep & Vybornova, Anna & Fallet, Sibylle & Olivero, Elisa & Marco, Bastien & Grossenbacher, Olivier & Ignjatovic, Natalija & Ignjatovic, Blagoje & Favre-Bulle, Matthieu & Levinson, Nora & Siutryk, Nadege & Chapuis, Valentin & Bertschi, Mattia & Alpert, Bruce. (2020). Are cuffless devices challenged enough? Design of a validation protocol for ambulatory blood pressure monitors at the wrist: the case of the Aktiia Bracelet. 2020. 10.1109/EMBC44109.2020.9176286.

FULL STUDY
https://www.researchgate.net/publication/343475840_Are_cuffless_devices_challenged_enough_Design_of_a_validation_protocol_for_ambulatory_blood_pressure_monitors_at_the_wrist_the_case_of_the_Aktiia_Bracelet

Aktiia Accurate in Different Body Positions

AKTIIA PROVEN ACCURATE REGARDLESS OF BODY OR ARM POSITION

> *The Aktiia Bracelet can generate accurate BP estimates for sitting and lying positions and is not affected by hydrostatic pressure perturbations.*

STUDY SUMMARY

The Aktiia bracelet is an automated cuffless solution, with blood pressure measurements being triggered by the device itself around the clock. But to ensure that the measurements taken are accurate without requiring a specific body or arm position, it was necessary for the Aktiia team to design a new validation protocol. In a peer-reviewed paper accepted for presentation at the 2020 IEEE Engineering in Medicine and Biology Conference (EMBC), Aktiia disclosed this new challenging trial design, as well as results from an initial pilot study with the Aktiia bracelet. Utilizing this protocol, the Aktiia bracelet and algorithms were able to generate accurate blood pressure estimates in multiple positions, while the user was lying down, sitting, and standing.

KEY DEMOGRAPHICS

n=10
study participants

5/5
male/female

31.2
Average Age

22.6
Average BMI

KEY FINDINGS

SD
standard deviation of the error

< 8 *mmHg*
ISO81060-2 target

< 8 *mmHg*
SBP (sitting and lying down)
Standing = 11 mmHg

< 6.5 *mmHg*
DBP (all body positions)

μ
mean of the error

< 5 *mmHg*
ISO81060-2 target

< 3 *mmHg*
SBP (all body positions)

< 3 *mmHg*
DBP (all body positions)

TAKEAWAY

During this pilot study, the Aktiia device provided accurate SBP and DBP readings for both the sitting and supine positions, and Aktiia proceeded to utilize this study design for a larger trial to validate all three positions. This method of testing allows us to demonstrate that Aktiia is accurate regardless of body position, and therefore measurements can be taken without user involvement. Automatic measurements allow Aktiia to become the first solution on the market able to measure accurately in the background of daily life without hassle