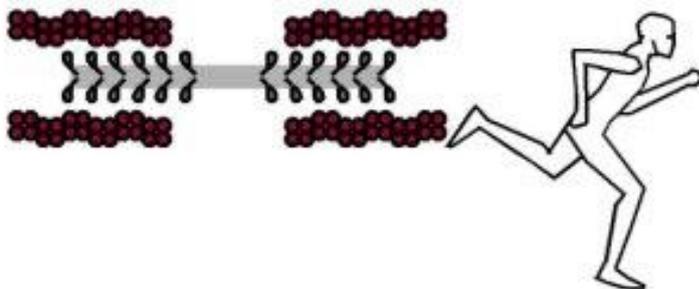


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# Scientific comparison of a new in-ear sensor to measure oxygen saturation in the blood

Cooperation project of the company cosinuss and the Chair Exercise Biology (TUM)

## Master thesis in sports science

**Start:** as soon as possible

### Project description

In this pilot project, a new sensor (Cosinuss One<sup>o</sup>) should be validated under real conditions to two established reference devices: Near Infrared Spectroscopy (NIRS) and finger clip.

NIRS will represent the cerebral SpO<sub>2</sub> and the finger clip will measure the peripheral SpO<sub>2</sub>.

The validation should be done in a range of the SpO<sub>2</sub> starting at normal values of ~98% down to 70%.

Main research questions of part 1:

- What is the absolute difference of the three sensors?
- Do the sensors react in the same way to an artificial reduction of the SpO<sub>2</sub> or do we see a delay in between the sensors?
- Does physical activity influence the measurements of the three sensors?

If the new sensor works quite well, in a second project the sensor should be tested at COPD patients as well as control persons. This part 2 also would include the writing of an ethical approval.

### Requirements

Interested in modern techniques.

### Supervision

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