



# Young at Heart:

The Benefits of Music & Outdoor Musical Play for Older Adults.

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## Introduction

As is widely known—both within the literature and in culture at large—the positive impacts of music on the cognitive, physical, psychological and emotional wellbeing of senior citizens and older adults are not only clearly evident, but actually statistically significant. The capacity of music and musical play to simultaneously foster community, boost mood, stimulate memory, encourage movement, activate creativity and complex cognitive function, reduce anxiety and agitation, improve coordination, and much more, make it an exceptionally useful and important tool to enable an enhanced quality of life for senior citizens. In recent years, many researchers and research bodies across various fields of study have attempted to examine, explain and quantify these impacts through both primary and secondary engagement with research participants falling into these categories.

This white paper in turn looks to collate and examine some of this recent existing research, consider and map out any potential trends that may emerge from it, and deliver conclusions about the impact and role of both musical listening and musical play on senior citizens and their quality of life. Firstly, given the breadth and depth of the research that exists on the subject, this white paper will attempt to give a brief overview of the primary focuses of studies that have been done to date and explain its function and relevance. Secondly, the white paper will zoom-in on the scale of specific physical, cognitive, and psychosocial benefits of music and musical play that the research has demonstrated. Next, we will briefly explore the ways in which these benefits might be maximised through forms of outdoor musical engagement, before concluding with a description of the white paper's primary findings.

## Background: Why Music?

Over the last fifteen to twenty years, the use of music and musical play in maintaining and improving the wellbeing and quality of life of senior citizens, or older adults, has attracted significant attention across multiple fields of research. To begin, then, it is useful to establish exactly why this trend has emerged at this point. Broadly, the necessity of this kind of research comes from a significant shift in the scale of demographics that exist in society today. Specifically, the ageing population, especially in the so-called Global North or Western world, is growing rapidly.<sup>1</sup> Currently, in the US, the proportion of the population over 65 is set to rise to at least 13% of the population by 2030.<sup>2</sup> Things are similar in the UK, where the number of people in this age demographic is projected to almost double by 2071, reaching approximately 21.3 million.<sup>3</sup> Amongst these figures, the fastest growing sub-section of this demographic is citizens over 85 years old. In the UK, it is estimated that the number of centenarians (people living to a hundred) has actually increased by 84% in recent years. Furthermore, it is predicted that globally, by 2030, the total number of people living to at least one hundred will have reached approximately one million.<sup>4</sup> With life expectancy figures and demographic shifts such as these come their own complex challenges.

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<sup>1</sup> Creech, A., Hallam, S., McQueen, H., & Varvarigou, M. (2013). The power of music in the lives of older adults. *Research Studies in Music Education*, 35(1), 87-102. <https://doi.org/10.1177/1321103X13478862>

<sup>2</sup> Coffman D. D. (2002). Music and quality of life in older adults. *Psychomusicology*, 18(1–2), 76–88.

<sup>3</sup> Government Office for Science. (2008). *Foresight mental capital and well-being project. Final project report—Executive summary*. London, UK: The Government Office for Science. Retrieved from [http://www.bis.gov.uk/assets/biscore/corporate/migratedD/ec\\_group/116-08-FO\\_b](http://www.bis.gov.uk/assets/biscore/corporate/migratedD/ec_group/116-08-FO_b)

<sup>4</sup> Office for National Statistics. (2011). *Estimates of Centenarians in the UK, 2010*. Retrieved from [http://www.ons.gov.uk/ons/dcp171780\\_233627.pdf](http://www.ons.gov.uk/ons/dcp171780_233627.pdf)

As medical research director Jean-Marie Robine, writing for the United Nations Department of Economic and Social Affairs, has characterized one of these central challenges, the situation is now a case of 'whether life expectancy in good health can increase as much as total life expectancy or whether this increase in longevity comes at the cost of an increase in years of life in poor health and/or disability'.<sup>5</sup> In other words, one key question for contemporary society is that with an increased predicted life span, what are the additional challenges to physical, mental, cognitive and psychosocial health that are presented to older adults as they age? Thus, the broader social challenge becomes: how might senior citizens be best equipped to maintain good health, physical and psychological, for longer and with fewer medical and pharmacological interventions? Various methodologies have been trialled across contexts, locations, age groups, and fields of study: one sub-section of these is musical interventions.

The impact of such musical interventions, in many ways, is difficult to quantify. However, researchers from all over the world have dedicated much time and attention to studying the dimension and scale of many of these impacts: ranging from cognitive and physical to psychological and social.<sup>6</sup>

## The Power of Music: Cognitive and Physical Benefits

As many studies have shown, the practice of active music making at any age brings with it all kinds of cognitive benefits. In research across many fields, it is clear that 'scientists are increasingly recognising the ability of music to elicit physiological and cognitive responses, and to elicit and evoke images and associations that seem to be unique to each human being'.<sup>7</sup> One recent review of eleven studies noted a clear correlation between music making and several cognitive benefits, and particularly focused upon the ways in which musical play appears to act as a protective mechanism against cognitive decline amongst older adults.<sup>8</sup> Additionally, one population based twin-study examined specifically the role of active music-making as a protective factor against developing Alzheimer's and other forms of dementia in older adults: a correlation which they found to be clear and significant.<sup>9,10</sup> Another study, conducted in a care-home in Switzerland, highlighted 'music's ability to trigger memories and strengthen links with identity and biography, participation in the programme was a valuable opportunity for the residents to stimulate and improve their cognitive abilities' as a key factor.<sup>11</sup> As one researcher has highlighted, the 'paradoxical dimension' of musical engagement is made clear in such findings: wherein the capacity of music to 'call [...] forth a sense of novelty in the environment, while at the same time appealing to the personal sensibilities of each individual' makes it uniquely cognitively beneficial in its simultaneous stimulation of various parts of the brain. However, the ways in which music activates neurological and bodily systems and works to prevent and protect their deterioration is not limited only to

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<sup>5</sup> Robine, Jean-Marie. (2021). Ageing Populations: We are living longer lives, but are we healthier? *United Nations: Department of Economic and Social Affairs*. Population Division, UN DESA/POP/2021/TP/NO.2.

<sup>6</sup> Creech A, Hallam S, Varvarigou M, McQueen H, Gaunt H. Active music making: a route to enhanced subjective well-being among older people. *Perspectives in Public Health*. 2013;133(1):36-43. doi:10.1177/1757913912466950

<sup>7</sup> Bourdon, Etienne. *Environmental Enrichment for Human Health: A Salutogenic Vision* (2024). Nova Science Publishers. <https://doi.org/10.52305/YKPU4625>

<sup>8</sup> Schneider, Catherine E., Elizabeth G. Hunter, and Shoshana H. Bardach. "Potential cognitive benefits from playing music among cognitively intact older adults: A scoping review." *Journal of Applied Gerontology* 38.12 (2019): 1763-1783.

<sup>9</sup> M. Alison Balbag, Nancy L. Pedersen, Margaret Gatz, "Playing a Musical Instrument as a Protective Factor against Dementia and Cognitive Impairment: A Population-Based Twin Study", *International Journal of Alzheimer's Disease*, vol. 2014, Article ID 836748, 6 pages, 2014. <https://doi.org/10.1155/2014/836748>

<sup>10</sup> See also Percussion Play's white paper focused specifically on music and Alzheimer's and dementia, 'Music for Mood and Memory'.

<sup>11</sup> Paolantonio, P., Cavalli, S., Biasutti, M., Pedrazzani, C., & Williamson, A. (2020). Art for ages: the effects of group music making on the wellbeing of nursing home residents. *Frontiers in Psychology*, 11, 575161.

the realm of the cognitive.

Indeed, research has also indicated a correlative relationship between musical interventions and the prevention of physical deterioration and weakening amongst older adults. For example, the relationship between cardiovascular health and musical therapies appears to be valuable: one study conducted in India in 2020 demonstrated a correlation between the use of Hindustani classical music in music therapies and a decreased blood pressure, pulse rate and respiratory rate in older men.<sup>12</sup> These benefits appear to extend beyond cardiac health, too, as indicated by one meta-analysis focusing on sleep quality, which covered 489 participants across 9 studies in recent years.<sup>13</sup> The meta-analysis found that not only did musical interventions across the board appear to have a positive impact upon sleep latency, they also correlated with improvements in sleep duration, sleep efficiency and sleep of daytime dysfunction in older adults.

As well as sleep and cardiac health, researchers in The Netherlands have investigated the connections between muscle strength and listening to music in older adults, finding that physical therapies and workout classes that involved music familiar to participants enhanced their performance and therefore their muscular growth and overall physical strength (though particular focus was placed on hand grip).<sup>14</sup> Not only does this indicate a correlation specific to workout or physical therapeutic environments, it also demonstrates the possibility for music to act as an enhancing factor for all kinds of physical activities for senior citizens as they experience the corporeal effects of ageing. **By enabling older adults in particular, then, to engage with rhythm and percussion instruments, music therapists and caregivers open up the possibility for them to experience both psychological and physiological benefits. This kind of physical engagement in music therapy requires the active use of a variety of different grips and hand positions, in order to produce different sounds on the musical instruments. This means that when the participants play the instruments, they are not only working to maintain their coordination and balance, but simultaneously improving their mobility and posture, increasing their energy levels, and developing the use of their fine and gross motor skills.**<sup>15</sup>

## The Power of Music: Psychosocial Benefits

Alongside these physical and cognitive benefits, recent research also demonstrates that musical engagement appears to be an extremely effective tool for promoting psychological and social wellbeing in older adults. To many of us, it will come as no surprise that there is much empirical research to support the hypothesis that music has a vital role to play in these areas. Evidence consistently backs up the claim that sustained periods of active music making is shown to have a statistically significant positive impact on subjective psychological wellbeing in older adults, particularly affecting individuals' senses of purpose, autonomy and self-determination, competence and social affirmation.<sup>16</sup> One study, conducted in Argentina, showed a significant difference in the reported quality of life for participants receiving music therapy when compared with the control group, with 86.6% of the music therapy group showing a high classification for total quality of life, versus 46.6% in the control group. Another, carried out in Italy,

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<sup>12</sup> Chatterjee, S., & Mukherjee, R. (2020). Evaluation of the effects of music therapy using Todi Raga of Hindustani classical music on blood pressure, pulse rate and respiratory rate of healthy elderly men. *Journal of scientific research*, 64(1).

<sup>13</sup> Wang, C., Li, G., Zheng, L., Meng, X., Meng, Q., Wang, S., ... & Chen, L. (2021). Effects of music intervention on sleep quality of older adults: a systematic review and meta-analysis. *Complementary therapies in medicine*, 59, 102719.

<sup>14</sup> van den Elzen, N.; Daman, V.; Duijkers, M.; Otte, K.; Wijnhoven, E.; Timmerman, H.; Olde Rikkert, M. (2019). The Power of Music: Enhancing Muscle Strength in Older People. *Healthcare*, 7, 82. <https://doi.org/10.3390/healthcare7030082>

<sup>15</sup> Percussion Play. 'Music for Mood and Memory: The Benefits Of Music For People Living With Alzheimer's Disease and Dementia.' (2019). *Percussion Play: White Papers*. <https://www.percussionplay.com/music-for-mood-and-memory/>

<sup>16</sup> Creech A, Hallam S, Varvarigou M, McQueen H, Gaunt H. Active music making: a route to enhanced subjective well-being among older people. *Perspectives in Public Health*. 2013;133(1):36-43. doi:10.1177/1757913912466950



likewise found a significant improvement in the depression index as well as in the cognitive level in the experiment's participants, again compared with no observable change in the control group. The study suggested that music training sessions could provide considerable aid to 'control the symptoms of depression, delay the deterioration of cognitive function, and enhance social-cognitive function' in older adults.<sup>17</sup>

As well as depressive symptoms, music has been proven to correlate with reductions in other often debilitating symptoms of poor mental health in senior citizens. For example, one study focused specifically on the relationship between reductions in anxiety in a randomized group of veterans with Alzheimer's over 75 years of age in northern Taiwan and active musical interventions.<sup>18</sup> In similar fashion to studies focused on depressive symptoms, this study noted significant decreases in levels of anxiety and agitation reported by the experimental group versus the control group. This trend thus reaffirms the capacity of musical play to enable emotional regulation and the reduction of anxious tendencies and agitated behaviors in older adults. By enabling this emotional regulation, feelings of autonomy and self-determination, and boosts in individuals' self-esteem, active music-making also crucially creates conditions for senior citizens to develop feelings of social integration, build community, and thus inhibit and even work to combat experiences of isolation that afflict many older adults today.<sup>19</sup>

## Music, Movement and the Great Outdoors

Given the clear indications of music and active music making as an extremely useful non-pharmacological tool for maintaining and improving the physical, cognitive, social and psychological health of older adults all over the world, it thus makes sense to attempt to find ways in which to maximise its positive impacts. It is well known that time spent outdoors also correlates with many of the health benefits described above. In fact, so-called 'eco-therapies' (outdoor and nature therapies) have been quickly gaining traction in recent years as a set of low-cost, high efficiency methodologies for therapeutic intervention (as well as general play and socialisation) with and for older adults.<sup>20</sup> **Eco-therapies have been proven to correlate with improvements in mental health, boosts in self esteem, with helping people with mental health problems return to work, improve physical health, and reduce social isolation, as many studies and analyses show.**

One study, conducted in 2019, considered the positive impacts of a program of outdoor adventures on the mental health of a group of participants as an alternative to time spent indoors, particularly screen time (ST). The study found significant improvements in the overall psychological and psychosocial wellbeing of the participants in the study after participating in the outdoor program.<sup>21</sup> Another recent study – which focused specifically on the combination of relaxation based music therapy and being outdoors in a natural setting – showed that the 'combination of music therapy and silence in a natural setting' to be 'significantly effective' for improving mental health, and recommended that combining silence, nature, and music 'should be further explored' due to its role as

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<sup>17</sup> Biasutti M, Mangiacotti A. Music Training Improves Depressed Mood Symptoms in Elderly People: A Randomized Controlled Trial. *The International Journal of Aging and Human Development*. 2021;92(1):115-133. doi:10.1177/0091415019893988

<sup>18</sup> Liu, M. N., Liou, Y. J., Wang, W. C., Su, K. C., Yeh, H. L., Lau, C. I., Hu, L. Y., Tsai, S. J., & Chen, H. Y. (2021). Group Music Intervention Using Percussion Instruments to Reduce Anxiety Among Elderly Male Veterans with Alzheimer Disease. *Medical science monitor : international medical journal of experimental and clinical research*, 27, e928714. <https://doi.org/10.12659/MSM.928714>

<sup>19</sup> Relatives and Residents Association. (2010). 40,000 older people in care "isolated." *News Release*, Retrieved from [http://www.relres.org/images/RRA\\_Nov\\_2010%20Isolation.pdf](http://www.relres.org/images/RRA_Nov_2010%20Isolation.pdf)

<sup>20</sup> Pretty, J., & Barton, J. (2020). Nature-based interventions and mind-body interventions: Saving public health costs whilst increasing life satisfaction and happiness. *International Journal of Environmental Research and Public Health*, 17(21), 7769.

<sup>21</sup> Mutz, Michael et al. 'Outdoor Adventures and Adolescents' Mental Health: Daily Screen Time as a Moderator of Changes.' *Journal of Adventure Education and Outdoor Learning*, vol. 19, no. 1, 2019. pp. 56-66.

an 'effective [...] method' for both individual and group therapies.<sup>22 23</sup> Studies focused specifically on the impact of time outdoors on older adults' quality of life have found similar levels of effectiveness, consistently citing the importance of outdoor activity to the maintenance of physical, psychological and social wellbeing for senior citizens.<sup>24 25</sup> Thus, logic follows that in order to combine the multifarious positive impacts of outdoor activity upon older adults with those of musical engagement, it may be useful to combine the approaches themselves. By enabling outdoor musical engagement for senior citizens – whether in therapeutic care or self-led play contexts – we open up the possibility to multiply their benefits, across the areas of the social, the psychological, the cognitive and the physical.

## The Power of Percussion Play

The outdoor musical instruments created at Percussion Play are diverse and accessible to people of all ages and abilities. They are deliberately designed in ways that aim to foster social, group and collaborative play, encourage independence and self-determination regardless of age, strength or physical ability, and equip music-makers of all ages to explore, experiment create and play. These instruments make perfect additions to any setting, particularly gardens and social spaces in senior living communities, care homes, nursing homes, hospices, and hospitals. In these settings, the musical instruments can be used and enjoyed by both residents and their carers. Anyone and everyone can access the health benefits that playing these Percussion Play instruments provides, and they are currently being installed in these types of setting all over the world.

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<sup>22</sup> Pfeifer, Eric et al. 'Enhanced Relaxation in Students after Combined Depth Relaxation Music Therapy and Silence in a Natural Setting.' *The Arts in Psychotherapy*, vol. 63, 2019. pp. 68-76.

<sup>23</sup> Section adapted from: Percussion Play. Hitting the High Notes: The Benefits of Music for Mental Health. (2020). *Percussion Play: White Papers*. <https://www.percussionplay.com/hitting-the-high-notes/>

<sup>24</sup> Ng, Y. L., Hill, K. D., Levinger, P., & Burton, E. (2020). Effectiveness of outdoor exercise parks on health outcomes in older adults—a mixed-methods systematic review and meta-analysis. *Journal of Aging and Physical Activity*, 29(4), 695-707.

<sup>25</sup> Bustamante, G., Guzman, V., Kobayashi, L. C., & Finlay, J. (2022). Mental health and well-being in times of COVID-19: A mixed-methods study of the role of neighborhood parks, outdoor spaces, and nature among US older adults. *Health & place*, 76, 102813.

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