Work interruptions have a greater impact on older people

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In everyday working life, people are often interrupted in their tasks. After the phone has rung, for example, it is difficult to concentrate on the original task again. The selection of working memory content is impaired after an interruption. Observations show that the performance deficit after such task interruptions is often bigger in older people. With the help of EEG evaluations, researchers from the Leibniz Research Centre for Working Environment and Human Factors in Dortmund (IfADo) have studied attentional selection during the resumption of primary tasks in younger and older persons in more detail.

The negative effect of an interruption was shown in both age groups. However, while younger individuals were more affected by a high-demand interruption than by a low-demand interruption, the performance deficit in older individuals occurred regardless of the cognitive demands of the interruption task. So older people are always affected by an interruption.

Interruption affects younger and older people differently

A work interruption requires the reactivation of primary task information in working memory every time. However, the handling of irrelevant information decreases with age, so that older people are less able to delete unimportant information from working memory. Therefore, the researchers assume that the memory of the interrupting task is present in the memory of older people even longer than in younger people, and thus the processing of the actual task is disturbed. Using EEG measurements, the study was able to show that signals associated with the processing of the primary task are significantly more reduced in older people after an interruption than in younger people.

The study also showed that older people were less able to cope with the negative influences of distraction on the selection of relevant primary task information. However, it could also be shown that not all cognitive processes are affected by aging. The two age groups did not differ in the ability to use new information regarding the relevance of certain memory contents.

In the study, participants performed a working memory task while frequently interrupted with a low or high cognitive demand arithmetic task. This requires the person to devote attentional resources to completing the interruption task and then reactivating information from the interrupted task (primary task). In this context, the short-term storage of information in working memory is of central importance.

The research was published in *Behavioural Brain Research*.

More information: Marlene Rösner et al, Aging impairs primary task resumption and attentional control processes following interruptions, *Behavioural Brain Research* (2022). DOI: 10.1016/j.bbr.2022.113932

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