MUSIC-BASED, PERSONALIZED DIGITAL THERAPY FOR PEOPLE WITH EPILEPSY

In this cross-disciplinary project, we will create a precision digital therapy by integrating expertise in music, mobile health, and atmospheric sciences.

The neurological effects of music are recognized as a means to improve treatments for refractory epilepsy. A dozen clinical studies report how listening to Mozart’s sonatas K.448 and K.545 can significantly reduce seizures in people with epilepsy. We will apply music analysis to several Mozart compositions to create diverse playlists intended to reduce seizures. These playlists will differ in tempo/rhythm to modulate arousal, and will be delivered via web-based application and MP3 players.

Because atmospheric conditions are known to precipitate seizures, music content will be adjusted to current and future weather conditions. Such a personalized digital therapy system will include an algorithm acquiring local weather data based on GPS coordinates or IP addresses, assessing weather-related seizure risks, and delivering playlists with arousal-adjusted antiseizure music.

Finally, we will collaborate with a local non-profit organization, the Gifted Music School, to deliver seminars about the health benefits of music.

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