

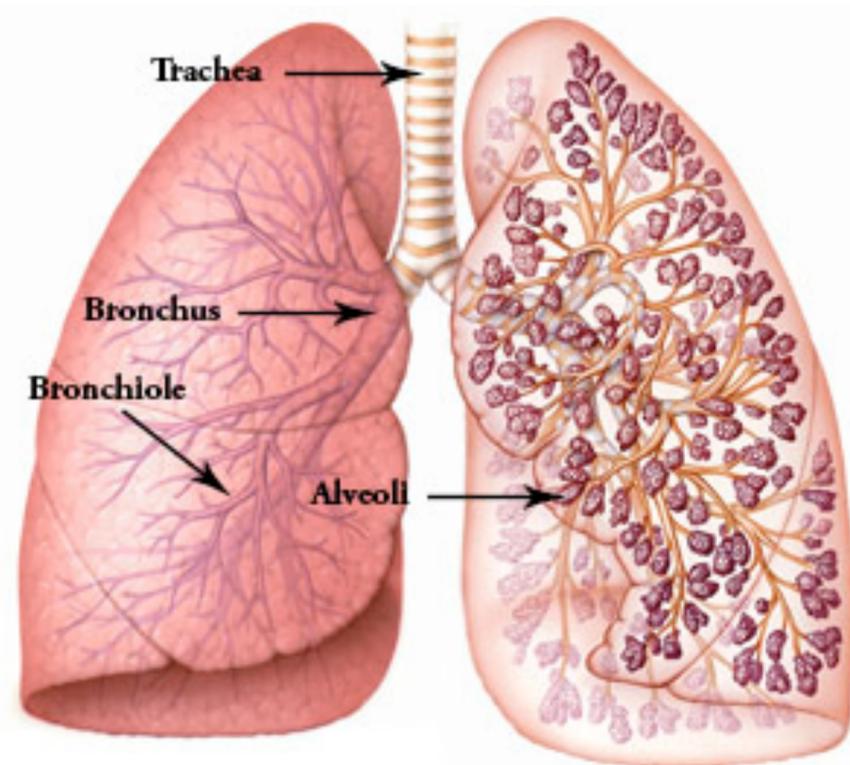
# **LUNG HEALTH & HERBAL SUPPORT**



**GENESIS SCHOOL OF NATURAL HEALTH**

# Respiratory System

The main parts of the respiratory system are the lungs, the airways, and the muscles that enable breathing.



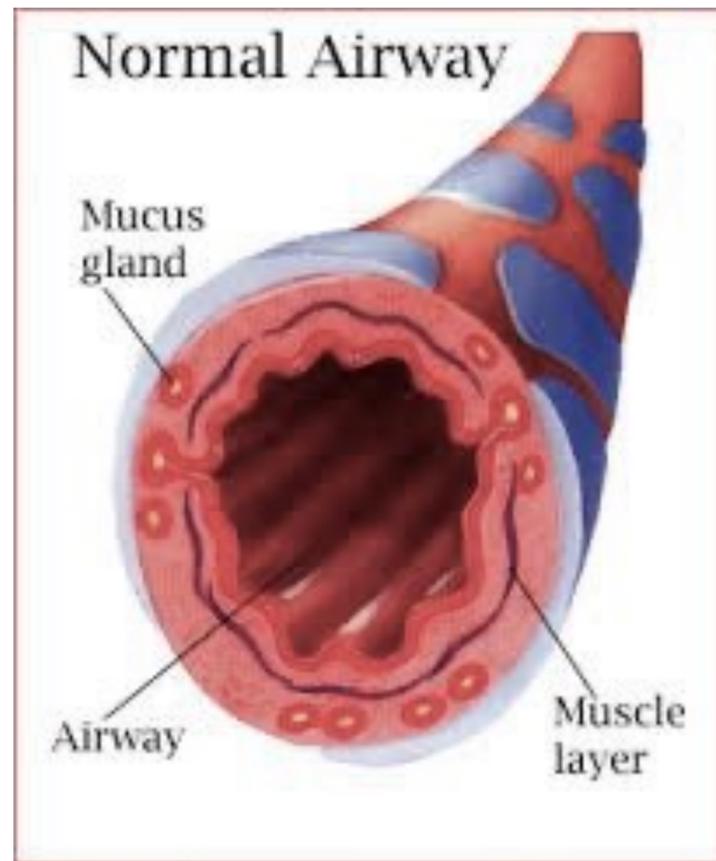
The main muscle used for breathing is the diaphragm, a dome-shaped muscle below your lungs that separates the chest cavity from the abdominal cavity. Your lungs' main job is to get oxygen into your blood and remove carbon dioxide.

The lungs are enclosed by the pleura, a membrane that has two layers. The membrane's cells create pleural fluid, which acts as a lubricant to reduce friction during breathing. Pleurisy is painful inflammation in the membrane.

Other body systems that work with the respiratory system include the circulatory system, nervous system, lymphatic system, and immune system.

# Lungs: Bronchi

**BRONCHI:** The trachea (windpipe) divides into two hollow tubes called bronchi. These bronchi then go on to divide into smaller bronchi. The small bronchi divide into smaller and smaller hollow tubes which are called bronchioles - the smallest air tubes in the lungs.



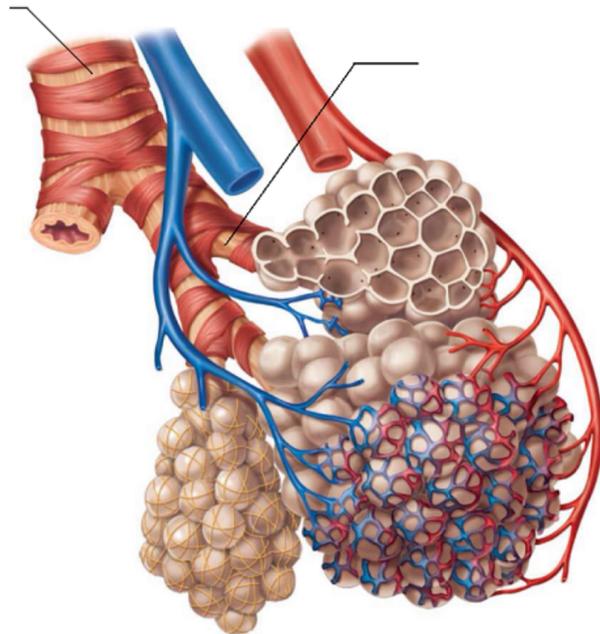
**Bronchitis** is an inflammation of the bronchial tubes and can be acute or chronic. It causes a cough that often brings up mucus. It can also cause shortness of breath, wheezing, a low fever, and chest tightness.

**Asthma** is a chronic inflammatory condition causing the bronchial tubes to become swollen and narrowed. Spasms and extra mucus make breathing difficult.

**Chronic obstructive pulmonary disease (COPD)** is a condition where bronchial tubes become inflamed, narrowed, tend to collapse when breathing out, and can become clogged with mucus.

# Lungs: Alveoli

**ALVEOLI:** At the end of the smallest bronchioles are tiny air sacs called alveoli. Alveoli are lined by a very thin layer of cells. The alveoli are where oxygen enters the blood and where carbon dioxide (CO<sub>2</sub>) leaves the blood. Lung diseases that affect the alveoli include pneumonia, tuberculosis, nontuberculous mycobacteria, cytokine release syndrome, and acute respiratory distress syndrome.



Alveolar macrophages protect against respiratory infection by clearing the air spaces of infectious, toxic, or allergic particles that have evaded the mechanical defenses (cilia, nasal passages) of the respiratory tract. Macrophages engulf microbes and secrete substances to kill microbes. When faced with large numbers of, or virulent microbes, the macrophages release a variety of cytokines to initiate inflammatory responses and recruit activated neutrophils into the alveolar spaces. When the infection has been eliminated, phagocytosis of neutrophils reduces macrophage secretion of pro-inflammatory cytokines and also stimulates production of anti-inflammatory cytokines - regulation.

# Lung Damaging Chemicals

## FROM THE AMERICAN LUNG ASSOCIATION:

Volatile organic compounds, or VOCs, are gases that are emitted into the air from products or processes. Some are harmful by themselves, including some that cause cancer. In addition, they can react with other gases and form other air pollutants after they are in the air.

Read all labels on cleaning supplies and household products before you buy them. Choose products that do not contain or have reduced amounts of VOCs, fragrances, irritants and flammable ingredients. **Avoid using air fresheners altogether.**

Manufacturers are not obligated by U.S. law to list all ingredients in consumer products. Products that are labeled "green" do not necessarily mean they are safer. Do a little research on the product from a reliable source.

- Aerosol spray products, including health, beauty and cleaning products
- Air fresheners
- Chlorine bleach
- Detergent and dishwashing liquid
- Dry cleaning chemicals and dry-cleaned clothing
- Rug and upholstery cleaners
- Furniture and floor polish
- Oven cleaners
- Paint, paint strippers, varnishes, and finishes
- Caulks, sealants, and adhesives
- Flooring, carpet, and pressed wood products
- Tobacco smoke
- Arts/crafts products: glues, permanent markers, etc.
- Wood burning stoves
- Diesel emissions
- Industrial emissions

# “Cytokine Storm”

Over 100 different cytokine molecules are involved in the regulation of local and systemic inflammation, cellular proliferation, metabolism, chemotaxis, tissue repair, and the development, differentiation and regulation of immune cells. Inflammation is crucial for a proper immune response - only excess or chronic inflammation is damaging. Like all cells, immune cells have basic nutrient requirements to function properly.

The term “cytokine storm” is not a medical term, it refers to cytokine release syndrome (CRS), a complex set of actions resulting in uncontrolled inflammation throughout the body. Cytokine release syndrome is typically a hyper-activated immune response against an infection or the result of immunotherapy drugs.

“Corona virus disease 2019 (COVID-19) patients with severe immune abnormalities are at risk of cytokine release syndrome (CRS)...Serious pulmonary inflammation is common in critically ill COVID-19 patients with pneumonia. The large area of infection and inflammatory reaction causes many immunologic problems, such as cytokine release syndrome (CRS), which can rapidly lead to deterioration and death.” - [https://](https://academic.oup.com/jid/advance-article/doi/10.1093/infdis/jiaa387/5864900)

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# Prevent the Storm

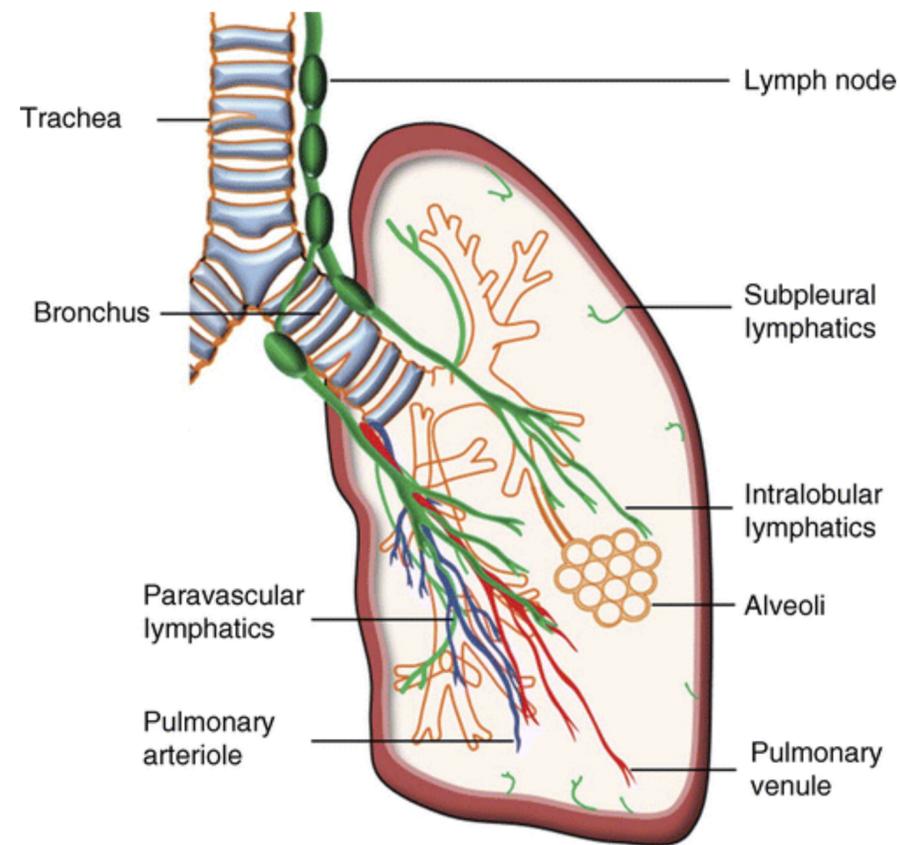
Research articles suggest that vitamins A, B6, B12, C, D, E, and folate, fatty acids EPA and DHA, as well as the trace minerals zinc, iron, selenium, magnesium, and copper may play a key role in the management of “cytokine storms”. Folic acid is the synthetic form of folate.

Tumor necrosis factor (TNF) is a pro-inflammatory cytokine involved in the development of chronic inflammatory diseases and oxidative stress. The flavone **quercetin** has been shown to induce the suppression of TNF- $\alpha$ . **Selenium** is an essential cofactor in enzymes involved in cellular antioxidant defenses. **Resveratrol** reduces the production of pro-inflammatory cytokines and strongly inhibits acute lung inflammation.

**N-acetylcysteine** (NAC) reduces phlegm and cough, thins mucus, and eases expectoration, and may decrease the deterioration of lung function. Low **vitamin D** levels increase inflammatory cytokines and the risk of pneumonia and viral infections. **Zinc** deficiency increases susceptibility to inflammatory and infectious diseases (pneumonia, influenza, etc.).

**Immune modulating herbs (not immune stimulating) should be used with hyper-immune conditions (active/uncontrolled autoimmune conditions).**

# Lymphatics & Lung Drainage



The lymphatic vascular system transports fluid, immune cells, and lipids throughout the body to prevent tissue edema, facilitate adaptive immune responses, and enable efficient fat handling. The lungs must tightly regulate interstitial fluid movement and prevent infection in order to maintain effective gas exchange.

“In healthy lungs, lymphatics run parallel to the major airways and respiratory bronchioles, and they also exist in close proximity to the intralobular arterioles and small veins. The number and size of lymphatics decrease significantly in the interalveolar walls, with 3.6–19% of alveoli associated with a lymphatic structure. In addition to the lymphatics in the lung, there is a network of subpleural lymphatics, which drains lymph from the surface of the lung”. <https://doi.org/10.1165/rcmb.2016-0290TR>

# Common Lung Disorders

## ASTHMA

Asthma is a chronic disorder in which the airways become inflamed and narrow. Acute episodes often include wheezing, coughing, chest tightness, and shortness of breath. Airway hyperresponsiveness has been linked to the action of eosinophils, lymphocytes, macrophages, and mast cells. During an allergic reaction, these cells trigger smooth muscle contraction (spasms, narrowing) in the airways and mucus secretion.

Over 25 million people have been diagnosed with asthma. In children, asthma prevalence was 3.5% in 1980 and 9.5% in 2010. The exact cause(s) of asthma is unknown however, children who experience viral respiratory infections have the highest risk of developing asthma symptoms early in life. Epidemiologic studies have found strong connections between antibiotic treatment and the later development of asthma and allergies.

Food preservatives/additives such as sodium bisulfite, potassium bisulfite, sodium metabisulfite, potassium metabisulfite, and sodium sulfite, can trigger an asthma attack. Food allergies and sensitivities (especially milk), air pollution, household air pollution (fragrances, cleansers, mold, dust mites...), and environmental/seasonal allergies are also common triggers.

**KEY POINTS:** Smooth muscle spasms, Inflammation, Swelling/Narrowing, Mucus, Allergies

# Common Lung Disorders

## Chronic Bronchitis/COPD

Bronchitis is a condition in which the bronchial tubes become inflamed and cause coughing, often with mucus. Other symptoms include wheezing or shortness of breath, chest pain, or a low fever. Bronchitis can be acute or chronic. Acute bronchitis can last a few days to a few weeks and is usually caused by a cold or flu virus. Occasionally, acute bronchitis can be caused by or develop into a bacterial infection.

Chronic bronchitis is an ongoing cough that lasts for several months and comes back two or more years in a row. In chronic bronchitis, the lining of the airways stays constantly inflamed. This causes the lining to swell and produce more mucus, which can make it hard to breathe. Risk factors include smoking cigarettes, asthma, allergies, gastroesophageal reflux disease (GERD), and a history of childhood respiratory infections.

Chronic bronchitis is often part of a serious condition called chronic obstructive pulmonary disease (COPD). COPD is a group of diseases that obstruct airflow from your lungs. They do this by constricting (spasms, inflammation, swelling) and clogging (mucus) airways or by damaging the air sacs/alveoli. This limits the amount of oxygen your lungs can deliver to your bloodstream. **Two of the most prominent COPD diseases are chronic bronchitis and emphysema.**

**KEY POINTS:** Smooth muscle spasms, Inflammation, Swelling/Narrowing, Mucus, Virus/Bacteria

# Lung Disorders/Infections

**Emphysema** is shortness of breath caused by damaged air sacs/alveoli - creates larger air spaces instead of many small ones. It is a type of COPD usually caused by long-term exposure to irritants that damage the lungs and the airways.

**Acute respiratory distress syndrome (ARDS)**, also called wet lung, is a life-threatening hyperinflammatory lung injury characterized by elevated proinflammatory cytokines. The lung injury allows fluid to leak into the alveoli. The most common cause of ARDS is sepsis, a serious and widespread infection of the bloodstream. Ventilation may be required.

**Nontuberculous mycobacteria (NTM)** is ubiquitous in soil, water, food, buildings (particularly within water pipes). Usually these bacteria are harmless but for unknown reasons, NTM lung infections are becoming more common.

In NTM disorders, the severity of infection and the disease course can vary greatly from one person to another. The most common symptoms include a persistent cough, fatigue, weight loss, night sweats, and occasionally shortness of breath (dyspnea) and coughing up of blood (hemoptysis). Most evidence indicates that these infections are not transmitted from one person to another, but are acquired from the environment. NTM lung disease most commonly affects people with an underlying lung disease such as chronic obstructive pulmonary disease (COPD), bronchiectasis, cystic fibrosis, primary ciliary dyskinesia, and alpha-1-antitrypsin disease, but individuals with no prior history of lung disease can also be affected.

# Mycoplasmas/Mycobacteria

2014 - <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4207559/>

“Since mycoplasmas may influence almost all the parameters of eukaryotic cells, the results obtained with infected cells should be treated with suspicion. Due to this fact, the editors of journals suggest that authors provide results of the verification of the experimental data (in particular, cell lines) for mycoplasma contamination. Since many viral vaccines are created using a primary cell culture, the problem of their contamination with mycoplasma is of special importance as vaccine contamination poses a potential risk to human health. In this regard, many countries demand that products created using primary cell cultures, such as viral vaccines against measles, rubella, poliomyelitis, rabies, mumps and some others, be thoroughly checked for mycoplasma contamination...

Thus, mycoplasma contamination of cell cultures and mycoplasma diagnosis and elimination remain serious problems. **It is absolutely clear that reliable methods for detecting infectious agents and decontamination methods are needed**, which would be based first and foremost on a thorough investigation of mycoplasma genetics and physiology. The discovery of the extracellular vesicular traffic in mycoplasmas mediating cell-to-cell interactions and pathogenesis makes it necessary to take into account new infectious agents. Since cell cultures are used to produce vaccines and physiologically active compounds, quickly solving the discussed issue is topical both for fundamental science and the biotechnological production of pure, next-generation products”.

# Lung Infections: Pneumonia

Pneumonia is an infection that inflames the air sacs in one or both lungs. The air sacs may fill with fluid or pus which causes a cough with phlegm, fever, chills, and difficulty breathing. A variety of organisms, including bacteria, mycobacteria/mycoplasmas, viruses and fungi, can cause pneumonia.

**Bacterial pneumonia:** Bacterial-forms of respiratory disease can be deadly, the infection often grows fast. Antibiotics should be used. The use of herbs and supplements to support the individual while on antibiotics, and following up (after antibiotics) with immunomodulating herbs with antibacterial and antiviral properties to prevent relapse, will speed full recovery.

**Viral pneumonia** can result in a secondary bacterial infection. The use of immunomodulating herbs with antibacterial and antiviral properties in addition to the supportive herbs (drainage, expectorant, diaphoretic, anti-inflammatory) is recommended..

When pneumonia is diagnosed as not bacterial it is automatically considered viral. Do not overlook mycoplasmas and fungi as a possibility.

# Lung Infections: Pertussis

Whooping cough, also called pertussis, is a serious respiratory infection caused by the bacteria called *Bordetella pertussis*. *B.pertussis* produce multiple toxins that work together to provide themselves with adhesion, survival, and proliferation abilities within the airways. Pertussis toxin (PT) has proved to be the key virulence factor for its ability to promote bacterial colonization, modulate host immune responses, and cause systemic effects.

The infection causes hard and uncontrollable coughing that can make it difficult to breathe and the child may vomit - the coughing fits are exhausting. Antibiotics work best (or only) when taken in the early stages - before the whoop of the cough. There are many herbs that can be used to support the drainage, thin the mucus, and calm the inflammation while they are on antibiotics (look up reaction information) and to heal the lungs after the infection clears. There are many herbs and supplements that can shorten the duration and decrease symptoms.

**While antibiotics can help treat the infection, they don't prevent or treat the cough itself.** Cough medicines aren't recommended because they have no effect on whooping cough symptoms and may carry harmful side effects for infants and small children. The coughing fits can go on for up to 10 weeks or more without.

# Influenza/Flu

Flu usually refers to viral infections of the upper respiratory tract that are common and usually seasonal. Flu can also refer to seasonal, infectious gastrointestinal upset (diarrhea, vomiting). Influenza is technically caused by one of three types of influenza viruses A, B, or C, but many other viruses cause flu-like symptoms. Viral pneumonia and secondary bacterial infections can develop with the flu so it is important to replenish the nutrients “used up” during the primary flu infection. Prevention of secondary infections, while supporting the individual through the flu, is always better than taking a “wait and see if they can kick it” response.

There are two generalizations I made with clients: Those who tended to react more to viruses and those that tended to react more to bacteria. The “bacterial” clients had a history of reacting to viruses by having diarrhea and/or throwing up, having a lot of mucus, sweaty fevers, and had a history of strep throat, tonsillitis, and/or ear infections. The “viral” people tended to react to viruses with severe bone pain, sensitive skin, dry fever, and had a history of reacting severely with mononucleosis (EBV) but seldom or never had strep throat, tonsillitis, or ear infections. The “bacterial” individuals also needed more bowel cleansing/toning while the “viral” individuals tended to need more liver support. Both of course can get viral and bacterial infections - the generalization helped with choose herbs based on both primary and secondary support.

# Common Cold / Respiratory Infections

Respiratory tract infections (chest colds) can affect the sinuses, throat, and lungs. There are more than 200 different viruses that can cause what we call a cold. Most respiratory infections resolve without treatment in a week to ten days however, herbal support will help reduce the amount of time and lessen the misery while the immune cells attack the virus. Most symptoms from the cold or flu are the result of a proper immune response.

Coughing is a protective mechanism, it serves to clear the airways of mucus and substances. With runny noses, mucus doesn't just run out of the nose, it also runs backwards towards the throat and in here it can cause a cough. Coughs can persist for a while after the infection has gone - you may feel better but the cough lingers. This is because the immune cells create the inflammation and other actions necessary to destroy the pathogen(s).

Adaptogens with immune modulation are excellent to use during and after for a fast and full recovery.

# Common Cold / Respiratory Infections

## Symptoms may include:

- a cough that brings up mucus/phlegm - it is not wise, usually, to suppress a cough however, thick mucus needs thinning so that it is a productive cough. Congestion is stagnation which may result in a secondary bacterial infection - thinning and an expectorant herbs are very useful.
- sneezing - this is clearing debris from the airways
- a stuffy or runny nose - stuffy is like thick mucus, it needs to move
- a sore throat - the result of mucus running down the throat or it is dry and hydration and soothing/mucilaginous herbs are needed
- headaches - often due to hard coughing or dehydration
- muscle aches - a systemic reaction to the virus - not just a respiratory response - use immune stimulators or modulators
- breathlessness, tight chest or wheezing - inflammation and/or thick mucus will narrow the airways
- a high temperature (fever) - part of the body's attempt to eliminate pathogens, do not suppress unless very high, use diaphoretic herbs to move the heat/equalize the reaction or even create heat if the person is cold and clammy
- feeling generally unwell during a cold is normal but, if fatigue continues after the cold, a good immune modulator and/or adaptogen will help strengthen the body

# Mucus & Coughs

Cloudy or white mucus is a sign of a cold. If it is thin and running and coughing brings up mucus easily, all is well. If the mucus is excessive (coughing continuously and/or choking on the amount coming up) a drying/astringent herb will help tone and membranes and lessen the secretions. Lung drainage/lymphatic herbs will encourage the elimination of fluid build-up and waste products from the immune reaction in the interstitial spaces.

If the person has thick mucus which makes coughing hard/labored, the use of an expectorant and mucus thinning herb(s) is indicated. Herbs that help with the removal of excess mucus from the body are called anti-catarrhal.

When the cough is hot and/or the throat red, dry or sore, using soothing and mucilaginous (demulcent) herbs are indicated. Do not use hot and drying herbs when a person needs cooling and moistening herbs.

Spasms in the bronchial tubes are induced by the smooth muscles. Using bronchodilators relaxes the smooth muscles and opens the airways (relaxes the constriction). Bronchodilators with anti-inflammatory herbs are also useful when breathing is difficult because the airways are smaller because of inflammation and/or mucus. Spasms are common with asthma attacks, bronchitis, COPD disorders, and whooping cough (Pertussis).

Yellow or green mucus is a sign of a bacterial infection. Use herbs that match other symptoms and add a potent anti-bacterial herb to the combination.

# Herbs for Mucus & Coughs

**Yarrow** (*Achillea millefolium*) is a versatile herb with relaxing diaphoretic, anti-catarrhal, astringent, de-congestive, expectorant, and diaphoretic properties. It will thin thick mucus and relieve head congestion; reduce excess fluid; stimulate a cough to clear the excess mucus from lungs; and disperse heat or induce sweating to regulate a fever. A valuable herb that tones mucus membranes in the digestive tract & respiratory track.

**Elecampane** (*Inula helenium*) is a versatile herb that is demulcent/soothing for sore throats and dry coughs; a stimulating expectorant to help the body dispel mucus from the lungs and yet can relax tissues and decrease inflammation. There are many synergistic constituents, do not use as a decoction, some of the action comes from the volatile oils. Widely used for viral coughs, bronchitis, asthma, whooping cough, and pleurisy.

**Mullein** (*Verbascum thapsus*) has an affinity for the respiratory system and the ability to calm inflamed nerves to relieve pain and soothe and tone the bowels; it is a soothing anti-inflammatory that stimulates fluid/thins mucus for easier expectoration (productive coughs). Widely used for spasmodic coughs, chronic bronchitis, pleurisy, asthma, and dry hot coughs .

# Additional Support

**Licorice** (*Glycyrrhiza glabra*) is sweet, moistening, anti-inflammatory, enhances antioxidant activity, and has immunomodulating activity with antibacterial and antiviral properties. It is commonly added to formulas to “harmonize” the combination of herbs.

**Thyme and/or Oregano** are great antiviral and antibacterial herbs. Tinctures preserve the volatile oils and the many synergistic constituents found in the herbs.

**Lobelia** is an excellent anti-spasmodic (low dose) to add to a lung formula for asthma or bronchitis. Lobelia is emetic at “high doses” (and that depends on the person) which may cause a person to feel nauseated and throw up - not necessarily a bad thing.

**Marshmallow** (*Althaea officinalis*) works as an anti-inflammatory mucilage that coats and soothes membranes. An excellent herb to use as a cold infusion but must make a fresh batch everyday. Adding peppermint tea helps with taste and peppermint is a valuable herb for colds/flu.

# Drainage/Lymphatic Herbs

Lymphatic drainage/movement is essential for effective immune responses. As with most categories there are a great number of effective herbs. I chose Red Clover, Nettles, Calendula, and Echinacea for their safety, effectiveness, and wide influence in the body.

**Red Clover** (*Trifolium pratense*) works best with other alteratives; encourages lung drainage & lymphatic movement which influences the whole body; widely used in bronchitis and whooping cough formulas.

**Calendula** (*Calendula officinalis*) is gentle, requires a higher dose and a longer time period but, it works safely and effectively for chronic lymphatic congestion.

**Nettles** (*Urtica dioica*) stimulates the lymphatics which enhances the ability to clear waste products; tones the mucus membranes in the respiratory, digestive and urinary tract; it is nutritive to help replenish essential minerals; it is slower in action than many lymphatic herbs but extremely safe and effective over time.

**Echinacea** (*E. purpurea* or *E. angustifolia*) helps thin mucus/anti-catarrhal; is a non-specific immune stimulant and research suggests that it is effective as a preventative and in the early stages of a cold/virus. Echinacea is an excellent herb for lymphatic movement.

# Antiviral/Antibacterial Herbs

***Andrographis paniculata***: Immune modulating/**stimulating** activities include inhibition of virus replication; antibacterial actions include inhibiting bacterial pathogenic factors such as toxins and surface coats that inhibit phagocytosis; antioxidant; anti-inflammatory; as an immune stimulating herb it should be used short-term with hyper-immune and/or autoimmune conditions and not at all if the autoimmune condition is in a very active state.

***Uncaria tomentosa (Cat's Claw/Uña de Gato)***: Immune modulating (not stimulating); Inhibits viral attachment on host cells and contains xindole alkaloids which induced apoptosis of virus infected cells. Antiviral activity of cat's claw has focused mainly on dengue fever virus, vesicular stomatitis virus, and rhinovirus type 1B infection in HeLa cells. Anti-Inflammatory and antioxidant activities include inhibiting the production of the pro-inflammatory cytokine TNF-alpha in arthritis, gastritis, osteoarthritis, and other inflammatory conditions. *Uncaria tomentosa* and *Uncaria guianensis* share similar phytochemicals and are used interchangeably.

***Astragalus membranaceus*** is an immune modulating and adaptogenic herb. It is valued for its ability to strengthen the immune system, metabolic, respiratory and eliminative functions. It has antioxidant, anti-inflammatory, immune-regulatory, anticancer, hypolipidemic, antihyperglycemic, hepatoprotective, expectorant, and diuretic effects. An excellent herb for during and after an infection, especially when the infection has left a person weak and without energy.

# Antiviral/Antibacterial Herbs

**Goldenseal** (*Hydrastis canadensis*) is a strong and very drying/astringent, using it for long periods of time can damage the intestinal mucus membranes. It is an effective herb for clearing sinus infections, especially when they are acute infections or are induced by food sensitivities and allergies. Remember to use drainage and soothing herbs as part of the formula.

**Oregon Grape** (*Mahonia aquifolium*), like goldenseal, contains berberine and is effective for sinus and bowel issues however, it has an affinity for the skin. A great choice for those prone to rashes or eczema. The addition of burdock and nettles will help dispel the waste.

**Barberry** (*Berberis vulgaris*) is suitable for children and the elderly. Like goldenseal it contains berberine but its action is slower, deeper, and milder. It may be used long-term for those who have re-occurring bacterial infections.

**Thyme and/or Oregano** are great additions to a cold/flu or fungal formula for acute or chronic lung conditions that tend to result in a bacterial infection of the lungs or sinuses. A great fungal/*Candida* formula is a tincture of Pau de Arco, Thyme, and Oregano.

# Simple - Gentle - Effective

**Elderberry** (*Sambucus*) is immune supportive, immune modulating, and has many antioxidant properties. Studies have shown that elderberry also has a potent direct antiviral effect against the flu virus. It inhibits viral survival in both the early and later stages of the influenza cycle.

**Peppermint** is a decongestant, soothes the throat, settles the stomach, and has antiviral properties. If using as a tea instead of a tincture, cover the cup/mug to contain the volatile oils.

**Chamomile** is now approved by Germany's Commission E to treat cough and bronchitis, fevers, cold, inflammation, infection, wounds, and burns. Chamomile calms both the nerves and digestive upset. If using as a tea instead of a tincture, cover the cup/mug to contain the volatile oils.

German Chamomile (*Chamomilla recutita*) and Roman Chamomile (*Chamaemelum nobile*)

**Lemon Balm** (*Melissa officinalis*) soothes the nervous system, lowers a fever (diaphoretic), reduces headaches, and may have antiviral properties (studies show an action against herpes viruses but not flu viruses).

**Peppermint or Chamomile, Elderberry, and Yarrow:** an excellent combination for most acute colds and uncomplicated flu symptoms.

# Cold and Clammy



Cold chills, cool to the touch but sweaty/clammy indicates that warming herbs are needed.

**Cinnamon, ginger, cardamon**, and other warming spices make a wonderful tea - add honey or even a little coconut milk.

**Garlic, Cayenne, Horseradish** are also very effective but may be too strong for children.

**\*Hypoglycemia, low blood sugar, also causes the skin to feel cold and yet sweaty.**

# Adaptogens

## Before, During, and/or After Illness

Most adaptogens, through endocrine, neuroendocrine, and immune modulation, support longevity, emotional balance, and an overall wellness. All adaptogens contain antioxidants and other phytochemicals that are beneficial for the prevention of disease, support during acute and chronic infections, and protection from toxins.

***Eleutherococcus senticosus***: is an adaptogen that supports adrenal function; enhances immune function; reduces the duration of respiratory infections; stabilizes blood sugar levels; and improves insomnia, physical endurance, stamina, fatigue, and concentration. Eleuthero contains phytochemicals that are antioxidant, anti-cancer, radioprotectant, anti-inflammatory, neuroprotective, hepatoprotective, and cardioprotective.

***Withania somnifera (Ashwagandha)***: is a balancing adaptogen that is able to calm the mind; greatly reduce inflammation; lower blood pressure; increase immune system activity; enhances thyroid function; and relieves anxiety. *Withania* supports and balances the neuroendocrine system, central nervous system, and the heart and lungs. It also has an antitumor, antioxidant, and immunomodulatory actions. *Withania* is in the nightshade family.

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