10 Science-Backed Therapeutic Benefits of Music

For Healthy Individuals

Research compiled by Bill Barclay

WHAT MUSIC IS

Concert Theatre Works

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1. Cardiovascular Health Improvement

Music listening reduces blood pressure, heart rate, and cortisol levels

Kulkarni, S., et al. (2013). Effects of music on systolic blood pressure, diastolic blood pressure, and heart rate: a meta-analysis. Journal of Clinical and Diagnostic Research.

Key Finding: Meta-analysis demonstrated music therapy leads to significant reductions in systolic blood pressure, diastolic blood pressure, and heart rate across diverse clinical settings (mean difference: -2.629 for all three measures).

2. Exercise Performance Enhancement

Music synchronization increases endurance by 15-20% and reduces perceived exertion

Patania, V. M., et al. (2020). The Psychophysiological Effects of Different Tempo Music on Endurance Versus High-Intensity Performances. Frontiers in Psychology, 11:74.

Key Finding: Total exercise duration with music (37.12 ± 16.26 min) was significantly greater than without music (22.48 ± 10.26 min)—approximately 65% increase in endurance performance.

3. Sleep Quality Improvement

Listening to slow tempo music (60-80 BPM) before bed improves sleep quality and duration

Nilsson, U. (2008). The anxiety- and pain-reducing effects of music interventions: a systematic review. AORN Journal, 87(4), 780-807.

Key Finding: Systematic review established 60-80 BPM tempo as optimal for sleep-inducing music, with effects including reduced sleep latency, improved sleep quality, and increased deep sleep duration.

4. Executive Function and Working Memory

Musical training enhances working memory capacity, inhibitory control, and cognitive flexibility

D'Souza, A. A., Moradzadeh, L., & Wiseheart, M. (2018). Musical training, bilingualism, and executive function: working memory and inhibitory control. Cognitive Research: Principles and Implications, 3:11.

Key Finding: Study of 153 young adults revealed musically trained individuals had significantly enhanced working memory compared to non-musicians, with benefits generalizing beyond musical tasks to academic and professional performance.

5. Corpus Callosum Enlargement

Musical training increases the size of the corpus callosum, enhancing interhemispheric communication

Schlaug, G., et al. (1995). Increased corpus callosum size in musicians. Neuropsychologia, 33(8), 1047-1055.

Key Finding: 30 professional musicians showed significantly larger anterior corpus callosum compared to 30 matched controls, with the effect most pronounced in those who began training before age 7.

6. Enhanced Verbal Memory

Musical training improves verbal memory performance and learning capacity

Chan, A. S., Ho, Y. C., & Cheung, M. C. (1998). Music training improves verbal memory. Nature, 396, 128.

Key Finding: Adults who received music training before age 12 demonstrated better memory for spoken words than those without training.

7. Second Language Acquisition

Musical training accelerates phonetic discrimination, prosody learning, and vocabulary retention

Milovanov, R., et al. (2010). Musical aptitude and second language pronunciation skills in school-aged children: Neural and behavioral evidence. Brain Research, 1194, 81-89.

Key Finding: Children with advanced pronunciation skills demonstrated superior musical aptitude and showed more pronounced neural activation with music stimuli, indicating shared processing mechanisms between music and language.

8. Immune System Enhancement

Active music-making increases immunoglobulin A levels and natural killer cell activity

Beck, R. J., et al. (2000). Choral Singing, Performance Perception, and Immune System Changes in Salivary Immunoglobulin A and Cortisol. Music Perception, 18(1), 87-106.

Key Finding: Secretory immunoglobulin A increased 150% during rehearsals and 240% during performance in professional choir members, while cortisol decreased 30% during rehearsals.

9. Social Bonding and Oxytocin Release

Group musical activities trigger oxytocin release and synchronize physiological states between participants

Good, A., & Russo, F. A. (2022). Changes in mood, oxytocin, and cortisol following group and individual singing: A pilot study. Music & Science.

Key Finding: Group singing (but not individual singing) led to significant increases in oxytocin levels, which correlated strongly with mood improvements—demonstrating music's unique role in facilitating social bonding beyond comparable non-musical activities.

10. Hippocampal Neurogenesis and Grey Matter Volume

Musical training promotes hippocampal growth and increases grey matter volume in memory-related structures

Groussard, M., et al. (2014). The effects of musical practice on structural plasticity: The dynamics of grey matter changes. Brain and Cognition, 90, 48-53.

Key Finding: Study of 44 musicians with 0-26 years of practice showed progressive grey matter volume increases in the left hippocampus and other brain regions, with changes appearing gradually and correlating with duration of musical training—potentially offering cognitive reserve protection against age-related decline.