Despite reported dislike, older readers put in less effort when using e-readers

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Older adults put in less effort to read text on tablet computers, but effects not seen in younger adults

Reading text on digital devices like tablet computers requires less effort from older adults than reading on paper, according to research published February 6 in the open access journal *PLOS ONE* by Matthias Schlesewsky and colleagues from Johannes Gutenberg University Mainz, Germany, in collaboration with colleagues from Georg August University Göttingen and the University of Marburg, Germany.

In the past, surveys have shown that people prefer to read paper books rather than on e-readers or tablet computers. Here, the authors evaluated the origins of this preference in terms of the neural effort required to process information read on these three different media. They found that when asked, both young and old adults stated a strong preference for paper books, but when they compared eye movements and brain activity measures, older adults fared better with backlit digital readers like tablet computers.

The authors measured two parameters in the readers: time required for visual fixation, and EEG measures of brain activity with the different reading devices to identify the amount of cognitive processing required for each device.

The researchers found that younger readers between the ages of 21 and 34 showed similar eye movements and EEG measures of brain activity across the three reading devices. Older adults aged 60-77 years spent less time fixating the text and showed lower brain activity when using a tablet computer, as compared to the other media. The study concludes that this effect is likely due to better text discrimination on the backlit displays. None of the participants in the study had trouble comprehending what they had read on any of the devices, but based on the physiological measures assessed, the researchers suggest that older readers may benefit from the enhanced contrast on electronic reading devices.

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