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Complex jobs may protect thinking skills in later life, study shows

People in jobs that demand complex dealings with people or data are more likely to stay mentally sharp in later life, a study suggests.

Researchers found that people who had worked in challenging work environments which might involve teaching or management skills scored better in memory and thinking tests when they were over 70.

Psychologists at the University of Edinburgh tested 1066 people for memory, mental processing speed and general thinking ability.

They judged the complexity of each participant's main jobs according to the Dictionary of Occupational Titles – a guide used by employment services to define the structure and content of occupations.

Using statistical models they analysed how a person's occupation impacted on the test results.

They took into account the results of intelligence tests taken by study participants when they were 11 years old and lifestyle factors, such as education and the relative deprivation of their environment. Those factors are important as they predict the kinds of jobs people are able to attain.

They found that participants whose work had involved tasks such as analysing data or instructing, mentoring and negotiating with people gained a small advantage.

Analysis revealed that the complexity of their roles explained about two per cent of their performance on some of the thinking and memory tests.

Co-author of the study, Dr Alan Gow, based at Heriot-Watt University, said: "Our findings have helped to identify the kinds of job demands that preserve memory and thinking later on. While it is true that people who have higher cognitive abilities are more likely to get more complex jobs there still seems to be a small advantage gained from those complex jobs for later thinking skills"

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.

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.

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Professor Ian Deary, Director of the Centre for Cognitive Ageing and Cognitive Epidemiology at the University of Edinburgh, who leads the research project, said: "It is interesting to see this new finding added to some other factors that seem to give a little boost to thinking skills in older age, such as not smoking, being physically fit and active, and knowing more than one language. It seems that having to exercise one's thought processes concerning data and people at work is helpful too. My team is now on the look out for more such factors."

The study is published today in *Neurology*[®], the medical journal of the American Academy of Neurology and is part of a larger project called the Disconnected Mind that is supported by funding from the Age UK. Additional support was received from the Medical Research Council and the Biotechnology and Biological Sciences Research Council.

Professor James Goodwin, Head of Research at Age UK, said: "Understanding how and why our thinking skills change with age is a major current health challenge. The relationship between the work we do during our lives and our health in later life is a complex one, so this finding is a welcome step forward in understanding the effects of job type on mental health in older age. The more we can find out what influences cognitive ageing, the better the advice that we can give people about protecting their cognitive health."

The study was carried out at the University of Edinburgh's Centre for Cognitive Ageing and Epidemiology (CCACE), which is funded by the Lifelong Health and Wellbeing programme. Job matching and analysis was carried out by Emily Smart, a research associate and co-author.

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