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The Effect of Music on Memory Recall Manifested by Heart Rates

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Abstract

Listening to music is an enjoyable hobby for many. We listen to music while doing various activities. Music makes boring tasks more tolerable. However, many studies have suggested that not all music is helpful for all situations. This study aims to explore the cognitive and physiological impact of different music tempos and forms on memory retention among high school students. We recruited 49 high school students between November 2025 and March 2026 to participate in a survey, read an article and answer 10 questions as they listened to upbeat (100+BPM), downbeat (~80 BPM), or no music. We also measured their minimum and maximum heart rate. Without considering any other variables, we found no correlation between the type of music and test scores. However, those who listened to downbeat music on average had a lower heart rate during the session than those who listened to upbeat music. The control group who listened to no music had an average heart rate between the other two groups.

Finally, those who considered themselves introverts scored slightly better with downbeat music, while the extroverts performed slightly better with upbeat music.

Keywords: Music, learning, personality, heart rate (BPM), memory retention