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Hot topics: Why fingernails on a chalkboard make us cringe

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The frequency of the screechy, scratchy sound ranges between 2000 Hz and 4000 Hz. It's the zone of terror, where the human ear is most sensitive.

"Some frequencies are amplified due to the anatomy of the ear canal," write musicologists Christoph Reuter, of the University of Vienna, and Michael Oehler, of the Macromedia University for Media and Communication in Cologne, Germany.

In other words: Blame the shape of your ear.

In Reuter's and Oehler's study, they played two unpleasant sounds – fingernails on a chalkboard and squeaking chalk on a slate – but before doing so, they told half of their participants that they'd be hearing contemporary music. The other half knew the horror that was coming.

Both groups reacted physically to the sounds, which induced a galvanic skin response – a change in the skin's electrical activity that is often triggered by fright and can be measured, like a polygraph test.

Those who thought they were listening to contemporary music judged the sound as slightly less unpleasant – but they still didn't like it, suggesting psychology plays a role in what makes the noise so noxious.

The good news in all of this is that chalkboards are pretty much out of fashion. Fingernails on whiteboards just don't have the same effect.

Source: Melissa Dahl, MSNBC

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