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News Release

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Staying quick-sighted is sign of staying intelligent in later life, study shows

People who retain an ability to spot things quickly in later life are more likely to stay mentally sharp, according to a study.

Tests carried out on people over 70 suggest that a decline in general intelligence in old age is linked to a decline in visual processing efficiency – the brain’s ability to reach conclusions about what the eye is seeing.

Researchers at the University of Edinburgh tested more than 600 people for visual processing at ages 70, 73 and 76 using a test which flashes one of two shapes on a screen. It then measured the time each person needed to reliably to tell one shape from the other.

They then compared result of the visual tests with several intelligence tests taken by the study’s participants at the same ages.

The team found that as the brain’s ability to make correct decisions based on visual impressions declined, so did intelligence levels.

Researchers say the findings suggest that the slowing of visual processing may be part of a wider decline in complex decision making, linked to general intelligence.

Dr Stuart Ritchie, of the University of Edinburgh’s Centre for Cognitive Ageing and Cognitive Epidemiology, who led the report, said: “The results suggest that the brain’s ability to make correct decisions based on brief visual impressions limits the efficiency of more complex functions. As this basic ability declines with age, so too does general intelligence. The typical person who has better-preserved complex thinking skills in old age tends to be someone who can accumulate information quickly from a fleeting glance.”

Professor Ian Deary, who directs the study at the University of Edinburgh, said: “Understanding why some people retain their thinking skills better than others in older age is important. In this study we tried to isolate one of the processes that underlies age-related mental decline. Next, we shall to find the brain structures health factors, and any lifestyle habits that support the retaining of both efficient visual processing and general intelligence.”

The group tested were part of the Lothian Birth Cohort 1936, a group of individuals who were born in 1936 and took part in the Scottish Mental Survey of 1947.

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Individuals have been tested on a number of physical and mental functions as they grow older, including changes in reasoning, memory, speed of thinking, many aspects of fitness and health, eyesight, blood composition and genetics.

The study, published in the Cell Press journal, *Current Biology* was funded by Age UK and the UK's Medical Research Council. The work was undertaken in the Centre for Cognitive Ageing and Cognitive Epidemiology as part of the Lifelong Health and Wellbeing Initiative which is funded by the Biotechnology and Biological Sciences Research Council and the Medical Research Council.

Professor James Goodwin, Head of Research at Age UK, said: "One of the major problems facing clinicians and healthcare workers is monitoring how cognitive decline is occurring as we age, particularly in those with dementia. These promising findings from the University of Edinburgh hold the potential for a simple way of testing how our thinking skills are changing, by measuring how well we are doing visually. More research is needed but these findings, from a study funded by Age UK, are an important breakthrough which will, in time, be of huge benefit to older people."

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