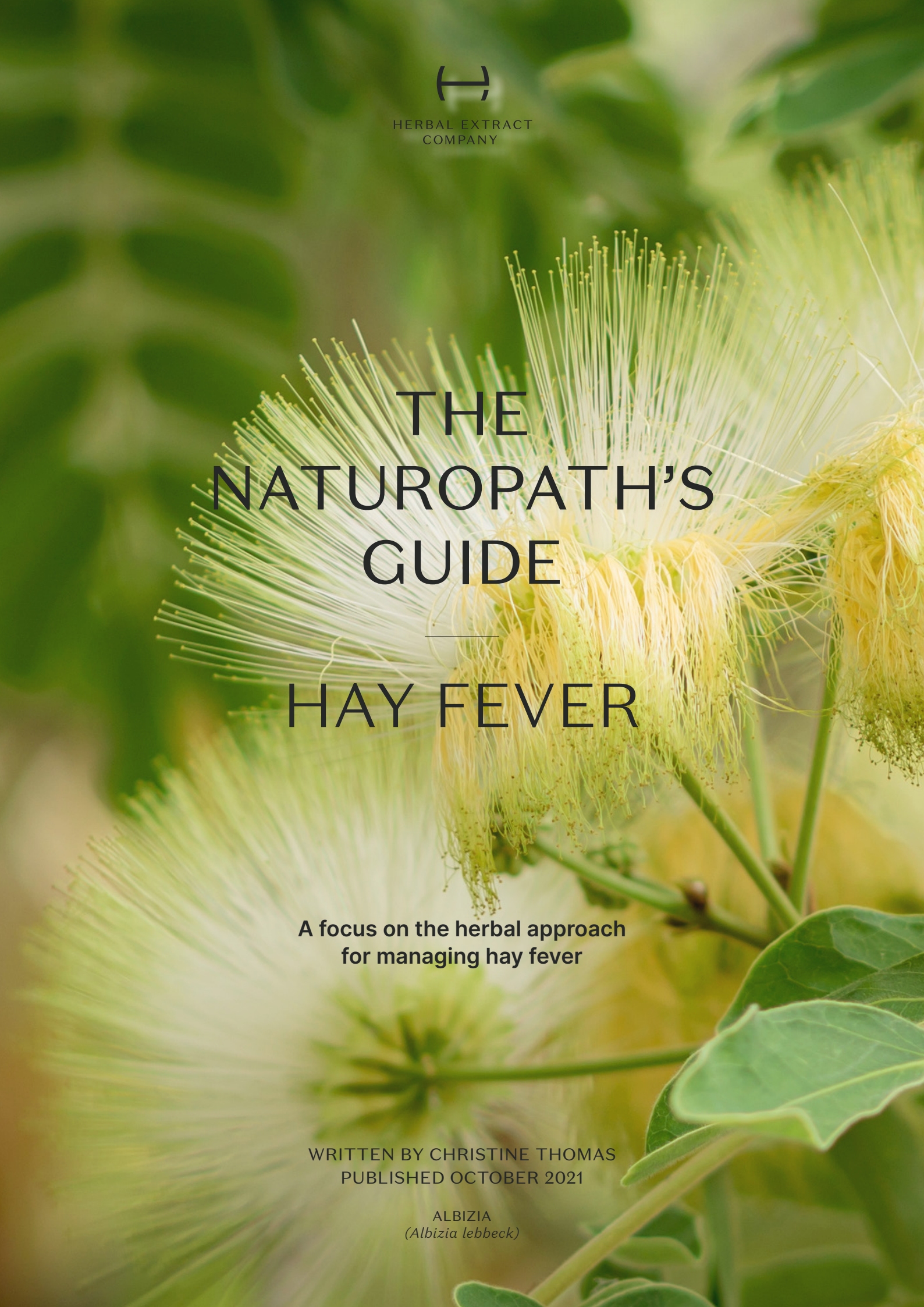

HERBAL EXTRACT COMPANY

THE NATUROPATH'S GUIDE

HAY FEVER

A focus on the herbal approach for managing hay fever

WRITTEN BY CHRISTINE THOMAS
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ALBIZIA
(Albizia lebbeck)

HAY FEVER

Hay fever is the common name for a condition called allergic rhinitis which means an allergy that affects the nose.

Hay fever is one of the most common allergic conditions affecting one in five people in Australia (more than 4.6 million people). Despite its moniker it is not caused by hay and does not result in fever. In fact the term hay fever takes its name from a popular idea in the 19th century that the smell of hay in the summer irritated the body.

Condition Overview

Hay fever is actually caused by an allergic reaction triggered when the nose and/or eyes come into contact with environmental allergens such as pollens, dust mite, moulds, animal dander and other similar inhaled allergens. The evidence suggests that hay fever did not exist, or was at least very uncommon, before the 1800s. The presence of pollutants in the air after the start of the industrial revolution may have played a part in its emergence. Furthermore, the alarming surge in the prevalence of allergy (hay fever, asthma, food allergies, hives, eczema and anaphylaxis) and autoimmune disease has been attributed to a so-called westernised lifestyle. This spawned the original hygiene hypothesis (that early exposure to germs helps a child's immune system develop resistance to infections) and the concept of allergies as not only genetic but also environmental diseases.

Hay fever is defined as an inflammatory disorder of the nasal mucosa induced by allergen exposure which triggers an immunoglobulin (Ig)E-mediated (antibody) response that causes inflammation driven by type 2 helper (Th2) cells. The initial defence response occurs within minutes of exposure to allergens and characteristically manifests degranulation (a type of secretion) of host mast cells. This releases mediators, with histamine being one of the primary mediators of hay fever. Histamine induces sneezing and stimulates mucous glands. Other immune mediators, such as leukotrienes and prostaglandins, are also implicated as they act on blood vessels to cause nasal congestion. Four to six hours after the initial response an influx of cytokines, such as interleukins (IL)-4 and IL-13, from mast cells occurs signifying the development of the late phase response. These cytokines, in turn, facilitate infiltration of eosinophils, T-lymphocytes and basophils into the nasal mucosa and produce nasal congestion. In simpler terms hay fever is initiated by the immune system identifying a harmless airborne substance as an invader and making antibodies to this substance. The next time this person comes in contact with the substance these antibodies signal the immune system to release defence chemicals such as histamine into the bloodstream which cause a reaction that leads to the signs and symptoms of hay fever.

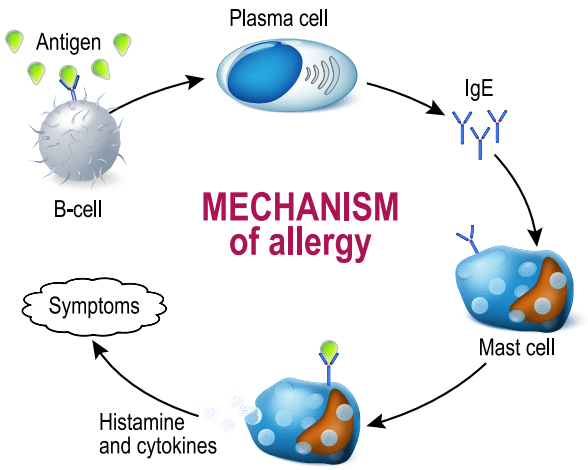
Hay fever can be classified as seasonal or perennial (year-round). Seasonal allergies usually occur during spring and autumn typically in response to outdoor

allergens like pollen. Occasionally mould spores can cause seasonal allergy.

Perennial hay fever causes symptoms similar to those of seasonal hay fever but the symptoms vary in severity often unpredictably throughout the year. The allergen in a year-round allergy may be house dust mite, feathers, animal dander or moulds.

Hay fever may also be classified by the duration and severity of symptoms which will help to guide the best treatment. Intermittent hay fever lasts for less than four days a week or less than four weeks. Anything over that is persistent hay fever. Within these categories it can be either mild or moderate to severe. Symptoms are classified as mild when quality of life is not affected. Symptoms are moderate to severe if patients have at least one or more of the following: abnormal sleep, impairment of daily activities, sport or leisure, abnormal work or school performance and troublesome symptoms.

There are several factors identified that may have a protective effect on the development of hay fever. The role of breastfeeding is often debated but it is still recommended due to its many other known benefits and no associated harms. There is no evidence that pet avoidance in childhood prevents hay fever however it is hypothesised that early pet exposure may induce immune tolerance. There is a growing interest in the "farm effect" on the development of allergies and a meta-analysis of eight studies showed a 40% lower risk in subjects who had lived on a farm during their first year of life which harks back to the hygiene hypothesis.



Common Symptoms

Some of these symptoms may be similar to those caused by infection (such as colds and flu) however allergy symptoms tend to persist unless they are treated correctly.

- The nose, roof of the mouth, back of the throat and eyes itch gradually or abruptly once the pollen season starts
- Watery, itchy, red eyes (allergic conjunctivitis)
- Sneezing
- Snoring at night
- Runny nose, nasal congestion, post nasal drip. This may block the eustachian tubes in the ears causing hearing problems particularly in children
- Headaches
- Coughing and wheezing
- Irritability, depression
- Loss of appetite
- Insomnia
- Fatigue
- Hives or other rashes
- Swollen, blue-coloured skin under the eyes (allergic shiners)

Risk Factors

History of Allergies in the Family

Hay fever has a significant genetic component. There is a greater risk if both parents are atopic than if one parent is atopic.

Having Other Allergies

The presence of hay fever is a significant risk factor for asthma and the coexistence of hay fever is associated with poor asthma control. Better control of hay fever has been shown to result in better asthma control in both adults and children. Untreated hay fever may also increase the risk of developing asthma. Similarly hay fever is the most common concomitant allergic disease associated with eczema. One suggested mechanism to explain the connection between common atopic disorders such as eczema, asthma and hay fever is atopic march, which proposes that the allergic disease progresses from atopic dermatitis to asthma and, subsequently, to allergic rhinitis (known as the

allergic triad). Hay fever is frequently associated with a secondary food allergy, also known as pollen food syndrome, which involves cross-reactivity in patients with pollen allergies who develop allergic symptoms to certain types of food, mostly fresh fruits, vegetables and nuts. It is a mild food allergy and has been associated with numerous airborne allergens. Patients with multiple food allergies are at increased risk of developing hay fever and asthma as compared to patients with a single food allergy.

Early Introduction of Foods or Formula

Studies in young children have shown a higher risk of hay fever in those with early introduction of foods or formula.

Heavy Exposure to Cigarette Smoking in the First Year of Life

Studies in young children have shown a higher risk of hay fever in those with heavy exposure to cigarette smoking in the first year of life.

Factors That May Contribute to Hay Fever Risk But Are Not Well Understood Include:

Vitamin D levels, obesity, exposure to cigarette smoke, increased total serum IgE, increased blood eosinophils (the hallmark of the allergic response), other environmental exposures common in urban settings and vaccinations. A 2017 study comparing chronic health problems in vaccinated and unvaccinated six to 12 year olds found that vaccinated children had significantly greater odds of having a diagnosed allergic condition compared to unvaccinated children (10.4% versus 0.4% for hay fever).

External Factors Which Can Trigger or Worsen Hay Fever Include:

Mites, domestic animal dander, insects, pollens and moulds, latex, flooring and upholstery, tobacco smoke, humidity, car exhaust including ozone, oxides of nitrogen and sulphur dioxide, aspirin and other non-steroidal anti-inflammatory drugs.

How To Get The Correct Diagnosis

Doctors confirm the diagnosis of hay fever based on symptoms and examination findings. Obtaining a thorough history is important including an evaluation of the nature, duration and frequency of symptoms, possible triggers, exacerbating factors, response to medications, comorbid conditions, family history of allergic diseases, suspected environmental and occupational exposures and effects on quality of life. They may also request blood allergy tests to identify specific allergen triggers and provide advice on allergen avoidance. A referral to a clinical immunology/allergy specialist may be required if symptoms remain uncontrolled.

Conventional Treatment & Prevention

Avoidance of triggers, especially in those with seasonal symptoms, is encouraged although it is not always practical such as in the case of allergy to pollens. Precautions can be taken to avoid dust mites, animal dander and upholstery. If removal of a pet from the home is not feasible isolating the pet to a single room in the house may be an option. It is important to note that it may take up to 20 weeks to completely eliminate cat dander from a home even after removal. It is also recommended to use allergen-impermeable bedding covers, wash sheets in hot water and use a vacuum cleaner with high-efficiency particulate air (HEPA) filters.

Similar to asthma management, medications for hay fever may be considered in terms of preventer treatment (such as topical intranasal corticosteroid spray) and reliever treatment (such as antihistamines). Non-drowsy antihistamines are available over the counter and provide temporary relief from mild symptoms only such as itching, sneezing and watery eyes. They are not effective for nasal blockage or congestion. When there is nasal blockage and congestion, or if less severe symptoms are persistent, then a preventative treatment approach is taken. Intranasal corticosteroid nasal sprays have a potent action on inflammation when used regularly and with careful attention to the way they are used. A combination of both these medications offers the combined advantages of both. Decongestant sprays and tablets should be used with caution. They unblock and dry the nose but the sprays should not be used for more than a few days as they can cause long term problems in the nose. The tablets can have stimulant side effects like tremors, trouble sleeping,

anxiety or an increase in blood pressure. People with high blood pressure should not take decongestant tablets. Natural products such as salt water nasal sprays or douches can also be effective in relieving symptoms.

Allergen immunotherapy, also known as desensitisation, reduces the severity of symptoms and/or the need for regular medications. This involves the administration of regular, gradually increasing amounts of environmental allergen extracts, by injections or sublingual tablets, sprays or drops (under the tongue). Treatment is usually for three to five years and is typically offered for people older than five years of age with severe hay fever. This is a long-term treatment that should be initiated by a clinical immunology/allergy specialist.

A doctor must distinguish perennial hay fever from recurring sinus infection (sinusitis) and growths inside the nose (nasal polyps). Sinusitis and nasal polyps can be complications of hay fever. Chronic sinusitis is often a concomitant presentation with hay fever or asthma. Suppressive treatment of hay fever is thought to lead to the development of chronic sinus inflammation. A recent study strongly linked chronic sinusitis to persistent hay fever and showed a significant association with heavy stress.

"The conception that antibodies, which should protect against disease, are also responsible for disease, sounds at first absurd."

Dr Clemens von Pirquet (1906), who coined the term allergy.

Baical Scullcap
(Scutellaria baicalensis)

INTERVENTION	Antiallergy	Anti-inflammatory	Immune support	Anticatarrhl, Mucolytic	Alterative, Liver herbs	Anxiolytic
Albizia	✓	✓				
Baical Scullcap	✓	✓	✓		✓	✓
Echinacea		✓	✓		✓	
Elder Flowers		✓		✓		
Eyebright		✓		✓		
Garlic		✓	✓		✓	
Golden Rod		✓		✓		
Horseradish				✓		
Ivy Leaf		✓		✓		
Nettle Leaf	✓				✓	
Perilla	✓	✓			✓	
Ribwort		✓		✓		

Natural Therapies For Treatment & Prevention

Natural therapies provide effective treatment options for hay fever sufferers. The aim is to reduce the body's allergic response, control the symptoms and remove the cause. The first step is to determine why a person's immune system has been aggravated and identify what has caused the reaction. A detailed history is important including dental hygiene (mouth breathing can dry up saliva, which protects against cavities and gum disease, so hydration is essential), allergies such as food, chemical, airborne and environmental, a full dietary review (digestive disorders and bowel dysbiosis may also play a role), recent vaccinations, potential occupational hazards, exposure to environmental hazards, headaches or migraines and depression, stress and other negative mental and emotional states which may lower the body's ability to fight infection. Once these are known the exposure to allergens can be reduced to lessen the impact of the allergens. This can also be done by reducing the immune response and improving the body's resistance. Symptom control is also important. For the allergic reaction to occur an allergen must penetrate deep into the nasal lining. If the mucous membranes are healthy this will not happen. This can be achieved by strengthening the tissues of the mucous membranes to restore proper function, and reduce excessive secretions, and supporting the liver function to help clear histamines. Seasonal rhinitis can be treated prophylactically for six weeks prior to the season.

A therapeutic approach could include these factors:

Diet

A nutrient dense, easy to digest wholefoods diet should be consumed to facilitate and support the body's own healing mechanisms.

Adequate Fluid Intake

This will help reduce inflammation and thin the mucous. Herbal teas and broths may further assist in draining mucous. The 'old wives' cure of chicken soup may not be such a myth. The inhalation of hot air (from hot water) is known to help clear nasal congestion and research has shown that hot chicken soup is more effective than hot water. The addition of aromatic spices and culinary herbs will also help to open up the nasal passages and clear

Echinacea
(*Echinacea* spp.)

secretions. As an additional benefit, eating the soup inhibits neutrophil migration, possibly helping to reduce symptoms in infection.

Check for Nutrient Deficiencies

Vitamin C deficiency is commonly seen as lowered immune function and high allergic response. Vitamin C is a potent natural antihistamine. Vitamin C rich foods include citrus fruits, cruciferous vegetables and capsicums. Increase the consumption of omega-3-fatty acids (e.g. cold-water fatty fish such as salmon and walnuts and flaxseeds) which has protective effects in inflammatory diseases. Bioflavonoids (especially quercetin) are useful for reducing hay fever. It can be found in leafy vegetables, broccoli, red onions, asparagus, capsicums, apples and grapes. Low zinc may also have an impact on susceptibility to hay fever. Foods high in zinc include red meat, shellfish, eggs, legumes (need to be soaked or heated to reduce phytates), seeds such as pumpkin and hemp and cashew nuts.

Probiotics/prebiotics: Include probiotics such as kefir and yogurt, and prebiotics in fermented foods, to assist gut health and immunity.

What to Avoid

Dietary Allergens

The diet can create a state of hypersensitivity and catarrh of the mucous membranes that predisposes people to hay fever. As a general rule whatever a person craves excessively, or eats in excess, may be a culprit. This may include dairy products, wheat, citrus fruits, eggs, soy, corn, peanuts and nuts, shellfish or other foods. If the person has an intolerance (or allergy) to a food it will promote the inflammatory cycle and thus perpetuate hay fever. Of the major food allergens, peanuts, milk and egg allergies significantly predispose individuals to the development of both hay fever and asthma.

Mucous Forming Foods

Dairy intolerance is common and can be triggered by products from cows, goats, sheep and other sources. Dairy is a mucous-producing food and overexposure can interfere with the body's natural mucous production. The body produces mucous when tissues become inflamed or irritated (mucous acts as a protective film). Try avoiding all mucous-producing foods (which also includes refined grains,

Perilla
(Perilla frutescens)

sugars and oils) for at least two months to see if symptoms improve prior to or during hay fever season.

The Usual Suspects

Refined carbohydrates (sugars and processed grains), preservatives, dehydrating alcohol and coffee and processed foods.

Lifestyle

Adequate Rest, Sleep and Stress Reduction

Practice sleep hygiene and stress reduction techniques such as mindfulness and meditation.

Exercise

Getting regular exercise and physical activity can help alleviate hay fever however take note of pollen levels before heading outside.

Heat Application

Local application of heat compresses on affected areas can be effective at alleviating the symptoms.

Inhalations (steam or chest liniment), Humidifiers

This can relieve congestion. Essential oils of thyme, chamomile, peppermint, tea tree, eucalyptus or lavender offer symptomatic relief.

Saline Washes

A number of trials demonstrate the positive benefits of nasal irrigation among people with hay fever providing a cheap, safe and acceptable alternative to intranasal steroids and antihistamines. A neti pot, spray or pump can be used to gently irrigate the nasal passages with warm saline which removes allergens and thins the mucous. Done daily this can aid with reducing bacterial overgrowth and preventing postnasal drip.

Avoid Triggers

Stay indoors when pollen counts are high, avoid exercising outdoors early in the morning, take showers immediately after being outside, keep the windows and doors shut as frequently as possible during allergy season, avoid smoking and passive smoking, keep the mouth and nose covered while performing yard work, try not to rake leaves or mow the lawn, bathe dogs at least twice a week to minimise dander, if dust mites are a concern remove carpeting from the bedroom and use air filtering vacuum cleaners.

Potential Treatment Plans

Seasonal hay fever	Albizia	Golden Rod	Echinacea	Nettle Leaf	Perilla
Perennial hay fever	Baical Scullcap	Ivy Leaf	Horseradish	Garlic	Golden Rod
Decongestant	Elder Flowers	Garlic	Horseradish	Golden Rod	Ribwort
Itchy, watery eyes	Elder Flowers	Eyebright	Golden Rod	Ribwort	Perilla

Desired Herbal Actions and Potential Herbs Include:

Antiallergy

To relieve allergy symptoms. Herbs such as albizia, baical scullcap, chamomile, nettle leaf, perilla.

Anti-inflammatory

Hay fever is characterised by inflammation. Reducing inflammation in mucosal tissue (as with conventional corticosteroid application) may also help to relieve congestion. Herbs such as albizia, baical scullcap, chamomile, echinacea, elder flowers, eyebright, garlic, ginger, golden rod, green tea, ivy leaf, maritime pine, perilla, ribwort, turmeric.

Immune Support

Boost immunity. In chronic diseases immune tonics will benefit. Herbs such as andrographis, astragalus, baical scullcap, echinacea, elderberry, garlic, ginger, hemidesmus.

Anticatarrhal, Mucolytics, Astringent

Nasal congestion is a common complaint from hay fever sufferers so reducing the formation of mucous, and thinning it, will assist. Herbs such as elder flowers, eyebright, fennel, fenugreek, garlic, golden rod, golden seal, horseradish, ivy leaf, peppermint, ribwort, sage.

Alteratives and Liver Herbs

To treat hay fever at a deeper level. Herbs such as baical scullcap, burdock, calendula, clivers, dandelion root, echinacea, garlic, gentian, green tea, perilla, poke root, red clover, St. Mary's thistle, yellow dock.

Anxiolytic, Nervine, Sedative, Adaptogen, Tonic

Stress can exacerbate hay fever. Supporting the stress response and the adrenal glands can help to minimise reactivity. Herbs such as andrographis, astragalus, atractylodes, bacopa, baical scullcap, chamomile, lemon balm, liquorice, rehmannia, reishi, rhodiola, schizandra, Siberian ginseng, withania.

Elder Flowers
(Sambucus nigra)

Herbal Support Could Include:

HERB NAME	DESCRIPTION	ACTIONS
Albizia *(Albizia lebbeck)* 	Albizia is Ayurveda's top antiallergy herb used to reduce symptoms such as runny nose, sneezing and coughing. In a recent in vivo study albizia alleviated nasal symptoms by inhibiting histamine signalling in sensitised rats through suppression of histamine receptors. Suppression of Th2-cytokine signalling by albizia also suggested that it could affect the histamine-cytokine network.	Antiallergic Anti-inflammatory
Baical Scullcap *(Scutellaria baicalensis)* 	Baical scullcap is one of the most widely used medicinal herbs for the treatment of inflammation. Preclinical research has shown it to be effective against IgE production. One study evaluated the efficacy of three different baical scullcap extracts (ethanol, acetone and ethyl acetate extract) against allergic reactions. The results revealed that the ethanol extract showed the most promising outcome among the three extracts.	Antiallergic Anti-inflammatory Hepatoprotective Immunostimulant Anxiolytic
Echinacea *(Echinacea purpurea)* 	Echinacea is one of the most common herbs used for the treatment of upper respiratory inflammation and allergy. It helps balance the overreactive immune response that triggers hay fever symptoms.	Immune Enhancing Immune Modulating Alterative Anti-inflammatory
Elder Flowers *(Sambucus nigra)* 	A key cooling herb for reducing nasal and sinus congestion. The German Commission E has approved elder flowers for catarrh.	Anticatarrhal Anti-inflammatory

Herbal Support Could Include: (Cont.)

HERB NAME	DESCRIPTION	ACTIONS
Eyebright *(Euphrasia officinalis)* 	Eyebright is an anticatarrhal herb for the upper respiratory tract particularly where there is profuse watery flow. As its name suggests it is also used for inflammation and infection in the eyes.	Anticatarrhal Anti-inflammatory Astringent Mucous Membrane Tonic
Garlic *(Allium sativum)* 	Garlic has traditionally been used for upper respiratory infections, including hay fever, to relieve congestion. It is useful for inflamed nasal passages.	Anti-inflammatory Immune Modulator Alterative
Golden Rod *(Solidago virgaurea)* 	Golden rod's astringent qualities mean it excels at tightening and toning tissue to stop excessive secretions such as excess mucous. It can completely eliminate the itchy red eyes, runny nose and excessive sneezing symptoms for many people. It also works well for cat dander allergies.	Anti-inflammatory Anticatarrhal Astringent
Horseradish *(Armoracia rusticana)* 	Well known for its pungent flavour horseradish is widely used in combination with other ingredients, such as garlic, in herbal decongestant formulations. Anecdotal evidence suggests that a mild, transient decongestant effect occurs. It is reputed to eliminate excessive catarrh from the respiratory tract.	Pungent Anticatarrhal

Herbal Support Could Include: (Cont.)

HERB NAME	DESCRIPTION	ACTIONS
Ivy Leaf *(Hedera helix)* 	Ivy leaf is especially useful for chronic catarrhs of the respiratory tract. It is beneficial when hay fever and asthma coexist.	Anti-inflammatory Mucolytic
Nettle Leaf (Urtica dioica) 	A traditional treatment for inflammation and allergy, nettle leaf is a natural antihistamine. Although the stinging hairs that run along the leaf can inject histamines into the skin and cause a reaction it paradoxically helps with allergies as well. In a randomised double-blind clinical trial 37 patients with the signs and symptoms of allergic rhinitis, and a positive skin prick test, took nettle leaf for one month. A significant improvement in clinical symptom severity and a statistically significant reduction in mean nasal smear eosinophil count was observed.	Antiallergic Alterative
Perilla *(Perilla frutescens)* 	Perilla is a minty Asian herb called shisho in Japanese cooking. For centuries Eastern herbalists have prized this potent leaf for its anti-allergy affects. Perilla is gaining international demand as recent research confirms its powerful anti-inflammatory actions. In a 21 day, randomised, double-blind, age matched, placebo-controlled parallel group study perilla was found to be an effective intervention for mild seasonal allergic rhinoconjunctivitis at least partly through inhibition of specific white blood cell infiltrating the nostrils.	Antiallergic Anti-inflammatory Hepatoprotective

Herbal Support Could Include: (Cont.)

HERB NAME	DESCRIPTION	ACTIONS
Ribwort *(Plantago lanceolata)* 	This hardy common weed, which is found growing on waysides everywhere, is the people's medicine. Ribwort can modulate an excessive histamine response from seasonal allergies. The combination of astringency, and soothing mucilage, makes ribwort ideal for healing irritated linings of the respiratory tracts and where there is excess mucous such as runny noses.	Anticatarrhal Astringent Anti-inflammatory

Conclusion

Hay fever is an irritating disease which can greatly interfere with a person's quality of life. However the good news is that hay fever is relatively easy to treat with herbs which can provide symptomatic relief as well as working on the underlying condition to prevent it happening in the future.

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