

Why older people struggle to read fine print

November 23 2012

(Medical Xpress)—Unique research into eye-movements of young and old people while reading discovers that word recognition patterns change as we grow older

Psychologists from the University of Leicester have carried out unique eye tests to examine reading styles in young and old people – and discovered for the first time that the way we read words changes as we grow older.

The team from the School of Psychology used an innovative method of digitally manipulating text combined with precise measures of readers' eye movements. This provides novel insights into how young and [older adults](#) use different [visual cues](#) during reading.

Their results have been published in the journal *Psychology and Aging*.

The researchers conducted experiments that used very precise measures of readers' [eye movements](#) to assess how well they read lines of text that had been digitally manipulated to enhance the salience of different visual information. For instance, sometimes the text was blurred and other times the features of the individual letters were sharply defined.

The results showed that whereas young adults (18-30 years) found it easiest to read lines of text when the fine visual detail was present, this was more difficult for older adults (65+years), who found it easier to read more blurred text. These findings support the view that older adults use a different reading strategy from younger adults and that they rely

more than young adults on holistic cues to the identities of words, such as word shape.

The research makes an important contribution to understanding why older people have difficulty in reading. The findings will promote further work to more fully understand this difficulty and already points to ways in which it can be combatted.

Dr Kevin Paterson, from the University of Leicester, said: "The findings showed that the difficulty older readers often experience is likely to be related to a progressive decline in visual sensitivity, particularly for visual detail, due to optical changes and changes in neural transmission even in individuals with apparently normal vision.

"However, the findings also showed that older readers comprehended text just as accurately as younger readers. Consequently, although normal aging clearly leads to important changes in reading behaviour, it seems that adaptive responses to the changing nature of the visual input may help older adults to read and understand text efficiently well into later life."

The research study aimed to understand how changes that take place in the eye and brain as a result of the normal aging process affect reading.

Dr Paterson said: "As we get older, we lose visual sensitivity, particularly to fine visual detail, due to changes in the eye and changes in neural transmission. This loss of [visual sensitivity](#) is found even in individuals with apparently normal vision and is not corrected by optical aids, such as glasses or contact lenses. However, it is likely to have consequences for reading.

"The ability to read effectively is fundamental to participation in modern society, and the challenge age-related visual impairment presents to

meeting everyday demands of living, working and citizenship is a matter of concern. The difficulty older adults have in reading is an important contributing factor to social exclusion. The RNIB has identified age-related reading difficulty amongst the over 65s as highly detrimental to quality of life and a barrier to employment.

"The fact that people have greater difficulty in reading as they get older limits their ability to engage in everyday activities (e.g., reading the newspaper, a utility bill, or the instructions on a medicine bottle), to continue to work, to read for leisure, to access education and knowledge, and to interact with others. Being able to understand the causes of this reading difficulty is an important first step to identifying ways to combat it.

"With an aging population and a rising retirement age, it is clear such problems pose serious economic and social challenges for the future. Consequently, research on this topic is likely to become increasingly important and both understanding and combatting age-related visual impairment will be important for reducing social exclusion in the elderly.

More information: Kevin B. Paterson, Victoria A. McGowan, Timothy R. Jordan
Filtered Text Reveals Adult Age Differences in Reading: Evidence From Eye Movements.
Psychology and Aging, Oct 15, 2012, No Pagination Specified. [doi: 10.1037/a0030350](https://doi.org/10.1037/a0030350)

Provided by University of Leicester

Citation: Why older people struggle to read fine print (2012, November 23) retrieved 8 April

2024 from <https://medicalxpress.com/news/2012-11-older-people-struggle-fine.html>

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