

ALTERNATIVE THERAPIES IN WOMEN'S HEALTH

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Tea Tree Oil and Vaginal Infections

By Adriane Fugh-Berman, MD

MELALEUCA ALTERNIFOLIA (FAMILY MYRTACEAE) GROWS ONLY IN Australia. Captain Cook gave melaleuca its misleading name—tea tree—after observing aborigines brewing the leaves into a medicinal tea. Melaleuca is no relation to the Camellia varieties used to brew regular tea; its camphor smell would discourage anyone from consuming it for enjoyment as it's one of the most medicinal smelling herbs. To add further confusion, several different species of plants are called tea trees.

During World War I, melaleuca oil was included in the first-aid kits of Australian soldiers for use on burns, bites, and infections. Today, the essential oil of tea tree is widely used as an antibacterial and antifungal topical medication, and is also used in several brands of toothpaste.

Constituents

Melaleuca contains a complex mixture of hydrocarbons and terpenes. In Australia, commercial tea tree oil must meet the Australian standard, which stipulates that the terpinen-4-ol (thought to be the most active antimicrobial constituent) content must exceed 30% and the 1,8 cineole (a skin irritant) content must be less than 15%.¹

Antimicrobial Effects

Perhaps the most remarkable aspect of tea tree's antimicrobial properties is its specificity for pathogens on skin and mucosal surfaces. In an in vitro study of skin flora susceptibility, *S. aureus* and most of the gram-negative bacteria tested (including *Acinetobacter baumannii*, *Klebsiella pneumoniae*, and *Serratia marsescens*) were more susceptible to tea tree oil than the coagulase-negative staphylococci and micrococci.¹ Thus, tea tree oil may preferentially remove transient skin flora while preserving resident flora. The authors of this study suggest that because tea tree oil-containing preparations readily penetrate the outer layers of skin, they may be particularly useful in hand disinfection products for health care workers.

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In vitro, tea tree oil appears very promising against organisms associated with bacterial vaginosis (the beneficial lactobacilli are relatively resistant).² In an agar dilution assay, tea tree oil minimum inhibitory concentrations (MIC) for five *Gardnerella vaginalis* isolates were all 0.06%, and for three of four *Mobiluncus* isolates the MICs were 0.03% (it was 0.06% for the fourth). The MIC₉₀ (minimum inhibitory concentration for 90% of organisms) was 0.5% for *Bacteroides* (12 isolates); 0.25% for *Prevotella* (24 isolates), *Fusobacterium* (10 isolates), and *Peptostreptococcus anaerobius* (12 isolates); and 0.12% for other gram-positive anaerobic cocci (12 isolates). By broth macrodilution, MICs for all six *Bacteroides* species were 0.06%; the minimal bactericidal concentrations (MBCs) for five isolates were 0.06% while the MBC for the last isolate was 0.12%. In contrast, MICs for the lactobacilli ranged from 0.12% to 2.0% and the MBC₉₀ was 2.0%. Tea tree oil also inhibits the growth of many fungi, including 32 strains of *Candida*.³

Evidence in Humans

There are no controlled trials of tea tree oil in treating vaginitis or bacterial vaginosis. A case series published in 1961 found that tea tree oil was effective in trichomonal vaginitis.⁴ However, this required quite a bit of effort. The vagina was first washed with pHisoHex, then washed with 0.4% tea tree oil, then a tampon satu-

rated in an emulsified 40% solution of tea tree oil and alcohol was inserted and left in place. Additionally, subjects administered daily vaginal douches containing 0.4% tea tree oil. Clinical cure was achieved after an average of six office visits and 42 vaginal douches. (One wonders whether such repeated ablutions with tap water wouldn't have had the same effect.)

There is also one case report of a 40-year-old woman with bacterial vaginosis in whom a five-day course of tea tree oil suppositories (containing 200 mg tea tree oil in a vegetable oil base) was successful treatment.⁵

Although not a vaginitis trial, an open trial of melaleuca for refractory oral candidiasis in AIDS patients did show some effect.⁶ Thirteen patients with oral candidiasis clinically refractory to fluconazole (in vitro resistance was also demonstrated by a MIC of >20 µg/ml) were given 15 ml melaleuca-containing commercial mouthwash (Breath-Away, Melaleuca, Inc., Idaho Falls, Idaho) qid to swish and expel. The concentration of tea tree oil in this preparation is not specified.

Weekly examinations consisted of evaluation of signs and symptoms as well as quantitative yeast cultures. At four weeks, of 12 evaluable patients, two were cured, six improved, four had no response, and one was worse. Mycological response was seen in seven of 12 patients. Follow-up two to four weeks after therapy was discontinued showed no clinical relapse in the two patients who were cured. Eight of 12 patients noted mild-to-moderate oral mucosal burning on contact with the solution, primarily during the first week of therapy. This symptom improved with resolution of the candidiasis.

This is inadequate clinical evidence to recommend tea tree oil for vaginitis, but there is certainly sufficient preliminary evidence to justify performing a trial of tea tree oil for recurrent or resistant vaginal *Candida* infections. Obviously, the genital mucosa is more sensitive than oral mucosa, and vaginal or vulvar burning would quickly disqualify a product.

Adverse Effects

Terpenes can produce central nervous system depression and gastrointestinal and dermal irritation. Topical use of tea tree oil has been associated with dermatitis; interestingly, it appears to be the degradation products of tea tree oil that are most sensitizing.⁷

There are a few case reports of poisonings in humans, primarily in children. In one case, a 23-month-old boy ingested 10 ml of melaleuca oil. Initially confused and unable to walk, the child was treated with activated charcoal with sorbitol and became asymptomatic within five hours of ingestion.⁸ In another case, a 17-month-old boy who ingested less than 10 ml tea tree oil also developed

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ataxia and drowsiness.⁹ Animals appear to be especially susceptible to CNS effects. High doses of topically applied tea tree oil have caused depression, weakness, incoordination, and muscle tremors in pets; supportive care usually results in recovery within two to three days.¹⁰

Conclusion

Essential oils should not be taken orally. There are rare exceptions, and these few should be taken orally only under the supervision of a practitioner experienced in their use. Topical tea tree oil may be sensitizing; patients should keep tea tree oil products refrigerated and tightly capped to limit degradation.

Tea tree oil is effective against a number of pathogens that cause vaginal infections. While the current level of clinical evidence is not strong enough to recommend tea tree oil suppositories to patients with bacterial vaginosis or candidiasis, this is a promising area for further research. ❖

References

1. Hammer KA, et al. Susceptibility of transient and commensal skin flora to the essential oil of *Melaleuca alternifolia* (tea tree oil). *Am J Infect Control* 1996;24:186-189.
2. Hammer KA, et al. In vitro susceptibilities of lactobacilli and organisms associated with bacterial vaginosis to *Melaleuca alternifolia* (tea tree) oil. *Antimicrob Agents Chemother* 1999;43:196.
3. Nenoff P, et al. Antifungal activity of the essential oil of *Melaleuca alternifolia* (tea tree oil) against pathogenic fungi in vitro. *Skin Pharmacol* 1996;9:388-394.
4. Pena EF. *Melaleuca alternifolia* oil. *Ob-Gyn* 1962;19:793-794.
5. Blackwell AL. Tea tree oil and anaerobic (bacterial) vaginosis. *Lancet* 1991;337:300.
6. Jandourek A, et al. Efficacy of melaleuca oral solution for the treatment of fluconazole refractory oral candidiasis in AIDS patients. *AIDS* 1998;12:1033-1037.
7. Hausen BM, et al. Degradation products of monoterpenes are the sensitizing agents in tea tree oil. *Am J Contact Dermat* 1999;10:68-77.
8. Jacobs MR, Hornfeldt CS. Melaleuca oil poisoning. *J Toxicol Clin Toxicol* 1994;32:461-464.
9. Del Beccaro MA. Melaleuca oil poisoning in a 17-month-old. *Vet Hum Toxicol* 1995;37:557-558.
10. Villar D, et al. Toxicity of melaleuca oil and related essential oils applied topically on dogs and cats. *Vet Hum Toxicol* 1994;36:139-142.

The Potential of Probiotics

By Gregor Reid, PhD, MBA

MORE THAN 100 YEARS AGO, ELIE METCHNIKOFF recognized that certain lactic acid-producing bacteria could be harmful to pathogens. So the concept that “good bugs” could interfere with “bad bugs” was born. Indigenous to human intestines and the female urogenital tract, lactobacilli are added to many food substances (especially dairy-based products). Approximately 400 species of bacteria live in the intestines, and about 50 species live in the female genital tract.

Background

The term “probiotics” refers to the use of viable organisms that benefit the host by improving the microbial balance. The term is thus the opposite of “antibiotics,” which kill or inhibit the growth of bacteria. A number of probiotic products, especially lactobacilli and bifidobacteria, are sold commercially, generally advertised to “promote intestinal health.” In Europe, many lactobacilli-containing products are available; in France, probiotic yogurt is a \$400 million yearly business. In Japan, a multibillion dollar company has built its core business on the use of one organism, *Lactobacillus casei* Shirota, in a sweet milky drink and various other products. It is estimated that 30 million people worldwide take this product each day.

Bifidobacterium species have been quite well studied and there is some evidence that certain strains can be effective at colonizing the intestine. Other organisms also are used as probiotics. *Streptococcus faecium* or *Enterococcus faecium* often are incorporated into dairy drinks or yogurt; this has raised concerns because these species may have pathogenic properties or could acquire virulence factors, including drug resistance genes. Further work needs to be done to delineate both the benefits and the risks of these organisms.

Despite their popularity elsewhere, probiotics have been slow to catch on in North America. There probably are several reasons for this, including a research emphasis on antibiotics; antipathy toward purposely introducing bacteria into people; and fear that bacteria could mutate and become virulent.

Antibiotics and Probiotics

Although antibiotics have saved many lives, overuse and misuse have had public health ramifications. Hardly a week goes by without some press article on bacterial

drug resistance. Hospital outbreaks of methicillin-resistant *Staphylococcus aureus* (MRSA) or vancomycin-resistant enterococci (VRE), statistics on drug overusage, and epidemiological findings on drug resistance patterns have attracted the attention and concern of consumers as well as physicians. Several other factors also contribute to this problem: using broad-spectrum antibiotics rather than a narrower-spectrum antibiotic; the use of antibiotics for prophylaxis (for example, large numbers of women worldwide take low-dose antibiotics chronically to prevent the recurrence of bladder infections); and the use of systemic antibiotics when local wound treatment or vaginal application of antibiotics may work just as well. There is relatively little research on systemic vs. local antibiotic treatment but the latter may well be adequate; for example, a recent study found that metronidazole vaginal gel was as effective as oral metronidazole for the treatment of trichomoniasis.¹

The response to drug resistance has been mainly unidimensional: Find new antibiotics. (New data also exist on peptides, vaccines, and receptor blockage strategies, which may provide alternative approaches in time, but good human studies are a long way off.) In the meantime, infectious disease conferences are filled with papers on new drugs that are essentially variations of existing chemicals. The strategy is basically the same—kill the offending bugs at all costs. Not only are antibiotics often expensive, they can cause serious adverse effects. We know little about the effects of destruction of normal flora.

Regulatory agencies and physicians in North America have been consistently reluctant to introduce live organisms into people. There are only a few exceptions, such as the use of *Bacillus Calmette-Guerin* (BCG) for bladder cancer. It is interesting that this use of BCG is more accepted in the United States than its primary use. Despite a growing tuberculosis problem in the United States and Canada, and the proven efficacy of BCG vaccine in reducing the risk of TB acquisition, this use has never garnered widespread support. There is some support for the use of BCG vaccine in high-risk tuberculin-negative children. North Americans are notoriously phobic about germs, and although drugs are perceived as clean and pure, microorganisms are perceived as dirty. However, the human environment (both external and internal) is dominated by microorganisms and more work is needed to educate the public to this reality and to find ways to maintain and restore health within this microbial soup.

The possibility that introduced organisms could acquire virulence properties is a reasonable fear. In the 1960s, there was an attempt to propagate “good bugs”

for oropharyngeal infections using alpha-streptococci, but apparent mishandling of alpha-streptococci by some laboratories resulted in treatment failures and acquisition of virulence properties by the organisms. However, modern manufacturing and handling techniques should reduce this fear.

Probiotic Potential

Probiotics hold promise in several areas of women's health, including reducing the risk of sexually transmitted diseases, recurrent candidal vaginitis, urinary tract infections, and preterm labor. (Clinical trials in these areas will be discussed in a future issue of *Alternative Therapies in Women's Health*.)

Often, infections arise when microorganisms form biofilms—dense clumps adherent to the cells and mucus. These biofilms are difficult to eradicate by antibiotic therapy. In situations requiring indwelling catheters (such as chronic neurogenic bladder disease or peritoneal dialysis), biofilms that do not necessarily infect the host can form. It may be possible to actually create “good” biofilms on devices, perhaps using lactobacilli probiotic strains, to prevent infectious biofilms from taking hold.

Most probiotic usage has been for diarrheal and other intestinal ailments, but the potential for probiotics is broadening. There is intriguing preliminary evidence that probiotics may also have potential in reducing the effects of Crohn's disease, and the risk of bowel cancer, bladder cancer, allergies, kidney stone formation, tonsillitis, and even dermatitis.²⁻⁴

Very few laboratories around the world study probiotics and funding for this research is difficult to obtain. Since bacteria cannot be patented (although formulations containing them may be patented), the interest of pharmaceutical companies in this area is limited. Government agencies, such as National Institutes of Health (NIH) and Canada's Medical Research Council (MRC), have also been slow to fund this research. In Canada, in the last three years the MRC has funded only one small grant on cystitis and none on probiotics. This is hard to justify when 20% of antibiotics are prescribed for cystitis, which afflicts several hundred thousand Canadian women each year. Although cystitis itself is not life-threatening, it may lead to kidney infections and sepsis.

Lactobacilli and Vaginal Health

In the United States, there has been some limited research on the role of lactobacilli in maintaining a healthy balance of vaginal flora. Bacterial vaginosis (BV) is an imbalance of vaginal flora in which lactobacilli are decreased or absent, gram-negative anaerobes predomi-

nate, and the pH of the vagina increases to above 4.5. BV appears to increase the risk of male to female transmission of STDs, including HIV,⁵ and is also a risk factor for preterm birth.⁶ The presence of lactobacilli is a marker for healthy vaginal flora. All *Lactobacillus* organisms produce lactic acid and some strains produce hydrogen peroxide. Although some researchers regard hydrogen peroxide production as key to the role of vaginal lactobacilli in vaginal resistance to infection, studies have shown this is too simplistic an explanation. Hydrogen peroxide-producing lactobacilli can be found in women prone to urogenital infections, and non-H₂O₂ producing strains, such as *L. rhamnosus* GR-1, can colonize the vagina and express antipathogen properties including bacteriocins and biosurfactants.⁷

If one is to use probiotics successfully for treatment, one must select an organism shown to be effective for that disease or condition. Any strain of lactobacilli would probably be inadequate to cure candidal vaginitis (*Candida* species are, after all, part of the normal flora and are found in the vaginas of 40-60% of healthy women). However, several strains could potentially reduce the risk of recurrent candidiasis by maintaining microbial balance in the vagina and thereby preventing candidal overgrowth.

Disruption of normal vaginal flora can occur as a result of exposure to antibiotics and spermicides. By introducing the proper lactobacilli, a good biofilm (like a community of organisms) could be created, which should prevent overgrowth of uropathogens, *Candida*, and BV organisms, by interfering with their growth and adhesion. Indeed, studies have shown that introduced lactobacilli can flourish, reducing recurrences of cystitis and yeast vaginitis.⁷

Availability/Formulation

In North America, probiotics are currently considered alternative therapies, available primarily through health food stores and on the Internet. However, labeling may not accurately reflect contents. Although a label may state, for example, that a product contains greater than 10⁹ viable *L. acidophilus* per capsule, analysis has shown that the organisms present are not necessarily those stated on the label, and the number of viable organisms at the time of purchase may have fallen significantly since the time of packaging.^{8,9} Furthermore, very few strains contained in current product lines have undergone rigorous examination or have proven mechanisms of action and efficacy (as shown by peer-reviewed scientific publications) for the ailment that is being treated or prevented.¹⁰

It should be noted that it is not an easy process to ensure viable lactobacilli in a product. Lactobacilli have fastidious growth requirements, and there are numerous problems associated with freezing and storing them. Also, the speciation of lactobacilli has not been as accurate as that of pathogens. Thus, the reliability and experience of the manufacturer with these cultures is critical to a high-quality product.

Conclusion

More research is necessary to ensure the efficacy of marketed products (for example by comparing probiotics directly with prophylactic antimicrobial therapy for the prevention of recurrent infection). There is currently research being done in at least two labs in Canada and the United States to bring reliable probiotic products to market for urogenital health.

Still, I remain optimistic. My own prediction is that many North Americans will ingest probiotics daily within the next 10 years. ❖

Dr. Reid is Associate Scientific Director of the Lawson Research Institute and Professor of Microbiology and Immunology at the University of Western Ontario, London, ON, Canada. Dr. Reid has an interest in Urex Biotech Inc., a company with patents on lactobacilli probiotics.

References

1. Ransom SB, et al. Oral metronidazole vs. Metrogel Vaginal for treating bacterial vaginosis. Cost-effectiveness evaluation. *J Reprod Med* 1999;44:359-362.
2. Tano K, et al. In vitro inhibition of *S. pneumoniae*, nontypable *H. influenzae* and *M. catharralis* by alpha-hemolytic streptococci from healthy children. *Int J Pediatr Otorhinolaryngol* 1999;47:49-56.
3. Brook I, Gober AE. Interference by aerobic and anaerobic bacteria in children with recurrent group A beta-hemolytic streptococcal tonsillitis. *Arch Otolaryngol Head Neck Surg* 1999;125:552-554.
4. Sidhu H, et al. Identification and classification of *Oxalobacter formigenes* strains by using oligonucleotide probes and primers. *J Clin Microbiol* 1997;35:350-353.
5. Sewankambo N, et al. HIV-1 infection associated with abnormal vaginal flora morphology and bacterial vaginosis. *Lancet* 1997;350:546-550.
6. Hay PE, et al. Abnormal bacterial colonisation of the

genital tract and subsequent preterm delivery and late miscarriage. *BMJ* 1994;308:295-298.

7. Reid G, et al. Instillation of *Lactobacillus* and stimulation of indigenous organisms to prevent recurrence of urinary tract infections. *Microecol Ther* 1995;65:3763-3766.
8. Hughes VL, Hillier SL. Microbiologic characteristics of *Lactobacillus* products used for colonization of the vagina. *Obstet Gynecol* 1990;75:244-248.
9. Zhong W, et al. Differentiation of *Lactobacillus* species by molecular typing. *Appl Environ Microbiol* 1998;64:2418-2423.
10. Reid G. The scientific basis for probiotic strains of *Lactobacillus*. *Appl Environ Microbiol* 1999;65:3763-3766.

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CME Questions

21. **In vitro, tea tree oil (*Melaleuca alternifolia*):**
 - a. is equally active against pathogens involved in bacterial vaginosis (BV) and lactobacilli.
 - b. is relatively more active against pathogens involved in BV than lactobacilli.
 - c. is relatively more active against lactobacilli than pathogens involved in BV.
 - d. is inactive against pathogens involved in BV and lactobacilli.
22. **Four hundred species of bacteria live in the intestine, and 50 species in the female genital tract.**
 - a. True
 - b. False
23. **A recent study found that in mildly hypertensive elders, 12 weeks of:**
 - a. aerobic exercise and T'ai Chi decreased blood pressure to the same extent.
 - b. aerobic exercise or T'ai Chi had no effect on blood pressure.
 - c. aerobic exercise but not T'ai Chi decreased blood pressure.
 - d. T'ai Chi but not aerobic exercise decreased blood pressure.
24. **A recent survey of CAM use, using a subset of the MEPS survey, found that 6.5% visited both conventional and CAM practitioners, and 1.8% used exclusively CAM practitioners.**
 - a. True
 - b. False
25. **Passion flower, kava kava, and lavender flower are considered:**
 - a. stimulant herbs.
 - b. adaptogens.
 - c. sedative herbs.

Clinical Abstracts

With Comments from Adriane Fugh-Berman, MD

T'ai Chi and Blood Pressure

Source: Young DR, et al. The effects of aerobic exercise and T'ai Chi on blood pressure in older people: Results of a randomized trial. *J Am Geriatr Soc* 1999;47:277-284.

Design and Setting: A randomized clinical trial in a suburban clinic.

Subjects: Sixty-two sedentary adults older than 60 with mild hypertension (average SBP 130-159 mm Hg, average diastolic blood pressure < 95 mm Hg). Seventy-nine percent of participants were women and 45% were black. Participants were not taking any antihypertensive medication and were not participating in vigorous exercise.

Treatment: Subjects were randomized to

an aerobic exercise program or a light intensity T'ai Chi program for 12 weeks. Each class met twice a week for one hour and patients were to supplement with home-based exercise with the goal of exercising four to five times a week for 30 minutes.

Outcome Measures: Systolic end diastolic blood pressure measured every two weeks for 12 weeks with a random zero sphygmomanometer.

Results: Significant reductions in blood pressure were seen in both groups by six weeks with additional reductions during the second six weeks. Both groups experienced a slight increase in body weight. For systolic blood pressure, adjusted mean changes after three months were -8.4 (1.6) mm Hg in the aerobic group and -7.0 (1.6) mm Hg in the T'ai Chi

group. For diastolic blood pressure, the aerobic exercise group experienced a -3.2 (1.0) mm Hg decrease, and the T'ai Chi group experienced a -2.4 (1.0) mm Hg reduction.

Initially, weekly class attendance was 90% to the aerobic exercise group and 84% for the T'ai Chi group. By the last three weeks of the trial, approximately half of all subjects attended classes. Throughout the three-month trial, 59% of weekly exercise logs were returned by the aerobic exercise group and 45% of weekly exercise logs were returned by those in the T'ai Chi group. Of those who returned exercise logs, more than 75% of participants in the aerobic exercise group exercised three or more sessions weekly, compared to all of those in the T'ai Chi group.

There was no increase in cardiorespiratory fitness in the either group.

Funding: In part, by HL 02642, awarded to Appel, and RR 00722, awarded to the Johns Hopkins Outpatient General Clinical Resource Center. Funding source not otherwise delineated.

Comments: T'ai Chi is a Chinese exercise regimen that combines concentrated mental effort with graceful, slow, flowing movements. This is a very interesting study that shows similar benefits between a light-intensity exercise regimen and aerobic exercise in reducing blood pressure in elders. Although half of participants were no longer attending classes at 12 weeks, I'm sure this dropout rate is no higher than the average 30-year-old who signs a health club contract.

As the authors point out, T'ai Chi can be performed anywhere at any time, and the fact that it does not require special clothing or equipment may make it a particularly attractive form of exercise for those who do not consider themselves "exercisers." It is inspiring that formerly sedentary elders participated so fully in an exercise program; the level of enthusiasm seems particularly high for the T'ai Chi group. Not only did those in the T'ai Chi group who returned logs exercise four or more sessions weekly, they often exercised multiple sessions a day (from 1-25 sessions weekly, with a median of 10). ❖

CAM Survey Targets Diverse Audience

Source: Druss BG, Rosenheck RA. Association between the use of unconventional therapies and conventional medical services. *JAMA* 1999;282:651-656.

Design, Setting, and Subjects: Survey of 16,068 adults participating in the 1996 medical expenditure panel survey (MEPS), which surveys the U.S. civilian non-institutionalized population to estimate health care use, expenditures,

sources of payment, and insurance coverage. In this subsample, 4% of the interviews were administered in Spanish. The survey examined only therapies delivered through a practitioner and asked about acupuncture; nutritional advice or lifestyle diet; massage therapy; herbal remedies purchased; biofeedback training; training or practice of meditation, imagery, or relaxation techniques; homeopathic treatment; spiritual healing or prayers; hypnosis; and traditional medicine (Chinese, Ayurvedic, American Indian, etc.), and other complementary and alternative medicine (CAM) treatments.

Funding: National Institute of Mental Health grant K08MH01556.

Results: In 1996, 59.5% of survey respondents used only conventional care; 1.8% used only unconventional care; 6.5% visited both unconventional and conventional practitioners; 32.2% used neither conventional nor unconventional care.

Those who used both conventional and unconventional care were more likely to be female, white, better educated, and live in the West. The most commonly used unconventional therapy was chiropractic, used by 3.3% of the survey population. Massage was used by 2% of the survey population, herbal remedies by 1.8%, spiritual healing by 1.4%, nutritional advice by 1.1%, acupuncture by 0.6%, meditation by 0.5%, homeopathy by 0.4%, hypnosis by 0.1%, biofeedback by 0.1%, and other therapies by 0.4%. Compared to those who used unconventional therapies only, those who used both types of therapies were significantly more likely to use chiropractic services (42.8% vs. 28.1%) and significantly less likely to use spiritual healing (1.3% vs. 22.6%). Among users of both types of therapies, 8.8% were referred by a physician and 19.7% had informed a physician that they were using CAM therapies.

Comments: It is commonly argued by opponents of CAM therapies that an

indirect danger is that patients will not receive conventional treatment for curable conditions. This study provides data that the majority of those receiving CAM treatment are also receiving conventional care.

One advantage of this survey over the Eisenberg survey¹ is that Spanish speakers and individuals without telephones were included; the literature still lacks a multilingual survey that would more accurately reflect the U.S. population. This survey found a lower rate of unconventional therapy use than have previous telephone surveys. As the authors point out, one reason may be the focus on practitioner-based therapies (self-prescribed therapies were not included). The other reason that the authors posit is that non-English speaking participants were surveyed; however, this reasoning makes little sense to me, as CAM usage among minority populations is usually higher than among white populations.

Only a very small percentage of the population saw CAM providers exclusively. This survey notes that 2.5% of those who received CAM treatments had these treatments provided by a physician. It is noted that subsequent analyses classified unconventional services provided by a physician as conventional, which seemed a bit odd.

It was surprising to note the substantial proportion of respondents (32.2%) who used neither conventional nor unconventional care. In this survey, this number is four times higher than those who used unconventional treatments (alone or adjunctively). This is a rarely asked question. It would be interesting to correlate the physical and mental health status of those who see no practitioners with those who seek medical or CAM care; is it a healthier, more avoidant, or more male group that avoids all types of care? ❖

References

1. Eisenberg DM, et al. Trends in alternative medicine use in the United States, 1990-1997. *JAMA* 1998;280:1569-1575.

Happy Camper®

Package Information

"It's attitude food!®"

"Be a Happy Camper and Throw a Party! Don't let a bum day get the best of you. Try Happy Camper and throw a party, fall in love, go bungee jumping or stand in the rain and sing a song. See? Things are looking up already. Happy Camper contains special ingredients from all over the world, the herbs you think of first to help turn even your worst day around. Happy camper can help you cope with the stress and frustrations of modern life.* So do something nice for yourself. Try Happy Camper, the feel good formula from Natural Balance.*"

"Hey! Snap out of it! Everybody's had one of those days. You're so stressed your teeth hurt, so irritable you feel like crawling in a hole. Well, snap out of it! It's time for Happy Camper® the herbal formula that can really helped put a smile back on your face! No kidding. Happy Camper contains an unique blend of herbs known to help calm your nerves, help reduce stress and help you feel good about yourself.* Is that the sun peeking through the clouds? Try happy camper today!"

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease."

Supplement Facts

Serving size two capsules	
Servings per container 30	
Amount per serving	% Daily Value
Proprietary blend 840 mg	*
Passion flower (aerial portion extract)	*
Kava kava (root, rhizome)	*
Siberian ginseng (root)	*
Gotu Kola (aerial portion extract)	*
Kola nut (seed extract contains caffeine)	*
Schizandra (fruit)	*
Wood betony (aerial portion)	*
Lavender (flower)	*

Other ingredients: Gelatin.

*daily value not established

Caution: not for use by persons under the age of 18. If pregnant, nursing, and taking a prescription drug or have a medical condition, consult a health care practitioner prior to use. Do not exceed recommended dose. Excessive consumption may impair ability to drive or operate heavy equipment. Not recommended for consumption with alcoholic beverages. Keep out of the reach of children. Store at room temperature.

Natural Balance® Inc., P.O. Box 8002, Castle Rock, CO 80104-8002

Price: \$9.99, 60 capsules

Comments by Adriane Fugh-Berman, MD:

This misleading package contains a peculiar combination of herbs, most of which have no clinical evidence of benefit. The bottle contains powdered herbs in clear gelatin capsules. With the name "Happy Camper" and a cartoon picture of a child's head in a green hat on the box and bottle, it would appear to be a product for children. It is only on reading the small print that one finds it should not be used by persons under the age of 18. It is impossible to tell how much of each herb is in this product, but at a total dose of 1,680 mg/d, there is probably not an adequate dose of any of the herbs. Manufacturers should be prohibited from selling products with ingredient lists that do not identify plants by botanical name. For example, passionflower can refer to *Passiflora incarnata* or *Passiflora caerulea*; the former is safe for medicinal use, but *Passiflora caerulea*, the ornamental blue passionflower, contains a significant amount of toxic cyanogenic glycosides.¹

This herbal mixture is a very strange blend of sedative herbs, a stimulant herb, two Chinese adaptogens, and one Ayurvedic adaptogen. Passion flower (*Passiflora incarnata*), kava kava (*Piper methysticum*), wood betony (*Stachys officinalis*), and lavender (*Lavandula angustifolia*) have sedative properties. Passion flower and lavender are fairly benign; long-term use of kava can cause yellowing of the skin and an ichthyosiform eruption known as kava dermatopathy, often accompanied by eye irritation (see *Alternative Therapies in Women's Health*, Premiere Issue, pp. 4-6). Siberian ginseng (*Eleutherococcus senticosus*) and Schizandra (*Schisandra chinensis*) are adaptogens commonly used in Chinese medicine. Gotu Kola (*Centella asiatica*) is an adaptogen commonly used in Ayurvedic medicine. None of these adaptogens have been associated with serious side effects. Kola nut (*Cola acuminata*) contains caffeine and, as it is a stimulant herb, is easily the oddest addition to this mixture. ❖

References

1. Foster S, Tyler VE. *Tyler's Honest Herbal*. 4th ed. Binghamton, NY: The Haworth Herbal Press; 1999:284.

In Future Issues:

Special Issue: Calcium Supplements
Lactobacilli for Vaginal Infections