



BODYWORK

Tai Chi Boosts Immunity, Improves Physical Health in Seniors

Editorial Staff

In what is believed to be the first study of its kind conducted in the United States, researchers at the University of California, Los Angeles have shown that behavioral interventions and integrative exercise programs such as *tai chi* can have a direct, positive effect on the immune system in older adults. Published in the September/October issue of *Psychosomatic Medicine*, the study found that prolonged use of a specific form of *tai chi* appeared to boost the immune system's response to a common virus, and could help ward off outbreaks of a painful, debilitating skin condition that occurs in the elderly population.

The varicella-zoster virus is the cause of two diseases in humans. In young children, it causes chickenpox, a common condition that usually resolves itself after seven to 10 days. After the outward signs of chickenpox subside, the varicella virus remains alive in the body's nerve cells, but is usually kept in check by the immune system. However, when an individual's immune system is weakened by stress, illness or old age, the varicella virus can re-emerge to cause shingles, a painful skin rash that can last for months or years. There is no standard treatment for the prevention of shingles, and even after the rash disappears, skin in the affected area can remain extremely painful to the touch.

Most health care providers agree that the best way to keep shingles from occurring is to keep the immune system functioning at an optimal level. To see if behavioral/exercise programs such as *tai chi* could play a role in immunity and well-being, and thus lower the chances of shingles, Dr. Michael Irwin and a team of scientists at the UCLA Neuropsychiatric Institute designed a trial using elderly patients who had chickenpox. They recruited 36 subjects, all of whom were at least 60 years old and had chickenpox earlier in life, but not shingles. Half of the patients were randomly selected to participate in a *tai chi* group; the remaining half were told not to begin any new

exercise programs during the study and acted as a control group.

For the *tai chi* group, the researchers used a specially structured form of exercise called *tai chi chih* (TCC), consisting of 20 simple, repetitive movements and designed for easy use by older adults. TCC was practiced three times a week for 15 consecutive weeks, for a total of 45 sessions; the patients were taught by a certified TCC instructor, who conducted all of the treatments. A typical session lasted 45 minutes, comprised of a 10-minute warm up; a 30-minute exercise period; and a 5-minute cool down stage.

The main outcome measured in the study was the level of a certain type of cell in the blood - specifically, a "memory T-cell," which is designed to recognize and attack the varicella virus. In older adults, there are approximately 10 memory T-cells for every 100,000 white blood cells in the bloodstream. The researchers also used the standard SF-36 medical outcomes questionnaire to measure general health and well-being. Blood tests were taken at baseline and one week after the TCC sessions ended, while SF-36 assessments were taken at baseline, at five-week intervals during the study, and one week after the final TCC session.

Because of geographical difficulties and time requirements, four patients in the TCC group dropped out of the program. One patient also dropped out of the control group, resulting in 31 patients who completed the study.

Results

In the TCC group, there was a "robust increase" levels of memory T-cells in the blood. On average, the scientists found "a nearly 50 percent increase" of varicella virus responder cells in TCC patients from the start of the study to the one-week post-TCC period. On a patient-by-patient basis, levels of memory T-cells increased in nine TCC patients, remained unchanged in seven patients and decreased in one patient. In the control group, memory T-cell levels increased in three patients, were unchanged in eight patients and decreased in five patients.

Physical improvements also were noted in the TCC patients. Analysis of the SF-36 forms found that patients in the TCC group had "significantly higher" role-physical and physical functioning scores compared to the control group. Role-physical scores improved throughout the study for the TCC patients, whereas scores for the control group varied between assessments.



Anecdotally, patients in the TCC group generally reported higher feelings of relaxation and increased energy, and less fatigue, than control patients.

In a press release sent to *Acupuncture Today*, Dr. Irwin expanded on the results achieved in the study.

"Our findings offer a unique and exciting example of mind over matter," Irwin said. "A large body of research shows how behavior can negatively affect the immune system and health, but ours is the first randomized, controlled study to demonstrate that behavior can have a positive effect on immunity that protects against shingles. The findings are particularly noteworthy, as *tai chi chih*, or 'meditation with movement,' increased immunity in older adults who are at risk for herpes zoster.

"The improvements in both immunity and physical functioning were significant by widely accepted measures of each, and all with no surgery, no drugs and no side-effects," Irwin continued. "We

were particularly struck by incredible improvements in what subjects were able to accomplish physically as a result of participating in these classes. In fact, older adults who had the more impairment present at the start of the study showed the greatest improvement and benefit at the end."

References

1. Irwin MR, Pike JL, Cole JC, Oxman MN. Effects of a behavioral intervention, *tai chi chih*, on varicella-zoster virus specific immunity and health functioning in older adults. *Psychosomatic Medicine* Sept/Oct 2003;65:824-830.
2. Mind over matter. Tai chi class boosts shingles immunity, improves physical functioning in older adults. Press release sent to *Acupuncture Today* Sept. 25, 2003.

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