Medical Xpress

Online time can hobble brain's important work

September 23 2013

While you are browsing online, you could be squandering memories – or losing important information.

Contrary to common wisdom, an idle brain is in fact doing important work – and in the age of constant information overload, it's a good idea to go offline on a regular basis, says a researcher from Stockholm's KTH Royal Institute of Technology.

Erik Fransén, whose research focuses on short-term memory and ways to treat diseased neurons, says that a brain exposed to a typical session of social media browsing can easily become hobbled by information overload. The result is that less information gets filed away in your memory.

The problem begins in a system of the brain commonly known as the working memory, or what most people know as short-term memory. That's the system of the brain that we need when we communicate, Fransén says.

"Working memory enables us to filter out information and find what we need in the communication," he says. "It enables us to work online and store what we find online, but it's also a limited resource."

Models show why it has limits. At any given time, the working memory can carry up to three or four items, Fransén says. When we attempt to stuff more information in the working memory, our capacity for

processing information begins to fail.

"When you are on Facebook, you are making it harder to keep the things that are 'online' in your brain that you need," he says. "In fact, when you try to process sensory information like speech or video, you are going to need partly the same system of working memory, so you are reducing your own working memory capacity.

"And when you try to store many things in your working memory, you get less good at processing information."

You're also robbing the brain of time it needs to do some necessary housekeeping. The brain is designed for both activity and relaxation, he says. "The brain is made to go into a less active state, which we might think is wasteful; but probably memory consolidation, and transferring information into memory takes place in this state. Theories of how memory works explain why these two different states are needed.

"When we max out our active states with technology equipment, just because we can, we remove from the brain part of the processing, and it can't work."

See Erik Fransén discuss information overload with other experts on Crosstalks TV: information-overload/" target="_blank">crosstalks.tv/talks/have-our-b … 93a38a0208-overload/

Erik Fransén's ongoing work includes research on the link between disease and properties of nerve cells (ion channels). The project is a collaboration with Stockholm Brain Institute and a clinical consortium led by Martin Schmelz, from the Department of Anesthesiology, University of Heidelberg.

More information: www.csc.kth.se/~erikf/Ion

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Provided by KTH Royal Institute of Technology

Citation: Online time can hobble brain's important work (2013, September 23) retrieved 23 April 2024 from https://medicalxpress.com/news/2013-09-online-hobble-brain-important.html

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