

### **Smart-Wake Study**

### Researchers

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#### Introduction

This information letter contains important information about this study and corresponding rules. Please read this letter carefully and ask any questions, before agreeing upon participation.

#### WHAT IS THIS STUDY ABOUT?

#### **Purpose**

Investigating waking mechanisms and the potential of smart alarms to reduce sleep inertia. The purpose of this study is to test the effects of a smart-wake alarm on post-awakening heart rate.

### **Background**

Smartwatches offer users features like heart rate monitoring and sleep analysis, utilizing heart rate measurements to classify sleep stages. This study enhances the ecological validity of findings by observing sleep patterns over a month, employing on-body sensors for real-life sleep data. Unlike previous research, the focus is on quantitative, accurate, and ecologically valid data collection, combining it with smart-wake systems to assess post-awakening heart rate effects while maintaining strict adherence to ethical and legal standards.

## Nature and duration of the study

Investigating the effectiveness of smart alarms during the period of four weeks.

### WHAT DOES PARTICIPATION IN THIS STUDY INVOLVE?

#### Contents

Participation in this study involves wearing a smartwatch during the experiment period of four weeks. The participant is expected to adjust their waking mechanisms during this period. In the first two weeks, the participant uses a conventional alarm clock, and in the second two weeks, the participant uses a smart alarm. The participant's data will be collected solely for the purpose of this study. Participants are expected not to consume coffee or caffeinated drinks within 2 hours after awakening. Additionally, participation in this study involves logging behavioral data for each of the 28 days.



## Potential negative consequences of participation

While participating in this study, it is important to acknowledge that the transition from conventional alarm clocks to smart alarms during the four-week period may introduce changes to your waking routine. Some participants may experience temporary discomfort or adjustment difficulties as they adapt to a new method of waking up. This transition may impact the waking experience, potentially leading to variations in alertness or mood during the initial adaptation phase. We encourage participants to promptly communicate any concerns or challenges they encounter during the study to our research team.



#### PARTICIPATION INFORMATION

## **Voluntariness of participation**

We ask your consent to participate in this study, which applies for the length of this study. Participating in this research is voluntary. You have the right not to take part in this study. If you decide to participate in this study, you are free to withdraw from this study at any time, without any negative consequences, and without giving any reason. You are free to only answer questions that you want to reply to.

The researchers can terminate the study if necessary. The decision to terminate the study can be made to protect your health and safety, or because the research plan stipulates that individuals who do not meet certain conditions or do not strictly follow the instructions, cannot participate

## [For personal data] What rights do I have?

You have the right, in principle, to request access to and rectify, erase, restrict or object to the processing of your personal data. For more information: <a href="https://www.tilburguniversity.edu/privacy">www.tilburguniversity.edu/privacy</a>

## Confidentiality

All information collected during this study will be stored confidentially. Your research data will be anonymized with a code name or number. Any personal information is not released without your written permission.

## **Research Data Management Policy**

The anonymized research data will be stored safely for a period of 10 years. Only the researchers have access to this data. When the results of this study are published or presented at conferences, no information will be presented that can reveal your personal identity. Anonymized data collected in this study might be useful for future research and therefore this data will be anonymously available.

### Data processing

Prior to storage, a rigorous anonymization process will be employed to remove any personally identifiable information, which ensures that your personal identity remains protected throughout and beyond the study. The anonymized research data may be utilized for future scientific research. However, it will only be made available in an aggregated, anonymous form, preventing the identification of individual participants. Researchers seeking access to this data for subsequent studies must adhere to a strict application and review process, ensuring that their research aligns with ethical standards and data protection guidelines. Rest assured that when the results of this study are published or presented at conferences, no information will be disclosed that could reveal your personal identity.



## **Reward/Reimbursement**

Participating in this study will be rewarded with 6 ECTS.

# **Ethical Approval**

This study was approved by the ethics review board (ERB) of Tilburg University.

# **Participation**

If you decide to participate in this study, you can sign the attached informed consent form.

#### Contact

Any questions about this study can be directed to: Oumaima Lemhour o.lemhour@tilburguniversity.edu

## **Attachment**

Informed consent form