

# Essential oils to fight COVID-19 myths busted by an aromatherapist

by Kathy Sadowski

In recent weeks, I have seen much unsubstantiated material on the internet stating that essential oils can be used to prevent the coronavirus (COVID-19). From hand sanitizer recipes, to recommending essential oils for COVID-19, to diffusing suggestions, to adding oils into face masks, and even ingesting essential oils like oregano, there has been a lot of bad advice.

First, I would like to present you with the information you need to understand why using essential oils are not the most effective choice in fighting the COVID-19. In some cases, the suggested uses you find on the internet may even be unsafe.

Then, I would like to review what medical experts suggest we do to help prevent catching the COVID-19. Finally, it is worth noting that while essential oils may not be the magical solution to solving this global pandemic, there is one significant way in which aromatherapy could help to provide some wellness support.

## *Why aren't essential oils proven effective in preventing the coronavirus?*

First off, the COVID-19 is a newly discovered virus, and scientific studies have not yet been conducted to determine if any essential oils can demonstrate antiviral activities against this specific pathogen.

Secondly, if any essential oil were to show antiviral potential against the coronavirus, it must then be assessed if the amount needed to prevent infection could be safe to use with humans.

In other words, there have been **no clinical studies to support the claim that essential oils can fight the COVID-19.**

Finally, once studies begin, the delivery method tested must match the delivery method used. For example, if a study were to come out, demonstrating that the virus was reduced on surfaces with the use of an essential oil cleaning formulation, this does not necessarily indicate that dispersing the same formulation into the air with an essential oil diffuser would be equally as effective.

Now let's take a look at some specific suggestions I have found on the internet for the use of essential oils against the virus. Home remedy ideas include hand sanitizing recipes, diffuser advice, placing oils in your face mask, and even ingesting oils. Why could these methods be considered ineffective? Further, what could make these suggestions unsafe to try at home?

## Essential Oil Hand Sanitizing Recipes

The CDC recommends that soap and water is the best way to clean your hands to reduce the spread of the virus (1). So, if you are nearby a sink and some soap, that is your best choice!

If you are out and about, and don't have access to a sink, hand sanitizer can be a less effective secondary alternative. The CDC recommends a recipe with greater than 60% ethanol or 70% isopropanol (2). Note that the key ingredient needed to fight the germs is the alcohol. Essential oils may also be added to a recipe but would not be considered the active ingredient needed to fight viruses.

*When is this method ineffective?*

Making or using a hand sanitizing recipe that contains less than the suggested 60% ethanol or 70% isopropanol would be considered ineffective. It is important to understand that the formulation percentage must be recalculated if the recipe utilizes an ingredient less than 100% ethanol (such as Everclear) or less than 100% isopropanol (such as typical store-bought rubbing alcohol).

Typical grain alcohol such as Everclear is 95% alcohol. It is not quite 100% alcohol. Therefore, a minimum of 63% of this strength of alcohol must be added to a recipe for it to contain at least 60% alcohol (formula:  $60/95$ ).

Typical vodka is only 40% alcohol, so it could not be used in making an effective hand sanitizing recipe.

Typical store-bought rubbing alcohol is 70% isopropanol, so it would need to be used at 100% to be effective, without adding any additional ingredients. Thus, 70% isopropanol would not work in a recipe that includes other ingredients.

*When is this method unsafe?*

When applied topically, essential oils should generally be diluted to 2% in a carrier. This percentage dilution may need to be higher with people who have sensitive skin, children, elderly, those who are pregnant, and those with certain medical conditions. Hand sanitizers containing more than 2% essential oils in the recipe may be unsafe. It depends which oils are selected.

Further, some oils may require a higher dilution than 2% such as cinnamon leaf and cinnamon bark, due to their very potent chemical constituents (3). In addition, some pressed citrus oils can be phototoxic with sun exposure if improperly diluted and may require dilution rates higher than 2%.

It is also important for you to be aware that some oils may be contraindicated with certain medical conditions. Ask your Doctor before use if you have any questions.

Finally, some essential oils may not be soluble with ingredients such as vodka and rubbing alcohol. This means they may not mix properly in homemade recipes that use these ingredients.

**Diffusing Essential Oils to Prevent Viruses**

Experts believe that the coronavirus is spread primarily from person to person. It may also spread when hands contact a surface contaminated with the virus.

Essential oil diffusers send particulates of essential oil into the air and are primarily used for aromatic pleasure. Since, at this time, the medical community does not believe the virus spreads in an airborne way, cleansing the air may not be nearly as beneficial as cleansing surfaces (1).

*When is this method ineffective?*

Especially since the COVID-19 is not considered airborne, suggesting the use of a diffuser to reduce the chance of catching the virus does not seem that effective. While it may offer great scents, it just doesn't make much sense!

*When is this method unsafe?*

Experts recommend that you use diffusers intermittently for 15-minute intervals. You should also enjoy diffusers in open rooms with proper ventilation. It can be unsafe to diffuse excessively, and especially around small children, pets, and those with certain medical conditions.

### Placing Essential Oil in a Face Mask

The CDC recommends that we wear face masks when going out in public to help reduce the spread of the virus. Some essential oil enthusiasts might think it is beneficial to put a few drops of an essential oil inside a mask to help reduce chances of catching the virus.

#### *When is this method ineffective?*

The vast majority of scientific studies that demonstrate the antimicrobial potential of essential oils are based on in vitro studies and not on airborne exposure.

Two preliminary airborne studies were found related to influenza, but more research is needed related to which essential oils could be effective against the coronavirus. In one study, nebulizing eucalyptus and tea tree reduced influenza droplets in the air (4). In another study, a blend of bergamot, eucalyptus, geranium, cinnamon, and lemongrass vapors were helpful in reducing the influenza virus in the air (5).

In reiteration, no studies are available that demonstrate a reduction of the coronavirus in the air with the use of essential oils. Wearing a properly fitted multi-layer cloth mask is key, but you should skip adding the essential oils.

#### *When is this method unsafe?*

Prolonged and/or excessive inhalation of essential oil may occur if it is placed onto a snug fitting face mask. It is not suggested that you use an essential oil diffuser for more than 15-minute increments. A face mask might be worn for hours or longer and could involve a much more potent exposure to the essential oils used!

In addition, especially if undiluted, essential oils in direct contact with your skin could cause topical irritation or sensitization. Based on these factors, it is not advisable that you apply essential oils to your face mask.

### Ingesting “Antimicrobial” Essential Oils such as Oregano

Many botanicals have demonstrated a range of antibacterial, antifungal, and antiviral activities against tested pathogens. It is important to understand the extraction method and delivery technique of the tested botanical as well as the dosage amount, duration, and possible contraindications.

#### *When is this method ineffective?*

Most studies on the antimicrobial activities of essential oil are in vitro or in vivo (in test tubes or with animals). Few human studies have been conducted. Further, many human studies may involve differing extraction methods of the botanical, complex dilution ratios, specific methods of delivery, or the combination of other botanicals in a formulation.

Thus, without a Doctor's advice, it can be very dangerous for the layperson to ascertain a safe and effective dosage and duration and know the possible side effects associated with ingesting essential oils.

*When is this method unsafe?*

Professional aromatherapy organizations do not advise the internal use of essential oils without expert advice (6,7). Ingesting oils can cause poisoning, mucus membrane burning, or dangerous reactions. Ingestion of certain botanicals may have contraindications with a variety of medical conditions or medications. Some of the most potent essential oils that have caused harm include oregano, cinnamon, eucalyptus, peppermint, wintergreen, and clove.

Thus, avoid ingesting essential oils that have not been properly diluted in a commercial product, and ask your Doctor if you have any questions before use!

### What do medical experts suggest we do to help prevent a COVID-19 infection?

While essential oils offer many benefits to our well-being, they may not be the best solution for preventing a coronavirus infection. Here is how the CDC recommends reducing the chances of getting sick (1).

- Frequently wash your hands with soap and water for 20 seconds.
- Avoid touching your face (especially your eyes, mouth, and nose) with unwashed hands.
- Practice social distancing by keeping six feet away from others in public places.
- Wear a mask out in public.

In addition, keep your immunity system strong by eating right, exercising, getting some daily sunshine, and keeping a positive attitude!

### One Way Aromatherapy Might Help Boost Immunity

Multiple scientific studies have found a link between heightened anxiety and a dramatically weakened immune system (8). When stressed, our production of a hormone called cortisol increases, and it in turn reduced our body's manufacturing of immunity cells. This makes us more susceptible to catching an infection from microbial invaders!

Aromatherapy may help us reduce stress levels. Multiple human studies have demonstrated that certain aromas can reduce anxiety. Here are just a few examples of research.

- In one placebo-controlled study with 99 pre-operative patients, 15 minutes of rose aroma reduced anxiety before surgery (9).
- In a double-blind and placebo-controlled study with 140 acute coronary syndrome patients, neroli aroma three times a day significantly reduced anxiety (10).
- In a placebo-controlled study with 50 acute leukemia patients, aromatherapy with lavender, peppermint, or chamomile significantly improved perceived tiredness, appetite loss, depression, and anxiety (11).

Some aromas to try for stress reduction include lavender, bergamot, rose, cedarwood, pine, neroli, chamomile, clary sage, or patchouli. Plus, to take it a step further, combining aromatherapy with breathing techniques may be a great way to help reduce anxiety. Some research has shown that calm

breathing can help bring our autonomic nervous system into parasympathetic (rest and digest) mode (12).

### In summary

Currently, there is no scientific evidence to demonstrate that essential oils are effective in preventing the COVID-19. Some advice on the internet could be both ineffective and unsafe. Essential oils are potent extractions of plant material and require proper dilution. They may also be contraindicated with certain medical conditions.

On a positive note, multiple studies have demonstrated that certain aromas may help to reduce anxiety. Lowering stress can help strengthen our immunity.

So...stay calm! Breathe deep! And enjoy some aromatherapy!

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Kathy Sadowski is a professional member of NAHA and AIA, Registered Aromatherapist (ARC), licensed massage therapist, enthusiast for environmental protection, natural lifestyle and a passion for reading scientific studies on herbs and essential oils. Learn more about Kathy and her work at <https://www.wellnessaromas.com/>.