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

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 website 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/>.

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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.

The National Institutes of Health (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.

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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