PHOTO: SHUTTERSTOCK / BY KOBBY DAGAN

HEAD FOR THE CHILLS

OR, WHY A GODDAMN MARIAH CAREY SONG GIVES ME GOOSEBUMPS.

BY CHRIS COLLINGWOOD

Are you that guy on the subway with the big goofy headphones, having apparently uncontrollable spasms in full view of dozens of commuters? You could stop it if you wanted to, but fuck that, the bass drum is kickin' and your body wants to move.

Granted, people might think you're an idiot, but reacting to music physically is just human nature. Everyone's born with a metronome in their chest and an incredibly versatile instrument inside their mouth. Which is why your audience might cut you some slack.

Not everyone experiences chills and goosebumps hearing certain passages of music, however. As that title teaser indicates, I get both. And though I can't believe I'm admitting this in print, one of the musical moments this happens is when Mariah Carey hits that high note in her cover of "Without You."

I can't help it. It's internal wiring. Or so I've always told myself. And it turns out, new research into musical response supports this idea that differences in brain architecture account for why some people get all tingly and moved, and others don't, during songs.

Matthew Sachs, now a PhD candidate at USC's Brain and Creativity Institute, conducted a study while at Harvard designed to figure out why the goosebump reaction doesn't happen to everybody.

A musician and music fan himself (he plays piano and the bassoon), Sachs asked his test subjects, both those who get the chills and their less tingly counterparts, to bring in favorite pieces of music and listen while he and his colleagues measured their heart rates and skin conductance (a measure of general arousal).

People showed up with songs by Coldplay, Bon Iver, Kanye West, 'N Sync, the Beatles, and other bands and artists. As the test subjects listened to three of their favorite songs, along with three others, the researchers also scanned their brains using an MRI-based neuroimaging technique called "diffusion tensor imaging." The listeners were asked to rate their emotional responses from zero to ten (no pleasure to high pleasure), and also press down on a keyboard space bar if they felt a chill, and hold it down for the chill's duration.

Sachs and his team found distinct differences between the brain structures of those who experienced chills, and those who didn't. The chills crowd had greater connectivity between the auditory cortex of their brains and areas that process emotion, thanks to more fibers linking the regions.

My Mariah response came down to fibers? Apparently so.

But I had questions. Like, were there differences in intensity of musical passion between the two groups? Were there differences in musical aptitude? And would it be possible for, um, a musician to engineer more chills in an audience by understanding how this all works?

I got in touch with Sachs. Though he was careful about drawing unfounded conclusions, he does think his research could shed some light on the evolutionary history of human aesthetic response–to music and the other art forms that have existed in all cultures at all times. And he spoke as well of potential real-world implications.

"I've thought a lot about whether a type of music-based therapy for treating mood disorders could be developed around intense emotional experiences with music," he told me. "These findings might help identify who would respond well to this type of therapy."

After our exchange, I played that damn Mariah Carey song again.

And got the shivers.

Chris Collingwood is a singer, songwriter, and cofounder of the rock group Fountains of Wayne. His new band, Look Park, released their eponymous debut in 2016. Follow him @lookpark