

STAYING TWO STEPS AHEAD OF MEMORY LOSS

The Many Benefits of Dancing for Your Brain Health

Dancing is often thought of as a recreational activity and, as such, is frequently overlooked for its positive physical, mental, and social health qualities. Indeed, it was not until relatively recently that scientists began to examine the neurological effects of dancing that arise, in part, from the complex mental coordination that dance requires.

MOUNTING EVIDENCE NOW SUGGESTS THAT DANCING IS NOT ONLY BENEFICIAL FOR OUR BODIES, BUT ALSO FOR OUR BRAINS, AND MAY EVEN REDUCE THE OCCURRENCE OF ALZHEIMER'S DISEASE AND OTHER FORMS OF DEMENTIA.

One of the first studies to report dancing's advantageous effects on the brain appeared in the 2003 issue of the *New England Journal of Medicine*. Researchers at the Albert Einstein College of Medicine in New York City sought to investigate how particular leisure activities impact the risk of dementia in the elderly over a long period. They examined the effects of 11 different types of physical activity, including cycling, golfing, swimming, and playing tennis, but found that only dancing lowered the participants' risk of dementia. Neurologists have posited that dancing stimulates the release of a crucial protein called the brain-derived neurotrophic factor (BDNF) that promotes the growth, maintenance, and plasticity of neurons necessary for learning and memory. →

Dancing's quantifiable effect on the brain has also been observed among ballet dancers. According to research published in the 2015 issue of *Cerebral Cortex*, ballet dancers develop differences in their brain structures that allow them to perform rapid and repeated pirouettes without feeling dizzy. Magnetic resonance imaging (MRI) scans revealed that years of dance training actually altered the brain of the ballet dancers. For instance, the cerebellum - the part of the brain linked with dizziness - was smaller among ballet dancers than the non-dancer participants.

More recently, research published in the March 2017 issue of *Frontiers in Aging Neuroscience* found that dancing might bolster a part of the brain that is partly responsible for memory known as the fornix. As one of the most important anatomical structures related to memory, changes in the fornix have been connected to progression from mild cognitive impairment to Alzheimer's disease, and even from cognitively normal individuals to Alzheimer's disease. The degree of alteration to the fornix appears to be correlated with the degree of memory impairment, indicating the potential for the use of the fornix as a marker of dementia risk. Importantly, Dr. Aga Burzynska, an Assistant Professor of Human Development and Family Studies at Colorado State University, and her colleagues have now established a link between the integrity of fornix and dancing.

The researchers examined participants between the ages of 60 and 79 who were randomly assigned into four groups: one that participated in aerobic walking, one that participated in aerobic walking and took daily nutritional supplements, one that attended stretching and balancing classes, and one that engaged in dance classes. The research team found that engaging in any moderate to vigorous physical activity, coupled with less time engaged in sedentary activities, was better for the brain health of the participants. Interestingly enough, though, the dancing group was the only group of participants where the integrity of the fornix actually increased. This result may be because "dance is more of an immersive experience," explains Dr. Burzynska. Dancing incorporates physical activity, social interaction, and learning. What's more, "dance is more enjoyable than just walking in a gym."

Various studies have also discovered a connection between dancing and mood enhancement. Researchers from Poland found that recreational ballroom dancers (compared to competitive ballroom dancers) enjoyed a boost in mood after dancing, suggesting that

WHEN AN INDIVIDUAL ENGAGES
IN DANCING FOR PLEASURE,
THE BENEFITS TO HIS OR HER
MOOD ARE GREATER.

POPULAR STYLES OF DANCE

Ready to give dance classes a try? The following is a primer on some of the most popular styles of dance:

1. **Salsa:** A seductive style of dance that is typically performed to salsa music, which is a form of Latin American dance music that incorporates elements of jazz and rock.
2. **Country Dancing:** A traditional type of social English dance in which couples face each other in long lines.
3. **Zumba:** An aerobic fitness program featuring movements inspired by various styles of Latin American dance and performed primarily to Latin American dance music. A small-scale study out of Minot State University found that Zumba improved some cognitive skills, including visual recognition and decision-making.
4. **Ballroom:** Formal social dancing in couples, popular as both a recreational type of dance and for competitive activity. The ballroom dance repertoire includes dances developed from old European folk dances such as the waltz and minuet, Latin American dances such as the tango, rumba, and cha-cha, and dances of 20th-century origin such as the foxtrot and quickstep.

Similarly, in a study published in the April 2014 issue of the *Journal of Health Psychology*, researchers found that elderly participants - both with and without Parkinson's disease - experienced an overall reduction in total mood disturbance and a specific reduction in anger after partaking in dance sessions over a ten-week period. Finally, research out of Columbia University suggests that participating in structured dance classes twice a week improves the symptoms of depression in older adults. According to the study's author, Ray Marks, "dance therapy appears to confer beneficial mood changes on the older population, and without the damaging side effects of medications."

With the foregoing benefits in mind, it is perhaps time to dust off your dancing shoes and take advantage of the brain-boosting effects of dancing. 🕺