

Examining effects of mobile phone use on attention, reaction time, and working memory of office workers

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Many of us carry a mobile phone much of the time. The term is increasingly something of a misnomer. While these portable devices may

well have their origins in allowing us to make phone calls wherever we happen to be, they are, to all intents and purposes, multitasking personal computers.

Indeed, the so-called [mobile phone](#), and in particular the smartphone, is seemingly used less and less as a device through which people might have a conversation. It is used more and more as a tool for accessing [social media](#) and social networks, taking and sharing photos and videos, watching and listening to streaming video and audio content, navigation, and many other applications that have little to do with talking.

Writing in the [*International Journal of Human Factors and Ergonomics*](#), a team from Iran has looked at [mobile phone use](#) on attention, reaction time, and the working memory of office workers. Fatemeh Sharmandemola, Gholamhossein Halvani, Sara Jambarsang, and Amir Houshang Mehrparvar of the Shahid Sadoughi University of Medical Sciences in Yazd, Iran, hoped to discover whether mobile phone use has an impact on cognitive function.

The team investigated mobile phone use among 132 office workers in a cross-sectional analysis using Wechsler and Stroop tests to measure any impact of mobile phone habits at work or before sleep on working memory, attention, and response time. They found that participants spent about 50 minutes using their device for phone conversations on average but almost two and a half hours using social networks throughout the day and night.

The team reports that as the duration of mobile [phone conversations](#) increased, there was a notable decrease in memory recall scores. Extended use of mobile phones for [social networking](#) at work was also associated with increased interference time and a decrease in reverse memory. Office workers who use mobile phones for more than two hours each day showed what they describe as a significant decline in

memory recall scores. The implications are perhaps obvious: irrespective of the benefits of mobile phone use, we should be aware of the potential detrimental effects it might have on our brains when used so much.

As with many such studies, the team acknowledges that there are limitations to the work and the interpretation of their results should be examined carefully. Larger-scale studies and a more diverse cohort are now needed to allow generalizations to be made. Nevertheless, we should be mindful of the potential for harm. Individuals, especially [office workers](#), hooked to their mobile phones for several hours each day should be aware that there may be risks to memory and cognition with prolonged use.

More information: Fatemeh Sharmandemola et al, Effect of mobile phone use on attention, reaction time and working memory of office workers, *International Journal of Human Factors and Ergonomics* (2023). [DOI: 10.1504/IJHFE.2023.135466](https://doi.org/10.1504/IJHFE.2023.135466)

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