

# Scientists investigate health benefits of music, rhythm and movement

Scientists at NUI Maynooth announce plans to develop phone app using music and rhythm to improve mobility

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NUI Maynooth has announced its involvement in a €3 million EU-funded project investigating whether music and rhythm can help improve mobility. The project, known as BeatHealth, will examine both patients with movement disorders such as Parkinson's disease and healthy participants undertaking moderate physical exercise.

According to Dr Tomás Ward from NUI Maynooth, music stimulates our sense of wellbeing at a subconscious level. "The idea that the power of music and rhythm makes us feel better has been around for a long time but science has begun to seriously investigate how this phenomenon can be harnessed as a drug-free way of actually improving health," says Dr Ward, a senior lecturer in the Department of Engineering.

BeatHealth brings together scientists from across the EU, with studies taking place in universities in France, Spain and Belgium. These institutions will work in collaboration with Maynooth in the research and development of two smart phone apps designed to adapt musical rhythm to body movement and breathing rates. Maynooth will be responsible for pulling together the research from across Europe to create these "usable, practical" applications.

The BeatRun app will support and improve the health and fitness levels of runners. It will monitor the runner's movement, breathing and heartbeat using signals from a wrist watch, a wireless chest patch, and a respiratory sensor. The app will then synchronise the music and body movements, challenging the runner by increasing the pace.

Meanwhile, BeatPark is a more specialised form of the running app, specifically designed for Parkinson's sufferers. Parkinson's patients can develop a condition known as 'freezing gait' when the body suddenly and unexpectedly freezes in one position. Beatpark will be designed to play music, using a rhythmical stimulus to help the patient break free from their frozen stance. "Music will allow them to bypass the Parkinson's mental block," says Joe Timoney from the Department of Computer Science in Maynooth.

In October 2013 *The Irish Times* spoke with Dublin-based Margaret Mullarney who suffers from 'freezing gait'. Ms Mullarney, who founded the Irish charity Move4Parkinsons and also sings in the charity's choir 'Voices of Hope', strongly believes that music can help Parkinson's sufferers. "Using mindfulness for singing helps people with rhythm," she told *The Irish Times*. "When you sing in a choir, you stand up so that helps with balance and mobility."

Dr Ward says the BeatRun app will be available to download from the app store by the end of 2017. He expects BeatPark to be released to doctors at the end of the three year study. "Our research will have a major impact on how we exercise and on illness such as Parkinson's disease," he says.

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