



# Natural Standard

The Authority on Integrative Medicine

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Natural Standard provides high quality, evidence-based information about complementary and alternative therapies.

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## Natural Standard Exhibiting at NACDS Conference



NATIONAL ASSOCIATION OF  
CHAIN DRUG STORES

Natural Standard will be exhibiting in booth # 749 at the upcoming NACDS Pharmacy & Technology Conference in San Diego to be held August 26-29.

The conference is a pharmacy trade show and educational forum that provides the nation's leading vendors of pharmacy technology, software and innovative goods and services an opportunity to do business face-to-face with the key leaders and decision makers in chain pharmacy today. Educational programming includes the latest on state-of-the-art pharmacy operations, practice and clinical issues, distribution and marketing.

Retail attendees will include marketing, sales, purchasing, operations, clinical service and E-business executives. Supply-side attendees include marketing, sales, finance, supply chain, customer services and E-business executives.

For more information, please visit [www.nacds.org](http://www.nacds.org).

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## Berries and the Brain



Eating berries may help protect against some of the reductions in brain function associated with aging, suggests a new study.

Researchers at Tufts University conducted a study examining the efficacy of diets supplemented with blueberry and strawberry extracts on age-related deficits in behavior.

To mimic the process of aging, researchers exposed young rats to particles of high-energy and charge (HZE particles), enhancing indicators of oxidative stress and inflammation and disrupting the functioning of the parts of the nervous system that use dopamine as a neurotransmitter (dopaminergic system) and behaviors mediated by this system.

The rats were given a diet with two percent blueberry or strawberry extract supplements or a control diet for eight weeks prior to being exposed to whole-body irradiation.

The study found that the rats on the antioxidant diets did not experience deficits in brain function. Additionally, the strawberry diet offered better protection against spatial deficits as strawberry-fed animals were better able to retain place information compared to controls. The blueberry diet, on the other hand, seemed to improve reversal learning, a behavior more dependent on intact striatal function.

The data suggests that an antioxidant diet ameliorates deficits in behavior caused by aging and that the polyphenols in strawberries and blueberries may act in different brain regions.

Researchers believe that these results may have implications for diseases associated with decline in cognitive function, such as Parkinson's and Alzheimer's diseases.

For more information on diets, please visit [Natural Standard's Herbs and Supplements Database](#).

Reference: 1) Shukitt-Hale B, Carey AN, Jenkins D, et al. Beneficial effects of fruit extracts on neuronal function and behavior in a rodent model of accelerated aging. *Neurobiol Aging*. 2006 Jul 10. [View Abstract](#).

## Carrageenan may Help Prevent Cervical Cancer



Carrageenan, a type of sulfated polysaccharide extracted from red algae, may help prevent cervical cancer by inhibiting the spread of the sexually transmitted human papilloma virus (HPV).

Certain HPV types are associated with the development of cervical cancer. According to the American Cancer Society (ACS), there are 10,000 new cases of invasive cervical cancer in women in the United States every year and an estimated 3,700 women will die from the disease this year.

The ACS states that cervical cancer was once one of the most common causes of cancer death for American women. Since 1955, the number of deaths from cervical cancer has declined significantly with the increased use of the Pap test to detect cervical cancer early.

Researchers at the National Cancer Institute in Maryland compared a variety of compounds and found that carrageenan is an extremely potent infection inhibitor for a broad range of sexually transmitted HPVs.

However, these studies were conducted *in vitro*, or in a test tube, and although carrageenan may inhibit some strains of HIV *in vitro*, researchers say that genital HPVs are about a thousand-fold more susceptible.

The study found that carrageenan acts primarily by preventing the binding of HPV virions (a virion is a single virus particle) to cells. HPV typically attacks cells by attaching to the proteins on the cell surface and then works its way in using chemicals. Carrageenan prevents HPV infection by attaching to the virus blocking its access to cells.

Researchers noted that carrageenan is in widespread commercial use as a thickener in a variety of cosmetic and food products, ranging from sexual lubricants to infant feeding formulas. Some of these products block HPV infectivity *in vitro*, even when diluted a million-fold. Still, there are over 100 discovered strains of HPV.

The study concluded that clinical trials are needed to determine whether carrageenan-based products are effective against genital HPVs.

For more information on carrageenan or red algae, please visit [Natural Standard's Herbs and Supplements Database](#).

References: 1) Buck CB, Thompson CD, Roberts JN, et al. Carrageenan is a potent inhibitor of papillomavirus infection. *PLoS Pathog.* 2006 Jul;2(7):e69. [View Abstract](#).

2) The American Cancer Society (ACS) 20 June 2006. [www.cancer.org](http://www.cancer.org).

## Integrative Medicine Conference: 2006- Kiev, Ukraine: 10/21-25



The 2006 Integrative Medicine and Phytotherapy Conference and Natural Health Expo will provide non-conventional doctors and patients with practical information on natural medicine, phytotherapy guidance regarding the safety and quality of herbs and botanicals, useful clinical tools, and integrative medicine protocols for the management and/or co-management of patients with common diseases.

The most current information from research and clinical applications will be provided. Evolving views of healing that consider information from both conventional and alternative bodies of knowledge will be presented.

Participants will learn about the safety and quality of treatment methods, herbs and their own role in providing integrative healthcare. Pre-conference workshops on a variety of alternative healthcare topics will also be offered.

The registration deadline is August 15, 2006 and there is a 25 percent discount for WONM (World Organization of Natural Medicine) members.

Attendees may include professional interested in integrating natural medicine, phytotherapy and co-management protocols into their practices. DNMs, phytotherapy specialists, medical physicians, osteopaths, chiropractors, naturopaths, nurse practitioners, physician assistants, nurses, clinical nutritionists, and registered dieticians will be in attendance as well.

For more information, please contact Kristina Shevchenko at +38(063)2776465, e-mail [shevchenko@nbscience.com](mailto:shevchenko@nbscience.com), or visit [www.nbscience.com](http://www.nbscience.com).

To register, please visit [www.nbscience.com/register](http://www.nbscience.com/register).

Please, be advised that U.S. citizens, citizens of the EU, Switzerland and Liechtenstein, Principality of Andorra, Vatican, the Republic of Iceland, the Principality of Monaco, the Kingdom of Norway, the Republic of San Marino, citizens of Japan, and citizens of Canada do not need a visa to enter Ukraine if the period of their stay does not exceed 90 days.

If interested in getting tourist information or hotel reservations in Ukraine, please contact the appropriate agencies and visit [www.tourism.gov.ua](http://www.tourism.gov.ua).

For flights to Ukraine, please contact AeroSvit (Ukrainian Carrier - the only Airline with non-stop

service to Kyiv), New York City. Please call 212.661.1620 or 1.888.661.1620 (toll-free) or visit [www.aerosvit.com](http://www.aerosvit.com).

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## Psilocybin, Found in Psilocybe Mushroom, may be Associated with Mystical Experiences

Psilocybin, a known illegal hallucinogen derived from the psilocybe or “sacred” mushroom, may induce occasional mystical experiences, a new study reports.

Researchers at Johns Hopkins University of Medicine evaluated the acute and longer-term psychological effects of a high dose of psilocybin relative to a comparison compound administered under “comfortable, supportive conditions.”



The study involved thirty-six volunteers claiming to be hallucinogen-naive adults who regularly participated in religious or spiritual activities. Two or three sessions were conducted at two-month intervals. Thirty participants received orally administered psilocybin and methylphenidate hydrochloride (also known as Ritalin®, methylphenidate hydrochloride is used to treat attention deficit hyperactivity disorder- ADHD) in counterbalanced order.

To obscure the study design, six additional volunteers received methylphenidate in the first two sessions and un-blinded psilocybin in a third session. The sessions were conducted individually.

The study reported that volunteers were encouraged to close their eyes and direct their attention inward. Volunteers completed questionnaires assessing drug effects and mystical experience immediately after and two months after sessions. Community observers were asked to rate changes in the volunteer's attitudes and behavior during the sessions.

The researchers said that as a precaution, participants were informed that they could be receiving a hallucinogen and they were closely watched to make sure they didn't experience a "bad trip."

Psilocybin was reported to have produced a range of acute perceptual changes, subjective experiences and unstable moods, such as anxiety. Psilocybin also reportedly increased measures of mystical experience.

The study said that at two months, the volunteers rated the psilocybin experience as having substantial personal meaning and spiritual significance and attributed sustained positive changes in attitudes and behavior consistent with changes rated by community observers to the experience.

The illegality of psilocybin brought the study to the attention of scientists at the National Institute on Drug Abuse (NIDA), who partially funded the study.

In a statement, the NIDA compared psilocybin to the more commonly known hallucinogen LSD (acid) warning that psilocybin acts on serotonin receptors in the brain profoundly distorting a person's perceptions of reality. The NIDA also cautioned that psilocybin can trigger psychosis in susceptible individuals and cause other deleterious psychological effects, such as paranoia and extreme anxiety.

Researchers stressed the importance of the study in advancing medical care. The study concluded that when administered under supportive conditions, the experiences triggered by psilocybin were

similar to spontaneous spiritual experiences.

For more information on medicinal mushrooms, please visit [Natural Standard's Herbs and Supplements Database](#).

References: 1) Griffiths RR, Richards WA, McCann U, et al. Psilocybin can occasion mystical-type experiences having substantial and sustained personal meaning and spiritual significance. *Psychopharmacology (Berl)*. 2006 Aug;187(3):268-83. Epub 2006 Jul 7. [View Abstract](#).

2) The National Institute on Drug Abuse (NIDA). 24 July 2006. [www.drugabuse.gov](http://www.drugabuse.gov).

## Strength Training Unpopular Among U.S. Adults

A new study by the U.S. Centers for Disease Control and Prevention (CDC) found that strength training is not gaining popularity among U.S. adults despite proven health advantages.

The CDC reports that strength training, a physical activity intended to increase muscle strength and mass, results in positive health outcomes. For example, adults who engage in strength training are less likely to experience loss of muscle mass, functional decline and fall-related injuries than adults who do not strength train.

The CDC states that studies on strength-training interventions have indicated that inactive older adults who begin regular strength training achieve substantial strength gains within a few months.



A national health objective for 2010 is to have almost one-third of adults perform physical activities that enhance and maintain muscular strength and endurance at least two days every week.

The CDC reports that this objective is also recommended by the American College of Sports Medicine (ASM).

The CDC analyzed data collected between 1998 and 2004 in the National Health Interview Survey (NHIS), which included over 30,000 adults, to determine the annual prevalence of strength training among U.S. adults by age group and race/ethnicity.

The report demonstrated that although the national prevalence of strength training for U.S. adults increased slightly between 1998 and 2004, only 21.9 percent of men and 17.5 percent of women (age adjusted) in 2004 reported strength training two or more times per week. This is substantially lower than the national 2010 objective of 30 percent underscoring the need for additional programs to increase strength training among adults.

While the prevalence of strength training was lowest among adults 65 years old and over, research shows that inactive older adults who start strength training achieve rapid gains within a few months.

For more information on strength training and other types of exercise, please visit [Natural Standard's Complementary Practices Database](#).

Reference: 1) Centers for Disease Control and Prevention (CDC). Trends in strength training--United States, 1998-2004. *MMWR Morb Mortal Wkly Rep*. 2006 Jul 21;55(28):769-72. [View Abstract](#).



## Vitamin C's Effects on Immune Response

Vitamin C supplementation may provide little to no immunity boost after intense endurance exercise, a new study suggests.

Researchers at the School of Sport and Exercise Sciences at Loughborough University in England studied the effects of two weeks of supplementation with vitamin C (VC) on cortisol, adrenocorticotrophic hormone, interleukin-6, oxidative stress and neutrophil responses to a single bout of endurance exercise.

Cortisol is the body's natural stress-fighting and anti-inflammatory hormone. The adrenocorticotrophic hormone is a hormone produced by the anterior pituitary gland that stimulates the adrenal cortex. Interleukin-6 is a substance that can improve the body's natural response to infection and disease. Neutrophils are a type of white blood cell especially protective against bacterial and fungal infections. Oxidative stress may occur after intense, longer periods of exercise when increased levels of free radicals and other oxidation-promoting molecules may cause cell membrane damage, cell death and damage to genetic material.

An increased systemic concentration of stress hormones (of the hypothalamic-pituitary adrenal axis) and some cytokines (chemical messenger molecules by which immune cells communicate) may contribute to the depression of immune cell function typically observed after prolonged exercise. Researchers wanted to see if vitamin C could boost the immune cell function.

Nine healthy endurance-trained males exercised for two and a half hours at 60 percent effort after two weeks of placebo or VC supplementation. All participants completed both trials utilizing a randomized crossover design with a minimum two-week washout period between trials.

Researchers concluded that supplementation with VC for a period of up to two weeks provides little to no protection against the depression of neutrophil function which typically occurs after endurance exercise.

Vitamin C (ascorbic acid) is a water-soluble vitamin which is necessary in the body to form collagen in bones, cartilage, muscle, and blood vessels, and aids in the absorption of iron. Dietary sources of vitamin C include fruits and vegetables, particularly citrus fruits such as oranges.

For more information on vitamin C and other supplements, please visit [Natural Standard's Herbs and Supplements Database](#).

Reference: 1) Davison G, Gleeson M. The effect of 2 weeks vitamin C supplementation on immunoendocrine responses to 2.5 h cycling exercise in man. *Eur J Appl Physiol.* 2006 Jul;97(4):454-61. Epub 2006 May 10. [View Abstract](#).



## Friedman School of Nutrition Science and Policy: First Annual Friedman Symposium- Tufts University, Boston, MA: 9/19-21



Dean Eileen T. Kennedy at Tufts University Friedman School of Nutrition Science and Policy has announced the first annual Friedman School Symposium, to be held at the end of September in Boston, Massachusetts. The Symposium will provide an unbiased, neutral forum for presenting current nutrition research and debate that will impact the 2010 Dietary Guidelines.

By engaging leaders in nutrition science and policy along with representatives of the food industry, whose products and advertisements rely on the Dietary Guidelines, the Symposium will address topics such as "Problems and Pitfalls In The Dietary Guidelines: The Example of Children" and "Should Supplements and Fortified Foods Have A Place at the 2010 Guidelines Table?"

The program for the Friedman School Symposium is chaired by Drs. Robert Russell and Simin Nikbin Meydani, Director and Associate Director respectively of the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University.

Symposium presenters will include: Bess Dawson-Hughes, MD, Professor of Medicine and Director of the Bone Metabolism Laboratory at the Jean Mayer USDA Human Nutrition Research Center on Aging; Leonard H. Epstein, PhD, Department of Pediatrics, State University of N.Y. at Buffalo; Edward Giovannucci, MD, Harvard School of Public Health; Bruce Hollis, Ph D, Medical University of South Carolina; Janet King, PhD, Children's Hospital, Oakland Research Institute; Alice Lichtenstein, D.Sc., Gershoff Professor of Nutrition Science and Policy, Friedman School Director and Senior Scientist, Cardiovascular Nutrition Laboratory, Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University; Joanne R Lupton, PhD Department of Animal Science and Nutrition/Texas A & M University; Anastassios G. Pittas, MD, Tufts-New England Medical Center; Barbara Rolls, PhD, Pennsylvania State University; Allison A. Yates, PhD, RD, Environ Health Sciences Institute; and Beth Yetley, PhD Office of Dietary Supplements/ National Institutes of Health.

Speaker biographies and the full two-day program may be found on the conference web site. For this information and more, please visit [nutrition.tufts.edu](http://nutrition.tufts.edu).

The Dietary Guidelines for Americans are published every five years by the Department of Health and Human Services and the US Department of Agriculture. They are the basis for Federal food and nutrition education programs and provide concise information about healthy diet and reducing risk of serious chronic disease.

The Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy at Tufts University is the only school of nutrition in the United States. Degree programs include Basic and Clinical Nutrition, Applied Nutrition, and Communications and Policy.

If you would like us to post your event(s) online, please e-mail: [news@naturalstandard.com](mailto:news@naturalstandard.com).

## Tai Chi may be More Beneficial than Walking for Elderly Women



Tai Chi may be more effective in improving fitness in elderly women than brisk walking, a new study suggests.

Researchers at Spaulding Rehabilitation Hospital's Department of Physical Medicine & Rehabilitation, Harvard Medical School compared the effects of a short style of Tai Chi to a brisk walking training program on aerobic capacity, heart rate variability (HRV), strength, flexibility, balance, psychological status and quality of life in elderly women.

Nineteen community-dwelling, inactive women with an average age of 71 years were randomly assigned to Tai Chi Chuan (TCC) or brisk walking group (BWG).

A separate group of elderly women was recruited from the same population to act as an inactive comparison group (SCG).

The exercise groups met for one hour, three days a week for 12 weeks. Outcomes measured before and after training included oxygen consumption during exercise (VO<sub>2</sub>max), spectral analysis of HRV (high-frequency, low-frequency power as well as high- and low-frequency power in normalized units) as a measure of autonomic (unconscious) control of the heart, isometric knee extension and handgrip muscle strength, single-leg stance time, the State Trait Anxiety Inventory (STAI), Profile of Mood States (POMS) and questionnaires.

Significant improvement was seen in estimated VO<sub>2</sub>max in the TCC group. Significant gains were also seen in the non-dominant knee extensor strength and single-leg stance time.

The study concluded that a short style of TCC is an effective way to improve many fitness measures in elderly women over a three-month period. TCC was also found to be significantly better than brisk walking in enhancing certain measures of fitness including lower extremity strength, balance and flexibility.

For more information on Tai Chi and other types of exercise, please visit [Natural Standard's Complementary Practices Database](#).

Reference: 1) Audette JF, Jin YS, Newcomer R, et al. Tai Chi versus brisk walking in elderly women. *Age Ageing*. 2006 Jul;35(4):388-93. Epub 2006 Apr 19. [View Abstract](#).

## A Healthy Diet and Exercise may Help Prevent Future Heart Problems in Overweight Children



A short-term rigorous diet and exercise regimen may reverse metabolic syndrome, the cluster of conditions that often occur together including obesity, high blood sugar, high blood pressure and high triglycerides that can lead to cardiovascular disease, in overweight children, a new study reports.

Researchers at the Department of Physiological Science at the University of California noted that being overweight and having metabolic syndrome are increasing radically in children. The study examined the effects of lifestyle modification in 16 children who were placed on a high-fiber, low-fat diet in a two-week residential program where food was provided in accordance with desire and daily aerobic exercise was performed.

The study found that in each participant, pre- and post-intervention fasting blood was drawn. Insulin, homeostasis model assessment for insulin resistance and body weight were reduced significantly.

Total cholesterol, low-density lipoprotein, triglycerides and total cholesterol-high-density lipoprotein and low-density lipoprotein-high-density lipoprotein ratios were reduced, with no change in high-density lipoprotein observed. Systolic blood pressure and diastolic blood pressure also decreased.

Most notably, before the intervention, seven of the 16 subjects were classified with metabolic syndrome. After the two-week intervention, despite remaining overweight, reversal of metabolic syndrome was noted in all seven subjects. All of these changes occurred with only modest improvements in the percentage of body fat and body mass index.

The study concluded that a short-term rigorous diet and exercise regimen can reverse metabolic syndrome, even in youth without documented atherosclerosis (hardening of the arteries).

The American Heart Association (AHA) reports that overweight children are more likely to be overweight adults. However, successfully preventing or treating overweight in childhood may reduce the risk of adult overweight reducing the risk of heart disease and other diseases.

According to the AHA, based on data from the 1999–2000 NHANES (National Health and Nutrition Examination Survey), the prevalence of overweight in children ages 6–11 increased from 4.2 percent to 15.3 percent compared with data from 1963–65. The prevalence of overweight in adolescents ages 12–19 increased from 4.6 percent to 15.5 percent.

For more information on overweight, obesity, heart disease and other conditions, please visit [Natural Standard's Condition Center Database](#).

References: 1) Chen AK, Roberts CK, Barnard RJ. Effect of a short-term diet and exercise intervention on metabolic syndrome in overweight children. *Metabolism*. 2006 Jul;55(7):871-8. [View Abstract](#).

2) American Heart Association. 25, July 2006. [www.americanheart.org](http://www.americanheart.org).



## Inside Natural Standard

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Please join Natural Standard in welcoming Dawn Costa to our Cambridge office. Congratulations to Nicole Giese, Wendy Weisner and Scott Wolter on their anniversaries!

Natural Standard would also like to welcome three new students joining us this August: Rebecca Strauss, PharmD: Northeastern University; Juliann Goodfriend, PharmD: Northeastern University; and Thuy-Duong Le, PharmD: Oregon State University.

Two members of our Cambridge, MA staff will be participating in athletic charity events in the next few months.

Jeff Sprung will be riding the [Pan-Mass](#) to raise money for cancer. The PMC, presented by the Boston Red Sox and Overstock.com, is the nation's first fundraising bike-a-thon and today raises more money than any other athletic fundraising event in the country. On August 5 and 6, Jeff will be one of 4,000 cyclists who will travel eight different routes, logging between 70 and 192 miles over one or two days, through 46 scenic Massachusetts towns. Their goal is to raise \$24 million. For more information about the PMC, call 800-WE-CYCLE or visit [www.pmc.org](http://www.pmc.org).

Shaina Tanguay-Colucci will be running the [Maine Marathon](#) in October with the Leukemia & Lymphoma Society's [Team in Training®](#) to raise money for cancer research. The Leukemia & Lymphoma Society's Team In Training® is the world's largest endurance sports training program. The program provides training to run or walk a whole or half marathon or participate in a triathlon or century (100-mile) bike ride. Since 1988, more than 295,000 volunteer participants have helped raise more than \$660 million.

### Quick Links:

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