

# Irrelevant sounds automatically ignored

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Canadian researchers say overexposure to irrelevant sounds can cause the brain to ignore them in favor of other auditory stimuli.

The finding by scientists at the University of Calgary is surprising because previous work suggested exposure to certain sounds increased the brain's response to them.

The researchers exposed adolescent cats to random sequences of tones at frequencies that varied within a fixed range, and then looked at the neural responses to the different frequencies in the cats' auditory cortex.

Following exposure, which lasted 24 hours a day for about 5 months, neurons in the cats' auditory cortex showed much weaker responses to frequencies that had been present in the exposure stimulus. In contrast, responses to other frequencies were enhanced.

The results, say the researchers, suggest overexposure to a stimulus can impair its representation in the brain; the auditory stimulus in the study was of no relevance to the cats, and presumably was ignored.

The scientists say it remains to be determined what would happen with overexposure of behaviorally relevant stimuli.

The study appears in the July issue of *The Journal of Neuroscience*.

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