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# The Influence of Music on Neurosurgical Cases: A Neglected Knowledge

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## Abstract

**Background:** The human brain can respond to and participate in music. Learning to play a musical instrument requires complex multimodal skills involving the simultaneous perception of several sensory modalities. In case of brain damage, the musician and nonmusician brains may have different capacities for reorganization and neural remapping. We aimed to investigate the effect of music on patients who had a brain tumor and/or underwent a neurosurgical procedure, comparing the recovery of those who had a musical background with those who did not.

**Methods:** A literature review was performed to search for any evidence on this issue. We divided the cases into two groups: as group I consisted of the nonmusician patients, while group II consisted of musicians with a neurosurgical disease. Studies were rated from 0 (no effect) to 4 (high effect).

**Results:** We found seven published studies as well as case reports. It was observed that the outcomes and quality of life of the musician group were better than those of the control groups or nonmusician patients in all of the investigated studies, but no statistical difference between musicians and nonmusicians was found.

**Conclusion:** Music-related structural changes in the brain may occur in musicians. However with limited number of cases, it cannot be asserted the improved recovery in musicians after neurosurgical disease or procedures by his or her enhanced plasticity. There are limited number of cases, for that reason, it cannot be asserted the improved recovery in musicians after neurosurgical disease or procedures by his or her enhanced plasticity. Professional musicians, who are making a living through their musical abilities, may also have a strong motivation to undergo stressful and enduring rehabilitation. An early restart of the musical activity in musicians with neurosurgical disease may lead to better outcomes, better quality of life, and better psychological parameters, in a shorter time than in nonmusicians.

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