

# Covid-19 updates

## Table of Contents

Covid-19 updates.....	1
<b>Table of Contents .....</b>	<b>1</b>
<i>Firstly, stay calm and engage common sense. ....</i>	<i>1</i>
<i>Prevention.....</i>	<i>3</i>
<i>Dealing with symptoms .....</i>	<i>6</i>
First assess .....	6
<i>Recipes.....</i>	<i>8</i>
<i>Is Elderberry likely to cause a cytokine storm?.....</i>	<i>10</i>
Branwen Hunolt’s critical analysis of the research on elderberry and cytokine storm .....	11
Some information gathered by the students .....	12

Please note that this is written from the perspective of listening to some very experienced herbalists, the plants and with some attention to research into corona virus but without too much of a reductionist approach. If you have other ideas to contribute then please do comment and together we may be able to put together a comprehensive article, thank you ☺

I will update this article as more information comes through, we are hearing more and more about what amazing medicine the plants that grow on our doorsteps have to offer and needing to evolve new ways of practicing in these strange times.

Please note that none of this advice is supposed to substitute seeking the advice and treatment by a health care professional if symptoms indicate this is necessary.

## Firstly, stay calm and engage common sense.

Secondly, practice good hygiene- soap and water work for hand washing and wash thoroughly for 20 seconds. Cover face if sneezing or coughing and then wash hands. Do not touch face after unless hands are thoroughly washed and avoid touching surfaces and so forth out when about as much as possible and if you do wash your hands or use hand sanitiser (with at least 62% alcohol), or ti tree applied liberally. With both hand washing and sanitiser application rub/scrub thoroughly over the whole surface of both hands for at least 20 seconds.

How soap works:

[https://virologydownunder.com/why-does-soap-work-so-well-on-sars-cov-2/?fbclid=IwARozow1dWLGnIINja-\\_DoA3bEdBZcwNLyYRzsrhkHvh8MM8D\\_T87yBd1toQ](https://virologydownunder.com/why-does-soap-work-so-well-on-sars-cov-2/?fbclid=IwARozow1dWLGnIINja-_DoA3bEdBZcwNLyYRzsrhkHvh8MM8D_T87yBd1toQ)

[https://www.marketwatch.com/story/deadly-viruses-are-no-match-for-plain-old-soap-heres-the-science-behind-it-2020-03-08?fbclid=IwAR2VTSIzIXOD2La3L\\_AJ69NVCwFfPloP6wzBye8dqJsFUdi6Xo8M4dBxMY](https://www.marketwatch.com/story/deadly-viruses-are-no-match-for-plain-old-soap-heres-the-science-behind-it-2020-03-08?fbclid=IwAR2VTSIzIXOD2La3L_AJ69NVCwFfPloP6wzBye8dqJsFUdi6Xo8M4dBxMY)

We are also making a hand salve/cream to apply with essential oils in it to cope with skin dryness on account of all the hand washing.

Practice social distancing, at least 1 metre and preferably 2 metres from people when out and about.

If one has been exposed then one wants to prevent the virus making its way into the lower respiratory system and causing a viral pneumonia or getting into the digestive tract. Steaming, gargling and other treatments to the nose, mouth and throat prevent this. One Greek practitioner suggests regularly moistening the lining of the nostrils with olive oil to prevent the virus penetrating.

Gargling with warm salt water is sufficient. Or make up a gargle with tinctures or teas such as sage, thyme, Euphrasia, Agrimony, Raspberry leaf, blackberry leaf, licorice, oak bark, herb Robert, prunella. Daisy may also have role. Myrrh is also good as a tincture.

Steaming can be with boiling water and a towel over the head or one can add essential oils ( tea tree, eucalyptus, thyme or other suitable oils, Cistus has been shown to kill the virus for example.) or use a herb tea (see suggestions below).

One can also rub essential oils onto the feet which are carried up to the lungs and breathed out so clearing from the bottom up which is a valuable way to augment the clearing from the top. We have made a blend with eucalyptus, ti tree, thyme, cistus, oregano lavandin ,pine and a few others but basically it is a blend of antiviral, mucolytic and expectorant oils. This done twice a day would be particularly useful for people with asthma to keep the lungs clear.

Use essential oils in burners or one a tissue to inhale regularly: some good ones are Ravintsara (Cinnamomum camphora), Ravensara, Eucalyptus radiata(or smithii or globulus, cinnamon, clove (more anti-bacterial), savoury, thyme, Lemon and Bay leaf also have very strong antiviral actions. Savoury and Cinnamon are very beta-sympathetic (so stimulating) so avoid at night (thanks to Sabrina Biscardi for information about not using the last two at night).

Wearing a mask stops you spreading the virus but does not guarantee that you will not catch it apparently.

Wrap up warm and spend time outside in the garden, forest or other places where there are trees and soil and so on. These produce all sorts of good things that boost our immune system outlined in this great article [https://integrativeinitiative.com/2020/02/29/the-coronavirus-is-heading-your-way-grab-a-tree-and-hold-on/?fbclid=IwAR1\\_vrc6bMZzebPWYQnXXKPVOCRMFAeIW7iULRXoHMk4yU6CEcbWaUxPOUM](https://integrativeinitiative.com/2020/02/29/the-coronavirus-is-heading-your-way-grab-a-tree-and-hold-on/?fbclid=IwAR1_vrc6bMZzebPWYQnXXKPVOCRMFAeIW7iULRXoHMk4yU6CEcbWaUxPOUM)

While you are spending time outside you can do some foraging for the wild greens that are emerging and are full of great anti-oxidants but make sure you are doing this sustainably and only take as much as you can use and what you have definitively identified. At present there are nettles emerging, wild garlic, cleavers, bramble leaf, sorrels, hairy bitter cress, cardamine, and a good few others that are great food and medicine. It is a great time to get to know these better and there are profiles for many of them at

<https://theplantmedicineschool.com/community/articles-and-interviews/plant-profiles>

You need to be registered on the site to view these but you do not need to pay a subscription and we hope to add photos over time to help with id but there are lots of good websites and books to help with this.

Please note that although it is not certain with covid-19 other corona viruses can cause symptoms in the GIT and may be spread in faeces and urine so hygiene in all areas is important.

Thirdly, learn about the virus and who it affects and how it affects different groups. For a healthy person Covid will be experienced as a mild to moderate respiratory infection similar to a cold or even be symptomless in young children whose immune response will not illicit a cytokine storm (unless they have an underlying immune problem, multiple vaccinations or other issues leading to a propensity to such an event). The elderly, those who are immune compromised or have autoimmune issues are more at risk.

And fourthly, Look after your mental health. Panic and worry and stress are all not good for our immune system. So avoid panic, discuss concerns with sensible rational people and allay them. There will be stress from learning new ways of doing things and for those with children at home and adapting to working from home or with elderly relatives or with particular health issues it is important to get the right kind of support. Avoid dis-information and make sure your sources are reliable (for example all the erroneous information about elderberry and cytokine storms which is discussed below- relax, elderberry is safe to use especially as a preventative). Using flower essences to help with staying calm can help and there are also many herbs that are good such as orange blossom, valerian, skullcap, Wood betony, passionflower and so forth. Practicing breathing, meditation, tai chi yoga or simply dancing like no one is watching to your favourite music or listening to music are all good. Take time to remember what things help to calm and relax you and then do them a few times in the day.

## Prevention

Covid-19 is considered to be a cold condition, or maybe a damp one and there is a complexity in its pattern so that it moves from cold and damp to heat and damp. So the main things to help prevent it is staying warm and dry.

Eat healthily:

Cut out all sugar ( an enemy of the immune system), processed foods and eat healthy vitamin C and vitamin D rich foods. So plenty of fresh fruit and veg, forage greens, sprouted seeds and mushrooms.

## Revision 1 – 26/03/20

Eat plenty of anthocyanin rich foods-purple fruits and veg. Eat plenty of the other antioxidants too, so follow a rainbow coloured diet.

Take extra vitamin C, the suckable ones with zinc are particularly useful for coating the throat and preventing the virus breaking through the cell membranes. Avoid ones sweetened with artificial sweeteners. Look for ones with vitamin C combined with bioflavonoids to enhance absorption. People have different tolerances of vitamin C so if you start to experience diarrhoea you are taking too much.

You may also wish to take vitamin D<sub>3</sub> and zinc as supplements (pumpkin seeds are a food source of zinc and there are others listed on the [www.veriditashibernica.org](http://www.veriditashibernica.org) website along with information on natural sources of other vitamins, minerals and essential fatty acids ). Some people are also recommending propolis, monolaurin and other supplements. If taking vitamin D<sub>3</sub> it is best to take it with some oily food.

Add lots of warming and drying herbs and spices to your food- for example cinnamon, clove, thyme, rosemary, oregano, cumin, turmeric, coriander, black pepper and other peppers, aniseed, fennel, parsley, ginger, bay leaf, sage, lovage, and others. Bay. Leaf is one that is being widely recommended as a preventative.

Add forage greens to your food and teas too (see above).

Take hot drinks and make some of these herbal infusions like rosehip, raspberry leaf, blackcurrant or blackberry leaf, ginger and lemon with cinnamon or clove, bay leaf and others mentioned above.

Avoid cold foods, iced water, raw salads etc and cooling foods like ice cream.

Take lots of fermented foods- live vinegar, kimchi, sauerkraut, kefir, yogurt, kombucha, etc to build immune function.

With cider vinegar you could make some fire cider (suggested ingredients below) and take this regularly or make oxymels with infused vinegars and honeys recipes below.

to help keep the respiratory system healthy.

Take prebiotic (fibre rich) foods like roots and fruits and veg.

A large part of our immune function is our microbiome-in our guts, on our skin, up our nose and actually in a cloud around us. Feed and support a healthy biome. For those who feel able, talk to the little beings in the biome and ask what they need and encourage them in their work. We can also do this with our white blood cells and funnily enough this has been clinically proven to help with a healthy immune system.

Some people say viruses are not alive-however they are but can only reproduce in a host's cells, so denying them access means they die off. So protect the boundaries with the measures above. Herbs that prevent the hyaluronidase enzyme from the virus being produced are Melissa, and Echinacea for a start. They do not necessarily kill the virus but they prevent it breaking through the cell membrane to reproduce within the cells. There are other herbs that do this too.

Gargling with herbs that strengthen the membranes in the throat is another good idea. The gargle can also contain herbs or essential oils that help clear the virus locally like ti tree, cistus, myrrh, and many others.

Since the virus can attach to certain cell wall components herbs that protect these are important and include licorice, Chinese skullcap, Elder (see the paragraph below discussing cytokine storms and why elderberry is quite safe), Horse chestnut, Japanese knotweed *Rheum palmatum*, proanthocyanidin rich herbs elderberries, rosehips, sour cherries, blueberries, bilberries etc) and ones containing lectins. And also foods rich in these last two mentioned substances.

Also, the following herbs strengthen the cell walls Hawthorn, Ginkgo and ones that are generally restorative to the mucus membranes such as Glechoma, plantain, elderflower, sages and eyebright. Olive leaf and berberine rich herbs like *Berberis vulgaris* re also useful. And ones like yarrow, wood betony and prunella which also strengthen the tissues in the mouth and throat. Prunella is also a strong anti-viral with a broad range of activity and packed full of antioxidants; it contains more rosmarinic acid than rosemary.

Use herbs for the lymphatic system such as Galium, Calendula, Red clover (apparently contains constituents that are anti-viral against covid-19 according to some research from China), *Viola odorata* and *Phytolacca* if you are fortunate enough to live in a region where it is allowed. You could also make a lymphatic absorption cream (see formula at end of article) to apply to the arm pits, over the glands in the throat and into the groin.

Herbs/supplements that dissolve biofilms and virus envelopes include propolis, monolaurin, milk thistle, thyme, rosemary, garlic.

Astragalus is good to build up the immune system, but should not be taken in the acute state (ie when symptoms, especially fever are present) since it can heighten symptoms at that point and is traditionally not used in febrile states Other herbs that are good for building the immune system include some of the medicinal mushrooms like reishi, Inula, *Sambucus fructus*, *Rosa canina fructus*, *Codonopsis*, *Thymus vulgaris*. *Rhodiola* has been suggested as heating and drying and good for anxiety, it can be valuable but does not suit people who are already hot and dry. There are many other possible choices. Other suggestions are *Andrographis*, *Echinacea*, berberine rich herbs, *Marrubium* (great for coughs).

Bill O'Dea suggests turkey tail mushroom as particularly valuable but there are others too such as birch polypore, oyster mushrooms, reishi, maitake and the indication is that even the humble white button mushroom from the supermarket has benefits. The bottom line is to include mushrooms of whatever kind in your food at least 3-4 times a week. Some people are suggesting *Cordyceps* as a prophylactic and treatment but be aware that true *cordyceps* is hard to source in this part of the world and very expensive so there is a lot of stuff being sold that is not the real thing. If you are buying medicinal mushrooms use a good reputable source.

Not all these herbs and foods are strictly anti-viral (some also have this action though) but rather prevent the virus breaking in.

Sage, Peppermint and Thyme have all been shown to be effective for treating for IBV <https://bmcvetres.biomedcentral.com/articles/10.1186/s12917-019-1925-6>  
IBV is genetically similar to COVID-19 and is being used to develop a vaccine for Covid-19 <https://www.pharmaceutical-technology.com/news/israel-migal-covid-19-vaccine/>

Nettle has been shown to contain a plant lectin which prevents the virus replicating so time to make nettle soup and nettle pesto and drink nettle tea or gargle with it. Thankfully, the new nettles are starting to shoot up.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3085190/?fbclid=IwARiITqFvoi3vo-biKWtKqoadHwZ7rt21jAloe2gqApSLC2tqkzyTuFxUMsE>

Red clover has also been shown to be effective against the virus according to research conducted in China but I have lost the link for that. However, red clover tea would also be good and is very calming and good for the lymphatic system.

For those of you with Houttoynia growing in the garden this has been shown to be an anti-viral for corona viruses. So have some species and hybrids of Cistus which are grown as ornamentals including Cistus ladanifer and incanus, c. salvifolius, C. crispus, c. albidus – these are most similar to incanus. C. populifolius, C. libanotis, C. clusii, C. laurifolius and C. monspeliensis will all have benefits.

<https://www.katkhatibi.com/cistus-incanus-for-pcos-leaky-gut-lyme-disease-the-most-beneficial-tea-you-havent-heard-about/>

<https://klinghardtinstitute.com/articles/sardinian-cistus-incanus/>

<https://www.prohealth.com/library/cistus-a-natural-antibiotic-antiviral-and-biofilm-buster-6292>

I will soon put together an article about wonderful edibles from the garden including things thought of as weeds and as ornamentals that are actually really good food and medicine. We are surrounded by plants that will help protect us so have a look and see what is available near you and use it.

Homeopaths are recommending Arsenicum Album 1 a day for 3 days repeat if necessary repeat in two weeks if necessary. Apparently. This has met with great success in India.

## Dealing with symptoms

### First assess

Is there sneezing and cough? Sneezing is not normally a symptom of Covid 19.

Is there increased mucus production?

Is there fever?

Is there difficulty breathing which is the primary diagnostic symptom for covid-19 rather than the other seasonal respiratory infections. Consider Asclepias if you can get hold of it, Grindelia, and essential oils applied to the feet (for example sweet marjoram, pine, eucalyptus, spruce, myrtle, ravintsara, rosemary).

Select herbs for the severity of the symptoms and keep common sense in place. We are treating a person, an individual primarily and considering how the infection is affecting them so that they can successfully throw off the infection.

If there is no fever take warm drinks simple nourishing food and herbs selected appropriately (suggestions below). People are reporting excellent results with elderflower and rosehip syrup, thyme tea. And various other things so see what you have to hand and use plentifully.

If a fever is present it is better not to eat but focus on hydrating. Remember that in a fever sweating should be prolific and both salt and water are lost. Also, drinking fluids to the level where one is urinating copiously helps clear heat from the centre and helps the fever to 'break'. If you are concerned about dehydration you can use apple juice and miso or a homemade rehydration drink with : 1 litre water, 1 tsp salt, 8tsp sugar, juice of lemon although I substitute apple juice with salt or use honey instead of sugar. Do not use sugar other than for the rehydration drink.

Using herb teas is ideal some classic ones for fever are elderflower, peppermint, yarrow, tilia and boneset. However, there are many others that help such as calendula, chamomile, hibiscus hawthorn, vervain, valerian, lemon, black currant or blackberry leaves, cinnamon, clove. If there is coughing and breathing difficulties (the primary diagnostic is the shortness of breath) you can add mallow flower and leaf, plantain, mullein, coltsfoot and others.

Some say avoid honey some say it is good. Apple juice diluted with hot water is good as treats fever, lung symptoms and gives simple fruit sugars and lots of minerals. Simple vegetable broths or stewed fruit are good. Miso soup or Bovril/marmite/yeast extract drinks can be helpful.

If necessary take a tepid shower sitting on a stool or sponge the forehead, arm pits and neck with tepid water or a suitable hydrosol such as orange blossom or lavender.

Some practitioners have suggested taking magnesium chloride (1 normal bottle of Hepar water or 20g of magnesium chloride in 1 litre of water - 2-3 glasses per day (this may trigger diarrhoea so don't be surprised).

REST, do not try to power through.

In convalescence take simple foods-steamed veg, stewed fruit, rice and so on. Live yogurt is ok too and some honey. Tahini is good for building up the lung energy. Lots of berries and mushrooms and continue to rest but get some fresh air.

Covid 19 is an enveloped virus but we are not completely sure which herbs are specific for it. However, some possibilities are Cinnamon, Thyme, Echinacea, (Melissa and hypericum are good for treating herpes enveloped viruses), Eucalyptus, Star anise, Inula (not anti-viral per se but protects against secondary infections and strengthens lungs and is warming and drying as is Angelica. Wormwood and Artemisia annua may have a role.

One colleague reported great success with thyme tea when they started experiencing symptoms. Another reported great success with rosehip and elderflower syrup. I found Inula, thyme, oregano and the oxymel really helpful along with essential oils to the feet and inhalations with Cistus. I experienced huge thirst and drank copious quantities of chamomile tea and warm water. I also experienced loss of sense of taste and smell but that recovered in a couple of days. The most distressing thing was the difficulty breathing and sense of impending doom and loss of joie de vivre; I felt very morbid so increased doses of Vervain and used some tree essences to help this.

## Recipes

### **Lymphatic absorption cream formula:**

In a base cream use up to 10% essential oil For example:

4% Ti tree  
2% Niaouli  
1% Geranium

1% rosemary

1% myrrh

Apply 3-6 times daily to congested lymph nodes or to the lymph nodes nearest to the area that you wish to drain/clean. This can be combined with dry skin brushing, rebounding, massage, stimulation of the lymphatic reflexes and many other techniques to get things moving.

### **Fire cider**

½ cup grated ginger root

½ cup horseradish root grated

1 medium onion chopped

10 cloves garlic, crushed or chopped

2 chillis, chopped

1 lemon, sliced or chopped

2 tablespoons rosemary, fresh or dried

1 tablespoon turmeric powder or 2 tablespoons freshly grated turmeric

¼ teaspoon chill powder

Some people add ¼ cup raw honey

Other ingredients that people add include juniper berries, elderberries, rosehips or hibiscus petals.

Pack ingredients into a kilner jar and cover with apple cider vinegar. Place a circle of baking parchment over the top to prevent the vinegar corroding the metal seal. Close and leave to infuse for 3-4 weeks in a warm place in the kitchen. Once infused it can be taken in 5-15 ml doses up to 3 times a day. People often add some warm water to prevent tooth enamel damage and others add some honey to make it more palatable. The herbs and spices that have been infused can be added to soups stews stir fries and the like. The fire cider can also be sprinkled over food.

### Oxymels

These are basically a combination of honey and vinegar taken to promote respiratory and digestive health and health in general.

The simplest version is to take 1 part honey and 1 part live vinegar (by volume) and mix thoroughly. The oxymel can then be taken in 5-15 ml doses up to 3 times a day. Some people prefer to use 2 parts vinegar to 1 part honey or vice versa.

One can also use infused honeys or ones from bees that have fed on a particular plant. Our current one has thyme honey made by bees feeding on thyme bushes and lemon honey made by infusing lemon slices in honey for 12-48 hours. One could use others such as honey infused with elderberry or lime blossom honey made by bees feeding on lime blossom. There are many possibilities. For the vinegar component at the moment we are using a mixture of infused vinegars including bay and cistus. We have also used pine needle, inula, marrubium, elderflower, plantain, oregano and all sorts. We have found them great for keeping the respiratory system healthy over the winter and they certainly will not do any harm as part of preventative measures.

### Links to other good articles to read:

[https://avivaromm.com/covid-19-natural-prevention/?fbclid=IwARotj7HlsdRjUgrAnasvuUa4HhzvbQR4WLHcb5DeAokjX-Mtk\\_iVjRSzh4](https://avivaromm.com/covid-19-natural-prevention/?fbclid=IwARotj7HlsdRjUgrAnasvuUa4HhzvbQR4WLHcb5DeAokjX-Mtk_iVjRSzh4)

Aviva Romm's website also has a series of great articles explaining what COVID -19 is what the symptoms are and how to prevent catching it. Worth exploring or sharing with people who have concerns or who have been panicked by reading some of the things circulating on the internet.

[naimh.com/coronavirus?fbclid=IwAR2gwr1rNJ6wkkIKzsY6q\\_ps8\\_Zhe4OefhOTL7Mu07IyMzBuiHzcdaom\\_S7M](http://naimh.com/coronavirus?fbclid=IwAR2gwr1rNJ6wkkIKzsY6q_ps8_Zhe4OefhOTL7Mu07IyMzBuiHzcdaom_S7M)

[https://www.rootsofthyme.co.uk/post/a-herbal-and-natural-approach-to-the-coronavirus?cid=0886cb27-4f41-4d4e-b7ef-f8b57aeae4ef&utm\\_campaign=ab872373-2289-468b-8d35-4f4dbd43df5f&utm\\_medium=mail&utm\\_source=so](https://www.rootsofthyme.co.uk/post/a-herbal-and-natural-approach-to-the-coronavirus?cid=0886cb27-4f41-4d4e-b7ef-f8b57aeae4ef&utm_campaign=ab872373-2289-468b-8d35-4f4dbd43df5f&utm_medium=mail&utm_source=so)

## Is Elderberry likely to cause a cytokine storm?

What are cytokines?

**Cytokines** are a large group of proteins, peptides or glycoproteins that are secreted by specific cells of immune system and include any of a number of substances, such as interferon, interleukin, and growth factors, which are secreted by certain cells of the immune system and have an effect on other cells.

The link below gives a further explanation of cytokines if you want to explore

[www.sinobiological.com › what-is-cytokine-cytokine-definition-a-5796](http://www.sinobiological.com › what-is-cytokine-cytokine-definition-a-5796)

They are signalling molecules that mediate and regulate immunity, inflammation and hematopoiesis. In other words, they help our immune responses to be mounted. One immune response is inflammation which causes swelling and opening of cell boundaries to allow toxins out and healing things in. **Hematopoiesis** is the production of all of the cellular components of blood and blood plasma. It occurs within the hematopoietic system, which includes organs and tissues such as the bone marrow, liver, and spleen. Simply, **hematopoiesis** is the process through which the body manufactures blood cells.

So cytokines are part of our healthy immune function. However, if our immune system has had a lot of challenges then it may mount an exaggerated response to a perceived threat. This can lead to a cytokine storm, over production which leads to damage of our own tissues. This is what sometimes happens in autoimmune disease where our body fails to recognise a particular tissue as our own so that we start producing antibodies to our own tissues. Or we can get hypersensitivities to relatively benign substances otherwise known as allergies-dermatitis, eczema, food intolerances and allergies, asthma, rhinitis and so on.

So, for people with allergic tendencies or autoimmune problems a simple infection with a virus such as a cold or flu can make their eczema or allergies worse or their diabetes or rheumatoid arthritis worse.

And in an elderly person whose immune system has met many challenges an infection like SARS or Covid-19 can cause the immune system to damage the lung tissue when an immune response is mounted to clear a viral infection in the lungs-viral pneumonia. This leads to the lung tissue being damaged.

Cytokine Release Syndrome (CRS), or in its extreme, cytokine storm is an immunologic phenomenon that occurs in advanced states of infection, for example, in ARDS, as mentioned above, a potentially severe advanced COVID-19 complication, sepsis, also a possible severe COVID-19 complication, or with certain specific immunologic medications (i.e., monoclonal antibodies). It was considered a major cause of death in the Spanish Flu, SARS, and H1N1. Interleukin-6 is a term often dropped in these conversations because it is an immune mediator that acts as both a pro-inflammatory cytokine but, simultaneously it also acts as an anti-inflammatory. The association with elderberry and cytokine storm is implausible; elderberry is not able to cause cytokine storm whether used for prevention or infection, or during infection. Were one to be experiencing cytokine storm, one would be far too sick for herbal therapies; this is an ICU/life support level crisis. Bottom line: elderberry is unlikely, based on what we know at this time, particularly relevant for COVID-19 prevention or even treatment of mild-to moderate

symptoms and if you're concerned about cytokine release syndrome or cytokine storm as a result of this herb, don't use it. From Aviva Romm

Cytokine Release Syndrome occurs in advanced infection or severe complications or things like administration of monoclonal antibodies. A cytokine storm is an ICU or life support level crisis and elderberry is not going to cause this. The idea that it might is based on one research paper where Sambucol products were mixed with monocytes from blood samples of healthy patients and in no way mimics what happens upon ingestion of elderberry orally.

## Branwen Hunolt's critical analysis of the research on elderberry and cytokine storm

What did they do?

"The production of inflammatory cytokines was tested using blood - derived monocytes from 12 healthy human donors. Adherent monocytes were separated from PBL and incubated with different Sambucol preparations i.e., Sambucol Elderberry Extract, Sambucol Black Elderberry Syrup, Sambucol Immune System and Sambucol for Kids. Production of inflammatory cytokines (IL-1 beta, TNF-alpha, IL-6, IL-8) was significantly increased, mostly by the Sambucol Black Elderberry Extract (2-45 fold), as compared to LPS, a known monocyte activator (3.6-10.7 fold). The most striking increase was noted in TNF-alpha production (44.9 fold). "

--They took blood from 12 healthy people

--They separated out the monocytes (monocytes produce macrophages and cytokines and more) <https://astartebio.com/products/cells/monocytes/>

-They incubated the monocytes \*with\* the Elderberry extracts and preparations

-They measured the immune components generated

What this tells us: Elderberry \*maybe\* elicits a response from the immune system (there are other ingredients in the products used, like glucose).

What this does not tell us: The level of response in an organic blood sample when Elderberry is taken orally in proper dosing, during an infection, processed through the digestive tract and disseminated throughout the body.

--Anything in too high a dose will cause what it treats.

--In homeopathy taking high doses of something to find the treatable symptoms is called a proving. "A proving is the testing of a potentized substance to find out which symptoms that substance is capable of producing, and hence curing." <https://nyhomeopathy.com/provings/>

--Putting a pure selection of monocytes directly into a plant extract would be considered an overdose of medicine.

--This reminds me of a study I read about 7 years ago (can't find it atm but will try again in a.m.) by some scientists who extracted and isolated a component of Red Raspberry leaf (*Rubus idaeus*) and then applied it \*directly\* to a frog uterus. They observed that the uterus began contracting and quickly concluded that this meant Red Raspberry leaf was unsafe for pregnant women and it would send them into premature labor. How many of you drank Red raspberry leaf tea when pregnant? It is known for strengthening the uterus in preparation for birth among other things. It has been used all the way back into the dusty ages of memory and time. The difference here is drinking Red Raspberry leaf as tea and your body absorbing it through digestion vs. isolating something and seeing what happens as a response through direct, concentrated interaction.

--The flu is known for causing a cytokine storm and basically no one worries about taking Elderberry for the flu.

--I have food allergies and other allergies and I take Elderberry. I have for over a decade and not had a bad reaction to Elderberry. I am just one person, however. Elderberry has drastically helped our family through many illnesses. There are many people I know who take Elderberry and none have had this cytokine storm reaction either. But they are not everybody. And maybe it is possible. Can we produce a human this has happened in? Would Elderberry have such an empirically safe, historically significant reputation if this was a real danger?

--Also things this study isn't commenting on: They did not use a pure, heat treated Elderberry juice or even an aqueous extract. They used products with multiple ingredients like glucose. There was no mention of the effects glucose has on monocytes, which is pretty weak considering it's the main ingredient in the products. We know sugar affects the immune system greatly. Putting sugar directly into contact with a monocyte is begging for an immune response.

--It is very appropriate to be wary in such times about proper approaches to something we know so little about (COVID-19). I think there is also push back from Pharma against Elderberry and the herbal community. I know there are people in the cool kids club of herbalism who have dubious allegiances to contradictory paradigms. Exercise your own judgement, always.

Thanks for reading. :)

## Some information gathered by the students

Encouraging research on **liquorice** for SARS-related coronavirus - how similar it is to COVID-19 I don't know <https://www.ncbi.nlm.nih.gov/pubmed/17886224> and <https://www.ncbi.nlm.nih.gov/pubmed/24520776> and <https://www.ncbi.nlm.nih.gov/pubmed/12814717>

Promising findings on **elder** <https://www.ncbi.nlm.nih.gov/pubmed/24433341>

Interesting study on a **rose** species (*Rosa nutka*) but I can't access the whole article to find out which compounds were extracted and to compare with the constituents of more local species <https://www.ncbi.nlm.nih.gov/pubmed/8847882>

Revision 1 – 26/03/20

**Astragalus** polysaccharides have been found to be effective against an avian coronavirus <https://www.ncbi.nlm.nih.gov/pubmed/29170045>

**Anthemis hyalina**, relative of roman chamomile, was found to be more effective than *Nigella* or *Cistus* in this study, but all were said to be useful <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3933739/>

Thanks to Roses Wilkinson for this list.

Cross-referencing with pneumonia out of interest, which points to *Inula* and *Echinacea*, as well. Bartram also mentions Icelandic moss, which I think could be an interesting consideration, as its actions are 'demulcent, expectorant, antitussive, nutrient, and antiemetic'. He specifically mentions it 'helps arrest permanent respiratory damage in wasting diseases. Highly active in chest infections.' I've not got much first-hand experience using it, but one to think about, potentially.

Jill Stansbury, in her discussion of pneumonia (again, may or may not be useful), mentions a tea blend (although they're more US-centric herbs, I think we'd still be able to access many of them) that's meant as a preventative approach for people who are at risk of contracting pneumonia, so I'm thinking (barring confirming contraindications for each individual) for the elderly and people with pre-existing heart conditions (who seem to be at higher risk, based on the PubMed articles I've read on coronavirus), or anyone at higher risk of exposure:

Equal parts: *Usnea* spp, *Sticta pulmonaria*, *Verbascum thapsus*, *Tussilago farfara*, *Glycyrrhiza glabra*, *Lomatium dissectum* (so fairly standard respiratory support herbs, essentially).

Thanks to Meghan Rhodes. As Meghan points out some of these herbs are not readily available here but we can substitute others.

Author Nikki Darrell