

Information and herbal strategies for Influenza support

Understanding the virus, its risks and complications, and the goals of herbal therapy

What is influenza?

Influenza is an acute respiratory illness caused by an RNA virus from the Orthosynovitic family, of which three serotypes are known (A, B and C). Influenza causes an acute febrile illness with myalgia, headache and cough. Uncomplicated influenza generally resolves over a two to five day period. However, in a significant minority, symptoms of weakness and malaise may persist for several weeks, particularly in the elderly.

Complications of influenza include otitis media, pneumonia, exacerbation of chronic respiratory disease, croup and bronchiolitis. Additionally, influenza can cause a range of non-respiratory complications including febrile convulsions, Reyes's syndrome and myocarditis. The influenza virus is transmitted primarily via virus-laden large droplets from sneezing, coughing or talking. Transmission may also occur by direct (for example, person-to-person) or indirect (person-to-person) contact and accounts for 30,000 deaths per annum, US.

H1N1 flu ("swine flu") is an A subtype, generally affecting the upper respiratory passages and the lungs less so, though can be characterized by a spasmodic, dry cough esp. in the initial stages. Those over 65 appear to be at lower risk because of exposure to the H1N1 type, which is the same as the 1918 flu. This serotype has been largely absent for some time. Most at risk are pregnant mothers and infants under 6 months. H1N1's most troubling characteristic seems that it spreads 2-3x more readily than most seasonal influenzas.

H5N1 flu ("bird flu") is also an A subtype, but appears to be much more focused on the lungs for invasion, replication, and symptoms. This serotype has been implicated with the "cytokine storm" (see below), making it more dangerous to those with health immune systems.

[H1N1](#), which caused [Spanish flu](#) in 1918, and the [2009 flu pandemic](#)

[H2N2](#), which caused [Asian Flu](#) in 1957

[H3N2](#), which caused [Hong Kong Flu](#) in 1968

[H5N1](#), a current [pandemic](#) threat

Serotypes are determined by the **Hemagglutin** and **Neuraminidase** surface markers on the viral capsule. These markers also serve to trigger immune reactions in respiratory epithelial cells.

The symptoms of 2009 H1N1 flu virus in people include fever, cough, sore throat, runny or stuffy nose, body aches, headache, chills and fatigue. Some people may have vomiting and diarrhea. People may be infected with the flu, including 2009 H1N1 and have respiratory symptoms without a fever.

In children, emergency warning signs that need urgent medical attention include:

- Fast breathing or trouble breathing
- Bluish or gray skin color
- Not drinking enough fluids
- Severe or persistent vomiting
- Not waking up or not interacting
- Being so irritable that the child does not want to be held
- Flu-like symptoms improve but then return with fever and worse cough

In adults, emergency warning signs that need urgent medical attention include:

- Difficulty breathing or shortness of breath
 - Pain or pressure in the chest or abdomen
 - Sudden dizziness
 - Confusion
 - Severe or persistent vomiting
 - Flu-like symptoms improve but then return with fever and worse cough
- 104 °F: up per range at which most bodily functions are not altered.
 - 106 °F: threshold for possible seizure activity. Normally human body temperature does not rise above this.
 - 108 °F: brain damage may occur due to protein destruction.
 - 110 °F: human cells begin to die.

In infants aged 1 month, 101.4 °F may be a critical temperature. This rises to 102 °F at 2 months of age.

Clinically, this H1N1 strain seems to require management in 3 general phases:

1. Cool, clammy skin with weak (relatively) pulse requires warming herbs that are also immunomodulants. Ginger, Turmeric, Garlic. Avoid foods.
2. Warm, dry skin and perhaps facial flushing with strong pulse and development of spasmodic cough. Cooling diaphoretics like Peppermint, Bonest are traditionally indicated, along with respiratory antispasmodics. Cooling bitters, esp. Andrographis, can play a role here too.
3. Demulcents and restoratives are important for the final period which can last 2-3 weeks. Consider Licorice, Slippery Elm, Pleurisy Root.

Prevention is, of course, the best medicine. Consistently use Astragalus and Garlic, as well as assessing Vitamin D levels and supplementing as necessary. Modest, plant-rich diet and abundant sleep are also crucial. Finally, limit spread through hygiene and limited contact.

The **cytokine storm** does not seem to be a crucial component to the 2009 H1N1 flu, but remains a concern nonetheless. This is a severe inflammatory reaction which usually occurs in the bronchiopulmonary system and causes excessive destruction of healthy tissue. It may have been a contributing factor in the deaths related to H5N1 bird flu, as well as the US epidemics of 1957 and 1968.

This inflammatory reaction is set in motion by the immune system and involves cellular players such as helper T-cells, as well as chemicals (“cytokines”) such as interleukin-6 (IL-6), tumor-necrosis-factor-alpha (TNF), and mitogen-activated protein kinases (MAPK, specifically of the p38 variety. This latter agent seems to be a major initiating player and is overexpressed as part of the reaction to certain flu strains). Additionally, if exposed to strains that show evidence of initiating a cytokine storm, virus-infected cells seem to exhibit increased resistance to the inflammatory chemicals that would normally hurt them.

Caution may be advisable with herbal agents such as Echinacea and Elderberry which may stimulate TNF and other cytokines. However, this danger is unclear. More important is the addition of herbs that down-regulate dangerous cytokines while also exhibiting antiviral effects (for instance, St. John’s wort, Baikal Scullcap, Salvia milthiorrhiza, Ginger, Turmeric).

The role of vitamin D in the seasonal nature of the flu bears mention. It has been postulated (Bergner et.al.) that the crucial role of D in promoting healthy immunity. The crucial role of vitamin D in the innate immune system was discovered only very recently. Both epithelial cells and macrophages increase expression of the antimicrobial cathelicidin upon exposure to microbes, an expression that is dependent upon the presence of vitamin D. Pathogenic microbes stimulate the production of an enzyme that converts 25(OH)D to 1,25(OH)2D, a seco-steroid hormone. This in turn rapidly activates a suite of genes involved in pulmonary defense. In the macrophage, the presence of vitamin D also appears to suppress the pro-inflammatory cytokines. Thus, vitamin D appears to both enhance the local capacity of the epithelium to produce endogenous antibiotics and at the same time dampen certain destructive arms of the immune response, especially those responsible for the signs and symptoms of acute inflammation, such as the cytokine storms operative when influenza kills quickly.

While it is unlikely that the increased deaths in healthy, young adults in the 1918 flu pandemic were entirely due to D deficiency, it is important to ensure adequate immunity esp. in the at-risk populations through testing (if necessary) and supplementation.

Herbal support and supplementation notes:

- **Preventative health:**

Vitamin D

The only supplement I recommend adding if your diet is adequately plant based. Recommended blood test levels are around 35 ng/mL, but that's just for adequate calcium metabolism. For immune function, required levels are closer to 50 ng/mL. Supplementation with 5,000 IU daily is necessary.

Astragalus

As a preventative, it should be withdrawn once symptoms begin. Take 3-5 grams of root daily in capsule, or simmer 2-3 TBS in a pint of water and drink through the day. Tinctures are taken at 1 tsp doses once or twice daily.

Garlic

Directly antiviral, ameliorates influenza symptoms, and its pungent compounds have been found to reduce cytokine storm. 3-4 cloves daily is ideal, as close to freshly cut as possible (chop first).

- **Herbs that are directly anti-influenza:**

Note: for most antiviral herbs, frequent dosing is relatively important in order to maintain physiological levels of herbal medicine ahead of the viral replication curves. Viral populations can easily more than double in an 8 hour period, so it is beneficial to work with antiviral and anti-inflammatory herbs on a 6-8 dose/day schedule. This is a dose roughly every 3-4 hours.

Boneset

Infusion, 1 TBS per pint along with other herbs, sipped every hour or so. Tinctures can also be used, 45-60 drops in warm water every hour or so.

Elderberry

Amazing clinical results against most influenza strains. Safe for H1N1, perhaps caution in H5N1 or other cytokine-storm-inducing strains due to potential TNF stimulation.

Use syrups (1TBS 3-5 times daily) or a fresh preserved succus / juice at the rate of 1tsp every 2-3 hours.

Elder flower tea is useful also, as a cooling way to induce sweating in the latter phases.

Echinacea

There is evidence of activity against influenza viruses, especially when combined with Thuja and Wild Indigo (Esberitox). It is potentially contraindicated in cytokine-storm influenza. Use Esberitox, or a good fresh tincture at doses of 1tsp. every 3-4 hours.

Usually best at the first signs of imbalance – fatigue, sore throat, headache.

- **Herbs that reduce cytokine storm activity and buffer “hot” influenza symptoms:**

Baikal Sculcap root

Reduces cytokine storm and acts as an inhibitor of influenza symptoms. Take 60-90 drops three times a day of a good tincture. Avoid in cases of diarrhea.

Salvia miltiorrhiza root

Immunomodulant for cytokine storm, esp. with a constricted, wiry pulse. Take ½ tsp. of a good tincture three times daily.

Ginger and Turmeric

Both rhizomes are anti-inflammatory and inhibit inflammatory cytokines. This protects respiratory tissue as well as relieving symptoms. Most indicated in the initial phases of the flu as warming agents. Add fresh ginger to teas, or use powders of both at doses of 1-3 grams 2-3 times daily (about ¼ to ½ tsp.).

St. John’s wort

This is a potent antiviral herb, prized as a restorative in deficient, depleted constitutions. Modern evidence points not only to its pharmacological effect on dampening the cytokine storm by suppressing IL-6 and MAPK, but also to its targeted and specific antiviral effect against the H5N1 strains of bird flu, both in the petri dish and in infected poultry. The dose of tincture is 90-120 drops three times daily.

Cannabis?

This herb is potentially a down-regulator of TNF in certain situations, and may have a role to play in especially “hot” influenza strains. It is also an activator of the endogenous cannabinoid system, which stimulates immunoglobulin production in the respiratory epithelium. Not for smoking – low doses of oil-based preparations are best.

Adjuvant herbs (beyond the virus and inflammation):

Dry, spasmodic cough:

A very intense and painful cough can accompany H1N1 2009 influenza. It usually appears after the first 24 hours or so, and affects the beginning of the bronchial tree causing violent coughing with whole-body spasms. The warm drying expectorants (such as Elecampane, Mullein, and Aster) are probably best avoided in favor of the soothing, demulcent expectorants listed below.

Licorice

Its antiviral action may be due in part to the inhibition of virulence factors such as the hemagglutinin proteins on the viral capsule. While it is still unclear if it has specific inhibitory effect on H1N1 or H5N1 strains, it remains an excellent demulcent for people of all ages and reliably loosens the dry cough within a day or at most two. This is especially important to help with disturbed sleep. Tincture, 2 droppers in a little water every 2-4 hours. Infusion, 1 TBS of root per cup. 1-2 TBS of infusion every 2-4 hours.

Pleurisy root, Butterfly weed

This demulcent expectorant is particularly indicated if there is a burning sensation in the chest wall that accompanies the cough. Any spitting of blood, while perhaps a clear sign of cytokine storm and certainly of the need for immediate treatment, was traditionally an indication for this herb. It is also relaxing and mildly diaphoretic. Take 30-60 drops of the tincture 3 times a day.

Lobelia

Strongly antispasmodic, it relieves the whole-body paroxysms associated with the dry bronchial cough and is also a gentle expectorant. Use 10-30 drops of tincture every 3 hours or so, depending on tolerance because it is quite nauseating if given in excess.

Wild Cherry, Peach pit

These herbs contain glycosides of hydrogen cyanide (HCN), which in small doses is calmative and strongly antispasmodic to the lungs. They are valuable as part of a comprehensive protocol that also includes expectorants and antiviral herbs. Cold-infusion is best. Heating dissipates HCN readily. Tincture is dosed 5-30 drops bid. Wild Cherry bark syrup: 1 pint overnight cold infusion of 1 oz bark; strain, add 2 lbs honey.

Diaphoretic herbs not previously mentioned:**Honeysuckle flower**

This remedy from the Chinese pharmacopoeia helps to cool and break a fever. Best during the first and early second stages of the flu to release internal heat and bring warmth to the surface. Usually infused, along with Platycodon for the lungs, Catnip as another antiviral diaphoretic, peach pit as a pulmonary antispasmodic, and Licorice.

Catnip herb

Especially useful as a mildly calmative antiviral diaphoretic for kids. Usually added to tea blends, perhaps with a little Ginger and/or Licorice.

Peppermint

Has some mild antiviral quality, and certainly is cooling and helps break a fever, as well as improve the flavor of herbs such as Boneset. A classic formula: equal parts of Peppermint, Boneset, Elderflower, and Yarrow in the late first / early second stage of the flu, when heat is manifest but the skin still dry and the body still achy, with a tense, tight pulse.

Bitter tonic herbs with antiviral / mucosal tonic effect:**Goldenseal**

Not antiviral, but astringent and tonifying to the upper respiratory mucosa. Can alleviate congestion and improve appetite in the second or third stages of the flu.

Andrographis

Also called the “king of bitters”, this herb has shown excellent results when combined with Siberian Ginseng in large trials for the flu. It has antiviral effect and also improves GI tract function and may help regulate cytokine activity and prevent the cytokine storm. dried herb - 1.5- 5 g/day; tea- 1/2- 1 teasp. steeped in 8 oz water, drink 4oz 3 X day
tincture- 20-60 drops 3 X day. standardized tablets- 100mg. w/ 5mg andrographolide and deoxyandrographolide, take 4 tablets 3Xday

Adaptogenic herbs not previously listed:

Panax quinquefolium

This is the American ginseng root, and while most of the evidence in humans pertains to the cold rather than the flu, it has good immune-enhancing (modulating) effect. It is especially indicated if there is severe stress and/or recurrent infections of all types related to deficient immunity. Take ½ tsp. of tincture 3 times daily, or 2-7 grams daily as whole root or capsule.

Siberian ginseng, though a very different plant, can be used similarly.

Specific pulmonary anti-inflammatory herbs not previously listed:

Platycodon

The balloonflower is used in Chinese medicine to clear heat from the lungs. As such, it seems more specific for the dry, painful and recurrent bronchitis than for moist, low-grade symptoms. It makes a good addition to tincture formulas for those who always have “every cold go to the lungs”. 30-90 drops of tincture 2-3 times daily.

Hyssop

Yet another effective antiviral herb that is gaining more attention in modern times, it is an excellent herb for lung afflictions of the more moist / hot variety. As such, it perhaps has a role to play in the later phases of influenza and to help with recovery. Infusion is excellent, about 1 TBS / cup steeped with a lid 3 times a day.