

# Motivation as a source of energy against mental fatigue

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Credit: Netherlands Organisation for Scientific Research (NWO)

During periods of mental fatigue, motivation can play a large role in enabling you to carry out your task for a longer period of time. If your 'battery' runs on empty, then a good dose of motivation can provide enough fuel for you to keep on going for a while. This was revealed in the PhD research of organisational psychologist Jesper Hopstaken.

After two hours of continuous effort working on a demanding memory task, people's performance often decreases. Many safety regulations, for

example when driving a car, stipulate that one should then rest. Although he does not advise ignoring these regulations, Hopstaken's research reveals that resting is not always necessary. If the motivation for a task is increased in a smart manner, performance can once again return to top level without the need for relaxation. This finding could have consequences for how organisations and governments deal with [fatigue](#) problems.

## **The role of brain systems**

During the laboratory research, Hopstaken not only examined self-reporting and [task performance](#), but also the physiological systems that can play a role during fatigue. In the lab, the study subjects' brain and cardiovascular activity, pupil diameter, and focus of attention were measured. This way, he could very precisely determine how much attention the study subjects devoted to the task, how engaged they were in the task, and which [brain systems](#) play a role in this.

The research revealed that during fatigue, the task performance was mainly related to the task engagement and its physiological indicators. Task engagement is a result of many conscious and unconscious considerations of the costs and benefits of the task you are performing. This provides a good explanation of the positive effect of increasing [task](#) engagement during fatigue.

## **What does the future hold?**

The use of [physiological measurements](#) makes this series of studies unique within the field of organisational psychology, which even today still predominantly uses self-reporting and other subjective measurements. The addition of objective measurements is valuable because these are very precise in predicting and possibly influencing

specific behaviour.

In this case, certain brain activity and variations in the pupil diameter were strongly correlated with emerging fatigue and the associated reduction in performance. This provides a good prospect for the targeted development of innovative interventions to counteract the dangers of fatigue.

**More information:** Should I stay or should I go? Neural mechanisms of task engagement under fatigue: [www.nwo.nl/en/research-and-projects/i/13/4613.html](http://www.nwo.nl/en/research-and-projects/i/13/4613.html)

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