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The Wonders of Music: How Music Has Positively Affected the Human Brain

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Abstract:

A form of art and technology known as music has advanced to be able to create chemical reactions in the human body, questioning thousands of researchers questions like, what are neurological events that happen with response to music from the human brain and how does this enhance our day to day lives? Studies from researchers and individuals listening to music on a day to day basis have been looked into to see how exactly it is that it works and the science behind it. From research found like the release of dopamine to other hormones running through the human body, there are answers and examples from medical professionals to why they involve music and how it has shown an increase in improvement when it comes to surgeons listening to music in an operating room.

Introduction:

Music is an everyday type of art and technology we don't think about much besides the thought of it making us happy, calm, and soothed. From calming infants crying continuously to having it as a background noise when studying or being occupied with something, it makes us question, why is it that we are so connected to it and what exactly is the science behind it? Over the years, music has added new genres and lists of emotions it speaks on. First being made from instruments for cultural practices, it has expanded to being a way of expressing emotions. This has allowed thousands of artists to connect with people around the world and expand on problems that millions can be going through as well. Seen as a privilege to some, it has been scientifically proven to enhance the lives of millions and provide support for stressful situations and used for simply the support from a situation. Using it while doing homework, completing chores, driving, or even having it as background noise, we have recognised that there must be

some form of connection to why it has been such a big part of our lives as human beings. Going into depth on scientific findings and proven scenarios of how music has impacted the lives of millions, we look into what participants of a study like surgeons have to say of music as a whole and how it has helped them be more successful in the operating room and how it has helped millions who may be struggling with autism, depression, anxiety, or other forms of illnesses or health conditions.

A privilege we use every day, which is music, has been connected to neural processes we may not be aware about, and this brings us to the question, what are the neurological mechanisms involved in the dopamine release response to music? In short, why does music make us feel so calm and happy? After some review, there has been scientific research for it to be linked with the release of several hormones your body releases all connected to emotional regulation and health improvement.

Known as an “auditory stimulus”(Zaatar, 2023, P.2), music has been around for years and has been used commonly to express emotions, culture, religion, and many other factors in our everyday lives. In terms of how it helps emotional regulation, I have found from Zaatar that it is linked to posing as a distraction from pain and any neurological processes associated with pain. Additionally, it is said that it has also been linked to increasing motivation, euphoria, emotions, and dopamine to help with your emotional state. Those expressing distress or depression have found to be positively impacted from having music in their life.

Correlating music to the release of dopamine and providing emotional regulation, it has also been linked to providing some form of assistance when helping with health of peoples’ hearts, brain functions, and fatigue reduction. Schubert speaks on the experiences that come from music and how it is linked to positive behaviors including optimistic emotions, feelings, and

observable behaviours. This tends to change habits of peoples day to day lives as well as their reactions and manners towards different circumstances or environments. Schubert explains in “A Special Class of Experience: Positive Affect Evoked by Music and the Arts” how emotions and new behaviors are actually changed from the consumption of music.

With the growth in music recognition and how it has a vast connection to our release of dopamine and other hormones, there is also a downside to it including the potential of it causing distraction from tasks. A recent study from Michael El Boghdady, a researcher from The University of Edinburgh spoke on how music might be the reason for complications arising in operation rooms in the medical field. The acceptance of music being played during surgery has caused an increase in attention. Questions arising including if it is affecting the performance of a surgical task has caused a lot of attention looking to see if it is a problem that could potentially lead to affecting someone's life. Michael and others in Edinburgh and around the world have expanded this question by asking, although music is linked to positivity and dopamine release in your body, is there possibility of negative effects and impacts from the art of music? He expands on how although there is a slight negative effect from having music involved in surgical performances, the vast majority of times it is seen as a positive impact as it reduces stress, and the patient's anxiety as well.

Through careful analysis and review of how music has become a new world of dopamine and brain enhancer, we have found it is an unspoken topic that affects us tremendously from releasing hormones such as dopamine, oxytocin, and other hormones correlated to positive health impacts in someone's life.

References

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