

"Alternative Medical Therapy" Use Among Singers: Prevalence and Implications for the Medical Care of the Singer

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Summary: Singers are extremely conscious of health problems that affect their voices and well-being and often take an active role in seeking care for these problems. They frequently seek treatment from providers or with modalities considered "alternative" to traditional medical care. A survey of singers was completed to elucidate their attitudes and practices regarding "alternative modalities" of medical care. Frequently singers will self-medicate or take advice from people not well versed in the special needs of a professional voice user. They will fail to share this information with the physician when seeking "traditional" medical care. These practices may predispose the singer to sub-optimal or even dangerous care. These results are discussed, as well as the implications for the medical physician treating the singer. The possible detrimental pharmacologic effects of "natural therapies" widely used by singers are presented, with special attention to the particular concerns for the professional singer. **Key Words:** Alternative medicine and singers—Herbal medicines for singers—Toxicity of herbal medicines—Singers' attitudes toward alternative medicine.

Recent investigations have concluded that alternative medical therapies are commonly used nationwide for a variety of health problems. A large study in 1990 documented that one in three respondents used at least one such therapy in the prior year.¹ We believe that singers tend to be highly conscious of

their bodies and frequently turn to alternative medical methods to optimize their health. Not all alternative medical therapies may be benign, however. This study was undertaken to get a sampling of what singers think about alternative medicine (AM) and what alternative medical treatment they actually use, information that should be helpful in understanding what doctors and singers should know about these therapies.

METHODS

A 4-page questionnaire containing 15 questions was developed by the authors. The questionnaire

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was given to approximately 200 teachers of singers in the New York/New Jersey area. Many questionnaires were mailed to members of the New York Singing Teachers' Association (NYSTA), who maintain private studios and are on the faculty at various college voice departments. Teachers were asked to give the survey to their adult students and colleagues. Voice students were included in the analysis only if they were considered old enough to make their own choices regarding the use of AM. One hundred forty-two surveys were returned with sufficient information to include in the study.

The study elicited information about the types of AM used and under what conditions, how a singer chooses to divide his or her care between AM and traditional medical care, and how singers view various AM modalities. The questionnaire defined *alternative medicine* as any therapy offered for treatment or prevention of a health problem by a nonphysician or a physician who claims to use "alternative," "complementary," or "adjunctive methods."

The responses to these questions, as well as information regarding the respondents' age, sex, voice, vocation, and singing experience were entered into a database for examination and statistical analysis with χ^2 testing when appropriate.

RESULTS

The 142 respondents were female three times as often as male. Their average age was 44 years with a range from 16 to 87 years, without great difference between males and females (Table 1). The respondents reflected a variety of levels of singers. Nearly one third claimed amateur status, one third actively performed professionally and spanned a large range of experience, 20% taught singing but may have sung or still sing, and 8% were retired singers (Table 2).

TABLE 1. Demographics

Responders	142
Male	25.3%
Female	74.7%
Age:	
Average 44 years (range 16-87)	
Male	48 (21-85)
Female	42 (16-87)

TABLE 2. Vocations of Responders*

Amateurs	53
Study for enjoyment only	20
Aspiring professional	14
College voice students	19
Active professionals	47
<5 years	6
5-10 years	6
>10 years	35
Retired professionals	13
Teachers	35
Teach and actively perform as singers	13
Teach and are retired professional singers	9
Teach only	13

*Total is greater than 142 because some singers are included in more than one category.

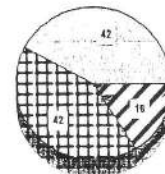
■ 71% overall use AM.

Of this group

42% 16-39 years old

42% 40-59 years old

16% 60-87 years old



■ Median use: 60 months

(Range 2-840 months)

FIG. 1. Prevalence of singers' use of alternative medicines.

Singers frequently (71%) used therapies they perceive to be AM. All age groups used AM; the median duration of use was 60 months (Figure 1). The frequency of use was consistent between age groups, with those under 40 years-old, 40-60 year-olds, and over 60 years old equally likely to use AM (Figure 2). Those who used AM did so frequently, with 53% claiming to use it daily, 11% weekly, 17% monthly, and 19% at least semiannually (Figure 3). Fifty-eight percent of the respondents used AM last within the prior month, and the remainder were equally divided; one third of respondents using AM in the prior 6 months, one third in the previous year, and one third in the previous 3 years.

Table 3 lists some of the more commonly specifically named biological/pharmacologic agents used.

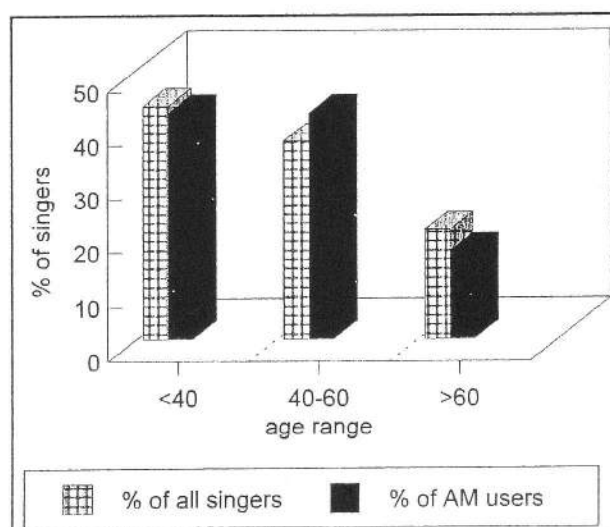


FIG. 2. AM usage was equally frequent in all groups of singers.

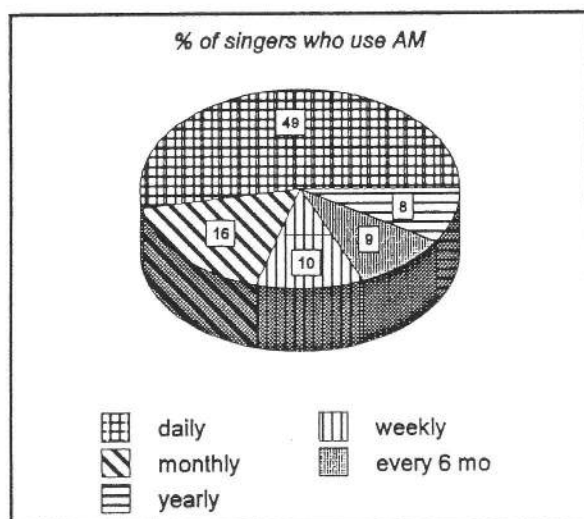


FIG. 3. Frequency of alternative medicine usage.

Forty-three different specific herbs, supplements, homeopathic, and ayurvedic remedies were named. Frequently "generic" categories, descriptions of a general classification of a product rather than a specific product, were mentioned, such as "vitamins" or "homeopathics."

Table 4 lists the various bodyworks techniques specifically listed. Massage techniques predominate, with chiropractic second and acupuncture third. Alexander and related techniques were common.

TABLE 3. *The More Common Alternative Medicine Modalities: Biological/Pharmacological*

Supplements	
Vitamins	17
Vitamin C	12
Vitamin E	5
Zinc lozenges	7
Homeopathic	
Homeopathic	10
Ayurvedic	
Ayurvedic	2
Herbals	
Herbals	28
Echinacea	33
Goldenseal	6
Ginkgo	6
Garlic	4
Ginger	3
Stinging nettles	2
St. John's wort	2
Dong quai	2
Evening primrose	2

TABLE 4. *The More Common Alternative Medicine Modalities: Bodywork*

Massage	
Shiatsu	29
Acupressure	3
Craniosacral massage	3
Ji shi do	2
Physiotherapy	1
Alexander Technique	
Feldenkrais	5
Elaine Summers	1
Trager	1
Acupuncture	
Acupuncture	13
Chiropractic	
Chiropractic	16
Other	
Yoga	5
Kinesiology	5
Chi gong	2
Exercise	2
Reiki	1
Therapeutic touch	1
Bodywork	1

Table 5 lists the various mind/body control methods mentioned, with meditation being the most common.

When specifically asked if singers use certain forms of therapies, a rough estimate of the frequency of use of alternative and certain traditional therapies was produced (Figure 4). Singers utilized (in decreasing frequency) "regular-dose" vitamins, herbs, massage, nutrients, "high-dose" vitamins, chiropractic, and homeopathy. Acupuncture was used slightly less frequently, and aromatherapy, biofeedback, and crystal therapy were used infrequently.

TABLE 5. *The More Common Alternative Medicine Modalities: Mind/body Control*

Meditation	5
Thoughtfield	1
Quietude	1
Visualization	1
Hypnotherapy	1
Est	1
Prayer	1

If asked whether the various modalities are alternative or traditional, those with an opinion overwhelmingly thought regular dose vitamins and nutrients were traditional, roughly half thought chiropractic was alternative and well over half thought the remainders were alternative. Aromatherapy, crystal therapy, and homeopathy were almost always thought alternative (Figure 5).

It is significant that singers frequently do not tell their physicians that they are using AM therapies. Twenty-nine percent of singers fail to tell their physicians about using AM, but less than 6% fail to tell their AM practitioner what their medical doctor had prescribed.

Singers rarely are directed to safe use of AM modalities by an authoritative voice, someone who can be expected to understand the safe and appropriate use of the products, such as a doctor or pharmacist. (Table 6). Seventy-two percent of singers got advice from a friend, and 28% from the process of "trial and error." One singer got advice from their opera administrator. Doctors, naturopathic MDs, nutritionists, and herbalists were infrequently influential.

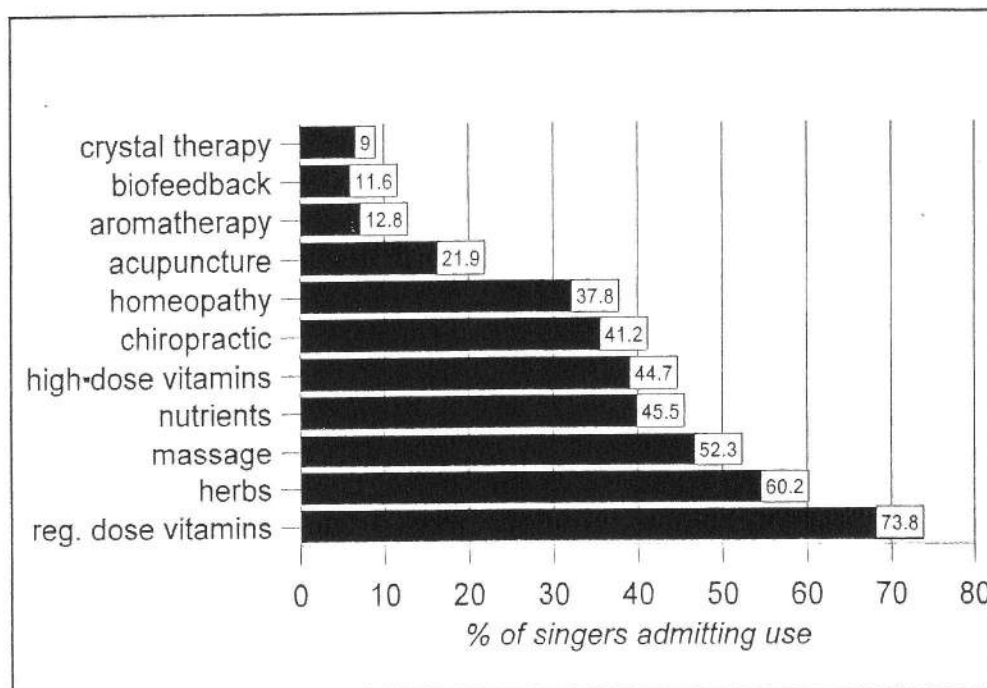


FIG. 4. Incidence of singers' use of specific therapies.

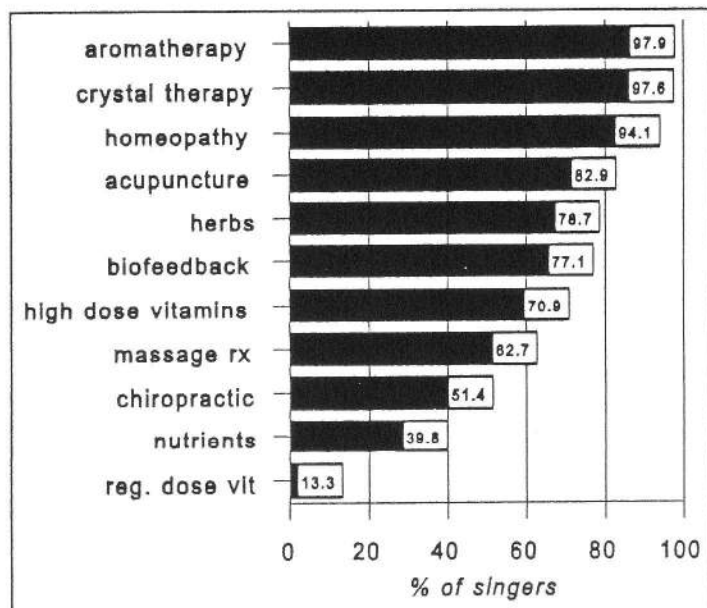


FIG. 5. Percentage of singers who think therapy is "alternative."

TABLE 6. Influences on the Choice of What Alternative Medicine to Use

Recommended by a friend	72%
Recommended by a publication	38%
Trial and error	28%
Radio or TV	17%
Store salesperson	17%
Doctor	6%
Teacher	3%
Naturopathic MD	2%
Nutritionist	2%
Herbalist	2%
Midwife	1%
Yoga therapist	1%
Acupuncturist	1%
Opera administrator	1%

TABLE 7. Frequency of Singers Choosing Alternative Medicine Before MD for Problems Related to Voice (Active Professional Versus All Singers)*

	All Singers	Active Professionals
Voice change with a cold	49%	65%
Voice change with allergies	42%	50%
Voice change related to singing	30%	27%
Sudden hoarseness not with a cold	29%	27%

* $P = 0.05$.

Singers frequently turn to AM care for a voice-related problem rather than to traditional medicine (Table 7). For voice problems related to colds and allergies, 49% and 42% of all singers, respectively, turn to AM first. If the voice change is related to singing or if the hoarseness is sudden, AM care will be used much less frequently. Active professionals are 50% more likely to turn toward alternative care than other singers for voice changes related to a cold, and more often, though not statistically significantly, from voice changes from allergies.

When asked how a singer would choose to seek care for certain problems, certain patterns can be seen (Figure 6). When slightly ill, self-treatment with AM predominates, with care by an MD, AM

practitioner, or both equally used. Self-treatment with over-the-counter (OTC) medications or no treatment is common. For moderate illness, treatment by an MD or both an MD and AM practitioner go up at the expense of no treatment, with care by AM or self-treatments fairly steady. If the singer is extremely ill, treatment by an MD increases greatly, with care by both practitioners modest, less AM care alone, and little self-treatment. For illnesses related to the voice, a similar pattern is seen, with MD care and combination care most common. Self-treatment with AM modalities is next common.

Active professionals differ from the rest of the singers in the type of care they seek when ill (Figure 7). Singers who are not active professionals consistently

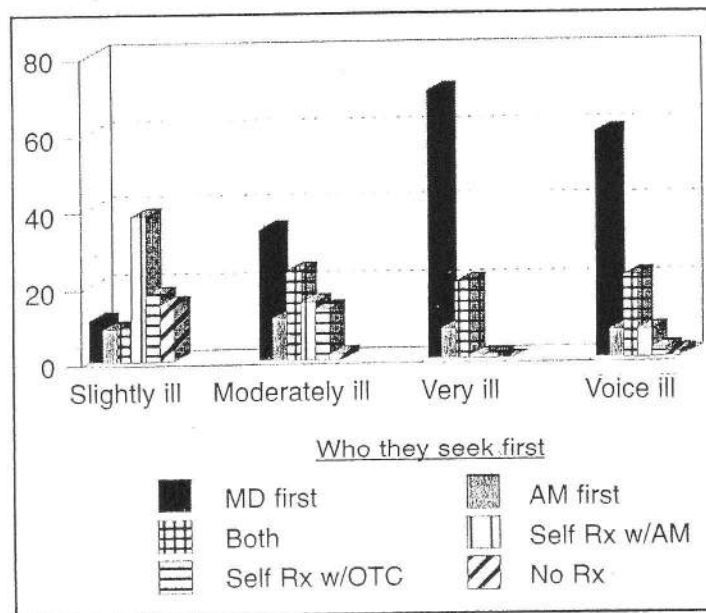


FIG. 6. Singers' choice of initial care for various degrees of illness (all singers).

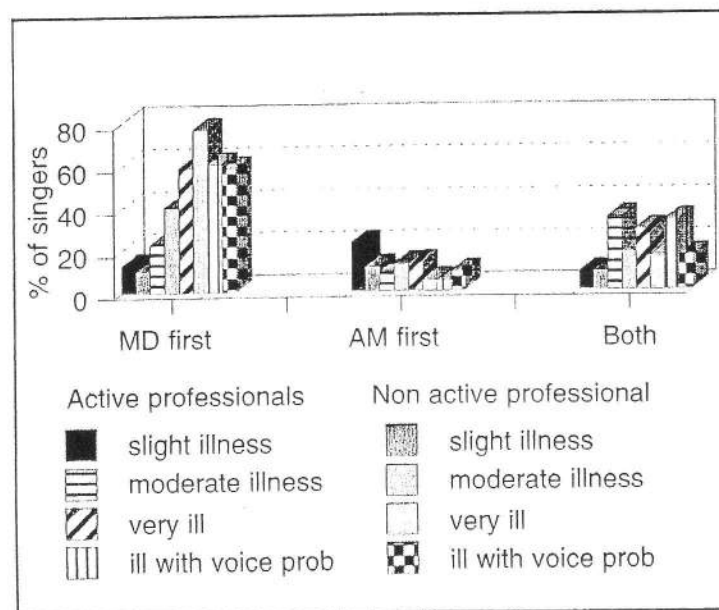


FIG. 7. Singers' choice of care for various degrees of illness (active professionals versus nonactive professionals).

see the MD more often than the active professionals as the severity of illness increases, although for voice-related illnesses the rate is high but equivalent. The use of AM providers stays roughly equal

throughout increasing illness severity. Active professionals consistently choose to use a combination of AM and traditional providers more often when they have severe illnesses and voice problems.

DISCUSSION

The phrase "alternative medicine" is rather nebulous, seemingly meaning different things to different people. Usually it implies treatments not generally embraced by the "mainstream" medical community. As pointed out by D'Antoni et al² the National Institutes of Health (NIH) was mandated by Congress in 1992 to establish an Office of Alternative Health, and defines "alternative medicine" in their fact sheet as "any medical practice or intervention that does not have sufficient documentation in the United States to show that it is safe and effective against specific diseases and conditions, is generally not taught in medical schools, and is generally not reimbursable for third party billing." (Recent changes in some managed care plans have allowed reimbursement for some forms of alternative medicine.) The NIH has divided AM practices into six categories including diet/nutrition/lifestyle changes, pharmacological and biological treatments, traditional and ethnomedicine, mind/body control, structural and energetic therapies, and bioelectromagnetic application.

For the purposes of this study, we chose to group the practices in the three categories: biological and pharmacologic therapies (therapies involving use of exogenous materials), bodywork (therapies involving body manipulation), and mind/body control (therapies that utilize the individual's cerebral processes exclusively, without any external chemical or manipulation). D'Antoni et al discussed the various bodywork techniques commonly used, their similarities to techniques specifically used in voice therapy, and commented on their role in managing voice disorders.² This article will not address these techniques, nor the various modalities previously outlined as mind-body control techniques.

The focus of this study is on the pharmacological and biological agents used by singers. Its purpose is to inform singers and physicians alike as to what types of methods are being used and what their consequences may be for the medical and voice care of the singer. At the 26th Annual Symposium: Care of the Professional Voice, Sanford Archer, MD, stated in a presentation that "foods are drugs with nutritional value." In the same vein it may be stated that: herbs, vitamins, and supplements are drugs that are not regulated by the Food and Drug Administration (FDA). To many people, this lack of regulation implies safety. As mandated by the FDA, advertise-

ments for these products are careful not to claim that these "food supplements" are a treatment of a disorder, but rather they "aid the body" in doing its job. However, it is a chemical within the ingested product that has an action, and by definition a chemical or substance used for the prevention or treatment of a disease is a "drug."³ We are subject to the effects and side effects of all the chemicals within the product, whether the product is herbal, natural, or made by human beings. Of the 150 best-selling prescription drugs, 86 contain at least one major active compound derived from natural sources.⁴

As it is necessary for the prescriber and taker of a prescription drug to know its effects, side effects, interactions with other products, and risks, it is equally important to know this information when dealing with alternative medicines. The problem is that this information is not easy to come by. Rarely do labels on the bottles of herbs and supplement at health food stores list known side effects or contraindications. Natural food store owners have told the authors that their staff is instructed *not* to counsel customers as to what products to take, because doing so might constitute practicing medicine without a license. The owners comment that they don't recommend products, but they do steer their customers to books in the store on natural remedies. These books rarely indicate risks or drug interactions, with the glaring exception of the book *Prescription for Nutritional Healing*.⁵ It is necessary, therefore, for consumers to take a more active role in researching the risks and benefits of the products they choose to take. The special physical demands of singers and their frequent use of alternative medicines make that chore even more important for them. Our survey clearly shows that the choice of therapy in singers is rarely influenced by someone who can be counted on to provide authoritative information. Strikingly, the study shows that singers are reluctant to discuss their alternative medical care with their physician. Informally, we have been told that users of AM believe that their physician will either not know about the therapy or be openly hostile to their patient for turning to it. Physicians should acquaint themselves with the therapies being used by singers so that they can serve as a resource to their patients. At minimum, the physician should be able to comment on whether the therapy is contraindicated with any medical therapy being pro-

vided, and as to whether they have any concerns over the special effects the product may have upon the voice.

Specific risks to singers

Table 8 provides an abridgement of the issues discussed in the following paragraphs regarding specific risks for a singer taking herbal medicines. The concerns listed below are relative contraindications, and are not meant to suggest that the products should not be used, or may not be used without consequence. If one chooses to use these products, however, it should be an informed choice and should include weighing the benefits to be derived from using any of these products against the risks. In some cases the risks may be small but still greater than those resulting from using another product available. The list of products for any given concern is not meant to be complete, but rather includes those commonly used. Other products may be of concern and not included in these lists.

Anticoagulation

Rupture of a blood vessel within the vocal fold may occur, with subsequent extravasation of blood throughout the fold, causing hoarseness. It is recommended that singers should not take aspirin or medications with anticoagulant activity, because this increases the likelihood that a hemorrhage will expand and increase the risk of permanent voice compromise from a stiff vocal fold or from possible consolidation of the disrupted tissues into a hemorrhagic polyp. Many common herbs and supplements have anticoagulant action. Dong quai contains the blood thinner coumarin,⁵ as does fennel.⁵ Salicylates, relatives of aspirin, are contained in willow, primrose, cowslip, and jack-in-the-pulpit⁵ (a medication specifically recommended in the *Journal of Singing* for laryngitis in singers).⁶ Garlic, ginger, vitamin E in high doses^{5,7-9} and ginkgo biloba¹⁰ contribute to anticoagulation through inhibition of platelet aggregation.

Diuretic activity

Adequate hydration of the larynx and vocal folds is necessary for optimal voice. Diuretics are generally contraindicated for healthy singers, even those with premenstrual bloating, as the water loss due to diuretic action is not the bound water within the tissues, but rather the free water that contributes to lu-

brication of the larynx. Many herbs have a diuretic action, including elder, feverfew, dandelion, and nettles,⁵ the latter herb frequently used for allergies. Use of these medications might affect the voice by promoting dehydration.

Hormonal activity

The hormonal balance of the singer is of importance for vocal health. The female larynx may be particularly sensitive to changes in estrogen levels as well as to ingestion and/or topical application of androgens (ie, testosterone). Progesteronelike hormones may have some androgenic activity.¹¹ Male voices may be affected by an estrogenic environment. Many natural therapies have a hormonal effect. Dong quai is reported to increase the effect of estrogenic and androgenic hormones.⁵ Yam, even applied topically, has strong progesterone activity.^{5,12} Licorice has estrogenic and progesterone effects and caution is made that the pitch of the voice may be changed.⁵ Hops has a high estrogen content and is noted to possibly cause loss of libido in men.¹² Melatonin acts on the pineal gland and may affect hormonal production and it acts as a contraceptive in high doses.⁵ Yohimbe may increase testosterone and should not be used by women.^{5,13}

Vitamin toxicity

Vitamin E at high dose may reduce the effectiveness of thyroid replacement, and thus may require dose adjustment to avoid hypothyroid effects on the larynx.¹⁴ Vitamin E in high doses may worsen high blood pressure, rheumatic heart disease, and, as mentioned above, may contribute to coagulation problems. Vitamin C at high dose may cause flatulence, bloating, diarrhea, and cramps.⁵

Blood pressure

Many herbs may affect blood pressure and interact with medications often used in singers. St. John's wort, an herb often used for its mood elevating effect, has a monoamine oxidase (MAO) inhibitor effect that increases the levels of certain neurotransmitters, including serotonin and epinephrine. Use of MAO inhibitors along with narcotics is linked with substantial incidence of high fever and coma. Concurrent use of decongestants, caffeine, asthma inhalers, amphetamines, or products containing the amino acid tyramine such as amino acid supple-

TABLE 8. Encapsulation of Various Risks Regarding Use of Common Herbal and Natural Medicines*

HERB	RISK										
	Anticoagulation Activity	Diuretic Activity	Hormonal Activity	Vitamin Toxicity	Blood Pressure Effects	Photosensitization	Immune Dysregulation	Uterine Stimulation	Inhalant Cross Reactivity	Toxic Effects	Other
Astragalus (huang qi)											✓
Celery						✓					
Chamomile								✓	✓		
Chaparral										✓	
Cinnamon								✓			
Coltsfoot										✓	
Comfrey										✓	
Cowslip	✓										
Dandelion		✓									
Dong quai	✓		✓			✓		✓			
Echinacea							✓		✓		
Elder		✓									
Fennel	✓										
Feverfew	✓	✓									✓
Garlic	✓										
Ginger	✓										
Ginkgo biloba	✓										
Ginseng					✓						✓
Goldenseal					✓				✓		✓
Hops			✓								
Jack-in-the-pulpit	✓										
Lady's mantle								✓			
Licorice root			✓		✓			✓			
Lobelia										✓	
Ma huang					✓						
Melatonin			✓				✓				
Myrrh								✓			
Nettles		✓									

(continued)

TABLE 8. (continued)

HERB	RISK										
	Anticoagulation Activity	Diuretic Activity	Hormonal Activity	Vitamin Toxicity	Blood Pressure Effects	Photosensitization	Immune Dysregulation	Uterine Stimulation	Inhalant Cross Reactivity	Toxic Effects	Other
Parsley								✓			
Peppermint											✓
Pokeweed										✓	
Primrose	✓		✓								
Red root	✓										
Rue										✓	
Sage											✓
St. John's Wort					✓	✓					
L-Tryptophan 1-											✓
Vitamin C				✓							
Vitamin E	✓			✓							
Willow bark	✓										
Yam			✓					✓			
Yarrow						✓		✓			
Yohimbe			✓								

*See text for details.

ments, beer, red wine, yogurt, fermented or smoked foods can lead to dangerous elevation of blood pressure. Ma huang is an herb also known as ephedra that has an epinephrinelike effect and is specifically contraindicated against use with MAO inhibitors (such as St. John's wort).⁵ Eight hundred health problems including seizures, strokes, and 40 deaths have been reported to the FDA associated with ma huang use. Ginseng raises blood pressure and also lowers blood sugar.¹⁵ Licorice root is a potent antidiuretic and leads to accumulation of fluid and subsequent problems such as hypertension.⁵

Photosensitization

Many herbs, including St. John's wort,^{5,12} dong quai,^{5,12} celery,^{5,12} and yarrow^{5,12} have a photosensitizing effect and should be used cautiously if strong sun exposure is likely to avoid serious sunburn injury.

Immune dysregulation

A host of herbs are reported to strengthen or boost the immune system. Several herbs and biological agents have been documented to contribute to problems by throwing off the normal balance of the immune system. If the suppressor T-cell (the type of lymphocyte that downmodulates the immune response) activity is overwhelmed by the killer T-cell (the type of lymphocyte that attacks an antigen) activity, for example, autoimmune problems such as multiple sclerosis and arthritis may be worsened.¹³ For this reason, melatonin shouldn't be used by those with severe allergy, immune disorder, or cancer.⁵ It is recommended that use of echinacea be avoided in human immunodeficiency (HIV) infections for similar reasons, and concerns have been raised that prolonged use for more than 6-8 weeks might cause immunosuppression.¹⁶⁻¹⁸

Uterine stimulation

Many herbs are noted to be uterine stimulants that are to be avoided in pregnancy, including yarrow, lady's mantle, dong quai, chamomile, cinnamon, myrrh, yam, licorice root, and parsley.^{5,13} Aside from the possibility of a direct hormonal effect on the vocal tract, the possibility of loss of abdominal support from uterine cramping may be considered.

Inhalant allergy cross-reactivity

Several herbs are botanical cousins of plants to which people frequently have allergies.^{5,12,13} Chamomile and goldenseal cross-react with ragweed and should be avoided in those with ragweed allergy. Chamomile specifically has been noted to sensitize people to ragweed if used long term. Echinacea should be avoided if one is allergic to sunflowers.

Toxic effects

Several herbs available off-the-shelf have been found to have toxic effects, such as chaparral, poke-weed, coltsfoot, and rue.^{5,12,13,19} Chaparral and comfrey are hepatotoxic if taken internally. Lobelia has a strong nicotinellike effect and also has sudden and drastic effects on pulse and blood pressure. Doses over 50 mg of dried lobelia can suppress breathing, depress blood pressure, and even lead to coma.⁵

Many other botanicals are frankly poisonous and are not readily available, although sometimes poisonings are reported from their recreational use, such as with jimsonweed.¹⁹

Problems with herbal production

Sometimes poisonings are due to problems related to the production of products, as in the inclusion of belladonna alkaloids in herbal tea from Paraguay, from weeds growing in the field from which the tea was harvested.¹⁹ In 1989 contamination of the amino acid supplement L-tryptophan led to several hundred cases of a serious autoimmune illness (eosinophilia-myalgia syndrome) and at least one death.

Two previously healthy women were found to have toxic levels of digoxin, a commonly used heart medication, because of contamination of herbal supplements marketed to "gently assist in the systemic cleansing of the body." Included in this product was the herb plantain, which was later found to be con-

taminated by glycosides from the plant *Digitalis lanata*.

The quality of herbal medicine depends on the processing of the product, which may include detoxification. *Aconitum* spp., used in Chinese herbal medicines, contains highly toxic alkaloids, levels of which are reduced by boiling. If incorrectly processed aconite is used, the resulting product can be fatal.²⁰

These concerns apply particularly to Chinese herbal medicines, as opposed to other ethnic medicines, as this is the largest source of crude herbal drugs supplied to patients.²¹ Compounding this are the fact that Chinese herbal prescriptions are often individualized to the patient, and the contents are often not labeled when dispensed, thus providing no information about what possible problems may result from their use.

These cases also illustrate the risks of consumers using products without an overseeing regulatory agency ensuring their quality as is the case in the United States.

Other concerns

There are many other concerns, warnings, and contraindications to unstudied use of alternative biological agents. Certain of these relate to use in people with identifiable medical problems. Ginseng lowers blood sugar and should not be used by people who are hypoglycemic.^{5,13} Sage contains the chemical thujone which can trigger seizures in epileptics.⁵ As mentioned above, melatonin should not be used by those with severe allergy, immune disorder, or cancer.⁵

Other concerns are effects on even totally healthy people. Peppermint relaxes smooth muscle and can promote gastroesophageal reflux.⁵ Chewing the leaves of feverfew is a folk remedy for use as an expectorant but can cause mouth sores.^{5,12} Astragalus and goldenseal should not be used in the presence of fever.⁵

CONCLUSIONS

This survey demonstrates that a wide variety of alternative medical therapies are frequently used by singers, including many biological/pharmacological agents that may have unexpected consequences to the singer. Often the singer will not tell the physician what AM therapy he or she is using. Singers are not getting authoritative advice as to what may be used

safely and effectively. We recommend to physicians, and all health care providers, a critical yet open-minded investigation of the potential benefits and risks of nontraditional therapies.

Active professional singers differ from other singers in the type of care they seek when ill. We speculate that active professionals are more pro active in getting AM techniques involved in their care, while ensuring that traditional care is received, in order to keep their ability to perform consistently ready.

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