



# Natural Standard

The Authority on Integrative Medicine

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## Organic vs. Conventional



Although many consumers believe that organic foods both taste better and are better for you, a new study suggests that there is an insignificant difference in the flavor of organic versus conventional fruits and vegetables; whether or not organic items have greater health benefits remains controversial.

Researchers from Kansas State University explained that while consumers of organically grown fruits and vegetables often believe that these products taste better than conventional produce, comparison of produce from supermarket shelves does not permit adequate assessment of this consumer perception, given potentially confounding cultivar and environmental effects.

In the study, researchers used replicated side-by-side plots to produce organic and conventional vegetables for consumer sensory studies. In one test, red loose leaf lettuce, spinach, arugula (rocket) and mustard greens, grown organically and conventionally, were evaluated for overall liking as well as for intensity of flavor and bitterness. Another consumer test was conducted comparing organically and conventionally grown tomatoes, cucumbers and onions.

The studies found that overall, organically and conventionally grown vegetables did not show significant differences in consumer liking or consumer-perceived sensory quality. The only exception was in tomatoes where the conventionally produced tomato was rated as having significantly stronger flavor than the organically produced tomato. However, overall liking was the same for both organic and conventional samples.

Researchers suggested that as conventional tomatoes also were scored marginally significantly higher in

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ripeness and a positive correlation was found between ratings of flavor intensity and ripeness, the flavor difference observed could not be simply ascribed to the contrasting growing conditions.

The study found that consumer panelists in both tests considered organic produce to be healthier (72 percent) and more environmentally friendly (51 percent) than conventional produce, while 28 percent considered organic produce to have better taste. Covariance analysis indicated that consumer demographics affected sensory comparisons of organic and conventional lettuce and cucumbers.

The study authors concluded that future study is needed to substantiate the influence of segmentation of consumers on their preference for organic food.

For more information, please visit [Natural Standard's](#) Organic Food monograph in our [Health and Wellness](#) database.

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## Health Benefits of Meditation Challenged



There is no definitive evidence supporting the use of meditation for health problems, a new review claims.

Researchers from the University of Alberta/Capital Health Evidence-based Practice Centre in Canada conducted a comprehensive review of medication synthesizing the state of research on a variety of meditation practices including: the specific meditation practices examined; the research designs employed and the conditions and outcomes examined; the efficacy of different meditation practices for the three most studied conditions; the role of effect modifiers on outcomes; and the effects of meditation on physiological and neuropsychological outcomes.

Comprehensive searches were conducted in 17 electronic databases of medical and psychological literature up to September 2005. Other sources of potentially relevant studies included hand searches, reference tracking, contact with experts and gray literature searches.

Researchers used a Delphi method to develop a set of parameters to describe meditation practices. Included studies were comparative, on any meditation practice, had more than 10 adult participants, provided quantitative data on health-related outcomes and were published in English. Two independent reviewers assessed study relevance, extracted the data and assessed the methodological quality of the studies.

Five broad categories of meditation practices were identified: mantra meditation, mindfulness meditation, yoga, tai chi and Qi Gong.

Characterization of the universal or supplemental components of meditation practices was precluded by the theoretical and terminological heterogeneity among practices. Evidence on the state of research in meditation practices was provided in 813 predominantly poor-quality studies. The three most studied conditions were hypertension (high blood pressure), cardiovascular (heart) diseases and substance abuse. Sixty-five intervention studies examined the therapeutic effect of meditation practices for these conditions.

Meta-analyses based on low-quality studies and small numbers of hypertensive participants showed that Transcendental Meditation®, Qi Gong and Zen Buddhist meditation significantly reduced blood pressure. Yoga helped reduce stress. However, yoga was no better than mindfulness-based stress reduction at reducing anxiety in patients with cardiovascular diseases.

The authors noted that no results from substance abuse studies could be combined. The role of effect modifiers in meditation practices has been neglected in the scientific literature. The physiological and neuropsychological effects of meditation practices have been evaluated in 312 poor-quality studies. Meta-analyses of results from 55 studies indicated that some meditation practices produced significant changes in healthy participants.

The study authors concluded that many uncertainties surround the practice of meditation. Additionally, scientific research on meditation practices does not appear to have a common theoretical perspective and is often characterized by poor methodological quality. Firm conclusions on the effects of meditation practices in healthcare cannot be drawn based on the available evidence. The researchers suggested that future research on meditation practices must be more rigorous in the design and execution of studies and in the analysis and reporting of results.

In a related study, scientists provided evidence asserting that yoga and other mind-body therapies are effective at lowering blood pressure. A review of 12 published randomized trials found favorable effects of mind-body therapies on blood pressure, with yoga the most beneficial.

Researchers from Yale University conducted a systematic review to assess the efficacy of the mind-body therapies - meditation, yoga and visualization - versus placebo or active control in the treatment of hypertension (high blood pressure).

The team reviewed randomized or quasi-randomized controlled trials comparing mind-body techniques (meditation, yoga and guided imagery) alone or in combination with conventional treatment to conventional treatment alone or no intervention/waiting list control. Relevant trials were identified in the register of trials maintained by the Cochrane Complementary Medicine Field Registry, The Cochrane Central Register of Controlled Trials, Medline, EMBASE, PsycInfo and CINAHL.

The review found that mind-body therapies significantly reduced systolic blood pressure by an average of 11.52 millimeters of mercury and diastolic blood pressure by 6.83 millimeters of mercury. Significant results were seen in systolic blood pressure reductions by yoga and meditation therapy, while only yoga therapies demonstrated significant reductions in diastolic blood pressure.

The study suggested that the absolute reductions in blood pressure were comparable to pharmacologic monotherapy in both effect size and temporality. Additionally, reductions in systolic and diastolic blood pressure to the degree found in yoga interventions were associated with reductions in vascular death rates as well as decreased overall cardiac (heart) risk.

The study authors concluded that there is some high quality scientific literature supporting the use of mind-body therapies as a treatment for hypertension, and the magnitude of effect is clinically significant.

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2) Ospina MB, Bond K, Karkhaneh M, et al. Meditation Practices for Health: State of the Research, Structured Abstract. Publication No. 07-E010, June 2007. Agency for Healthcare Research and Quality, Rockville, MD. [View Report](#).

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## Green Tea: New Benefits

Two new studies suggest that more health benefits may be associated with the popular Chinese beverage, green tea.

Green tea is made from the dried leaves of *Camellia sinensis*, a perennial evergreen shrub. Green tea, black tea and oolong tea are all derived from the same plant. Green tea is produced by lightly steaming the freshly cut leaf, thus not allowing oxidation of the enzymes within the leaf to take place. Green tea is produced and consumed primarily in China, Japan and countries in northern Africa and the Middle East. Green tea is used as an antioxidant and has been studied for weight loss and chronic disease prevention.

Researchers have discovered new evidence suggesting that green tea may reduce the risk of oral cancer as well as help treat inflammatory skin diseases.



In the first study, researchers from Japan examined the relation of green tea consumption with oral carcinogenesis (cancer) by prospectively analyzing data from a nationwide large-scale cohort study in Japan.

A total of 20,550 men and 29,671 women aged 40-79 years, without any history of oral and pharyngeal cancer at baseline survey, were included in the study. During a mean follow-up period of 10.3 years, 37 oral cancer cases were identified.

The study found that women who drank five or more cups of green tea a day may have a reduced risk of mouth cancer. In men, no such trends were observed.

The study authors concluded that there was not enough evidence to suggest that green tea consumption is correlated with oral cancer; however, there was a tendency for a reduced risk in women.

In a related study, researchers suggested that green tea may help treat skin disorders such as psoriasis and dandruff.

Scientists from the Medical College of Georgia studied the effects of green tea on inflammatory skin diseases in an animal model.

Inflammatory skin diseases are characterized by patches of dry, red and flaky skin caused by the inflammation and overproduction of skin cells. Researchers suggested that green tea treatment may slow the growth of skin cells. They explained that green tea suppresses inflammation and regulates the expression of caspase-14, a protein in genes that regulates the life cycle of a skin cell.

Researchers suggested that traditional inflammatory skin disease treatments result in harmful side effects. For example, ultraviolet light and medication, while they may control lesions and be used long term, they may also cause squamous cell carcinoma, the second most common form of skin cancer.

Additionally, some of the most effective anti-dandruff shampoos also have carcinogens in them with unknown long-term effects.

Researchers noted that one of the problems with using green tea as an alternative treatment is that the chemicals in green tea are so active that they are oxidized too quickly when mixed with other ingredients. They also dissolve in water, which cannot penetrate the skin's barrier.

Researchers are looking for a balanced formula that can dissolve in fats and permeate the skin.

The study authors concluded that while there are no cures for inflammatory skin diseases, it is possible that green tea may be a non-toxic way to regulate them. Further study in humans is needed to determine the full effects.

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

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## Exercise for Bipolar Disorder

Physical activity may help alleviate some of the symptoms of bipolar disorder, a new study reports.

Bipolar disorder, also known as manic-depressive illness, is a psychiatric disease characterized by periods of abnormally elevated moods, often followed by episodes of depression. Different from the normal highs and lows that everyone experiences, the symptoms of bipolar disorder are severe and extreme. They can result in damaged relationships, poor job or school performance and even suicide.



An individual with bipolar disorder has episodes of mania characterized by an abnormally elevated mood, sleeplessness, racing thoughts and pressured speech. Individuals with bipolar disorder can go from feeling very sad, despairing, helpless, worthless and hopeless (depression) to feeling as if they are on top of the world, hyperactive, creative and grandiose (mania), often in a short period of time.

Approximately 5.7 million American adults or about 2.6 percent of the population age 18 and older have bipolar disorder. There is no cure for bipolar illness but symptoms can be managed. Bipolar disorder typically develops in late adolescence or early adulthood. However, some people have their first symptoms during childhood and some develop them late in life. It is often not recognized as an illness, and people may suffer for years before it is properly diagnosed and treated.

Researchers from the University of Melbourne in Australia explained that physical activity has demonstrated efficacy in depression and anxiety, but its potential in the management of bipolar disorder had not yet been fully explored.

The retrospective cohort study investigated the effectiveness of an adjunctive walking program in the acute treatment of bipolar disorder. It included all patients admitted over a 24-month period to a private psychiatric unit with a primary diagnosis of bipolar disorder.

All patients were invited to participate voluntarily in a walking group during their admissions. Those who reliably attended the walking group (participants) were compared against those who did not attend (non-participants), using the clinician-rated Clinical Global Impression Severity and Improvement scales and the self-reported 21-item Depression Anxiety Stress Scales as primary outcome measures.

There were 24 admissions for participants and 74 admissions for non-participants. At discharge, the inter-group differences in Clinical Global Impression Severity and Improvement measures remained non-significant, but participants had significantly lower scores than non-participants for Depression Anxiety Stress Scales and all its subscales.

Methodological limitations include a retrospective design, small sample size, lack of randomization or control and indirect measure of manic symptoms.

The study authors concluded that the results of this trial suggest a therapeutic role of physical activity in bipolar disorder and warrant further investigation with randomized controlled trials.

Bipolar illness should be treated by a qualified healthcare provider such as a psychiatrist. Most people with bipolar disorder, even those with the most severe forms, can achieve substantial stabilization of their mood swings and related symptoms with proper treatment. Because bipolar disorder is a recurrent illness, long-term preventive treatment is strongly recommended and almost always indicated. A strategy that combines medication and psychosocial treatment is optimal for managing the disorder over time.

The individual suffering from bipolar disorder should reduce stress and try to develop regular sleep patterns. Sleep disturbances may signal the early phase of a manic or depressive episode. Individuals should also limit or avoid common stimulants, such as caffeine and certain over-the-counter medications (pseudoephedrine or Sudafed®). Nervousness and anxiety may occur when using these, possibly triggering a manic episode. Some dietary supplements may also cause nervousness and anxiety, such as weight loss supplements that contain stimulants like caffeine, bitter orange, green tea and synephrine.

Most alternative therapies for bipolar disorder have focused on the prevention and treatment of depression and not the manic episodes. They include 5-hydroxytryptophan (5-HTP), acupressure, acupuncture, aromatherapy, ayurveda, dehydroepiandrosterone (DHEA), folic acid, ginkgo, healing touch, Kundalini yoga, L-carnitine, massage, melatonin, music therapy, omega-3 fatty acids, psychotherapy, Qi gong, reiki, relaxation therapy, riboflavin (Vitamin B2), SAMe, St. John's wort, tai chi, vitamin B6 (Pyridoxine) and yoga.

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## South Central Chapter/Medical Library Association Conference



**October 20-24, 2007, Albuquerque, New Mexico**

The 35th annual meeting of SCC/MLA will be held in Albuquerque, New Mexico in the Hotel Albuquerque at Old Town.

The presenters and sessions will use the meeting's theme, "Re-imagining our libraries and our lives," as a starting point for the program and events.

At this meeting, participants will have numerous opportunities to network with colleagues, to hear about the clever ideas they have implemented in their libraries, their research projects, grants they have received, new methods they have developed for improving access to

their collections and programs they have created that have resulted in greater efficiencies or have saved money or even have helped save lives.

The meeting in Albuquerque has and will continue to take advantage of the uniqueness of the conference venue and theme in various ways. Local Area Committee, inspired by the center stage placement of the film industry in the re-imagining of New Mexico's economy, chose to create a video invitation to the meeting and to use the cinematic theme for the events and graphic elements in the conference program. Despite the new Hollywood polish, Albuquerque is still rich in arts and history (the opening event takes place at the Albuquerque Museum) and Native cultures (the closing event will be at the Indian Pueblo Cultural Center).

For more information about the conference program and to view the video invitation, please visit [hsc.unm.edu/library/SCCMLA2007](http://hsc.unm.edu/library/SCCMLA2007). To register, please visit [hsc.unm.edu/library/SCCMLA2007/registration.shtml](http://hsc.unm.edu/library/SCCMLA2007/registration.shtml).

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## Spinal Manipulative Therapy



A new study examined the effects of spinal manipulative therapy on the trunk and abdominal muscles.

Spinal manipulation was used medicinally as early as 2700 B.C. in ancient Chinese medicine. There are more than 100 distinct chiropractic and spinal manipulative adjusting techniques, and there is variability between practitioners. Some approaches use highly specialized tables or hand-held equipment.

Spinal manipulation is a primary chiropractic therapeutic application. Spinal manipulation is also used in osteopathic medicine and other disciplines.

A spinal manipulation (adjustment) refers to a directed, high-velocity, short-amplitude thrust applied at the end of the passive range of motion to individual segments of the spine. When the joint is passively mobilized, the range of motion is slightly increased. At the end of this range, a resistance is encountered due to tensing of the joint capsule. If the movement is forced beyond this initial barrier (manipulation), a sudden give is felt, a crack may be heard and a range of motion is increased beyond the usual physiological limit into the so-called para-physiological space. At the end of this space, there is the limit of anatomical integrity for the joint. The force of spinal manipulation must be great enough to separate joint surfaces without disturbing their anatomical integrity.

Researchers from the University of Queensland in Australia explained that spinal manipulative therapy is common in the management of low back pain and has been associated with changes in muscle activity, but evidence is conflicting.

The study investigated the effects of spinal manipulative therapy on trunk muscle activity in postural tasks in people with and without low back pain.

In 20 subjects (10 with lower back pain and 10 controls), EMG (electromyography) recordings were made with fine-wire. Standing subjects rapidly flexed an arm in response to a light, before and after a small amplitude end range rotational lumbar mobilization.

The study found that in the control group, there was no change in trunk muscle EMG during the postural perturbation after spinal manipulative therapy. In low back pain subjects, there was an increase in the postural response of the obliquus internus muscle and an overall increase in abdominis muscle EMG.

The study authors concluded that spinal manipulative therapy changes the functional activity of trunk muscles in people with low back pain, but has no effect on control subjects. Additionally, spinal manipulative therapy increased the activity of the oblique abdominal muscles with no change in the deep trunk muscle, which is often the target of exercise interventions.

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

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## Calcium Supplementation in Pregnancy

Calcium supplementation before and early in pregnancy may help prevent blood pressure disorders, such as pre-eclampsia, a new study suggests.

Pre-eclampsia is a condition characterized by high blood pressure during pregnancy along with protein in the urine. It can cause serious complications for the mother and baby. Pre-eclampsia can decrease the supply of blood and oxygen available to the mother and developing child. This may result in conditions such as a lower birth weight and neurological (nervous system) damage. The mother is at risk for kidney problems, seizures, strokes, breathing problems and even death, in rare instances. The cause of pre-eclampsia is not known. Pre-eclampsia usually occurs during the second half of the pregnancy and affects approximately five percent of pregnant women.



Researchers from South Africa explained that calcium supplementation during pregnancy may reduce the risk of hypertensive (blood pressure) disorders of pregnancy. For their review, they searched the Cochrane Pregnancy and Childbirth Group trials register and the Cochrane Central Register of Controlled Trials (March 2006) and chose randomized trials comparing at least 1 gram of calcium daily during pregnancy with placebo. Eligibility and trial quality were assessed. Data were extracted and analyzed using Review Manager software.

Twelve studies (15,528 women) were included. The researchers reported that most women were at low risk and had low dietary calcium. The study found that high blood pressure was reduced with calcium supplementation rather than placebo in 11 trials involving a total of 14,946 women. Pre-eclampsia was reduced in 12 trials involving a total of 15,206 women.

The effect was greatest for women at high risk, as evidenced in five trials including 587 women. The effect was also significant in women with low baseline calcium intake, as seen in seven trials involving 10,154 women.

Researchers noted that there was variability, with less effect in the larger trials. The composite outcome maternal death or serious morbidity was reduced. The syndrome of hemolysis (excessive breakdown of red blood cells), elevated liver enzymes and low platelets was increased. There was no overall effect on the risk of preterm birth, stillbirth or death before discharge from the hospital.

The study authors concluded that calcium supplementation appears to reduce the risk of pre-eclampsia and to reduce the rare occurrence of the composite outcome 'maternal death or serious morbidity.' There were no other clear benefits or harms.

They also suggested that adequate dietary calcium before and in early pregnancy may be needed to prevent the underlying pathology responsible for pre-eclampsia; additionally, the research agenda should be redirected towards calcium supplementation at a community level.

Integrative therapies with strong or good scientific evidence in the prevention and/or treatment of pre-eclampsia and related conditions include omega-3 fatty acids, fish oil, alpha-linolenic acid, Coenzyme Q10, hibiscus, Qi gong, stevia and yoga.

For more information on the integrative therapies mentioned above, please visit [Natural Standard's Herbs & Supplements](#) and [Health & Wellness](#) databases.

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## Chinese Medicine for Menstrual Pain

Four Agents Decoction (Si Wu Tang), a type of Chinese medicine, may help reduce menstrual pain when used long-term, a new study suggests.

Researchers from the National Health Research Institutes in Taiwan found that the 800-year-old formula does not significantly reduce menstrual pain after three cycles of treatment; however, a beneficial effect may be present after a longer treatment.

Scientists explained that most traditional Chinese herbal formulas consist of at least four herbs. Four-Agents-Decoction is a documented formula containing four herbs and has been widely used to relieve menstrual discomfort in Taiwan. However, no specific effect had been systematically evaluated.

The randomized, double-blind, placebo-controlled, pilot clinical trial was conducted in an *ad hoc* clinic setting at a teaching hospital in Taipei, Taiwan. Seventy-eight young women with dysmenorrhea (painful periods) were enrolled after 326 women with self-reported menstrual discomfort in the Taipei metropolitan area of Taiwan were screened by a questionnaire and subsequently diagnosed by two gynecologists concurrently with pelvic ultrasonography.

Researchers administered a dosage of 15 odorless capsules daily for five days starting from the onset of bleeding or pain. The dosage regimen and treatment length used in the study were not associated with adverse reactions.

Study outcome was pain intensity measured by using an unmarked horizontal visual analog pain scale in an online daily diary submitted directly by the participants for five days starting from the onset of bleeding or pain of each menstrual cycle.

Overall-pain was the average pain intensity among days in pain and peak-pain was the maximal single-



day pain intensity. At the end of treatment, both the overall-pain and peak-pain decreased in the Four-Agents-Decoction (Si Wu Tang) group and increased in the placebo group; however, the differences between the two groups were not statistically significant. The trends persisted to follow-up phase.

Statistically significant differences in both peak-pain and overall-pain appeared in the first follow-up cycle, at which the reduced peak-pain in the Four-Agents-Decoction (Si Wu Tang) group did not differ significantly by treatment length. However, the reduced peak-pain did differ among women treated for four menstrual cycles. There was no difference in adverse symptoms between the Four-Agents-Decoction (Si Wu Tang) and placebo groups.

The study authors concluded that Four-Agents-Decoction therapy showed no statistically significant difference in reducing menstrual pain intensity of primary dysmenorrhoea at the end of treatment. The finding of statistically significant pain-reducing effect in the first follow-up cycle was unexpected and warrants further study. Researchers recommended a larger similar trial among primary dysmenorrheic young women with a longer treatment phase and multiple batched study products to determine the definitive efficacy of this historically documented formula.

Integrative therapies with good scientific evidence in the treatment of painful menstruation and related conditions include calcium, sage and soy.

For more information on traditional Chinese medicine formulas or the therapies listed above, please visit [Natural Standard's Herbs & Supplements](#) and [Health & Wellness](#) databases.

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

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## Back to School Germs



With the start of the school season comes the battle against germs. Before stocking up on antibacterial gels and soap, consider a new study that suggests that antibacterial soaps may be more hazardous than helpful.

Researchers from the University of Michigan explained that much has been written recently about the potential hazards versus benefits of antibacterial (biocide)-containing soaps.

In a systematic literature review, researchers assessed the studies that have examined the efficacy of products containing triclosan (an antibacterial agent), compared with that of plain soap, in the community setting. The review also evaluated the findings that address potential hazards of this use- primarily, the emergence of antibiotic-resistant bacteria.

The PubMed database was searched for English-language articles using relevant keyword combinations for articles published between 1980 and 2006. Twenty-seven studies were identified as being relevant to the review.

The review found that soaps containing triclosan within the range of concentrations commonly used in the community setting were no more effective than plain soap at preventing infectious illness symptoms and reducing bacterial levels on the hands. Several laboratory studies demonstrated evidence of triclosan-adapted cross-resistance to antibiotics among different species of bacteria.

The study authors concluded that there is a lack of an additional health benefit associated with the use of triclosan-containing consumer soaps over regular soap. The researchers noted that this, coupled with laboratory data demonstrating a potential risk of selecting for drug resistance, warrants further evaluation by governmental regulators regarding antibacterial product claims and advertising.

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**Natural Standard** would like to welcome Idalia Rychlik, Kerri MacWhorter and Celtina Chase to our Content Team.

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