

Brain scans may help guide career choice

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General aptitude tests and specific mental ability tests are important tools for vocational guidance. Researchers are now asking whether performance on such tests is based on differences in brain structure, and if so, can brain scans be helpful in choosing a career?

In a first step, researchers writing in the open access journal *BMC Research Notes* have investigated how well eight tests used in vocational guidance correlate to [gray matter](#) in areas throughout the brain.

Richard Haier, from the University of California, USA, worked with a team of researchers to investigate the neurological basis for performance on each of the tests. He said, "Individual differences in [cognitive abilities](#) provide information that is valuable for vocational guidance.

There is some debate, however, as to whether results on individual tests of specific abilities may be more helpful than results on tests of broader factors, like general intelligence. We compared brain networks identified using scores on broad cognitive ability tests to those identified by using specific cognitive tests to determine whether these relatively broad and narrow approaches yield similar results".

Using MRI, the researchers correlated gray matter with independent ability factors (general intelligence, speed of reasoning, numerical, spatial, memory) and with individual test scores from a battery of [cognitive tests](#) completed by 40 individuals seeking vocational guidance. They found that, in general, the grey matter correlates for the broad and narrow test types were different.

Speaking about the results Haier said, "A person's pattern of cognitive strengths and weaknesses is related to their [brain structure](#), so there is a possibility that [brain scans](#) could provide unique information that would be helpful for vocational choice. Our current results form a basis to investigate this further."

More information: Gray matter correlates of cognitive ability tests used for vocational guidance, Richard J Haier, David H Schroeder, Cheuk Tang, Kevin Head and Roberto Colom, BMC Research Notes (in press), www.biomedcentral.com/bmcresnotes/

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