



# Natural Standard

The Authority on Integrative Medicine

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August 2008

Natural Standard provides high quality, evidence-based information about complementary and alternative therapies, diets, exercise and nutrition. For more information, please visit [www.naturalstandard.com](http://www.naturalstandard.com).

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## Integrative Medicine Webinar Series



### Acupuncture Therapy: Integrative Medicine for Patient Centered Care *Presented by: David Sollars, MAC, LicAc, HMC*

#### September 16 from 11 AM to 12 Noon

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### Natural Standard Database Overview

*Presented by: Catherine Ulbricht, PharmD*

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#### November 18 from 3 PM to 4 PM

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**December 10 from 3 PM to 4 PM**

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**Botanicals and Menopause**

*Presented by: Maida Taylor, MD MPH FACOG*

**October 14 from 11 AM to 12 Noon**

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**October 14 from 2 PM to 3 PM**

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Attendee call in number: (641) 715-3222, access code 169-402-823

**Diabetes: Integrative Care Cases**

*Presented by: Catherine Ulbricht, PharmD*

**November 12 from 3 PM to 4 PM**

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**An Innovative Program in Applied Natural Products**

*Presented by: Lana Dvorkin-Camiel, PharmD*

**December 2 from 2 PM to 3 PM**

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Attendee call in number: (616) 883-8055, access code 458-016-977

**Contact for further information:**

Eleanor McConnell

Member Services Director

(617) 444-8665

[eleanor@naturalstandard.com](mailto:eleanor@naturalstandard.com)

**Maternal Zinc for Baby Health**



According to the U.S. Centers for Disease Control and Prevention (CDC), the month of August has the highest number of births making a recent study all the more relevant. Researchers from George Washington University's School of Public Health and Health Services in Washington, D.C., found that zinc supplementation in pregnant women may contribute to the health of their children.

Previous research has revealed little about how maternal zinc intake influences the growth of babies both in the womb and after birth. Zinc is necessary for the functioning of more than 300 different enzymes and plays a vital role in an enormous number of biological processes.

The study assessed the effect of maternal zinc supplementation during pregnancy on infant growth through one year of age.

The trial of prenatal zinc supplementation was conducted from 1995 to 1997 in Lima, Peru among 1,295 at 15.6 +/- 4.6 weeks gestation.

The women were assigned to receive daily supplements with zinc (15 milligrams of zinc + 60 milligrams of iron + 250 micrograms of folic acid) or without zinc (60 milligrams of iron + 250

micrograms of folic acid) through pregnancy to one month after delivery.

At birth, 546 infants were followed for 12 months to assess growth. Measures of body size and composition were collected monthly, and morbidity and dietary intake surveillance was carried out weekly.

The study found that infants born to mothers prenatally supplemented with zinc had significantly larger average growth measures beginning in month four and continuing through month 12. Prenatal zinc was associated with greater weight, calf circumference, chest circumference and calf muscle area.

The authors concluded that maternal zinc supplementation in this population was associated with offspring growth, which is suggestive of lean tissue mass accretion.

For more information on zinc, please visit [Natural Standard's Foods, Herbs & Supplements](#) database. For more information on pregnancy, please visit [Natural Standard's Medical Conditions](#) database.

To comment on this story, please click [here](#) to enter the **Natural Standard** blog.

#### References:

1) Iannotti LL, Zavaleta N, León Z, et al. Maternal zinc supplementation and growth in Peruvian infants. *Am J Clin Nutr.* 2008 Jul;88(1):154-60. [View Abstract](#).

2) U.S. Centers for Disease Control and Prevention (CDC). Births, Marriages, Divorces, and Deaths: Provisional Data for 2007. *National Vital Statistics Reports.* Volume 56, Number 21. [View Report](#). Accessed July 25, 2008.

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## Enzymes for Muscle Mass



Researchers have discovered that adding an enzyme supplement may help individuals who are trying to increase muscle mass.

Current study suggests that consuming 1.5-2.8 grams of protein per kilogram of body weight daily (3.5 times the current recommended daily allowance) is effective and safe for individuals trying to increase or maintain lean muscle mass. To achieve these levels of daily protein consumption, supplementing the diet with processed whey protein concentrate in liquid form has become a popular choice for many people; some products have a suggested serving size as high as 50 grams of protein.

However, the researchers cautioned that due to the possible inhibition of digestive enzymes from over-processing and rapid small intestine transit time, the average amount of liquid whey protein that is absorbed may be only 15 grams. The combined effect of these factors may contribute to incomplete digestion, thereby limiting the absorption rate of protein.

The study investigated whether Aminogen®, a patented blend of digestive proteases from *Aspergillus niger* and *Aspergillus oryzae*, would significantly increase the absorption rate of processed whey protein over control values. It also examined if any increase would be sufficient to significantly alter nitrogen balance and C-reactive protein levels over control values as further evidence of increased whey protein absorption rate.

The researchers assigned two groups of healthy male subjects a specified balanced diet before and after each of two legs of the study. Subjects served as their own controls. In the first leg each control group was dosed with 50 grams of whey protein following an overnight fast. Nine days later each test group was dosed following an overnight fast with 50 grams of whey protein containing either 2.5 grams or 5 grams of Aminogen®.

The following 18 amino acids were quantified: alanine, arginine, aspartic acid, cysteine, glutamic acid, glycine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, tyrosine and valine.

The study found that Aminogen® increased the absorption rate of processed whey protein over controls. Significant decreases in C-reactive protein levels and fluxes in amino acid levels were also reported.

For more information on muscle building and strength training, please visit [Natural Standard's Health & Wellness](#) database.

To comment on this story, please click [here](#) to enter the **Natural Standard** blog.

#### References:

- 1) Oben J, Kothari SC, Anderson ML. An open label study to determine the effects of an oral proteolytic enzyme system on whey protein concentrate metabolism in healthy males. J Int Soc Sports Nutr. 2008 Jul 24;5(1):10. [View Abstract](#).
- 2) **Natural Standard** Research Collaboration: The Authority on Integrative Medicine. [www.naturalstandard.com](http://www.naturalstandard.com). Copyright © 2008.

## Natural Standard Exhibiting at the American Osteopathic Association Conference



Come visit **Natural Standard** at booth #736 at the 2008 113th Annual AOA Convention and Scientific Seminar to be held October 26-28, 2008 in Las Vegas, Nevada.

The Council on Research directs the conference, held each year in conjunction with the AOA Annual Convention and Scientific Seminar. During three morning instructive sessions, a full poster exhibition and student poster competition and a variety of meetings and events, osteopathic physicians, professors and students have a forum for presenting their research findings and meeting with other researchers about their mutual interests.

The Conference is sponsored by the A. T. Still Foundation and has been held each year since 1956. For more information, please visit [www.osteopathic.org](http://www.osteopathic.org).

## Deep Brain Stimulation for Depression

Deep brain stimulation, an experimental and invasive treatment that involves stimulating the brain with electrical signals, may help treat otherwise difficult to cure depression, a new study reports.

Depression is an illness that involves the body, mood and thoughts. Imbalances in three brain chemicals, serotonin, norepinephrine and dopamine, are linked to depression.



Unlike normal emotional experiences of sadness, loss or passing mood states, depressive disorders are persistent and can significantly interfere with an individual's thoughts, behavior, mood, activity and physical health.



Depressive disorders affect approximately 18.8 million American adults or about 9.5 percent of the U.S. population age 18 and older in a given year. Among all medical illnesses, major depression is the leading cause of disability in the United States and many other developed countries. Without treatment, symptoms can last for weeks, months or years. Appropriate treatment, however, can help most people who suffer from depression.

Researchers from the University of Toronto, Toronto, Canada, explained that an early report in six patients suggested that deep brain stimulation of the subcallosal cingulate gyrus (part of the brain) may provide benefit in treatment-resistant depression.

In the study, 20 patients with treatment-resistant depression underwent serial assessments before and after the deep brain stimulation. The researchers analyzed the percentage of patients who achieved a response or remission after surgery. They also examined changes in brain metabolism associated with deep brain stimulation.

The researchers observed both early and progressive benefits with deep brain stimulation. For example, one month after surgery, 35 percent of the patients met criteria for response with 10 percent of patients in remission. Furthermore, six months after surgery, 60 percent of patients were responded to therapy and 35 percent met the criteria for remission. These benefits were largely maintained at 12 months.

Deep brain stimulation therapy was associated with specific changes in the metabolic activity localized to cortical and limbic circuits implicated in the pathogenesis of depression. The number of serious adverse effects was small with no patient experiencing permanent deficits.

The authors concluded that deep brain stimulation provides significant improvement in patients with treatment-resistant depression. The stimulation likely acts by modulating brain networks whose dysfunction leads to depression. They observed that the procedure was well-tolerated and benefits were sustained for at least one year.

For more information on depression, please visit **Natural Standard's** [Medical Conditions](#) database.

To comment on this story, please click [here](#) to enter the **Natural Standard** blog.

#### References:

- 1) Lozano AM, Mayberg HS, Giacobbe P, et al. Subcallosal Cingulate Gyrus Deep Brain Stimulation for Treatment-Resistant Depression. *Biol Psychiatry*. 2008 Jul 16. [View Abstract](#).
- 2) **Natural Standard** Research Collaboration: The Authority on Integrative Medicine. [www.naturalstandard.com](http://www.naturalstandard.com). Copyright © 2008.



## Yerba Mate

Yerba mate, also known as erva-mate in Portuguese, originates from South America and is extracted from the dried leaves of *Ilex paraguariensis*. Two new studies examined its protective effects.

Traditionally, it has been used as a stimulant and for the treatment of arthritis, difficult digestion, liver diseases, headache, rheumatism and obesity. Yerba mate is rich in polyphenols such as caffeine, caffeic acid, catechin, epicatechin gallate and quercetin. These polyphenols



have antioxidant activity, the ability to scavenge oxidative stress causing free radicals.

Researchers from Brazil evaluated the chemical properties of the residues from yerba mate processing and also determined the candy-making performance with addition of residues from yerba mate on consumers' acceptance and purchase intent of this new product.

The candies containing different amounts of mate powder were evaluated through overall acceptability test and purchase intent. Mate powder showed high contents of dietary fiber, total ash and total polyphenols.

Supplementation with mate powder caused significant increases in polyphenol and mineral contents of mate candies. The incorporation of mate powder increased the hardness of the candies and their nutritional value.

The authors concluded that the sensory tests indicated that mate candies were acceptable and approved in relation to purchase intent.

In a related study, another group of Brazilian researchers explained that yerba mate is rich in several bioactive compounds that can act as free radical scavengers. Free radicals are produced when the body fights against infections. Although free radicals are needed for the body to produce energy, maintain immunity, transmit nerve signals, produce hormones, and contract muscles, they may also contribute to various health conditions, such as cancer. The authors investigated the antioxidant activity of mate tea as well as the ability to influence DNA repair in male Swiss mice.

Forty animals were randomly assigned to four groups. The animals received three different doses of mate tea aqueous extract, 0.5, 1.0 or 2.0 grams/kilogram, for 60 days. After the intervention, the liver, kidney and bladder cells were isolated and the DNA damage was investigated. The DNA repair process was also investigated for its potential to protect the cells from damage by the same methodology.

The study found that mate tea does not damage the DNA in liver, kidney or bladder cells. The regular ingestion of mate tea increased the resistance of DNA to DNA strand breaks and improved the DNA repair in liver cells, regardless of the dose ingested.

The authors concluded that mate tea could protect against DNA damage and enhance the DNA repair activity. Protection may be afforded by the antioxidant activity of the mate tea's bioactive compounds.

For more information, please visit **Natural Standard's** [Foods, Herbs & Supplements](#) database.

To comment on this story, please click [here](#) to enter the **Natural Standard** blog.

#### References:

1) Miranda DD, Arçari DP, Pedrazzoli J Jr, et al. Protective effects of mate tea (*Ilex paraguariensis*) on H<sub>2</sub>O<sub>2</sub>-induced DNA damage and DNA repair in mice. *Mutagenesis*. 2008 Jul;23(4):261-5. Epub 2008 Feb 27. [View Abstract](#).

2) Vieira MA, Rovaris AA, Maraschin M, et al. Chemical characterization of candy made of Erva-Mate (*Ilex paraguariensis* A. St. Hil.) residue. *J Agric Food Chem*. 2008 Jun 25;56(12):4637-42. Epub 2008 May 24. [View Abstract](#).

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## Meditation for Delayed HIV Progression

Practicing mindfulness meditation may help delay the disease progression in HIV patients, a new study reports.

Various forms of meditation have been practiced for thousands of years throughout the world, with many techniques originating in Eastern religious practices. In modern times, numerous meditation types are in use, often outside of their original religious and cultural contexts.



During mindfulness meditation, attention is focused on a physical sensation such as the breath. When thoughts intrude, the individual returns to the focus. Attention is placed on the present moment, rather than on the future or past. This technique may involve a "body scan," in which one focuses on the body from head to feet, concentrating on areas of pain or illness. This is usually performed while lying down. Regular practice is suggested to enhance self-awareness.

Researchers from the University of California, Los Angeles, investigated whether an eight-week mindfulness-based stress reduction (MBSR) program is more effective than a one-day MBSR seminar in: (1) maintaining immune resistance in HIV infection (i.e. maintaining counts of white blood cells and reducing HIV viral load), and (2) improving HIV-related quality of life.

Additional analyses tested for a dose-response effect of MBSR by examining if MBSR class attendance and daily meditation practice are associated with the primary and secondary outcomes.

In the study, the 50 HIV-positive adults showed no loss of CD4 T cells, indicating that mindfulness meditation training may delay HIV progression. In contrast, the control group showed significant declines in CD4 T cells from pre-study to post-study.

The study also found that the more mindfulness meditation classes people attended, the higher the CD4 T cells at the study's conclusion.

The authors concluded that research examining the underlying pathways through which mindfulness meditation reduces stress, using brain imaging, genetics and immune system measurements is now required.

This study was supported by postdoctoral research fellowship from the National Institute of Mental Health, a seed grant from the Cousins Center for Psychoneuroimmunology at UCLA, and the UCLA General Clinical Research Center.

For more information on mindfulness meditation, please visit **Natural Standard's** [Health & Wellness](#) database.

To comment on this story, please click [here](#) to enter the **Natural Standard** blog.

#### References:

- 1) Myers HF, Creswell JD, Irwin MR. Mindfulness Meditation Training in HIV (MBSR). CLA Department of Psychology. ClinicalTrials.gov identifier: NCT00600561. [View Trial](#).
- 2) **Natural Standard** Research Collaboration: The Authority on Integrative Medicine. [www.naturalstandard.com](http://www.naturalstandard.com). Copyright © 2008.



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### **Welcome!**

**Natural Standard** would like to welcome Dave Fanara, Lisa Waldo, Scott Pelrine and Andy Cote to our team. We also welcome the following students: Ashley Doshi, Yen Nguyen and Diem Tran.

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