

AU InforMed

Volume 5 Number 21 (Issue 156)

Friday June 29, 2007

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JULY IS HERBAL AWARENESS MONTH

What is Herbal medicine



An herbal medicinal product (a.k.a. botanical) is derived from plant parts and exerts a pharmacologic effect.¹ The history of herbal medicine can be traced back to early civilization. Remnants of plants still used for medicinal purposes were excavated from the gravesite of a 60,000 year old Neanderthal man in Iraq. Early healthcare providers- whether they were medicine men, mid-wives, ancient Chinese medicine traditionalist, or classical Greek physicians- relied on herbs as healing agents.

Herbal medicine is still an accepted part of therapy in most of the world. In Europe, herbs are much more standardized than in the US. Physicians in Germany write prescriptions for herbs and herbal preparations are the therapy of choice for sinusitis and depression.² A big public misconception about herbs is that natural means free from harm, but a quick review of St. John's Wort should dispel that myth. Congress passed the Dietary Supplement Health and Education Act in 1994 which allows for the sale of herbals without FDA scrutiny. The herbal/supplement industry did not want to provide safety and efficacy testing to the FDA. ABC News reported that the industry lobbied intensely and donated much money to law makers to pass the Act. The herbal/supplement industry exploded after its passage. Before 1994 there were about 4,000 herbal/supplement products but, by 2005 there were more than 30,000 products.³ Health care providers need a basic knowledge of at least the top sellers.

This chart, derived from information provided by the CDC, indicates the wide spread use of nonvitamin, nonmineral, and natural products in 2002.⁴

Nonvitamin/Nonmineral Natural Product	Number of Patients
Echinacea	14,665,000
Ginseng	8,777,000
Gingko Biloba	7,679,000
Garlic supplements	7,096,000
Glucosamine w/wo chondroitin	5,249,000
St. John's Wort	4,390,000

1. Miller LG and Murray WJ. Herbal Medicinals – a clinician's guide. New York: Pharmaceutical Products Press; 1998. p. 2.
2. Presser AM. Pharmacist's Guide to Medicinal Herbs. Petaluma, CA: Smart Publications; 2000. p. 3-24.
3. ABC News. The advertising behind male enhancement pills. June 2, 2005. <http://abcnews.go.com/print?id=814864>
4. Barnes PM, Powell-Griner E, McFann K, Nahin, RL. Complementary and alternative medicine use among adults: United States, 2002. Centers for disease control and prevention. 2007 May 27;343:9. Also available from: <http://www.cdc.gov/nchs/products/pubs/pubd/ad/ad.htm>



An old herbal getting new attention....



Grape, or grape seed extract (GSE), is by no means a new herbal medicine but it is beginning to receive increased public interest. Everyone has heard of the benefit to cardiac health from moderate red wine consumption. That is the concept behind the increased interest in GSE which is made mostly from red grapes; the same red grapes that provide red wine its cardiovascular benefit. Even though there are more specific extracts available, eg, resveratrol, GSE is now one of the top sellers for the General Nutrition Center (GNC) stores and is being touted for health

promotion and disease prevention.

But, how safe is GSE? At least one study claims GSE increases cytotoxicity caused by oxidative stress from nitric oxide.¹ However, GSE has been studied for use as an antioxidant, to improve cardiovascular health, treating retinopathy, prevention of swelling, and chloasma. More data is needed to determine the actual benefit of GSE. Buyer's must beware that many recommendations have been made for GSE but they are not founded on clinical data. Some of those claims include reducing aging, hemorrhoids, and treatment of AIDS.² GSE was recently found to be non-beneficial in one pilot study in the treatment of seasonal allergic rhinitis.³ GSE's benefit appears to come from the phenolic compounds contained in grapes such as oligomeric proanthocyanidins, proanthocyanidins, flavonols, and polyflavan -3-ols. GSE is generally well tolerated by those who use GSE regularly. Most common complaints include headache, abdominal pain, sore throat, nausea, and cough but they occur at rates similar to placebo. Excessive grape consumption may produce a laxative effect. GSE should be avoided in women who are pregnant or lactating due to insufficient data on its use in that population. GSE does interact with some medications; it induces CYP 1A2 enzymes thus decreasing serum levels of 1A2 substrates such as amitriptyline, caffeine, naproxen, propranolol, ropinirole, and numerous others. There is also a theoretical interaction with warfarin and the tocopherol content of GSE which may increase the risk of bleeding.

Currently, GSE does appear to have some clinical data supporting its use.⁴ However, further testing is needed to determine the safety and efficacy of GSE.

1. Shao ZH, HSU CW, Chang WT, Waypa GB, Li J, Li D, et al. Cytotoxicity induced by grape seed proanthocyanidins: role of nitric oxide. *Cell Biol Toxicol*. May 2006;22(3):149-158.
2. Natural-standard.com. Cambridge: Natural Standard, The Authority on Integrative Medicine; [updated 2007 June 18; cited 2007 June 18]. Available from: <http://www.naturalstandard.com/>
3. Bernstein DI, Bernstein CK, Deng C, Murphy KJ, Bernstein IL, Bernstein JA, et al. Evaluation of the clinical efficacy and safety of grape seed extract in the treatment of fall seasonal allergic rhinitis: a pilot study. *Annof Allerg, Asthma Immunol*. March 2002;88(3):272-278
4. Gregory PJ. Natural Medicines Comprehensive Database. 9th ed. California: Therapeutic Research Faculty; 2007. p. 623-626.

FROM THE MEDICAL LITERATURE ...



Green Tea - Green tea has been used in traditional Chinese medicine for centuries and now modern medicine has started investigating the benefits of green tea extracts, especially of epigallocatechin-3-gallate (EGCG). It has been shown to inhibit *Helicobacter pylori* and promote apoptosis in 50% of cancer cells while only affecting 1% of healthy cells. In vitro studies of

blocking angiogenesis (formation of new blood vessels to tumors) are promising, but animal models have rendered mixed results. A large prospective study in Japan only showed green tea to be associated with decreased gastric and colon cancer, not the breast and prostate cancers they had hoped to see.¹ Research is currently being done on the use of high concentrations of EGCG as a cancer treatment and the use of EGCG in lowering cholesterol.² Green tea is also being

evaluated as an agent to reduce chemotherapy-induced nausea. Tea is an accepted antioxidant with green tea having the most antioxidant properties followed by oolong and then black tea. Green tea is an herb with a good safety profile. One can safely drink up to 12 cups a day or take the equivalent of 1g of green tea three times daily¹, but if you see unexpected decreases in the INR in a warfarin patient, you may want to ask about green tea consumption. Dry green tea contains 1428µg of vitamin K / 100gm of leaves where black tea only contains 262µg. Each brewed cup contains ≈ 0.03µg, but it depends on the dilution.³

1. Carlson JR. Reading the Tea Leaves: Anticarcinogenic Properties of (-)Epigallocatechin-3-Gallate. *Mayo Clin Proc* 2007;82(6). p. 725-732.
2. Bursill CA. A green tea extract lowers plasma cholesterol in cholesterol-fed rabbit. *Atherosclerosis* 2007;193:86-93.
3. Cheng TO. Green tea may inhibit warfarin. *Int J Cardiol.* 2007;115:236.



Natural Male Enhancement - Natural treatment for erectile dysfunction (ED) is one of the biggest class of herbal sellers,¹ but is there any clinical evidence behind “Smiling Bob’s” smile? Let’s start with a quick review of ED. Nitric oxide (NO) serves as a chemical messenger activating a series of events that allow blood to flow into the penis. That is why disease states that impair NO activity, such as heart disease, hypertension, dyslipidemia, and diabetes, even smoking, is associated with more ED. L-arginine is the precursor of NO. Human clinical trials of L-arginine (2.8g to 5g per day) for ED has produced mixed results, but appears to work best for those with altered NO activity. One study found it works better when mixed with pine bark extract.² Korean red ginseng has also been clinically evaluated. At the recommend dose of 0.5 to 2g daily there was significant improvement in rigidity and libido compared to placebo.³ “Bob’s” once daily Enzyte® contains L-arginine with pine bark extract and Korean red ginseng though the exact amounts are proprietary. Another ingredient of Enzyte® is niacin 30mg.⁴ Niacin’s RDA for males 25-50 yo is 19mg/day and for >51yo is 15mg/day. Niacin’s target dose for hyperlipidemia is 1.5-6g/day of regular release or 375mg to 2g/day of extended release. Niacin should be titrated in order to reduce side effects. Niacin can interfere with glucose control, so use should be monitored in diabetics, but there is no mention of caution in any health conditions on the Enzyte® website. Combining alcohol and niacin increases flushing, so if “Bob” decides to wine & dine his lady, he shouldn’t drink himself.⁵ Maybe “Bob’s” rush is just a flush. A literature search shows no studied connection between ED and niacin use. The only thing most of these natural male enhancement products have been proven to increase, is company sales.¹

1. ABC News. The advertising behind male enhancement pills. June 2, 2005. <http://abcnews.go.com/print?id=814864>
2. MacKay D. Nutrients & botanicals for erectile dysfunction: Examining the evidence. *Alt Med Rev.* 2004;9(1):4-13.
3. Hong B. A double-blind crossover study evaluating the efficacy of Korean red ginseng in patients with erectile dysfunction. *J Urol.* 2002;168:2070-3.
4. Berkeley Premium Nutraceuticals, Inc.©2006. <http://www.enzyte.com/blend.html>
5. Lexi-Comp Online. Niacin [Updated 03/16/07]. Available via subscription from: <http://online.lexi.com/crlsql/servlet/crlonline>





Helpful herbal remedies for Summer...

Natural Sun Products - Green tea anti-oxidants protect against UV radiation. Applying green tea polyphenols to the skin before sun exposure helps prevent damage to dermal DNA. Even oral administration can decrease skin damage.¹ What if you get a sunburn? Should you apply aloe? Evidence suggests that aloe may be effective in promoting healing of mild to moderate skin burns, but studies to date are small and poor in quality so no clear conclusions can be made.² Other products that can help with minor burns are external St. John's Wort, Peruvian balsam, and camphor products.³

1. Katiyar S. Green tea and skin cancer: photoimmunology, angiogenesis and DNA repair. *J NutrBiochem.* 2007;18:287-296.
2. Natural Standard® Patient Monograph, Copyright © 2007 (www.naturalstandard.com).
3. Blumenthal M, senior editor. The Complete German Commission E Monographs. Austin: American Botanical Council; 1998. p. 423.



Insect bite - Apply Arnica flower ointment. It has analgesic, antiseptic, and anti-inflammatory activity.¹

Hershey's® the new herb? - Need to lower your blood pressure after a stressful day? Try a cup of dark cocoa or have a Hershey's® bar. Phenols from dark chocolate have been shown to reduce BP.³

Mosquito repellent - Citronella oil 10% provides <20 minutes of protection so it is not recommended. Soybean oil 2% (Bite Blocker®) compares to 4.7% DEET and provides ≈ 1.5 hours of protection. Lemon eucalyptus oil 40% offers the best protection and is comparable to 20%-40% DEET lasting 4-12 hours.²

Female hirsutism - 1-2 cups of spearmint tea significantly reduces androgen levels and may be an alternative to hormone therapy in combating female hirsutism.⁴

1. Blumenthal M, senior editor. The Complete German Commission E Monographs. Austin: American Botanical Council; 1998. p. 83.
2. Jellin JM, Founding Editor. Natural Medicines comprehensive database. Mosquito [updated 6/15/07] [http://www.naturaldatabase.com/\(S\(tqvllh45g42aiqfsma0o2or4\)\)/home.aspx?cs=&s=ND](http://www.naturaldatabase.com/(S(tqvllh45g42aiqfsma0o2or4))/home.aspx?cs=&s=ND)
3. Taubert D. Effect of cocoa & tea intake on blood pressure. *Arch Intern Med.* 2007;167:626-634.
4. Akdogan M, Tamer MN, Cure E, Cure MC, Koroglu BK, Deliba N.. Effect of spearmint teas on androgen levels in women with hirsutism. *PhytotherRes.* 2007;21:444-7.



The last "dose" ...



"Be careful about reading health books. You may die of a misprint."
Samuel Clemens (a.k.a. Mark Twain)
US humorist, novelist, short story author, & wit (1835 - 1910)

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