BEAUTIFUL NOISE

Music Might Help Neil Diamond Fight His Parkinson's Disease

The singer retired from tours following his diagnosis. But scientists say that music might help him deal with the incurable disease.

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01.23.2018 6:44 PM ET

On Monday night, singer Neil Diamond announced his retirement from touring due to his diagnosis of Parkinson's disease. The disease is characterized by tremors and difficulty to move, due to the death of neurons in the basal ganglia, the part of the brain that helps in controlling movement. As of yet, there is no cure for the disease—though research in slowing its progression is quickly developing. It’s a disease that has affected many, including Linda Ronstadt, Robin Williams, Michael J. Fox, Muhammad Ali and now, Diamond.

Diamond, however, might be in luck in treating the movement issues he will be dealing with: He's a musician, and, according to groundbreaking neuroscience work, music is helpful for alleviating the symptoms of Parkinson's.

What really marks Parkinson's patients from those who don't have the disease is the fact that movement is difficult and can lead to both uncontrollable shaking or being frozen. "They [Parkinson's patients] might think, 'I want to stand up from my chair and go to the kitchen and get a cup of coffee,'" Jessica Grahn, a music neuroscientist and professor at Western Ontario University, told The Daily Beast. "But even though they think it, they might want to do this, it's as if their body doesn't respond to the command."

Grahn's research has focused on how and why the human body responds to music. She's looked at Parkinson's patients and found some very interesting therapeutic effects to cranking the music up that might help point to better lives for those like Diamond living with the disease, and even point to the evolutionary mystery of why music makes us move the way it does.

For one thing, music seems to help release the "brake" the basal ganglia has on movements in several Parkinson's patients Grahn has studied—especially if it's got what Grahn calls a "nice, clear beat." Think something with a steady, oomph oomph bass that doesn't change speed and is predictable, with a sort of marching quality to it, "something to tap your toe to, like dance music or a march, not chillout music or slow sad songs that aren't steady to make them expressive," she described (so maybe not Diamond's reflective "September Morn"). When patients hear something like Diamond's bar classic "Sweet Caroline," however, their basal ganglia reacts and allows them to move.

Why this works, though, is unclear.

Marta Bieńkiewicz-Watson, a post-doctoral researcher studying the neuropsychology of Parkinson's with regards to music, said the relationship between rhythm and the disease is ambiguous. "On the one hand, they lose the ability to keep the time right

(and play music)," she told The Daily Beast via email. "On the other [hand], they easily latch onto temporal structure available to them externally." The inherent structure of music means that the brain "feels" the beat. In mice, this has actually helped to combat the motor and muscular issues typically associated with Parkinson's, with human behavioural evidence starting to mount: "Being physically active at a forced/higher pace than spontaneous for people with Parkinson's is the only factor that has actually demonstrated [slowing down] the progression of Parkinson's."

One theory Grahn proposed for the effectiveness of the beat is the idea that music is an external cue to move; rather than thinking, "I need to walk from Point A to Point B," music acts as a sort of guide that somehow indicates to the brain that movement is okay, nudging the body along.

"It could also be a strong beat is an external cue to get other parts of the body to move," Grahn hypothesized, allowing the beat to act as a sort of metronome for patients as they walk. But there's a gray area here, too: While some patients seem to march to the beat of the drum, so to speak, others find it stressful to follow it. And music doesn't necessarily alleviate the tremors that are associated with Parkinson's. "Dual tasks can be worse, kind of like being on the phone and trying to walk at the same time," she described. "It can create an additional load while doing something difficult. But some patients benefit from it. It certainly doesn't hurt to try."

Regardless of if a person is following the beat in walking or using the beat as a way to tickle movement awake, what's clear is the steady, thumping beat of a song like "Forever in Blue Jeans" matters. It doesn't have to be music the patient enjoys or is included in their favourite Spotify lists—"surprisingly, that doesn't matter much," Grahn said—nor does have to be music they have necessarily heard before, though familiarity certainly helps. Another intriguing quality to the thumping music? Personal experience, however, really helps—a song that jogs memories or has some nostalgic factor helps patients to move.

In Diamond's case, that he's a musician and can sing could prove to be helpful, especially given the fact that he already responds to beats. It depends on if he finds it

stressful to sing to himself and also move, but Grahn said it may be that Diamond can use that to his benefit.

Grahn added that her research has shown that music plays an important roleoutside of Parkinson's patients. For example, some people naturally have what Grahn called "beat perception," but others don't. Despite this, humans seem to universally respond to music. There could be the social aspect of bonding with others, or our brains might be wired to understand music as the universal language that has us all jumping and jiving. “There is no consensus in science why this happens,” Bieńkiewicz-Watson said. “Control of the movement switches from internally timed [in the brain] to externally timed to music”—improving timing that might be neurologically suppressed.

Grahn said she's seen this in choirs composed of patients and their caregivers, describing how the freedom of movement afforded to those with Parkinson's disease and not are universal. "Everyone is engaging, they're singing together and synchronized," she said. "There's something special there.” Crank up “Cherry Cherry.”

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