

## An Integrative Approach to Allergies

### Introduction

The phrase “allergies” encompasses a tremendous range of symptoms, from life-threatening anaphylaxis to mild seasonal allergic rhinitis. Other manifestations of the allergic response include eczema, reactive airway disease/asthma, diarrhea, and hives. Anaphylaxis requires strict allergen avoidance and emergent medical attention when there is an exposure, but non-life-threatening reactions and sensitivities can be addressed in a variety of ways. Allergen avoidance and paying attention to exercise and nutrition patterns can have a significant impact on symptoms as well.<sup>1</sup> Many over-the-counter and prescription medications such as antihistamines (diphenhydramine, loratadine, fexofenadine, cetirizine), leukotriene modifiers (montelukast), nasal steroids (fluticasone, mometasone), and mast cell stabilizers (cromolyn) are available to treat symptoms. Some individuals do not tolerate these medications, some may benefit from adjunctive treatments, and some may benefit from addressing their sensitivities from a broader perspective. The following focuses on treating allergic symptoms using an Integrative Health approach.

### Physical Activity

As with nearly every health concern, it appears that moderate, regular exercise (more than intense exercise) can reduce inflammation and improve symptoms.<sup>2,3</sup> A recommendation of 30-40 minutes most days of the week at an intensity that allows the individual to talk but not sing is often recommended.

### Surroundings

There are a few aspects of the physical environment to consider in relationship to allergy. Starting in infancy and early childhood, it seems exposure to allergens may help the immune system mature in a way that is protective from allergic disorders. Lack of or decreased exposure (e.g., increased use of antibacterial soaps and hand sanitizer) may actually increase vulnerability to allergic reactions such as asthma, eczema, and allergic rhinitis; this is the basis for the so-called “hygiene hypothesis.” For example, cat ownership may prevent development of asthma in atopic individuals, and dog ownership protects against the development of allergic asthma.<sup>4</sup>

As we grow, we are continually exposed to environmental pollutants, including chemicals used in manufacturing furniture, toys, paints, varnishes, carpeting, cleaning supplies, and clothing. Increasing evidence has linked air pollution with the development of allergies and asthma. Pollutants seem to affect the balance between antioxidant pathways and airway inflammation.<sup>5</sup> It makes sense, then, to decrease the burden on our antioxidant pathways while supporting their optimal function. (See the Nutrition section below).

Information on decreasing exposure to pollutants and chemicals can be found on the website of the [Environmental Working Group](#). This resource contains a few very informative and easy to

use “Consumer Guides” for products such as sunscreens, produce, seafood, cosmetics, cleaning supplies, etc.

If allergies have developed, avoidance of the offending allergens can improve symptoms. Suggestions may include the following:

- Avoid outdoor activities during relevant pollen seasons. Use of air conditioning during these times may be helpful as well.
- Reduce humidity in the home to less than 50% helps stave off mold and mildew.
- Patients with allergies to dust and/or pets should thoroughly wash bed linens in hot water and remove carpets and pets. They should also encase pillows, mattresses, and box springs with hypoallergenic covering.
- Clean ducts in the living spaces.
- Eliminate cockroaches.

These steps are likely to decrease or eliminate need for pharmacotherapy.<sup>4</sup>

## Nutrition

### Anti-Inflammatory Diet

Allergies are an overreaction of the immune system. Therefore, optimizing immune function has the potential to affect the inflammation component of allergic reactions. Nutrition may be the single most important factor in optimizing immune function and controlling inflammation in the body, because it can have a positive or negative impact depending on dietary patterns.

The balance between omega-6 and omega-3 polyunsaturated fatty acids (PUFAs) in our diets is of particular importance. The same enzymes in the body metabolize both types of PUFAs, but the omega-6 fats promote inflammation, while omega-3 fats promote wound healing and resolution of inflammation.<sup>6</sup> The ideal ratio of intake of omega-6 and omega-3 fats seems to be around 2:1, but the standard American diet contains a ratio of something like 10:1 to 25:1; the balances is strongly tipped toward inflammation. The level of inhibition of some inflammatory markers by dietary modification can rival that of pharmacologic agents. In general, an anti-inflammatory diet includes the following:<sup>7</sup>

- Cold water fish, flax, and nuts
- A wide variety of fruits and vegetables of various deep colors
- Whole grains
- Anti-inflammatory spices such as turmeric, ginger, rosemary, oregano, and cayenne

An anti-inflammatory diet avoids or limits: <sup>7</sup>

- Foods high in trans- and omega-6 fats (processed and red meats; dairy; partially hydrogenated oils; corn, cottonseed, grapeseed, peanut, and soy oils)
- Refined carbohydrates (white breads, instant or white rice, rice and corn cereals, crackers, cookies, cake, etc.)
- Soda and juices

When dietary intake of omega-3 fatty acids is unclear or limited, supplementation may be of benefit. Supplementation with omega-3 polyunsaturated fatty acids such as eicosapentaenoic acid (EPA) and/or docosahexaenoic acid (DHA) during pregnancy and early infant feeding (in breastmilk or enriched formulas) has been shown to reduce markers of allergy (such as IgE levels) and allergy risk later on in children.

For more information, go to [“Choosing a Diet”](#) Integrative Health tool.

## Gut Health

Gut health deserves attention with regard to immunity as well. The gut is the major interface between the external world and the body’s internal environment. It has evolved over time to house an important mix of healthy bacteria. It is this intestinal microenvironment that is suspected to have a huge regulatory impact on our immune function, not only protecting us from illness-causing microbes but also preventing the over-activity of the immune system seen in autoimmune diseases such as food allergies. What it takes to keep the gut healthy may vary based on the individual. However, there are a few key components that seem common to everyone:

1. Avoidance of the excess inflammation which can be caused by foods and medications that irritate the gut, as well as by one’s lacking effective mechanisms to deal with life’s stresses
2. A healthy mucus layer which lubricates the intestinal lining and feeds the healthy bacteria that reside there
3. An appropriate mix of healthy bacteria

For more information, go to [“Promoting a Healthy Microbiome with Food and Probiotics”](#) Integrative Health tool.

## Breastfeeding

Special mention should be made of breastfeeding. Children who have been breastfed are less likely to develop allergies.<sup>8</sup> Both the American Academy of Family Physicians and the American Academy of Pediatrics recommend “exclusive breastfeeding for the first 6 months of life, followed by breastfeeding in combination with the introduction of complementary foods until at least 12 months of life and continuation of breastfeeding for as long as mutually desired.”<sup>9,10</sup> Supporting breastfeeding is an important aspect of protecting a child’s immune system. It should be noted, however, that in some infants with functional gastrointestinal issues or eczema, maternal avoidance of allergens such as cow’s milk, eggs, nuts, and peanuts may be helpful.<sup>8</sup> Additional allergens to consider avoiding in the mother’s diet include soy, fish/seafood, and wheat. Additional information on dietary allergen avoidance is offered below.

## Bioflavonoids—Quercetin AND Vitamin E

There are specific foods and food components that have been studied for their protective effect on allergy symptoms as well. Bioflavonoids are plant pigments which give colors to fruits and vegetables. Quercetin is a bioflavonoid that is found in a number of dietary sources, including apples, buckwheat, onions, and citrus fruits.<sup>7</sup> It has been found to inhibit parts of the inflammatory cascade that lead to the allergic response, and it can have an impact that is

almost twice as potent as cromolyn sodium. Quercetin acts via the same mechanism (i.e., stabilizes mast cells).<sup>4</sup> It has been proposed that adequate intake of vitamin E and flavonoids such as quercetin can help prevent negative effects of reactive oxygen species that results from peroxidation of fatty acids (i.e., they are important antioxidants).<sup>11</sup> This offers more support for a balanced, anti-inflammatory diet rich in various sources of vitamin E (nuts and seeds, green leafy vegetables), flavonoids (multicolored fruits and vegetables), and omega-3 fatty acids (fatty, cold-water fish and fortified foods).

In addition to being obtained in the diet through eating a wide variety of different-colored fruits and vegetables, quercetin can be taken as a supplement. The usual dose is 400-600 mg of a coated tablet 1-3 times daily between meals. To help its absorption, it is frequently sold in products where it is blended with bromelain and vitamin C. Quercetin should be taken before exposure to allergy triggers, if possible, and it is usually recommended that it be taken throughout an individual's allergy season. It can be taken year-round for those who need it, and it is typically very well tolerated.<sup>7</sup> If taken as a supplement to address nut allergy, look for products containing mixed tocopherols.

## Elimination Diets

While avoidance of foods or food additives that lead to gastrointestinal or anaphylactic allergic reactions is standard of care (e.g., peanuts in peanut-allergic patients), elimination of certain foods for less severe allergic reactions can be helpful as well.<sup>7(pp268-274)</sup> While the results of these elimination diets are quite individual, there are a handful of foods that tend to be most commonly problematic: dairy, egg, soy, peanuts, fish/seafood, and wheat. However, it is important to eliminate foods with caution; it can be easy to foster a fear of food that unnecessarily limits otherwise healthy foods. The clear symptoms one is attempting to address should be documented and then re-evaluated after the elimination. There are also times when problematic foods can be reinstated in the diet in limited or even pre-elimination amounts without issue. For more information, check out the "[Elimination Diets](#)" Integrative Health tool.

## Recharge

Sleep and allergies reciprocally influence each other. Lack of sleep is known to influence immune function.<sup>12</sup> Similarly, allergic symptoms can interfere with sleep, especially if nasal congestion or cough is part of the list of symptoms. Effectively treating nasal congestion has been found to decrease disturbed sleep and its adverse effects on quality of life.<sup>13</sup> Therefore, address allergies to improve sleep, and sleep to improve allergies.

## Family, Friends, and Co-Workers

Allergic symptoms can be loud (sneezing, coughing, sniffing) and negatively affect household activities (e.g., cleaning more often if dust allergies, avoidance of going outside during peak pollen season, parents closely monitoring children with allergies and asthma, etc.). Because families function as units, the impact of the symptoms on the individual affected as well as the family members who live with and care for them is important to address. For example, the mother of a sick child may develop anxious or depressive symptoms as a reaction to the health concerns of her child, and this may impact the function of the household, whether there is awareness of this or not.<sup>14</sup> Evaluating the impact of allergic patients' symptoms on their ability to participate in activities with friends and family and assessing how their limitations and overall

health impact those that care for and work with them may be an important part of supporting the well-being of these individuals.

## Mind and Emotions

Stress seems to have the potential to increase allergic responses in anxious patients,<sup>15</sup> and individuals with persistent emotional stress seem to have more frequent allergy flares. More flares can result in worsening mood.<sup>16</sup> Those with asthma and atopic dermatitis seem to have higher levels of stress, exhaustion, and anxiety as well as more of a tendency toward depression-related health worries.<sup>17</sup> Whether it is the stress that worsens allergies or allergies that lead to more stress can be difficult to discern. However, some interesting studies in the 1960s showed that when patients with asthma were exposed to saline mist but told it was it was potent allergens, severe symptoms were exhibited. However, the symptoms greatly improved with the use of a saline inhaler if they were told it was a beta agonist. Wheal-and-flare reactions to skin testing for dust mites were found to be less pronounced in those viewing a humorous video compared to a weather report. Self-hypnosis has been found to decrease symptoms of allergic rhinitis.<sup>7(pp 268-274)</sup> Because state of mind can have an impact on immune function, encouraging joyful and/or centering practices, stress reduction programs, and work with a licensed therapist when needed have the potential to improve quality of life in those with allergies.

## Dietary Supplements

**Note:** 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.

### Butterbur (*Petasites hybridus*)

There is relatively strong scientific evidence that butterbur is comparable in effectiveness for allergic rhinitis to medications such as fexofenadine and cetirizine. It should be used with caution in those with allergies to it or to other plants from the Asteraceae/Compositae family, such as ragweed, marigolds, daisies, and chrysanthemums.<sup>18</sup> Butterbur contains pyrrolizidine alkaloids (PA) which can be toxic to the liver. Using extracts that are PA free appear to be quite safe—only products listed as such should be recommended. The dose is typically 50-75 mg twice daily of an extract that contains 7.5 mg of petasin and isopetasin. For children ages 10-12, the dose is 25 gm twice daily.<sup>19</sup>

### Stinging Nettle (*Urtica dioica*)

Stinging nettle has been used historically used for allergic rhinitis. Clinical studies are few, but in vitro the herb appears to have a number of anti-inflammatory effects.<sup>7(pp268-274)</sup>

- **Dose:**
  - Tea: 1 tsp dried nettle leaves in 1 cup boiling water for 2-5 minutes. Strain.
  - Decoction: Boil 5 gm of chopped, dried root in 2 cups water for 10 minutes. Strain, cool, and drink throughout the day.
  - Capsule: Take 300-800 mg daily of dried, powdered root extract.
  - Tincture: Take 1-3 tsp daily of an alcohol-based liquid extract of the root.<sup>19</sup>

## Black Seed (*Nigella sativa*)

As a food, black seed is a flavoring or spice and is often eaten with honey. Some small but promising studies have shown benefit in subjective symptoms of allergic rhinitis and atopic dermatitis.<sup>20,21</sup> It is generally well tolerated but should not be used in pregnant women, given its potential for inducing uterine contractions and possible contraceptive activity. In terms of dosing, a specific product (Immerfit, Phyt-Immun) containing 500 mg per capsule of black seed oil to get a daily dose of 40-80 mg/kg for 4-8 weeks has been used. Capsules containing 0.5mL of black seed oil once daily for 1 month have also been used.<sup>22</sup>

## Food Allergy Herbal Formula-2 (Chinese Herbal Medicine)

Food Allergy Herbal Formula-2 (FAHF2) is combination of Chinese herbs including *Prunus mume* (Wu Mei), *Zanthoxylum schinifolium* (Chuan-Jiao), *Angelica sinensis* (Dang-Gui), *Zingiber officinale* (Gan-Jiang), *Cinnamomum cassia* (Gui-Zhi), *Phellodendron chinense* (Huang-Bai), *Coptis chinensis* (Huang-Lian), *Panax ginseng* (Hong-Shen) and *Ganoderma lucidum* (Ling-Zhi). It has been shown to have potential beneficial impact on frequency, sensitivity and severity of food allergies in some murine models and in *in vitro* studies.<sup>23,24</sup> While more study is needed, it may be an option for individuals at risk for accidental exposures to known allergens.

## Spirulina

Spirulina is the dried biomass of *Arthrospira platensis*, a photosynthetic bacterium. It lives in both fresh and salt water.” This supplement has been shown to inhibit histamine release from mast cells, in addition to having other immune modulating effects.<sup>4</sup> Clinical studies have shown significant improvement in allergic rhinitis symptom scores with doses of 2 gm daily for 6 months.<sup>25</sup>

## Prebiotics and Probiotics

Prebiotics are food ingredients that help support good bacteria in the gut and are generally not digested until they reach the large colon; examples include fructo-oligosaccharides, lactulose, lactitol and gluco-oligosaccharides. There is some low quality but promising results that show supplementation of prebiotics in infancy may lead to decreased risk of wheezing and asthma later in life.<sup>26</sup>

Probiotics are live organisms that have the potential to confer health benefits to the host. As mentioned above, the gut barrier and a healthy composition of gut bacteria seem quite important for immune health. Probiotic tablets are thought to help support the correct microbiome composition. There is some evidence that prolonged use of the probiotics *Bifidobacterium longum* and *Lactobacillus rhamnosus* can reduce risk of developing asthma and allergic rhinitis in young children.<sup>27</sup> Use of probiotic *Enterococcus faecalis* bacteria in sinus inflammation may reduce symptom flares and the need for antibiotics<sup>28</sup> *Saccharomyces cerevisiae* is an oral yeast-derived compound that has been found to decrease nasal congestion and rhinorrhea and improve quality of life.<sup>4</sup> There is more clear evidence for the benefit of probiotics in the third trimester of pregnancy, in breastfeeding women and in infants for decreasing the risk of eczema.<sup>26</sup> In children with cow’s milk protein allergy (which usually resolves with age), probiotic species such as *Lactobacillus rhamnosus GG*, *Lactobacillus casei* and *Bifidobacterium breve* may expedite tolerance to cow’s milk protein.<sup>29</sup> Larger scale studies

are still needed to more fully understand which probiotics should be used, how long they should be used, and which patients will derive benefits. Nevertheless, it is becoming increasingly clear that the intestinal microbiome plays a significant role in health.

## Complementary and Integrative Health Approaches

### Nasal Irrigation

There is good scientific evidence supporting the use of nasal irrigation for allergies and chronic sinusitis.<sup>30</sup> Follow the link for an instructional handout on [Medicine Nasal Irrigation](#), including a comment on water quality.<sup>30</sup> While saline is frequently quite sufficient, at times the addition of 1 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 that if either is recommended. Use this product with caution, and start with low concentrations, increasing as tolerated.

### Nasal Breathing

A study in India found that a specific nasal breathing technique improved the efficacy of nasal steroids for allergic rhinitis. The technique was described as "...deep inspiration followed by expiration through one nostril with the other nostril blocked by finger with humming or production of sound 'hmm'... or 'om.'" The exercise was repeated five times each nostril" after use of a nasal steroid.<sup>31</sup>

### Acupuncture

While study findings have been mixed, there have been several large studies showing improved quality of life and decreased rhinitis and nasal symptoms in those with allergic rhinitis.<sup>4</sup> The combination of acupuncture with Chinese herbs (important elements of Traditional Chinese Medicine) has shown significant effectiveness for allergic rhinitis and, impressively, for asthma and food allergies (including peanut allergy) in animal models.<sup>7</sup> Acupuncture does seem to reduce itching in patients with atopic dermatitis.<sup>23</sup> More research is clearly needed and the experience of the provider is very likely to play a role.

## Resource Links

- [Environmental Working Group](https://www.ewg.org/): <https://www.ewg.org/>
- [Choosing a Diet](https://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/tool-choosing-a-diet.pdf): <https://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/tool-choosing-a-diet.pdf>
- [Promoting a Healthy Microbiome with Food and Probiotics](https://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/tool-promoting-healthy-microbiome.pdf): <https://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/tool-promoting-healthy-microbiome.pdf>
- [Elimination Diets](https://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/tool-elimination-diets.pdf): <https://www.fammed.wisc.edu/files/webfm-uploads/documents/outreach/im/tool-elimination-diets.pdf>
- [Passport to Whole Health](https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Passport_to_WholeHealth_FY2020_508.pdf): [https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Passport\\_to\\_WholeHealth\\_FY2020\\_508.pdf](https://www.va.gov/WHOLEHEALTHLIBRARY/docs/Passport_to_WholeHealth_FY2020_508.pdf)
- [Medicine Nasal Irrigation](https://www.fammed.wisc.edu/files/webfm-uploads/documents/research/nasalirrigationinstructions.pdf): <https://www.fammed.wisc.edu/files/webfm-uploads/documents/research/nasalirrigationinstructions.pdf>



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