

Music to my ears

Since using his cochlear implant to listen to music, **John Cradden** has discovered a new software programme called Hope Notes. He talks to its creator, musician and fellow implant user Richard Reed

COCHLEAR IMPLANTS have been around for a long time and are now used by more than 200,000 adults and children worldwide.

But while the technology is effective in helping its users hear and comprehend speech, one of its biggest limitations is in dealing with more complex sounds, particularly music.

Those of us with normal hearing can hear thousands of sound frequencies thanks to thousands of tiny hair cells inside the cochlea, or auditory nerve.

Those hair cells will be damaged in the ears of a deaf person, but a cochlear implant essentially replaces them with up to 24 electrodes inserted into the cochlea, breaking up the acoustic world into just 24 “channels” of blocky but recognisable sound.

Its success in helping users understand speech comes from the fact speech sounds occupy only a small range on the sound-frequency spectrum, and the implant’s software largely gears the electrodes to focus on that small range.

Music, by contrast, occupies almost the entire spectrum, making it much more challenging for users to comprehend, never mind appreciate.

There have been attempts to improve music perception by developing better software, with some success. But the conventional wisdom among implant engineers and experts was that music appreciation for CI users is unlikely to hit enough of the right notes to work properly.

Over the last few years, though, the number of users who have reported enjoying music has turned this conventional wisdom on its head.

Richard Reed, a professional musician from Rhode Island in the US who hears with a cochlear implant, has been doing his bit to promote music appreciation among CI users.

“At first, clinicians and researchers were surprised when some CI users reported enjoying music. It didn’t make sense on paper,” he says.

“Supposedly, we don’t get enough aural information to appreciate melodies. But while it’s certainly true that much of the nuance is lost, there’s more going on in music than just melody.”

Reed, who got a CI in 2002, 10 years after he began to lose his hearing, has developed a software programme called Hope Notes to help improve music perception and appreciation among CI users. It features original songs, traditional folk, blues and country styles, and some familiar tunes played in unexpected ways.

Hope Notes is a bit like watching the

educational animations you see on *Sesame Street* combined with “musical” subtitles. As a new cochlear implant user, it’s fun and easy to follow. To someone with normal hearing, it probably sounds quite plain, but for people like us, it works.

“The music on Hope Notes is intentionally bland – the better to hear what’s going on – so it’s been a pleasant surprise to get emails from people who actually enjoy the songs,” says Reed.

“I think of them as exercises, little bridges which might hopefully lead to more substantial stuff.

“More than one person has been in touch saying they’d read the liner notes, but couldn’t hear some of the things I’d written about – a tap on a cymbal, a soft high piano note – but

