

Allergies and Asthma

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Part I: Allergies and the inflammatory process

Inflammation is similar throughout the human physiology. Although it is a complex, living process in and of itself, we can understand it better by focusing on its location, the microscopic tissue changes that take place during inflammation, and the more holistic patterns that occur system-wide.

LOCATION. The easiest way to witness inflammation in action is on the skin, in response to a cut, or in a joint, in response to an injury or sprain: the skin swells, reddens, and becomes warm and painful. Very similar events are taking place in the eyes, noses, and respiratory passages of those who suffer with allergies. All of these inflammatory reactions are local, or remain in the tissues initially involved. Additionally, there can be more system-wide allergies and sensitivities that can result in widespread reactions such as rashes, fever, and respiratory constriction. In the end, however, both local and systemic inflammatory reactions make use of the immune system as a whole, and thus to a certain extent always involve the whole physiology (which is why holistic approaches can be so successful if correctly formulated).

TISSUE CHANGES. During inflammation, the damage being inflicted on the tissue initiates a cascade of biochemical changes that ultimately have a key effect: tiny blood vessels (capillaries) in the local tissue begin to swell and leak fluid. This causes the redness, heat and swelling (all a result of increased blood flow). At the same time, immune cells are attracted to the area to protect the bloodstream and interior of the body from invasion by bacteria, viruses, or fungi. The immune system recognizes these pathogens by chemical “tags” on their outer surface, known as antigens. Immune cells then stimulate further inflammation, secrete chemicals that cause pain, and work at eliminating the antigen.

SYSTEMIC CHANGES. Inflammation doesn’t always have to come from a clearly “offending” substance or event (like a knife, a burn, a corrosive chemical, etc...). In fact, some people seem quite sensitive to substances that would not cause inflammation in others – and this is the definition of an “allergy”, isn’t it? Wheat is a great example, and so is ragweed pollen! Understanding what may predispose some to allergies is best done by taking a broad view of the human physiology, by centering on the idea of “toxic blood” or “dirty blood”. Although a bit vague, this concept is actually quite useful in getting an overview of systemic inflammation.

To understand “dirty blood”, think of our bloodstream as having a certain quota of “toxicity” which, when exceeded, causes symptoms of inflammation to appear. If you think of “toxins” as entering the body through the gut or through the lungs, you can begin to see what organ systems might be involved in protecting the blood (a deeper level) from these “toxins”: a functional

respiratory system will trap most harmful substances and remove them through the expectoration of mucus; a functional digestive system will sterilize food (unless it's horribly tainted...), digest many proteins, poisons, and other chemicals that can cause inflammation, and eliminate toxic waste quickly and effectively; a strong liver will metabolize chemicals absorbed from the gut, reduce their toxicity, and eliminate them through the bile; and, although not the most important in a discussion of allergies, the urinary system helps eliminate undesired substances from the blood. Weakness at any of these points can lead to an increase in "toxins" present in the blood. Finally, the immune system is responsible for the general level of sensitivity to the blood's "toxicity" (actually sensitivity to the presence of antigens): in effect, it sets the quota. Once the threshold is met, the same tissue changes discussed in the context of external surfaces take place internally: on the gut wall; on the heart and blood vessels; in the lungs and respiratory passages; in the eyes; in the joints; in the nervous system. Those who are allergic to external substances others aren't sensitive to may have either more "toxic" blood (from exposure to more toxins, or from weakness in a relevant organ system) or a lower quota.

The THERAPEUTIC GOALS are based on the previous discussion:

- Microscopic tissue changes are similar for all inflammatory patterns. Flavonoids (a class of chemicals found in plants; specifically, proanthocyanidins) are extremely helpful and well-proven in reversing those changes (reducing capillary engorgement and permeability, decreasing chemical signals that promote inflammation (like histamine) and increasing those that reduce inflammation (like nitric oxide). While most plants contain some flavonoids, some stand out as extremely helpful for allergies: goldenrod (*Solidago canadensis*), fresh stinging nettle (*Urtica dioica*), chocolate (*Theobroma cacao*), green tea (*Camellia spp.*). Additionally, there are plants that contain chemicals (usually powerful alkaloids) that directly constrict blood vessels and dilate the respiratory passages by stimulating the body's stress response. Thus, they are strong anti-allergic and anti-inflammatory aids for the respiratory system, but since they mostly mask the symptoms, they are best used only short-term or as part of a broader formula. Such plants include ephedra (*Ephedra sinica*) and coffee (*Coffea arabica*).
- If the gastrointestinal system is involved (inflammatory patterns follow the consumption of specific foods), or weak (bloating, burping, gas, abdominal cramping or spasms, constipation and/or diarrhea), use bitter herbs such as gentian (*Gentiana lutea*) root, dandelion (*Taraxacum officinale*) root; along with aromatic herbs like anise / star anise (*Pimpinella anisum/Illicium verum*) and fennel (*Foeniculum vulgare*) or angelica (*Angelica archangelica*).
- If the liver is sluggish (this may be more difficult to determine – but generally, it is never a bad idea to improve liver function; some signs include pale stools, gallbladder colic and strong abdominal pain after eating fatty, rich foods, and any history of liver disease or excessive consumption of drugs and/or alcohol), use bitters and cholagogues such as dandelion (*Taraxacum officinale*) root, medicinal mushrooms such as red reishi (*Ganoderma spp.*), and liver tonics such as milk thistle (*Silybum marianum*, also loaded with flavonoids) or schizandra (*Schizandra chinensis*).
- Adjusting immune function ("raising the threshold") should always be considered. To this end, use immune tonics, the best of which are the medicinal mushrooms: red reishi (*Ganoderma spp.*) and shiitake (*Lentinula spp.*) are good examples. During times when allergen exposure is low, you can also consider astragalus (*Astragalus membranaceus*) as an excellent immune tonic for the "off season".
- Systemic anti-inflammatory herbs can help as temporary adjuncts to the more direct therapies. Some examples are licorice (*Glycyrrhiza glabra*) and Jamaican dogwood (*Piscidia erythrina*).

Part II: Asthma

Asthma is an inflammatory process. It occurs in the passages that bring air into the lungs, and results in airway constriction, difficulty breathing, both of which can at times become very intense and may even lead to death. It is characterized by repeated “attacks”, which can become chronic and frequent. There are both external, allergic (“intrinsic”) causes such as chemicals, pollen, dust, mold, etc; and internal (“intrinsic”) causes, such as asthma that occurs upon exertion, or in response to anxiety and stress. Stress plays an interesting role in asthma: one would think that a classic “fight-or-flight” response would help open the lung’s passages (and indeed, in most individuals, it does!), but in some individuals who exhibit anxiety this can actually be a trigger for an inflammatory process that overwhelms any bronchiodilation that may be occurring as part of the stress response.

Most of the systemic interrelations discussed for allergies apply for asthma as well, and the idea of reducing the “toxicity” of the blood is still a useful one. The goal of preventing the asthmatic inflammation and treating it quickly if it does occur become even more important than when addressing allergies, however: this is because, as asthma attacks continue, the tissue of the bronchial passages begins to change, producing more mucus-secreting glands, recruiting more immune cells, and generally becoming much more sensitive and prone to constriction. Thus, a vicious cycle can set in which, if left unaddressed, can lead to more and more severe attacks of longer and longer duration (and possibly even death).

TREATMENT GOALS are divided into “emergency” measures, and long-term preventive treatment:

- In an emergency, strong stimulants are used to open the bronchial passages. Some examples are ephedra (*Ephedra sinica*) and coffee (*Coffea arabica*). Plants with alkaloids that suppress bronchial secretions are also useful in emergencies; the best example is jimson weed (*Datura stramonium*), which was smoked for asthmatic attacks (nowadays we use the tincture!). Aromatic inhalants such as eucalyptus (*Eucalyptus globulus*), rosemary (*Rosmarinus officinalis*) and anise / star anise (*Pimpinella anisum/Illicium verum*), in the form of essential oils, can be deeply inhaled through a cloth for relief in an emergency.
- As part of a long-term strategy, include herbs that serve as relaxants of smooth muscle (that’s what is squeezing the lung passages closed in an asthmatic attack), such as lobelia (*Lobelia inflata*).
- Rely on all of the herbs mentioned in the discussion on allergies, focusing on those rich in flavonoids and including those that pertain to specific weaknesses in relevant organ systems.
- Adjust the immune system using medicinal mushrooms, specifically red reishi (*Ganoderma spp.*), and herbal immune tonics, specifically baical skullcap root (*Scutellaria baicalensis*) and astragalus (*Astragalus membranaceus*).
- Use specific anti-inflammatories that have an affinity to the lungs. The best example is the balloonflower (*Platycodon grandiflorum*).
- Calm and soothe the nervous system, reducing anxiety and improving adrenal health. My favorite nervines and restoratives to use for asthmatic conditions are oats (*Avena sativa*) and ashwagandha (*Withania somnifera*). If a strong relaxant is required, kava-kava (*Piper methysticum*) is very nice and quite safe (though not in pregnancy).

Part III: Key herbs for asthma and allergies

Goldenrod (*Solidago canadensis*)

Flavonoid-rich, anti-inflammatory, anti-allergic for the upper respiratory system. Best taken as a tea: 3 TBS in one quart of hot water, steeped 30 minutes, daily. Safe.

Nettle (*Urtica dioica*)

Flavonoid-rich, diuretic, tonic, anti-allergic for the eyes and nose. Best taken by eating the fresh, wilted leaves daily; or taking a tincture made of the fresh leaves, ½ to 1 tsp. 2 or 3 times a day. Safe.

Chocolate (*Theobroma cacao*)

Most flavonoid-rich of all plants. Contains theophylline and small amounts of caffeine, both bronchodilators. Anti-asthmatic. Best taken as dark (70% or higher) chocolate, 2-4 oz. daily, or as hot cocoa made with 1 TBS of cocoa powder per 12 oz of hot water (or rice milk; beware of dairy as a potential antigenic trigger for asthma). Generally safe.

Ephedra (*Ephedra sinica*)

Source of ephedrine, a potent bronchodilator. Stimulant. Anti-allergic, anti-asthmatic. For allergies, take as a hot tea made with 1 TBS of twigs to 16 oz of water. For asthma, take 15 drops of a tincture, repeating after 5 minutes if necessary. It is important to start at this low dose first, until you know what the particular tincture's effect is (herbal preparations vary). CONTRAINDICATED IN PREGNANCY, HYPERTENSION, OR WITH OTHER STIMULANTS. SHORT TERM USE ONLY.

Star anise (*Illicium verum*)

Aromatic, digestive, expectorant, anti-asthmatic. Best used if there is also bloating in the GI tract, but good for asthma in any case. A strong tea can be brewed with 6 "stars" in 8 oz. of hot water, steeped covered for 20 minutes. Generally safe, but avoid during pregnancy.

Gentian (*Gentiana lutea*)

Bitter digestive, cholagogue, anti-allergic. This is probably our best bitter for allergies and sensitivities to environmental irritants. Best taken as a tincture, 15 to 30 drops right on the tongue 15 minutes before and/or 5 minutes after eating. CONTRAINDICATED FOR PEPTIC ULCERS, and best avoided during pregnancy.

Jimson weed (*Datura stramonium*)

Parasympatholytic, reduces bronchial secretions, anti-asthmatic. Can be smoked for emergencies, just one puff. Best taken as a tincture, 15 drops, repeating after 5 minutes if necessary. As with ephedra, the dose may need to be adjusted depending on the preparation. CONTRAINDICATED DURING PREGNANCY AND FOR INDIVIDUALS WITH MENTAL HEALTH CONCERNS OR HISTORY OF SUBSTANCE ABUSE.

Red Reishi (*Ganoderma spp.*)

Immunomodulant, anti-allergic, anti-cancer, liver protective. A medicinal mushroom traditionally prepared by boiling for long periods of time, can also be taken as an extract with a daily dose between 30 and 60 drops. Generally safe, but can be a bit drying to the upper respiratory passages if overdosed.

Lobelia (*Lobelia inflata*)

Antispasmodic, anti-asthmatic, relaxant, emetic (in high doses only). Best taken as an extract, and as part of a broader formula since it tastes so bad. An individual dose (whether alone or as part of a formula) should not exceed 10 to 15 drops. **CONTRAINDICATED IN PREGNANCY.**

Balloonflower (*Platycodon grandiflorum*)

Anti-inflammatory, relaxant, anti-spasmodic, anti-bacterial, anti-asthmatic, restorative, anti-ulcer. Best taken as an extract, 30 to 90 drops 2-3 times a day. **CONTRAINDICATED IN PREGNANCY.** May interact with alcohol and sedative-hypnotic herbs or medication, increasing their effects.

Astragalus (*Astragalus membranaceus*)

Immunomodulator, lung tonic. Helps reduce the incidence of viral and bacterial respiratory infections, which can contribute to and/or cause asthmatic attacks. Can be taken as a tea of the simmered root, 4 TBS of root simmered in 1 QT of water, covered, for at least 30 minutes and drunk in 1 day. Alternatively, an extract or tincture can be taken at a dose of 30 to 60 drops twice a day on an empty stomach. Safe.

Sample formulas:

For allergies with bloating after meals:

Gentian, 2 parts

Goldenrod, 3 parts

Red Reishi, 1 part

Take ½ to 1 tsp. twice daily before meals

For asthma with nervousness and anxiety, aggravated after eating pasta:

Lobelia, ½ part

Oats, 5 parts

Balloonflower, 3 parts

Star anise, 1 part

Gentian, 1 part

Take 1 tsp. 2 to 3 times daily before meals

Try eliminating wheat from the diet for 1 week and noting changes to the asthmatic pattern.

This formula is a long-term tonic and cannot replace a good emergency strategy. It should, however, decrease reliance on the emergency treatment(s) over time.