



## **New Study Published in *Nutrition Research Journal* Suggests AHCC® Post Flu Shot May Further Protect Against Flu**

- ***Japanese Mushroom Extract Increases White Blood Cells and Antibody Levels in Healthy Patients After Getting Flu Shot-***

**January 14, 2013 (Purchase, NY) ---** A new study published in *Nutrition Research Journal* suggested that short-term supplementation with active hexose correlated compound known as AHCC®, a mushroom extract from Japan, may increase white blood cells and improve the antibody response to the influenza B vaccine.

AHCC, short for Active Hexose Correlated Compound, is a natural immune-modulating ingredient derived from the mycelia (roots) of several subspecies of hybridized Japanese medicinal mushrooms. Supported by over 20 human clinical studies, AHCC has been demonstrated to help patients with liver disease, cancer, hepatitis, infections, numerous chronic conditions as well as healthy people seeking to regulate their immune systems. For more information, please visit [www.ahccresearch.org](http://www.ahccresearch.org).

The randomized, controlled study performed with 30 healthy adults evaluated whether AHCC supplementation could improve protection against the flu after flu shots were administered. The analysis of white blood cells in these adults after vaccination showed that AHCC supplementation increased the natural killer cells and T cell types of white blood cells when compared to the group who didn't receive AHCC. Antibody levels against the influenza B virus were also higher in those receiving AHCC three weeks after being given the shot. The study found that adults taking AHCC had better immunity with greater levels of white blood cells and antibodies against the flu virus compared to the control group.

“This collection of data is promising as it suggests supplementing with AHCC can help boost immunity and make the vaccine more effective,” said Elizabeth Gardner, Study Author and Researcher, Department of Food Science and Human Nutrition, Michigan State University. “We recognize the importance of future studies to determine the immune enhancing potential of AHCC, particularly with the influenza vaccine in immune-compromised or aging individuals.”

Influenza infection is a major public health threat worldwide resulting in 36,000 deaths and over 200,000 hospitalizations each year<sup>i</sup>. While influenza vaccinations are effective in protecting 70 to 90 percent of young people from the disease, it is estimated to be only 45 percent effective in immune-compromised individuals such as cancer patients and the elderly<sup>ii</sup>.

“The search for new methods that may improve immune response to the flu vaccine is currently underway,” said Gardner. “Administering supplements near or at the time of immunization has been a recent approach used to increase immune response. This new study supports this method and shows that AHCC may be an option for building immunity against a commonly dangerous, and even deadly, virus.”

### Study Design

A randomized controlled study was performed with 30 healthy adults to evaluate the effects of AHCC supplementation on the immune response to the 2009-2010 seasonal influenza vaccine. Blood was drawn pre-vaccination and three weeks post-vaccination. Immediately post-vaccination, the AHCC group began supplementation with AHCC (3 g/d). Flow cytometric analysis of lymphocyte subpopulations revealed that AHCC supplementation increased NKT cells ( $P < .1$ ), and CD8 T cells ( $P < .05$ ) post-vaccination compared to controls. Analysis of antibody production three weeks post-vaccination revealed that AHCC supplementation significantly improved protective antibody titers to influenza B, while the improvement was not significant in the control group. Overall, the study showed that AHCC supplementation improved some lymphocyte percentages and influenza B antibody titers over the control. Future studies are required to determine the kinetics of AHCC supplementation to improve the overall response to influenza vaccination. The full study can be obtained by visiting: [http://www.nrjournal.com/article/S0271-5317\(12\)00228-X/abstract](http://www.nrjournal.com/article/S0271-5317(12)00228-X/abstract).

### About AHCC

Active Hexose Correlated Compound (AHCC) is one of the world's most researched natural immune-modulating compounds. In addition to its immune-regulating abilities, AHCC has been shown to have anti-inflammatory properties and other healing features. Supported by over 20 human clinical studies, AHCC has been used in over 1000 medical clinics and hospitals worldwide. For more information, please visit [www.ahccresearch.org](http://www.ahccresearch.org).

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<sup>i</sup> Thompson WW, Shay DK, Weintraub E, Brammer L, Cox N, Anderson LJ, et al. Mortality associated with influenza and respiratory syncytial virus in the United States. *JAMA* 2003;289:179–86.

<sup>ii</sup> Gardner EM, Bernstein ED, Dran S, Munk G, Gross P, Abrutyn E, et al. Characterization of antibody responses to annual influenza vaccination over four years in a healthy elderly population. *Vaccine* 2001;19:4610–7.