

# New research links brain structure with hallucinations and musical aptitude

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New research published in *Schizophrenia Research* conducted at the University of Liverpool links brain structure to an individual's likelihood of experiencing hallucinations and to their musical aptitude.

Previous research has showed that musicians have increased white matter integrity in a specific part of the [brain](#) called the [corpus callosum](#), a thick band of nerve fibres that connects the left and right halves of the brain, enabling communication between the hemispheres.

In psychotic individuals with auditory verbal hallucinations the integrity of the corpus callosum has been found to be reduced.

Researchers from the University's Psychological Sciences department identified 38 healthy individuals aged between 18 and 63 and tested their propensity to hallucinate, musical aptitude and measured their detailed [brain structure](#) using an MRI scanner.

The researchers observed that participants with higher musical aptitude showed lower hallucination proneness. More importantly, the research revealed musical aptitude was positively associated with corpus callosum integrity whereas hallucination proneness was associated with lower integrity in the fibres connecting the two hemispheres of the brain.

A statistical analysis indicated that the relationship between hallucination proneness and musical aptitude is mediated by microstructure in the corpus callosum.

Of the study Researcher Amy Spray said: "These results could have important clinical implications. If [musical aptitude](#) increases the white matter integrity of the corpus callosum, [musical training](#) could potentially counteract an individual's predisposition of hallucinations.

"Future research should address whether rehabilitation approaches that include musical training can benefit patients with psychosis."

**More information:** Amy Spray et al, Relationship between hallucination proneness and musical aptitude is mediated by microstructure in the corpus callosum, *Schizophrenia Research* (2017). [DOI: 10.1016/j.schres.2017.11.024](https://doi.org/10.1016/j.schres.2017.11.024)

Provided by University of Liverpool

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