

Herbal Assistance During the Winter Immune Season



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PROFESSIONAL RESOURCES

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Planning Ahead for the Winter Immune Season

As health-care professionals, we need to plan ahead for the immune season so that we are ready when our patients face challenges. There are so many things we can do to support the immune system. While we might consider single herbs for specific concerns, there are plenty of lifestyle changes and healthy habits that we can recommend additionally to help keep our patients—and ourselves—healthy.

In the late summer and early fall, these simple things can help ensure our immune systems are as healthy as they can possibly be. While many might seem like second nature to us as health-care professionals, they are good reminders to maintain healthy habits.

Eat well now, rather than waiting until we are sick and trying to catch up. If you start with a poor diet that is lacking in anti-inflammatories and antioxidants, it is more difficult to keep the immune system in good shape. Once we are sick, there are some things that can be done nutritionally, but it makes more sense to start now.

Getting the right amount and type of exercise is important. Doing no exercise is a problem in terms of immune function, but overexercising is also a problem for the body's defenses, as elevated cortisol impairs immune function.

Sleep enough, and make sure it is restful. If you are not sleeping properly, it is harder to keep the immune system in good shape. During sleep, our immune system is the most efficient at cleaning up our inflammatory conditions and any bacteria and viruses we have been exposed to during the day.

Shut down the brain chatter. Stress management is a vital part of immune system health. If we are under constant stress, it is extremely difficult to keep our immune system in good shape.

During cold and flu season, some basic common sense can help. Basic hygiene, such as keeping your hands away from your mouth and eyes, is vital. If you work in an office where you share keyboards and phones, use alcohol wipes rather than antibacterial wipes to lower bacterial content of these items and decrease the spread of germs.

Support overall gut health. The vast majority of our immune function is associated with our gut. It is a matter of making sure our microbiome is appropriate. This requires we ingest probiotics, in the form of fermented foods and drinks. Prebiotic foods are those carbohydrates that are not processed but used in the gut to keep our good bacteria happy.

Eating for Immune Boosting

One of the most important ways we can improve our immune health through diet is by increasing our consumption of our omega-3 fatty acids. These reduce interleukin-1 and TNF

alpha, both of which will make the immune system not be able to function appropriately if they are out of regulation. Consuming fish oils is the simplest way to integrate omega-3 fatty acids, as they contain the active forms, EPA and DHA. Krill oil is another source of omega-3s, but the krill is generally not harvested sustainably. Vegans and vegetarians can get DHA and occasionally EPA from algae sources. This is the most sustainable source of omega-3s, as the process does not kill the algae.

Plant-based sources of omega-3s, including flax and hempseed, contain the precursors rather than the active forms. The precursors do not convert to DHA and EPA very efficiently, as we convert only about 30% of what we consume; this makes plant-based omega-3s healthy but very inefficient sources.

In addition, eating to decrease glycemic load can boost the immune system. This means consuming fewer sweets and carbohydrates, and, in some cases, fruit. When the glycemic load is off balance, you can have increases in some of the interleukins and other inflammatory cytokines. Eating a diet that reduces your glycemic load will reduce IL-1, IL-6 and TNF alpha.

Exercise

Exercise is a great way to keep glucose and insulin balanced. Within reason, the more we exercise, the more we force our body to pay attention to the glucose; it improves insulin metabolism. Encourage your patients to exercise enough to lead to weight loss if they are overweight. Losing weight presumably leads to a reduction in adipose tissue, which therefore lowers inflammation.

Sometimes exercise can lower cortisol, the main stress hormone. Abnormalities in this hormone can lead to fairly significant dysfunction in the immune system. Lowering cortisol will elevate both pro- and anti-inflammatory cytokines necessary for normal immune function.

You do have to be careful, as too much exercise can occasionally give the body the message that there is a major stress going on, which can put cortisol into overdrive. That can increase inflammation and, in the long run, increase body fat because cortisol is rising and impacting insulin.

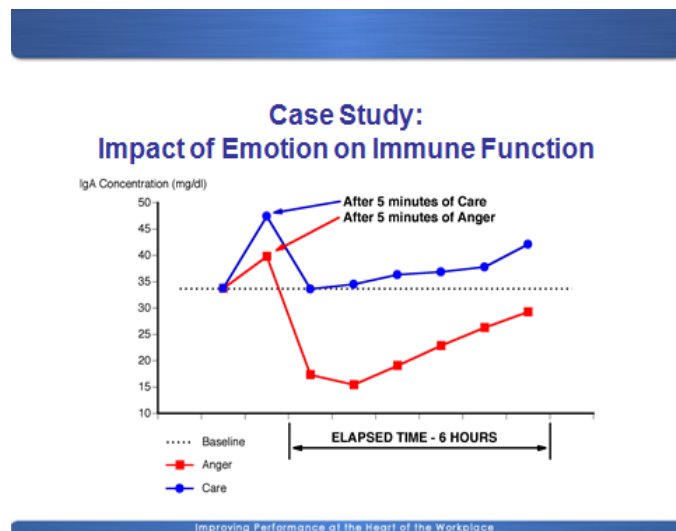
Take, for example, a 30-year-old female patient who works as a personal trainer and does competitive Crossfit. She was working so hard and producing so much cortisol that she was putting on a lot of fat despite the fact that she was burning a tremendous amount of calories. She started to get sick and experienced some gynecological problems. We had to have a discussion about backing off, which was extremely difficult for her to hear.

Shutting Down the Brain Chatter

With regards to the immune system, this is a very important aspect to consider. There have been some significant studies that looked at silencing the left brain/brain chatter through meditation. Most of us are busy people, and when you are busy, you learn to stay a few steps ahead by relying on brain chatter or multitasking. This means that even when you are physically relaxed, your brain is probably still engaged. By meditating and shutting that down, it has been shown to reduce IL-1, IL-6 and TNF alpha, all of which help with immune function and balance.

Shifting Emotions

There is some interesting research from the Institute of HeartMath on shifting your emotional state and how that affects immune function. Researchers studied the differences in a group of people when some experienced five minutes of anger and the rest experienced five minutes of positive emotion.



Part of the group saw one film intended to induce anger; the others saw five minutes of uplifting emotions. Researchers then tracked their salivary IgA levels periodically for the next six hours. As you can see in the graph at left, the subjects were affected for more than six hours by only five minutes of strong emotion. Any strong emotion will cause an initial rise in IgA. In the anger group, whose peak was not as high as the other group's, they experienced a plummeting of their IgA levels. Six hours later, they

were not yet back to baseline.¹

In the people who were uplifted, they saw a larger rise, a return to the baseline and a gradual shift back up. Six hours later, they were still higher than baseline.

In the middle of winter season, when you are surrounded by sick people, I tell my patients to do their best not to get irritated when someone cuts you off in traffic on your way to work. Those five minutes of getting mad means that your immune function is impaired for the bulk of your workday. That always gets their attention.

¹ Rein, Glen, Atkinson, Mike and McCraty, Rollin. The Physiological and Psychological Effects of Compassion and Anger. Journal of Advancement in Medicine. 1995; 8(2): 87-105.

One Concept of Immune Function and Its Organization

Next, we will briefly examine the organization and function of the immune system. There are surface and nonspecific immune responses. This includes physical barrier (skin) breaks.

If you were to cut your skin, it would activate kinins, which are peptides that are produced and act at the site of an inflammation or injury, and pro-inflammatory cytokines (e.g., IL-1, IL-6, TNF alpha, IL-8). It also then stimulates the secretory system, which includes stimulation and production of phagocytes, monocytes, neutrophils and macrophages.

The internal and specific immune response is all cell-mediated as well as humoral. This is where the antibodies are produced, as well as the T cells (Th1, T helper, T suppressor, T cytotoxic and lymphokines) and cytokines.

With the specific immune response, you get the humoral response (B cells and antibodies), and this is referred to as the Th2.

There is also what could be considered the Endocrine Immune Response. While the endocrine system is technically not part of the immune system, it does have an impact upon it.

Finally, there is what I refer to as our Immune Reservoir, which is our general ability to have a functioning immune system.

Herbs that can be used with the surface and nonspecific response include Echinacea and Yarrow, as well as demulcents.

Internal or specific cell-mediated responses can be impacted by herbs such as Reishi mushrooms, Honeysuckle and Garlic.

There are two aspects to the humoral response. To stimulate activity, you can use Echinacea or Elderberry; to reduce excess activity, opt for Scutellaria, Turmeric, Bupleurum and the group of herbs called immune amphoteric.

With regards to the Endocrine Immune Response, the HPA axis has a direct effect on the immune system, even though it is not a part of it. For support of the endocrine response, we can use adaptogens and nervines.

While the Immune Reservoir doesn't exist *per se*, this is simply referring to the overall ability to mount an immune response. Support for this category would include the immune potentiators: the mushrooms Chaga, Ganoderma and Grifola, as well as Astragalus.

Other appropriate herbs include immune amphoteric, which normalize immune response; alteratives, which increase resistance by improving eliminatory function and circulation; and lymphatic tonics, which improve lymphatic circulation and drainage.

Echinacea

Echinacea seems to work best for respiratory illnesses to reduce duration and severity of symptoms.

Mechanism of Action

Echinacea works by stimulating production of IL-6, TNF, IL-12 and NO from macrophages, as demonstrated in vitro. It also initiates a signaling cascade within macrophages through both a TLR4-dependent and -independent mechanisms, involving communication signals including ERK, p38 and JNK, and ultimately the activation of NF-kappa B, a strong immune regulator.² Not every study has proven efficacy with Echinacea. In reviewing the studies that had negative findings, you will notice one of three errors: the dosing was incorrect, the timing was inappropriate or the wrong parts of the plant were used.

Dosing

The ways that you can dose Echinacea vary, but they matter a great deal. This is not an herb that can be taken once or twice daily to achieve efficacy. Inappropriate dosing of tinctures is, in my experience, the main reason why people find it doesn't work for them. In tinctures (1:2.25), dosage should be 40-60 drops every 2-3 hours. For the dry herb and root, you will need 2-3 grams daily in divided doses. With a liquid extract (1:2), the dosage should be 3-10 mL daily. *Echinacea purpurea* juice should be dosed at 6-9 mL daily.

Choose the form that is most convenient for you and your patient. What matters most is that it is used at the very beginning of symptoms. If you start it several days into an immune challenge, it is probably not going to be as effective.

Honeysuckle (*Lonicera japonica*)

Honeysuckle works on the internal specific part of the immune system.

In Traditional Chinese Medicine, it is used in conjunction with other herbs to clear what is called blood heat (infections), including high fevers from strep throat, pneumonia, sinusitis and bronchitis.

² Sullivan AM1, Laba JG, Moore JA, Lee TD. Immunopharmacol Immunotoxicol. 2008;30(3):553-74

Mechanism of Action

Honeysuckle is often used in combination with Forsythia, and it appears to activate host defense system as well as directly inhibit virus proliferation.³ Not only are you boosting the immune system, but you are stopping the virus from proliferating, which means the duration of the respiratory infection will be much shorter. Honeysuckle might also increase neutrophil activity and increase phagocytosis, according to research on cell culture lines.⁴ Honeysuckle has been used for thousands of years in TCM, so the question is not whether it is working but how it is working.

Dosing

With a Honeysuckle tincture (1:4), the appropriate dosing is 30-40 drops qid.

Forsythia (*Forsythia suspensa*)

Forsythia appears to be antibacterial, antiviral and anti-inflammatory, with antioxidant activity. It also is an immune regulator.

In Chinese medicine, it is said to remove toxic heat (infections) in the blood and respiratory system.

Mechanism of Action

In influenza, colds, viral pneumonia, bronchitis and sinusitis, Forsythia appears to be antiviral.⁵ In studies in China, Forsythia was successfully used with Licorice, Houttuynia and Honeysuckle to treat SARS.⁶

Dosing

For a tincture (1:4 or 1:5), use 15-30 drops tid.

For a tea (decoction), use 1-2 dried seedpods in 8 ounces water. Decoct for 10 minutes then steep 15-20 minutes. Take up to 2 cups daily.

You can use a combination of tincture and tea.

Andrographis (*Andrographis paniculata*)

Andrographis works on both internal and humoral stimulatory action. It is antiviral and antibacterial, and it is effective for influenza. It works well even when taken later in an immune

³ Integr Biol (Camb), 2013, Feb; 5(2):351-71

⁴ Natural Medicines Database

⁵ J Ethnopharmacol, 2006, Sep 19:107(2):205-10

⁶ J Med Plants Res, 2010;4(14):1455-8

challenge. If someone does not start on Echinacea fast enough, Andrographis can work even after two or three days.

Mechanism of Action

Andrographis is anti-inflammatory and antipyretic. It also is an immunostimulant.⁷

Dosing

The dosing depends on the form available. However, it is an extremely bitter herb, so tea is not recommended. In a tincture (1:4), take 20-40 drops qid. Adults can take 2-3 grams daily, which is 4-6mLs of a 1:2 extract. For an acute infection, use 6 grams (or more) daily or up to 12mls daily. I recommend taking it every couple of hours for the first 12 hours, then backing off. By increasing the dosage initially, it tends to work faster.

Combine Andrographis with warming herbs such as Ginger, Cinnamon and Astragalus, which can also help mask the bitterness.

In children, the dose is .5-1 gram daily, in .5–2 mLs extract. You will always need to mix it with Ginger or Cinnamon for children, due to the bitter taste. For an acute infection, use 2 grams daily and 4 mLs of a 1:2 extract.

Black Elderberry (*Sambucus nigra*)

This is a very nice herb that is often overlooked as a cold, flu or sniffles treatment. Black Elderberry is well-known to be antiviral, and it increases inflammatory and anti-inflammatory cytokines. There are significant studies showing faster recovery from influenza when Black Elderberry is used. Syrups are the most common form, and they are simple to make at home.

Mechanism of Action

We know that Black Elderberry's mechanism of action is to block viral attachment to a host cell, as shown in cell culture lines. It does not kill a virus, but it does block proliferation. It also has been shown to increase inflammatory cytokines (IL-1, IL-6, IL-8 and TNF alpha), which are necessary to activate anti-viral activity. It also increases anti-inflammatory cytokines such as IL-10 so we do not overdo the immune response.⁸

Dosing

In a tincture (1:1.15), the dosage is 60-90 drops qid. Also historically it was used in syrups, jams, cordials and wines, which all work well. This is a great way to integrate Black Elderberry into daily life as a preventative herb.

⁷ E Ernst, *Planta Med*, 2004; 70; 294-298.

⁸ *Eur. Cytokine Netw.*, 2001 Apr.-June;12(2): 290-6.

Black Elderberry syrups tend to be standardized to 30-38 percent Elderberry. In liquid form, it is dosed at one tablespoonful (15 mL) three times daily; in powdered extracts, the dosage is 500 mg (capsule) 2-3 times daily for 3-4 days. Take for at least three days for acute viral infections.

Turmeric (*Curcuma longa*)

Turmeric can do so many things for the immune system. Here we address only a few of the modes of action. Turmeric does have internal or humoral activity. It helps modulate the immune system by decreasing excess humoral activity. It has anti-inflammatory, antioxidant, antibacterial and antitumor properties.

Mechanism of Action

Turmeric has many modes of action—upwards of 300 activities have been ascribed to it.⁹ It inhibits neutrophil function, lymphocyte activity, NF-kB and others.¹⁰

Dosing

Turmeric can be used as treatment or prevention. As flu season approaches, it is a good idea to integrate more Turmeric into your food. In tinctures (1:2), the dosage is 40-60 drops qid. For general use, take 1.5-7.5 mg of Curcumin daily in 3-4 divided doses. As a tea, 1-1.5g of dried root may be steeped in 150 mL of water for 15 minutes, taken 2-3x daily. (Tea works better as prevention rather than treatment.) As an antioxidant, take two 500 mg oral doses daily for three months. Absorption is enhanced by addition of Black Pepper, as Turmeric alone is not absorbed well.

Curcumin is one chemical found in Turmeric, but there are many other compounds within the rhizome that have activity. It is probably better to use the whole rhizome, not simply Curcumin.

Reishi (*Ganoderma lucidum*)

The medicinal mushroom Reishi has adaptogenic properties. It is an immune potentiator, has anti-inflammatory and antioxidant activity and is an “immune amphoteric.” Also, Reishi is effective for allergies to modulate the allergic response.

Mechanism of Action

Reishi has been shown to stabilize mast cells and reduce histamine response. It improves innate regulatory capacity, and it stimulates TNF alpha, IL-1, IL-6, Th1 and T lymphocytes.¹¹ Reishi is also a nerve.

⁹ Mol Nutr Food Res, 2013, 57, 1529-42.

¹⁰ Adv Pharmacol Sci, 7pp dx.doi.org/10.1155/2013/805756.

¹¹ Nutr Cancer, 2005;53(1):11-7.

Dosing

Reishi mushrooms are difficult to eat, as they are quite tough. However, you can add them to soup or make a broth with them. The dosage for a tincture (1:5) is 80-100 drops, 4-6x daily. For a decoction (or broth), use 1-2 oz dried mushroom to 32 oz water. Decoct 2-4 hours at a low heat and consume up to 4 cups daily. (This is better as a prevention rather than a treatment.) For a liquid extract (1:5), use 30mLs/day. For a dried powder, use 6-12 g, and with a concentrated extract, use .5-1g/day.

Astragalus (*Astragalus membranaceus*)

Astragalus is an immune potentiator and immune amphoteric. It is immunosuppressive for cancer and has been used for immune excess as well (allergies). In Chinese medicine, it enhances the *wei qi*, which suppresses sweating and helps fight external infections of the lungs. Astragalus prevents but does not really treat acute viral and bacterial infections. During flu season, I have patients use it for prevention.

Mechanism of Action

Astragalus has been shown to potentiate IL-2 and monocyte activity.¹² It also enhances NK (natural killer) cell activity and modulates TNF alpha.^{13,14}

Dosing

The dosing depends on the preparation. For a tincture (1:5), use 40-80 drops tid. In a decoction, use 2 tablespoons dried root to 12 oz water, and let it decoct for quite a while. Consume up to 3 cups per day. For the dry root, use 10-30 grams dry root or add it to a soup, if you prefer to use herbs as part of your food.

Adaptogens and Nervines

Adaptogens and nervines also can be used to support immune health.

Ashwagandha is a common adaptogen that helps the body's ability to calm the HPA axis, which, when stable, supports the body's immune function. It can be used alone or with any combination of adaptogens, including:

- Holy Basil
- Rhodiola
- American and Panax Ginseng

¹² Clin Nephrol. 1999 Nov;52(5):333-4

¹³ J Clin Lab Immunol 1988;26:183-7

¹⁴ American Herbal Pharmacopoeia. 1999;1:1-25

The nervines Lemon Balm and Milky Oats can be used to keep the HPA axis more stable, which will enhance overall immune function.

Immune Potentiators

Immune potentiators, which include the aforementioned Reishi, simply are the group of substances that allow you to have appropriate immune potential. They have a general, almost tonic like effect on the immune system. These include Maitake, Licorice, Eleutherococcus and Cordyceps. These can all be used for prevention and as part of a treatment protocol.

Alteratives

Alteratives can be considered to improve immune function simply because they assist with elimination.¹⁵ Consider how the immune system works: If it has killed off a bacteria or virus that has invaded, the body then needs to process those. Adding alteratives can make sure these products (and the inflammatory breakdown products) proceed smoothly. You can use Hoxsey's therapy, which includes Barberry, Buckthorn bark, Burdock root, Cascara sagrada, Licorice root, Poke root, Prickly Ash, Red Clover blossoms, and Stillingia root in a water base with potassium iodide.

These are not absolutely necessary in every case, but if a patient gets multiple colds every winter, adding an alterative can help with immune function. It also is important to use an alterative or lymphatic tonic in those who have no more symptoms but still have enlarged lymph nodes. While it does not happen in all cases, adding a lymphatic tonic when it does happen can be helpful.

Lymphatic Tonics

Lymphatic tonics include Red Clover, Cleavers, Poke root, Burdock, Figwort and Violet.

In conclusion, there are a number of herbal approaches to immune support during the winter months. In conjunction with a healthy lifestyle, good diet and regular exercise, as well as stress management, herbs can provide both preventative support and acute assistance in the presence of immune challenges.

¹⁵ Hoxsey (as published in 1956)

About the Author:

Wendy Warner, MD, ABIHM, is board-certified in obstetrics and gynecology as well as in integrative holistic medicine. She attended medical school at the University of Tennessee, Memphis, and completed her residency in obstetrics and gynecology at Temple University Hospital in Philadelphia, where she was chief resident.

She has also been the chair of the department of OB/GYN at two hospitals in suburban Philadelphia and was the medical director of the Holistic Medicine Center at St. Mary Medical Center in Langhorne, Pennsylvania. She is the founder and director of Medicine in Balance, LLC, in suburban Philadelphia, where she provides integrative holistic women's health services, as well as integrative medicine consultations for women, men and teens.

She is a nationally known lecturer and teacher, as well as a past president of the American Board of Integrative Holistic Medicine. Dr. Warner has been on the board of directors of ABIHM for more than a decade, and has helped the organization certify thousands of physicians in integrative holistic medicine.

Dr. Warner is frequently sought out as a thought leader by the press and has been quoted in *Ladies Home Journal*, *Woman's Day* and other popular magazines. She has appeared on the *Dr. Oz Show*, where she discussed a functional medicine approach to menopausal management.