

Tai Chi Boosts Immunity to Shingles Virus in Older Adults, NIH-Sponsored Study Reports

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Tai Chi, a traditional Chinese form of exercise, may help older adults avoid getting shingles by increasing immunity to varicella-zoster virus (VZV) and boosting the immune response to varicella vaccine in older adults, according to a new study published in print this week in the *Journal of the American Geriatrics Society*. This National Institutes of Health (NIH)-funded study is the first rigorous clinical trial to suggest that a behavioral intervention, alone or in combination with a vaccine, can help protect older adults from VZV, which causes both chickenpox and shingles.

The research was supported by the National Institute on Aging (NIA) and the National Center for Complementary and Alternative Medicine (NCCAM), both components of NIH. The study's print publication follows its online release in March. The research was conducted by Michael R. Irwin, M.D., and Richard Olmstead, Ph.D., of the University of California at Los Angeles, and Michael N. Oxman, M.D., of the University of California at San Diego and San Diego Veterans Affairs Healthcare System.

"One in five people who have had chickenpox will get shingles later in life, usually after age 50, and the risk increases as people get older," says NIA Director Richard J. Hodes, M.D. "More research is needed, but this study suggests that the Tai Chi intervention tested, in combination with immunization, may enhance protection of older adults from this painful condition."

"Dr. Irwin's research team has demonstrated that a centuries-old behavioral intervention, Tai Chi, resulted in a level of immune response similar to that of a modern biological intervention, the varicella vaccine, and that Tai Chi boosted the positive effects of the vaccine," says Andrew Monjan, Ph.D., chief of the NIA's Neurobiology of Aging Branch.

The randomized, controlled clinical trial included 112 healthy adults ages 59 to 86 (average age of 70). Each person took part in a 16-week program of either Tai Chi or a health education program that provided 120 minutes of instruction weekly. Tai Chi combines aerobic activity, relaxation and meditation, which the researchers note have been reported to boost immune responses. The health education intervention involved classes about a variety of health-related topics.

After the 16-week Tai Chi and health education programs, with periodic blood tests to determine levels of VZV immunity, people in both groups received a single injection of VARIVAX, the chickenpox vaccine that was approved for use in the United States in 1995. Nine weeks later, the investigators did blood tests to assess each participant's level of VZV immunity, comparing it to immunity at the start of the study. All of the participants had had chickenpox earlier in life and so were already immune to that disease.

Tai Chi alone was found to increase participants' immunity to varicella as much as the vaccine typically produces in 30- to 40-year-old adults, and Tai Chi combined with the vaccine produced a significantly higher level of immunity, about a 40 percent increase, over that produced by the vaccine alone. The study further showed that the Tai Chi group's rate of increase in immunity over the course of the 25-week study was double that of the health education (control) group. The Tai Chi and health education groups' VZV immunity had been similar when the study began.

In addition, the Tai Chi group reported significant improvements in physical functioning, bodily pain, vitality and mental health. Both groups showed significant declines in the severity of depressive symptoms.

“This study builds upon preliminary research funded by NCCAM and we are delighted to see this rigorous trial of Tai Chi for varicella zoster immunity come to fruition,” said Ruth L. Kirschstein, M.D., NCCAM Acting Director.

Shingles, or herpes zoster, affects the nerves, resulting in pain and blisters in adults. Following a case of chickenpox, a person’s nerve cells can harbor the varicella-zoster virus. Years later, the virus can reactivate and lead to shingles. More information about shingles is available from the NIA at <http://www.niapublications.org/agepages/shingles.asp> and from www.NIHSeniorHealth.gov, a Web site for older adults developed by the NIA and the National Library of Medicine, also a part of NIH. More information on Tai Chi can be found on NCCAM’s website at <http://nccam.nih.gov/health/taichi/>.

The NIA leads the federal effort supporting and conducting research on aging and the medical, social and behavioral issues of older people. For more information on research and aging, go to www.nia.nih.gov. Publications on research and on a variety of topics of interest on health and aging can be viewed and ordered by visiting the NIA website or can be ordered by calling toll-free 1-800-222-2225.

The NCCAM’s mission is to explore complementary and alternative medical (CAM) practices in the context of rigorous science, train CAM researchers, and disseminate authoritative information to the public and professionals. For additional information, call NCCAM’s Clearinghouse toll-free at 1-888-644-6226, or visit www.nccam.nih.gov.

NIH--the nation's medical research agency--includes 27 institutes and centers and is a component of the U.S. Department of Health and Human Services. It is the primary federal agency for conducting and supporting basic, clinical and translational medical research, and it investigates the causes, treatments and cures for both common and rare diseases. For more information about NIH and its programs, visit www.nih.gov.

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Reference: Irwin, M.R., et al. Augmenting immune responses to varicella zoster virus in older adults: A randomized, controlled trial of Tai Chi. *Journal of the American Geriatrics Society* (2007), 55(4):511-517.

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Tai Chi May Help Prevent Bouts of Shingles in Older Adults

Shingles is a painful skin rash caused by the varicella-zoster virus (VZV), the virus that causes chicken pox. Older adults are more likely to develop shingles than younger adults. More than half of those who develop shingles are 60 or older. The rash can go away, but then occur again. Even after the rash is gone, the pain can linger. Shingles pain tends to be more severe in older than in younger people. It can be so severe that it lowers quality of life.

People with stronger immunity to VZV seem less likely to have attacks of shingles than do people with weaker immunity. This suggests that treatments that boost this immunity might protect against shingles and shingles pain. In a recent study, a VZV

vaccine cut the number of shingles attacks that older adults had by more than half. It also cut post-rash pain by nearly two-thirds.

In another recent but small study, researchers found that a version of Tai Chi - a traditional Chinese martial art that combines aerobic exercise, relaxation and meditation - boosted immunity to VZV. This version of Tai Chi is called Tai Chi Chih (TCC).

New Research in the *Journal of the American Geriatrics Society*

Investigating further, the same researchers who did this study recently did another study to see both whether TCC could improve immunity to VZV in older adults and boost the effect of the VZV vaccine in older people.

The researchers studied 112 healthy older adults, aged 59 to 86. All had had the virus at some point in their lives. At the start of the study, the researchers measured each adult's immunity to VZV.

The researchers then randomly assigned half of the adults to Tai Chi classes and the other half to health education classes. The Tai Chi classes met for 40 minutes three times a week. The health education classes met for the same amount of time. The adults in the study went to their assigned classes for 16 weeks, then they got the VZV vaccine, and then they went to their assigned classes for another 9 weeks.

Eight, 12, 16, and 25 weeks after the adults had started the classes, the researchers measured their immunity to VZV.

Adults who took the Tai Chi classes developed much greater immunity to VZV than the adults who took the health education classes, the researchers found. In fact, the Tai Chi classes boosted adults' immunity to VZV just as much as the VZV vaccine itself did. In addition, the combination of Tai Chi and VZV vaccine boosted immunity to VZV to levels comparable to those found in middle-aged adults who have substantially lower risk of shingles.

It's possible that Tai Chi could boost immunity to other infectious diseases, and also how well other vaccines work, the researchers conclude. More research is needed.

What Should I Do?

Tai Chi and other forms of exercise offer many benefits. Talk to your healthcare provider about exercise and get his or her OK before beginning an exercise program.

Visit [Aging in the Know](#) for more information about [exercise](#) and [shingles](#).

The summary above is from the full report titled, "[Augmenting Immune Responses to Varicella-Zoster Virus in Older Adults: A Randomized Controlled Trial of Tai Chi](#)." It is in the April 2007 issue of the *Journal of the American Geriatrics Society* (Volume 55, Issue 4). The report is authored by Michael R. Irwin, M.D., Richard Olmstead, Ph.D., and Michael N. Oxman, M.D.