

Brighter light yields greater alertness

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Karin Smolders. At the left a test subject wearing the light meter used in the research. Credit: Bart van Overbeeke.

Do you sometimes feel tired when you're working in the office during the day? If so, some extra light could help. Research at TU/e shows that people immediately have more energy and feel alerter if there's more light. The effect is greatest when you're feeling mentally tired. In addition, people performed better on an attention task. Many earlier studies have showed similar effects among people working at night, but the effects during daytime have hardly been investigated.

Researcher Karin Smolders gained her PhD on Tuesday 3 December for

her research on this subject. Her work involved 52 test subjects who wore a light meter close to their eyes for three days, for example attached to eyeglasses. Using an app, they reported hourly on how they felt. The combination of the resulting data showed that the test subjects had more energy and felt more alert when they had been exposed to more light in the preceding hour.

Smolders then carried out a series of lab tests in which subjects filled in questionnaires and performed tasks in both [bright light](#) and lower light intensity conditions. Here too the test subjects reported having more energy and feeling more alert under brighter lighting, especially when they were feeling mentally fatigued after carrying out tasks requiring a lot of mental effort. They also had shorter reaction times on a task calling for concentration. However this effect was mainly observed after half an hour of exposure, even though the test subjects immediately felt more alert and had more energy in the bright light condition.

Despite these findings, Smolders doesn't recommend just switching on more lights in every office. "The [test subjects](#) didn't always experience the bright light as more pleasant, and I didn't observe a performance improvement on all tasks. Whether bright light increases performance seems to depend on the time and duration of exposure." Smolders believes her results motivate the development of dynamic lighting systems providing light scenario's matched to how a person feels and his or her working patterns.

More information: For more information, see [www.tue.nl/onderzoek/institute ... -institute/home-ili/](http://www.tue.nl/onderzoek/institute...-institute/home-ili/)

Provided by Eindhoven University of Technology

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