1 APPENDIX I: INFORMED CONSENT FORM

INFORMATION FOR PARTICIPANTS

The goal of this study is to evaluate novel wearable device for continuous measuring of blood pressure. We will take multiple readings of your blood pressure with a standard inflatable cuff device and the new system that involves placing sensors on your abdominal area. We will ask you to perform 5 out of 7 different tasks (sitting, standing, laying down with deep breathing, sitting against the wall, forced exhalation, squatting, and sustained squeezing of the ball with your left or right hand). The data obtained in this study will be used to develop and validate novel methods for diagnostics of hypertension.

Optional exercise protocol

If you wish, you can opt for additional 1-hour guided exercise session where you will have to perform a sequence of isometric contractions of various groups of muscles for intervals between 30 seconds and 1 minute.

The sequence includes: (please see the Exercise Sequence in the Appendix)

- a 20-minute warmup session with exercises of gradually increasing intensity (from low to moderate)
- a 20-minute main session with of sustained moderate intensity, and
- a 20-minute cooldown session with exercises of gradually decreasing intensity (from moderate to low)

The goal of this protocol is to gradually increase, maintain and decrease blood pressure within normal physiological range by maintaining isometric muscle contraptions.

The participation in the study and the optional exercise session is voluntary for you and you can ask the experimenter to pause or interrupt the study at any point, without giving any specific reason. You will have the opportunity to have a small break after each of the five blocks or the optional exercise session.

Rejecting to participate in the study will not cause any negative consequences for you. If you choose to stop the experiment, the data collected until that moment will still be used in the study.

Data protection

The data obtained in this study will be used to train machine learning algorithms to predict systolic and diastolic blood pressure from optical (PPG), electrocardiographic (ECG), and mechanic (movement, acceleration) measurements of the cardiovascular system. All the measurement data is pseudonymized and only reported in aggregated form. Your personal information is gathered in the beginning of the study and will be stored separately from the measurement data at Aalto University for one year during which and cannot be distributed to a third party. Please see the data protection statement for additional information or contact the responsible researcher (contact information below).

By agreeing to participate in this study you acknowledge and agree with the following:

- I have read and understood the Information Sheet (as well as the Privacy Notice included) that was given to me and I have sufficient information about the process of the research. YES / NO

- I understand that my participation in the research is completely voluntary and that I have the right to discontinue my participation at any stage. YES / NO

- I understand that the research data is gathered only for the purpose of scientific research based on my consent and I understand my rights regarding my personal data, as explained in the Privacy Notice. YES / NO

- I acknowledge that I have received the information necessary to make an informed decision about my participation in the research, my questions have been answered and I agree to volunteer as a research subject. YES / NO

- **Additionally,** I volunteer to participate in the **OPTIONAL** exercise session YES / NO

Participant

Date: _____

Place: _____

Signature: _____

Name: _____

_____

Responsible researcher:

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Signature: _____