

Dancing with a little do si do may help fend off aging in the brain, Colorado State University researcher finds

Square dance training incorporates exercise, social interaction and learning that keeps the brain's wiring in good shape

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The waltz won't do. Nor will the rumba.

Looks like the good old-fashioned square dance, AKA contra dancing, accompanied by a fiddle and a helpful caller, could keep older brains firing on all pistons.

At least that's the conclusion of a Colorado State University study that tracked what happens to "white matter" in the brains of older adults.

The CSU research team found that dance training in contra or English country dancing — think square dancing, but in lines — seems to have a positive effect on the fornix, a white-matter tract in the middle of the brain that is basically the brain's wiring. The fornix connects the [hippocampus](#) to other areas of the brain and seems to play an important role in memory, researchers say.

The quality of a brain's wiring deteriorates as people age, causing disruptions in the transmission of electrical that control everything from emotions and movements to complex reasoning, lead researcher Aga Burzynska said.

Burzynska's team found that integrity of the fornix increased in the dance group, while integrity declined in half of the other participants involved in other activities.

Maybe because dance training incorporates exercise, social interaction and learning, the fornix got healthier in the dance group, Burzynska said.

"Our brain does age," she said, "maybe faster than we previously thought, but it seems that there are things we do that can modulate it. The lifestyle that people choose can predict the decline."

But it's not just any dance that will save brains. Researchers said contra dancing is best because it "minimizes lead-follow roles. Instead these social dances required participants to move between partners during each dance."

Contra dance is a folk dance made up of long lines of couples. Throughout the course of a dance, couples progress up and down those lines, dancing with other couples in the line. The dance is led by a caller who teaches the sequence of figures in the dance before the music starts.

But key changes are made during the course of a dance, which means participants have to stay on their toes.

The fiddle is considered the core instrument of the dance but other stringed instruments such as the guitar, banjo, bass and mandolin are also brought into play.

The randomized clinical trial, funded by the National Institutes of Health, took four years to complete. The findings were identified in a group of 174 health adults between the ages of 60 and 79 who met three times a week for six months in a gym at the University of Illinois at Urbana-Champaign.

The subjects were randomly assigned to four groups: one participated in aerobic walking, one did the same aerobic walking and took a daily nutritional supplement, one attended stretching and balance classes and one took the dance classes. The dance classes were taught by experienced dance instructors and involved choreographed and social group dances that challenged participants' cognitive and motor-learning abilities.

Each participant's white matter microstructure was measured using non-invasive, diffusion [tensor](#) magnetic resonance imaging at the beginning and end of six months of dance classes.

Participants in the exercise-only group, meanwhile, didn't exhibit the same benefits to the brain. That leads researchers to believe that there is more value in activities like dance that provide cognitive and social stimulation in addition to physical activity, a key finding of the study. Researchers also found that those who sat more and exercised less on a daily basis saw steeper levels of brain integrity decline during the six months.

"I think it's amazing," said Yuqin Jiao, a CSU graduate student who worked on the study's findings with Burzyanska. "It shows that when it comes to the effects of aging, it's never too late to change. I think that's important information to deliver; that there's hope."

A paper on the findings was published March 16 in the journal "[Frontiers in Aging Neuroscience](#)."

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