

Say that again? Drug treatment could help older brains distinguish sounds

Have you noticed that learning languages or musical instruments becomes harder as you get older? It may be because your brain's ability to distinguish between sounds is declining. But research in mice suggests we may be able to reverse this. Previously, Jay Blundon at St Jude Children's Research Hospital in Memphis, Tennessee, and his colleagues discovered that levels of a chemical called adenosine in the thalamus – a part of the brain involved in sensory processing – rise as mice age. This activates a pathway that impairs learning in the brain's auditory cortex, so when old mice are played two tones that are close in pitch, they are unable to discriminate between them.

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To demonstrate this, the researchers exposed old mice to a continuous sound as background noise. Then, they played a slightly different tone in addition. The mice were startled by the new sound, showing they were able to hear it as being different from the background tone. When the team blocked adenosine signalling, they observed an increase in the number of neurons in the auditory cortex that responded to sounds – a process called neuroplasticity.

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Improving auditory plasticity could also help in conditions like stroke and tinnitus, says Blundon. Different auditory neurons could potentially be trained to take over the role of those destroyed by stroke, or to replace those that become hyperactive in [tinnitus](#), he says. "But we're far, far away from any human studies," he says.

[The original study can be found [here](#)]

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion, and analysis. Read full, original post: [Old brains can't hear similar sounds but a drug can change that](#)