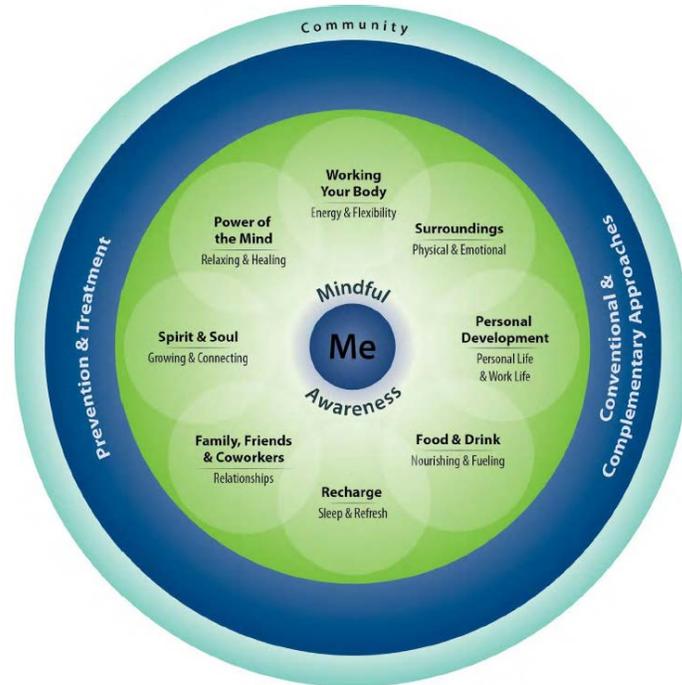


WHOLE HEALTH: CHANGE THE CONVERSATION

Advancing Skills in the Delivery of
Personalized, Proactive, Patient-Driven Care

Prevention and Treatment of Viral Upper Respiratory Infections Clinical Tool



This document has been written for clinicians. The content was developed by the Integrative Medicine Program, Department of Family Medicine, University of Wisconsin-Madison School of Medicine and Public Health in cooperation with Pacific Institute for Research and Evaluation, under contract to the Office of Patient Centered Care and Cultural Transformation, Veterans Health Administration.

Information is organized according to the diagram above, the *Components of Proactive Health and Well-Being*. While conventional treatments may be covered to some degree, the focus is on other areas of Whole Health that are less likely to be covered elsewhere and may be less familiar to most readers. There is no intention to dismiss what conventional care has to offer. Rather, you are encouraged to learn more about other approaches and how they may be used to complement conventional care. The ultimate decision to use a given approach should be based on many factors, including patient preferences, clinician comfort level, efficacy data, safety, and accessibility. No one approach is right for everyone; personalizing care is of fundamental importance.

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Prevention and Treatment of Viral Upper Respiratory Infections

Clinical Tool

Background

Non-influenza viral upper respiratory infections (URIs), or common colds, are the most common infections experienced by human beings. They account for more than 25 million doctor visits and 40 million lost days of school and work annually in the United States.¹ These numbers dramatically increase when influenza infections are included. While there is no cure for these viral infections, there are many things that patients can do to decrease their likelihood of contracting such an illness and, if they do get it, to minimize the length and severity of symptoms. This clinical tool focuses on a number of approaches that might be woven into a Personal Health Plan.

Working Your Body

Growing evidence indicates that moderate amounts of regular exercise improve immune function and decrease the risk of developing a URI.² However, there is a transient depression of immune function with associated *increased* risk of URI after periods of intense, prolonged exercise such as training for and/or running in a marathon.³ For general health, including prevention of upper respiratory infections, consider recommending 30-40 minutes of aerobic exercise most days of the week at an intensity that allows talking but not singing.

Surroundings

A number of simple hygiene and environmental tactics can be used to prevent spreading or contracting viral URIs.⁴

- Sneezing and coughing into tissues keeps the viruses from spreading, especially when the tissues are immediately discarded and hands are then washed.
- If no tissue is available, one should sneeze or cough into the bend of the elbow.
- Avoid, as much as is practical, prolonged contact with anyone who has a cold.
- The importance of hand-washing cannot be underestimated.
- Keep the hands out of contact with the eyes, nose and mouth.
- Keeping the kitchen and bathroom countertops clean is important, especially when someone in the family has a common cold. Children's toys should be washed before and after play when someone in the house has a cold.
- Focus on temperature and humidity. Keeping an affected individual's room warm but not overheated is important. If the air is dry, a cool-mist humidifier or vaporizer can moisten the air and help ease congestion and coughing. A clean humidifier may help to prevent the growth of bacteria and molds.

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The common cold is also influenced by social factors, and both acute and chronic stress can increase the risk of infection. A series of studies showed that certain psychosocial variables predicted whether volunteers would become infected when they were exposed to one of the most common viruses implicated in URIs. Variables that predicted infection and increased symptom severity and duration include childhood socioeconomic status, number and quality of social relationships, acute and chronic stress, and negative emotion.¹

Food and Drink

General

Nutrition may be the single most important factor in optimizing immune function because it can have a positive or negative impact depending on dietary patterns. Antioxidant micronutrients (vitamins and minerals which are only required in small amounts) such as selenium, zinc, fatty acids, and vitamins E, A and D help regulate the function of the immune system.⁵ Studies have shown that a diet insufficient in macronutrients (protein, carbohydrate and fat) leads to more frequent chronic infections.⁶ Although evidence is lacking, staying well hydrated with a variety of fluids including water, broth, tea, etc. is frequently recommended. See the **Food and Drink** module for additional nutrition information.

Dietary supplements

***Note:** Please see the module on **Dietary Supplements** for more information about how to determine whether or not a specific supplement is appropriate for a given individual. Supplements are not regulated with the same degree of oversight as medications, and it is important that clinicians keep this in mind. Products vary greatly in terms of accuracy of labeling, presence of adulterants, and the legitimacy of claims made by the manufacturer.*

- **Vitamin C**

Evidence supports use of vitamin C at doses ranging from 200-500 milligrams a daily for prevention or early intervention at first onset of symptoms of a URI.¹ In a subset of studies in people living in extreme circumstances, including soldiers in sub-arctic exercises, skiers, and marathon runners, vitamin C has led to significant reductions in the risk of developing colds by approximately 50%.⁷ While supplements can certainly be used, regular intake of vitamin C-rich fruits and vegetables such as citrus fruits (e.g., oranges and grapefruit) and their juices, red and green peppers, kiwifruit, broccoli, strawberries, cantaloupe, baked potatoes, and tomatoes are likely to have additional health benefits (and be more pleasurable to consume) than swallowing a pill.

- **Zinc**

Studies that have looked at concentrated dosing of zinc with URIs have had very mixed results. Overall, zinc-containing products seem to be beneficial for reducing the duration of symptoms of the common cold in adults by about 1.6 days, but adverse effects such as bad taste and nausea may limit their usefulness. Zinc from

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supplements taken prophylactically does not seem to prevent the common cold.⁸ Recommended doses range from 9-24 milligrams every two hours while awake and still symptomatic, starting within 48 hours of symptom onset. Regular use of higher doses can interfere with copper absorption. Nasal preparations have been associated with loss of smell.¹ As with vitamin C, including foods rich in zinc as part of a healthful diet can also be reasonably supported. Foods to consider include oysters, red meat, poultry, seafood such as crab and lobsters, and fortified cereals. Other foods containing lower levels of zinc include beans, nuts, whole grains and dairy products.

- **Garlic (*Allium sativum*)**

While there are dozens of reported health benefits of garlic, data is limited in its usefulness in upper respiratory infections. The data that does exist, however, supports that garlic has a role in decreasing frequency of URIs and shortening duration if a cold is experienced.

Many garlic products are available, but they are of varying quality. It is preferred to eat raw or lightly cooked crushed garlic.¹ One palatable use of garlic is to pack a jar with garlic cloves and cover with honey. Let this sit in a lightly covered jar for two weeks. At first onset of URI symptoms, combine one to two tablespoons of the honey with one to two tablespoons of lemon juice and half cup of warm water. Gargle and/or drink. The garlic cloves can be eaten, chopped in the tea, or used for cooking.

- **Honey**

Honey has been studied as an antitussive in children and found to be better than both no treatment and diphenhydramine, but not better than dextromethorphan.⁹ Honey can also add to the expectorant properties of other herbs when used in teas.¹⁰

Recharge

Sleep and immune function seem to influence each other. Both sleep deprivation and acute illness (such as a viral infection) increase inflammatory markers that have been found to make us more tired. Studies have shown that sleep deprivation leads to decreased immune function, leading to increased frequency of infections and decreased response to immunizations such as the influenza vaccine. In contrast, sleep strengthens the immune response; most immune cells' response to challenges (e.g., viral infections) peak at night.¹¹ Adequate sleep appears to be between seven and eight hours per night. Too much sleep (greater than 10 hours), however, has been associated with increased risk of cardiovascular disease.¹²

Family, Friends, and Co-Workers

Interpersonal relationships are an extremely important aspect of our overall well-being. Indeed, their quality can impact how well our immune systems can protect us from disease. Studies have found that more negative or hostile behaviors during discussions focused on conflict, marital disruption, or the chronic stress of caring for a relative with Alzheimer's disease can suppress immune function. There is some evidence to suggest that *quality* interpersonal relationships can be protective against these types of immune changes.^{13,14} Even in provider-patient interactions, patients seem to recover more quickly from URIs when they feel cared for by their health care practitioner.¹⁵ While encouraging patients to foster healthy relationships and treating them with sincere compassion may not “cure” a cold, it can significantly influence how often and how long patients are impacted by symptoms.

Spirit and Soul

Individuals with higher levels of spiritual well-being, including participation in formal religion, seem to have better cardiovascular, neuroendocrine and immune function.^{16,17} Taking an appropriate spiritual history is a part of supporting overall health in all individuals, including optimizing immune function. More on this can be found in the **Spirit and Soul** educational overview.

Power of the Mind

Mindfulness meditation

Mindfulness meditation has been studied in relation to immune function. This type of meditation is a practice that fosters an ability to take a step back and notice our reactions to external stimuli, giving people a chance to pause and choose how they will respond. Some studies have shown regular mindfulness practices to lead to more robust antibody responses to the influenza vaccine.¹⁸ Others have failed to show this relationship, but they did correlate optimism, less anxiety, and lower perceived stress with high antibody levels following immunization.¹⁹ Mindfulness meditation has also been associated with decreased symptom severity in the common cold.²⁰

Resources and an introduction to a variety of centering practices including meditation and centering prayer can be found

at: http://www.fammed.wisc.edu/sites/default/files//webfm-uploads/documents/outreach/im/module_meditation_patient.pdf.²¹

Guided imagery

Guided imagery is a technique used by trained professionals to help patients relax and focus on images associated with personal issues they are confronting. It may include interactive, objective guidance to encourage patients to find solutions to problems by exploring their existing inner resources. There has been some preliminary evidence that

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guided imagery in children used to address stress and encourage relaxation may reduce the duration of symptoms due to upper respiratory tract infections, including colds.²²

Dietary Supplements

Andrographis and Siberian ginseng

Andrographis (*Andrographis paniculata*) is native to Asia with a long history of use in Indian medicine. Individual studies and systematic reviews support its role in treatment of URIs. A specific product called Kan Jang®, which combines andrographis with Siberian ginseng (*Eleutherococcus senticosus*), also seems to be superior to placebo, especially when started within 72 hours of symptom onset. There is preliminary evidence that andrographis, when taken prophylactically, can reduce the risk of developing a URI by 50% after two months of continuous treatment. This herb is generally well tolerated. It can, however, cause gastrointestinal distress, urticaria, fatigue, and headache. In high doses, it may cause transient elevation of liver enzymes.^{1,23}

Dosing regimens have been as follows:

- For treating the common cold: A combination of a specific andrographis extract, standardized to contain 4-5.6 milligrams andrographolide, plus Siberian ginseng (Kan Jang, Swedish Herbal Institute) 400 milligrams three times daily
- For preventing the common cold: 200 milligrams daily for five days each week
- For relieving fever and sore throat in pharyngotonsillitis: 3-6 grams daily
- For influenza: A combination of a specific andrographis extract 178-266 milligrams, standardized to contain 4-5.6 milligrams andrographolide, plus Siberian ginseng 20-30 milligrams (the product studied was Kan Jang, from the Swedish Herbal Institute) three times daily for three to five days.²³

Astragalus (*Astragalus membranaceus*)

Astragalus is an important medicinal plant in traditional Chinese medicine that seems to have antiviral and immune boosting properties.¹ Although data is limited, there is some preliminary evidence that supports its efficacy in reducing the risk of catching the common cold.²⁴

Dosing:

- Tea: 3-6 tablespoons of dried, chopped root, simmered in 2-4 cups of water for 10-15 minutes.
- Capsule: 1-3 grams of dried, powdered root daily
- Tincture: 2-4 milliliters, three times daily

While astragalus is generally safe, it should not be used in an acute infection. Those with autoimmune diseases should consult with a clinician before use due to its immune boosting effects.¹⁰

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Echinacea (*Echinacea angustifolia*, *Echinacea pallida*, *Echinacea purpurea*)

There have been a plethora of studies and literature reviews around the efficacy of echinacea for the prevention and treatment of URIs. Overall, the data seems to support its role in decreasing the duration and symptom severity.¹ The best evidence appears to be for preparations containing *Echinacea purpurea* species and three specific commercial formulations. These are Echinaforce, made by Bioforce AG; EchinaGuard by Nature's Way; and Echinacin, by Madaus. The herb also seems to be most potent when taken as early as possible in the course of the illness and taken for 7-10 days.²⁵

Dosing:

- Tea: Steep 1-2 teaspoons of Echinacea leaf/flower in 1 cup boiling water, or boil 1 teaspoon of root in 1-2 cups of water for 10 minutes
- Tincture: when coming down with a cold, take either a tincture of Echinacea root or the expressed juice from fresh *E. purpurea* above-ground parts stabilized in alcohol. Every two hours, take 1-2 milliliters directly or diluted in water.
- Capsule: dose varies on product

Taken early in the onset of illness, echinacea shortens the duration of the illness by 1-2 days. Use with caution if a person is taking medications such as itraconazole, lovastatin, fexofenadine, or birth control pills due to potential inhibition of certain liver enzymes. Also use with caution in those with allergies to members of the Asteraceae (daisy) family.¹⁰

Elderberry (*Sambucus nigra*)

Clinical research shows that some elderberry extracts might reduce flu-like symptoms. Sambucol by Nature's Way at a dose of 15 milliliters (1 tablespoon) four times daily seems to reduce the symptoms and duration of influenza infection when given within 48 hours of symptoms. On average, this elderberry extract seems to reduce the duration of symptoms by 56%. Another study of elderberry lozenges (ViraBLOC by HerbalScience) taken at 175 milligrams four times daily for two days, started within 24 hours of initial symptoms, significantly improved flu-like symptoms compared to placebo.²⁶ Avoid use of unripe berries and other plant parts as they contain compounds that can cause nausea, vomiting, diarrhea, dizziness and confusion.¹⁰

American ginseng (*Panax quinquefolius*)

Ginseng is considered an adaptogenic herb—one that brings balance, homeostasis, and healing. Several trials have shown decrease in episodes of cold and flu and decreased duration and severity and symptoms with regular use of this herb. The specific product was an American ginseng extract called CVT-E002 (Cold-FX made by Afexa Life Sciences, Canada), taken at 200 milligrams twice daily over a three to four month period during influenza season.²⁷ For treatment of acute infection, ginseng at 100 milligrams twice daily for nine days has been used. Ginseng is generally well tolerated. The most common side effect is insomnia. It can also infrequently cause tachycardia, palpitations, and hypertension.¹

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Probiotics

Probiotics are live bacteria that are thought to support healthy gastrointestinal function. A recent Cochrane Review found that probiotics do indeed seem to decrease the chances of experiencing an acute URI and reduce antibiotic use.²⁸ Strains that appeared to be beneficial include *Lactobacillus rhamnosus* and *Lactobacillus GG* (in one study) and *Lactobacillus acidophilus* and *Bifidobacterium animalis*. The dose is 5 to 10 billion colony-forming units (CFUs) twice daily.¹

Bee propolis

Propolis is a resinous material from poplar and conifer buds used by bees for maintaining their hives. Many propolis preparations are contaminated with beehive by-products. There is some evidence that propolis might decrease the duration of cold symptoms by 2.5 times compared with placebo in patients with rhinovirus infection. The typical dose is typically 500 milligrams daily.²⁹

Oscillococcinum

Oscillococcinum is a homeopathic dilution of duck liver and heart extracts frequently used to prevent and treat infection with the influenza virus. While reviews of the studies show no evidence that it has a role in *prevention* of the flu, there is some preliminary evidence that it might reduce the duration of symptoms by a minimal amount (approximately 0.28 days).³⁰

Pelargonium (*Pelargonium sidoides*)/Umckaloabo

Pelargonium is a genus of flowering plants mostly native to southern Africa that have long been used medicinally in that part of the world. Studies have shown efficacy of a product called Umckaloabo for URI symptoms of cough, fatigue, phlegm production, and hoarseness. The product is available in alcohol-containing and alcohol-free formulations. Dosing can be followed according to the packaging. Allergic reactions have been reported, but the product generally seems to be safe.^{1,10}

Sinupret ®

Sinupret ® is an herbal combination product that has been found to have antiviral activity against several viruses known to cause the common cold.³¹ It contains gentian root (*Gentiana lutea*), primrose flower (*Primula veris*), sorrel herb (*Rumex acetosa*), European elder flower (*Sambucus nigra*), and European vervain (*Verbena officinalis*). The dose is one tablet three times daily for 7-14 days. It is to be avoided in pregnant and lactating women and children.³²

Licorice (*Glycyrrhiza glabra*)

The tissue-coating properties of licorice root give it utility in the symptomatic treatment of sore throats and coughs. Dosing is as follows:

- Lozenge: One lozenge every few hours for several days to soothe inflamed tonsils and throats

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- Tea: For nagging cough, especially when associated with URI causing nasal drip, boil 1-2 teaspoons of chopped licorice root in 1 cup water for 10 minutes. Strain, cool and take half cup three to four times daily for up to seven days.

The doses above are typically safe. However, the higher doses and long term use typically needed to treat gastritis or heartburn can cause hypertension and electrolyte imbalances if the deglycyrrhizinated (DGL) form of licorice is not used.¹⁰

Sage

Sage mouthwashes and gargles have been approved for use against sore throat in Germany by the German Commission E.³³ For a sore throat, steep 1 teaspoon chopped sage in 1 cup water for 10 minutes. Strain and drink or use as a gargle (+/- salt).¹⁰

Thyme

The culinary herb thyme has antispasmodic and expectorant activities which allow it to calm coughs and help clear bronchial mucus. One to two teaspoons of dried leaves and flowers can be steeped in 1 cup of hot water and taken three times daily. Adding honey can increase the expectorant and antitussive properties. Covering the tea while steeping can help prevent important volatile oils from evaporating.¹⁰

Thyme Cough Syrup

- 2 Tbsp dried thyme (or 4 Tbsp fresh)
- 1 teaspoon lemon juice
- 1 cup water
- 1/2 cup organic honey
- Pour 1 cup of near-boiling water over thyme and steep for 10 minutes, covered. Strain and add honey and lemon juice. Refrigerate for up to one week. For children 18 months and older, give 1 tablespoon as needed. For those who don't like the flavor of thyme they can substitute fennel seed and prepare it the same way. Simmer the seeds gently on low heat for 15 minutes and then strain.

Eucalyptus (*Eucalyptus globulus*)

Eucalyptus as an essential oil has a menthol-like effect that can relieve chest and sinus congestion. Consider recommending the following:

- Bring large saucepan of water to a boil and pour into heat-proof bowl.
- Add two drops of eucalyptus oil, two drops lavender oil, and two drops tea tree oil.
- While keeping eyes closed, cover head and bowl with a towel and inhale vapors for three minutes.¹⁰
- Eucalyptus can also be used in a bath. Add six to seven drops in a full tub or one drop massaged under the collar bones while in the shower.

Other Interventions

Nasal Irrigation

Nasal irrigation with saline solutions is one of the most effective treatments for chronic rhinosinusitis, and it empowers patients in that they are able to treat themselves without the need for physician input.¹ An instructional handout can be found at the following link, including a comment on water

quality: <http://www.fammed.wisc.edu/sites/default/files//webfm-uploads/documents/research/nasalirrigationinstructions.pdf>.³⁴ While saline is frequently quite sufficient, at times the addition of one drop of eucalyptus oil or use of Alkalol (a product that can be found at most major drug store chains) in the saline solution offers a menthol-like intensity that can increase its decongestant effect. These both can be quite intense and patients should be warned about that if it is suggested.

Whole Health: Change the Conversation Website

Interested in learning more about Whole Health?
Browse our website for information on personal and professional care.

<http://projects.hsl.wisc.edu/SERVICE/index.php>

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References

1. Rakel D. *Integrative Medicine*. 3rd ed. Philadelphia: Elsevier Saunders; 2012.
2. Walsh NP, Gleeson M, Shephard RJ, et al. Position statement. Part one: Immune function and exercise. *Exerc Immunol Rev*. 2011;17:6-63.
3. Nieman DC. Exercise, upper respiratory tract infection, and the immune system. *Med Sci Sports Exerc*. 1994;26(2):128-139.
4. Common cold. 2014; Natural Standard: The Authority on Integrative Medicine website Available at: <https://naturalmedicines-therapeuticresearch-com.ezproxy.library.wisc.edu/databases/medical-conditions/c/common-cold.aspx>. Accessed November 4, 2014.
5. Meydani SN, Erickson KL. Nutrients as regulators of immune function: Introduction. *FASEB J*. 2001;15(14):2555.
6. Afacan NJ, Fjell CD, Hancock RE. A systems biology approach to nutritional immunology - focus on innate immunity. *Mol Aspects Med*. 2012;33(1):14-25.
7. Vitamin C. Natural Medicines Comprehensive Database website. Available at: <http://naturaldatabase.therapeuticresearch.com/nd/Search.aspx?cs=&s=ND&pt=9&Product=Vitamin+C>. Accessed June 28, 2014.

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8. Zinc. Natural Medicines Comprehensive Database website. Available at: <http://naturaldatabase.therapeuticresearch.com/nd/Search.aspx?cs=&s=ND&pt=9&Product=zinc>. Accessed June 22, 2014.
9. Oduwole O, Meremikwu MM, Oyo-Ita A, Udoh EE. Honey for acute cough in children. *Cochrane Database Syst Rev*. 2012;3:Cd007094.
10. Johnson RL, Foster S, National Geographic Society. *National Geographic Guide to Medicinal Herbs: The World's Most Effective Healing Plants*. Washington, D.C.: National Geographic; 2012.
11. Gamaldo CE, Shaikh AK, McArthur JC. The sleep-immunity relationship. *Neurol Clin*. 2012;30(4):1313-1343.
12. Ganz FD. Sleep and immune function. *Crit Care Nurse*. 2012;32(2):e19-25.
13. Kiecolt-Glaser JK, Malarkey WB, Chee M, et al. Negative behavior during marital conflict is associated with immunological down-regulation. *Psychosom Med*. 1993;55(5):395-409.
14. Kennedy S, Kiecolt-Glaser JK, Glaser R. Immunological consequences of acute and chronic stressors: mediating role of interpersonal relationships. *Br J Med Psychol*. 1988;61 (Pt 1):77-85.
15. Rakel DP, Hoeft TJ, Barrett BP, Chewning BA, Craig BM, Niu M. Practitioner empathy and the duration of the common cold. *Fam Med*. 2009;41(7):494-501.
16. Seeman TE, Dubin LF, Seeman M. Religiosity/spirituality and health. A critical review of the evidence for biological pathways. *Am Psychol*. 2003;58(1):53-63.
17. Townsend M, Kladder V, Ayele H, Mulligan T. Systematic review of clinical trials examining the effects of religion on health. *South Med J*. 2002;95(12):1429-1434.
18. Davidson RJ, Kabat-Zinn J, Schumacher J, et al. Alterations in brain and immune function produced by mindfulness meditation. *Psychosom Med*. 2003;65(4):564-570.
19. Hayney MS, Coe CL, Muller D, et al. Age and psychological influences on immune responses to trivalent inactivated influenza vaccine in the meditation or exercise for preventing acute respiratory infection (MEPARI) trial. *Hum Vaccin Immunother*. 2014;10(1):83-91.
20. Barrett B, Hayney MS, Muller D, et al. Meditation or exercise for preventing acute respiratory infection: a randomized controlled trial. *Ann Fam Med*. 2012;10(4):337-346.
21. Fortney L. Meditation for Health and Happiness. 2007; revised 2013; University of Wisconsin Integrative Medicine, Department of Family Medicine. Available at: http://www.fammed.wisc.edu/sites/default/files/webfm-uploads/documents/outreach/im/module_meditation_patient.pdf. Accessed September 18, 2014.
22. Guided Imagery. Natural Standard website. Available at: <https://naturalmedicines.therapeuticresearch.com/databases/health-wellness/g/guided-imagery/bottom-line.aspx>. Accessed June 22, 2014.
23. Kan Jang. Natural Medicines Comprehensive Database website. Available at: <http://naturaldatabase.therapeuticresearch.com/nd/Search.aspx?cs=&s=ND&pt=103&id=3008&fs=ND&searchid=48370180>. Accessed June 22, 2014.
24. Astragalus. Natural Medicines Comprehensive Database website. Available at: <http://naturaldatabase.therapeuticresearch.com/nd/Search.aspx?cs=&s=ND&pt=100&id=963&fs=ND&searchid=48370180>. Accessed June 22, 2014.
25. Echinacea. Natural Medicines Comprehensive Database website. Available at: <http://naturaldatabase.therapeuticresearch.com/nd/Search.aspx?cs=&s=ND&pt=100&id=981&fs=ND&searchid=48370180>. Accessed June 22, 2014.
26. ViraBLOC. Natural Medicines Comprehensive Database website. Available at: <http://naturaldatabase.therapeuticresearch.com/nd/Search.aspx?cs=&s=ND&pt=103&id=55070&fs=ND&searchid=48336247>. Accessed June 28, 2014.

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27. American ginseng. Natural Medicines Comprehensive Database website. Available at: <http://naturaldatabase.therapeuticresearch.com/nd/Search.aspx?cs=&s=ND&pt=100&id=967&fs=ND&searchid=48370180>. Accessed June 22, 2014.
28. Hao Q, Lu Z, Dong BR, Huang CQ, Wu T. Probiotics for preventing acute upper respiratory tract infections. *Cochrane Database Syst Rev*. 2011(9):Cd006895.
29. Bee propolis. Natural Medicines Comprehensive Database website. Available at: <http://naturaldatabase.therapeuticresearch.com/nd/Search.aspx?cs=&s=ND&pt=100&id=390&fs=ND&searchid=48370180>. Accessed June 22, 2014.
30. Oscilloccinum. Natural Medicines Comprehensive Database website. Available at: <http://naturaldatabase.therapeuticresearch.com/nd/Search.aspx?cs=&s=ND&pt=100&id=1080&fs=ND&searchid=48370180>. Accessed June 22, 2014.
31. Glatthaar-Saalmuller B, Rauchhaus U, Rode S, Haunschild J, Saalmuller A. Antiviral activity in vitro of two preparations of the herbal medicinal product Sinupret(R) against viruses causing respiratory infections. *Phytomedicine*. 2011;19(1):1-7.
32. Sinupret. Sinupret website. Available at: <http://sinupret.co.za/>. Accessed November 4, 2014.
33. Sage. Natural Standard website. Available at: <https://naturalmedicines.therapeuticresearch.com/databases/food,-herbs-supplements/s/sage/professional.aspx>. Accessed June 22, 2014.
34. University of Wisconsin Department of Family Medicine Nasal Irrigation Instructions. University of Wisconsin Integrative Medicine, Department of Family Medicine website. Available at: <http://www.fammed.wisc.edu/sites/default/files//webfm-uploads/documents/research/nasalirrigationinstructions.pdf>. Accessed September 16, 2014.