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Why fingernails-on-a-chalkboard is the worst sound in the world

By *Melissa Dahl*

Screeeeeeech. Even imagining the sound of a person's fingernails scraping down a chalkboard is horrible. Now, new research helps suggest why the noise is such a special kind of awful.

The frequency of the screechy, scratchy sound ranges between 2000 Hz and 4000 -- and to your ear canal, this is 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.

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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.

Reuter and Oehler presented their finding this week at the [Acoustical Society of America meeting](#).

Feeling uncomfortable after all this fingernails-on-chalkboard talk? Researchers actually proved in a 1986 study just thinking about nails-on-a-chalkboard can evoke the same psychological reaction as actually



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Can you think of a sound that's worse than fingernails on a chalkboard?
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(Silverware scraping on plates? Styrofoam rubbing together?)

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Wan-3235979 ★

Give me chalk screeching any day over teenagers talking loudly using profanity, gang language, and poor grammar, all the while being disrespectful to adults and figures of authority.

#1 - Sun Nov 6, 2011 1:43 PM EST

REPLY 13 votes

Gerard Gustav

You sound so old. I pity you for that.

#1.1 - Sun Nov 6, 2011 7:13 PM EST

4 votes

Iuvz2dance ★

You sound so immature, rude and low-rent. Maybe one day you'll grow up and want to act like an adult.

#1.2 - Sun Nov 6, 2011 7:34 PM EST

5 votes

ikie 12pts

The only thing worse than fingernails on a black board is the guttural sounds of the new "Metal Bands" that sound like Lucifer; people screaming in anguish amid the low, growling sounds of



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#1.3 - Sun Nov 6, 2011 9:44 PM EST

4 votes

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Wan-3235979

Actually, Gerard, I'm not old. I'm a teacher. I can handle chalk screeching. Do it myself sometimes. Kids telling me they're going to "snap on me some day," and "someone gonna get shot" in my classroom, or telling *me* to shut up and sit down just because I politely asked them to pay attention, is what causes my skin to crawl.

#1.4 - Fri Nov 11, 2011 8:13 PM EST

1 vote

kdc43

I'D have to agree with Wan-3235979 1000%, threats of violence and gun shots are way wrong!!!!

#1.5 - Sun Nov 13, 2011 2:35 AM EST

REPLY

johnny07022



Gum chewing and snapping

#2 - Sun Nov 6, 2011 1:46 PM EST

REPLY

5 votes

Steve-2534810



That explanation seems a bit simplistic to me... you can take a tone generator and create the whole range of tones between 2Khz and 4Khz and you don't get even close to the same reaction. I think there's more to it.

#3 - Sun Nov 6, 2011 1:57 PM EST

REPLY

8 votes

older

Kevin C-752389

Very good point.

Quint from "Jaws":

(drags his nails down a chalkboard to quiet the room) "Y'all know me. Know how I earn a livin'. I'll catch this bird for you, but it ain't gonna be easy. Bad fish. Not like going down the pond chasin' bluegills and tommycods. This shark, swallow you whole. Little shakin', little tenderizin', an' down you go. And we gotta do it quick, that'll bring back your tourists, put all your businesses on a payin' basis. But it's not gonna be pleasant. I value my neck a lot more than three thousand bucks, chief. I'll find him for three, but I'll catch him, and kill him, for ten. But you've gotta make up your minds. If you want to stay alive, then ante up. If you want to play it cheap, be on welfare the whole winter. I don't want no volunteers, I don't want no mates, there's just too many captains on this island. \$10,000 for me by myself. For that you get the head, the tail, the whole damn thing."

#3.1 - Sun Nov 6, 2011 4:10 PM EST

2 votes

newer

AG99

Seems simplistic to me as well. When I hear that sound, or even think about it, I imagine the damage being done to the fingernails as they scrape down the board, the chalk dust getting under the nails, the splintering of the edges.

Oddly, I don't get that reaction when I think about someone getting shot or stabbed, even though the damage is far worse.

#3.2 - Sun Nov 6, 2011 4:36 PM EST

REPLY

beledibabe

Perhaps because a generated tone is steady and constant, while fingers on a chalkboard have an inherent staccato quality?

#4 - Sun Nov 6, 2011 2:09 PM EST

REPLY

3 votes

Maarigold



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Ugh the only thing I can think worse than fingernails down a chalkboard is the sound of a sandstone block on a flattop metal grill to clean it. "shudders" Anyone who has ever worked in a diner knows what I mean. It's nauseating.

#5 - Sun Nov 6, 2011 2:22 PM EST

REPLY 2 votes

Megidolaon



Babies crying and screaming physically hurt my ears! It's like someone's driving an ice pick in them. Another sound that's just as bad is someone chewing on ice. I cringe just thinking about it.

#6 - Sun Nov 6, 2011 2:45 PM EST

REPLY 6 votes

DickTucker-3544258



Nickelback?

#7 - Sun Nov 6, 2011 3:15 PM EST

REPLY 7 votes

Lalla-3521875

Crying babies and squeaking teeth. (My own, I dunno if I can hear other people's teeth.)

#8 - Sun Nov 6, 2011 3:18 PM EST

REPLY

Mizpeterz

Styrofoam rubbing is together is even worse than the chalkboard!!

#9 - Sun Nov 6, 2011 3:22 PM EST

REPLY

Jim-697095

Those noises have never bothered me.

#10 - Sun Nov 6, 2011 3:25 PM EST

REPLY 2 votes

older

swerve-2635311



The worst sound would be someone farting in an elevator. because the sound means something much worse is on the way.

#11 - Sun Nov 6, 2011 3:42 PM EST

REPLY 5 votes

newer

airrika



The absolute worst sound is:

CHILDREN SCREAMING DURING PLAY.

My kids were forbidden to scream unless there was a fire or abduction attempt. They are now very respectful and courteous--not the loud obnoxious-types at parties.

Parents who let their kids scream are spineless and inconsiderate of neighbors. I repeat: My kids had all the playthings any kids could ever have and enjoyed lots of hours in the sun playing, and they had plenty of fun, WITHOUT having to \$\$\$@ scream like savages.

They are now older and very well-mannered !!

#12 - Sun Nov 6, 2011 4:14 PM EST

REPLY 6 votes

airrika

Microphone feedback

Saliva-drenched kissing on TV

Any song by the Stones

#13 - Sun Nov 6, 2011 4:19 PM EST

REPLY 3 votes

ikie 12pts

Airrika, I beg your pardon..."The Stones"? They made the best rock n roll ever!!!!

#13.1 - Sun Nov 6, 2011 9:48 PM EST

1 vote



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martha washington

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Metal scraping on sand. Gives me chills!

#14 - Sun Nov 6, 2011 4:21 PM EST

REPLY

K-3819406

I love kids, but the sound of screaming is no good for me. I have an Autism-spectrum disorder, though, and I'm hyper-sensitive to all kinds of sounds, and also sensations. The act of pulling a cotton-ball out of a medication bottle has the same effect on me as nails on a chalkboard, my mouth waters and I cringe and have chills and goosebumps and icky tingles up and down my body. I hate it.

#15 - Sun Nov 6, 2011 4:27 PM EST

REPLY 1 vote

L K Tucker

The sound of old guy slobber.

#16 - Sun Nov 6, 2011 4:51 PM EST

REPLY

ibog

The crowd outside of the Today Show when they start yelling at 7:30 A.M.

#17 - Sun Nov 6, 2011 5:07 PM EST

REPLY 1 vote

GLO2009

I can barely handle taking ice out of the freezer. The sound of the ice rubbing the ice is as bad for me as nails on a chalkboard. Also, they have these lipglosses with glittery handles. The glitter attached to the glue on the handles makes the most terrible sound when it's touched. My family has chased me around the house scraping their nails along the top *shudder*.

#18 - Sun Nov 6, 2011 5:12 PM EST

REPLY

neets-2075474

I have to leave the house when my husband uses a callous scraper on his heels. Gad, I can barely even type that sentence without shuddering. Makes me want to throw up!

#19 - Sun Nov 6, 2011 5:22 PM EST

REPLY

Carol875

And how did the researchers establish that the critical frequencies were in the 2000-4000 Hz range? A mention of their use of bandpass filtering would have clarified this. It's really annoying that this column does not publish links to the original research.

#20 - Sun Nov 6, 2011 5:42 PM EST

REPLY

Jace-559382

At least they mentioned the author's names so that it is possible to find the journal article. That is more than MSNBC usually does for its scientific reporting.

#20.1 - Mon Nov 7, 2011 12:32 AM EST

1 vote

REPLY

Ekio

I hate the noise of squeeky peanuts when you chew them... I also hate the raspberry noise someone makes when they stick their tongue out at some1... it gives me a headache ><

#21 - Sun Nov 6, 2011 5:46 PM EST

REPLY

RJEM

older

newer



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What about chewing aluminum foil?
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#22 - Sun Nov 6, 2011 5:55 PM EST

REPLY

evanusk

Never mind the sound, that gives me a toothache just thinking about it!

#22.1 - Sun Nov 6, 2011 6:07 PM EST

3 votes

REPLY

Todd E. Mashlan, a/BSG

Although it's more tactile than audile, I have a similar reaction to wooden popsicle sticks scraping against teeth.

#23 - Sun Nov 6, 2011 6:37 PM EST

REPLY

1 vote

Viewer_Ready

And the age old question is. (as my father used to say)

"If this sound makes your skin crawl, how does your butt smell when it passes your nose"?

#24 - Sun Nov 6, 2011 6:42 PM EST

REPLY

2 votes

somedude-506636

Screaming bratty kids cryin and shrieking is about as annoying as it can get , especially first thing in the morning when you want to go get a breaky sandwich and a coffee and read the paper in peace .

#25 - Sun Nov 6, 2011 7:12 PM EST

REPLY

1 vote

AnotherLBowman1

Don't get me started on that loud, high pitched squeal toddlers do that seems to carry for miles. The worst is when you're in public shopping or waiting for an appointment and someone's little angel has learned to squeal in that high pitch. And the little brat has learned when they squeal they get attention. Usually the parent does nothing to stop them or worse tells them how cute that is and encourages them to continue. Once it got so bad that I loudly told a receptionist that it was too loud in the waiting room and I asked to postpone my appointment till a quieter day. I got a dirty look from the mother but at least she took her screaming brat outside.

#25.1 - Mon Nov 7, 2011 6:44 AM EST

1 vote

REPLY



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