

Why some people hear colour, taste sounds

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ANU researchers have shed new light on synesthesia. Credit: The Health Blog, Flickr

Researchers at The Australian National University (ANU) have shed new light on synesthesia - the effect of hearing colours, seeing sounds and other cross-sensory phenomena.

Lead Researcher, ANU Research School of Psychology's Dr Stephanie Goodhew, said the research found synaesthetes had much stronger

mental associations between related concepts.

"For them words like 'doctor' and 'nurse' are very closely associated, where 'doctor' and 'table' are very unrelated. Much more so than for people without the condition," she said.

The findings could help researchers better understand the mysteries of synaesthesia, which Dr Goodhew said affects an estimated one in every 100 people.

Dr Goodhew said synesthetes have stronger connections between different [brain](#) areas, particularly between what we think of as the language part of the brain and the colour part of the brain. Those connections lead to a triggering effect, where a stimulus in one part of the brain would cause activity in another.

"Things like hearing shapes, so a triangle will trigger an experience of a sound or a colour, or they might have a specific taste sensation when they hear a particular sound," she said.

"One person reported that smells have certain shapes. For example the smell of fresh air is rectangular, coffee is a bubbly cloud shape and people could smell round or square."

The research centred on measuring the extent that people with Synesthesia draw meaning between words.

"Going in we were actually predicting that synesthetes might have a more concrete style of thinking that does not emphasise conceptual-level relations between stimuli, given that they have very rigid pairings between sensory experiences.

"We found exactly the opposite," Dr Goodhew said.

More information: "Enhanced semantic priming in synesthetes independent of sensory binding," *Consciousness and Cognition*, Volume 33, May 2015, Pages 443-456, ISSN 1053-8100, [dx.doi.org/10.1016/j.concog.2015.02.019](https://doi.org/10.1016/j.concog.2015.02.019)

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