

Analyzing the ability of Smartwatches in predicting VO₂max

Master-Thesis



TECHNISCHE
UNIVERSITÄT
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<https://www.runnersworld.com/training/a35701347/is-a-high-vo2-max-good-or-bad/>

Motivation

Novel smartwatches can estimate users' cardio fitness level and can thus predict VO₂max, which is the maximum amount of oxygen your body can consume during exercise. Typically, VO₂max is measured or tested in a laboratory setting, while wearing expensive masks. These masks are then used to record the oxygen consumption and carbon dioxide production while riding a bike. Recently, novel smartwatches introduced algorithms to predict the VO₂max.

Tasks

In this thesis, you should conduct a study to validate how accurate the smartwatches are in predicting the VO₂max.

1. Literature research on related work
2. Evaluation with participants
3. Detailed analysis of results using statistical tests

The thesis can be written in German or English.

Requirements

- Knowledge of statistical tests
- Experience in conducting evaluations with participants
- Basic knowledge on vital parameters

Keywords

Vital parameters, Exergaming

Ansprechpartner

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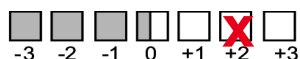
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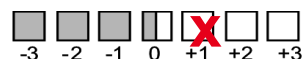
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Theoretical (Analytical)



Empirical (Simulation)



Practical (Implementation)



Literature