

Saline Now Recommended for COVID?

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STORY AT-A-GLANCE

- › According to recent research, gargling and rinsing your nasal passages with saline can ease the respiratory symptoms of COVID-19 and reduce your risk of hospitalization
- › The hospitalization rate among those gargling and irrigating their sinuses four times a day for 14 days, using 2.13 grams of salt dissolved in 8 ounces of warm water, was 18.5%. Those who used 6 grams of salt had a hospitalization rate of 21.4%. The untreated reference population had a hospitalization rate of 58.8%
- › Nasal irrigation and gargling with hypertonic saline has also been shown to reduce the duration of the common cold by 1.9 days and reduce transmission within the household by 35% when done within 48 hours of symptom onset
- › Irrigating your sinuses with povidone-iodine has also been shown to reduce COVID hospitalization rates
- › Nebulizing hydrogen peroxide may be the most effective strategy of all. In most respiratory infection cases, improvement is seen within a few hours. Some of your immune cells produce hydrogen peroxide to destroy pathogens. By killing the infected cell, viral reproduction is stopped. Hydrogen peroxide therapy aids your immune cells to perform their natural function more effectively

According to research presented at the annual meeting of the American College of Allergy, Asthma and Immunology (ACAAI) in early November 2023, gargling and rinsing your nasal passages with a simple saline solution can ease the respiratory symptoms of COVID-19 and reduce your risk of hospitalization.

The results have not yet been published in a peer-reviewed medical journal. As reported in an ACAAI press release,¹ both high- and low-dose saline regimens, consisting of gargling and nasal rinsing four times a day for 14 days, were associated with significantly lower hospitalization rates for COVID-19 infections compared to the reference population.

Simple Technique to Lower Your Hospitalization Risk

Between 2020 and 2022, 55 individuals between the ages of 18 and 65 who tested positive for SARS-CoV-2 infection were randomly assigned to use either a high- or low-dose saline solution. Outcomes were compared to a reference group of 9,398 patients who also had COVID but didn't gargle or rinse their nasal passages. All had similar rates of vaccination, including controls.

The low-dose group used 2.13 grams of salt dissolved in 8 ounces of warm water, while the high-dose group used 6 grams of salt. They were instructed to gargle and rinse their nasal passages with the solution four times a day for 14 days.

The primary outcomes included frequency and duration of symptoms associated with SARS-CoV-2 infection. Secondary outcomes included hospital or ICU admission, mechanical ventilatory support and death.

Primary and secondary outcomes were very similar between the two treatment groups, but significantly lower than the control group. The hospitalization rate among those using the low-dose saline regimen was 18.5%. In the high-dose group, it was 21.4%. The reference population, meanwhile, had a hospitalization rate of 58.8%. No significant differences were noted in the other outcomes. Co-author Dr. Jimmy Espinoza commented on the results:

"We found that both saline regimens appear to be associated with lower hospitalization rates compared to controls in SARS-CoV-2 infections² ... It's a very simple intervention that is universally available, cheap and easy to use. I think it can make a difference, especially when it comes to comfort."³

Nasal Irrigation and Gargling Speeds Recovery From Common Cold

Studies have shown similar benefits for other respiratory ailments as well. For example, nasal irrigation and gargling with hypertonic saline has been shown to reduce the duration of the common cold by 1.9 days and reduce transmission within the household by 35% when done within 48 hours of symptom onset.⁴

“ Regularly rinsing your sinuses makes sense since it helps clear out pathogens and prevent them from gaining a strong foothold and migrating into your lungs.”

Gargling and flushing your sinuses helps prevent respiratory infections and speeds recovery by killing and flushing out viruses, thereby lowering your viral load.

In most respiratory infections, including COVID-19, the viral load is greatest in the sinuses and nasal cavity. Regularly rinsing your sinuses therefore makes sense since it would help clear out the pathogen and prevent it from gaining a strong foothold and migrating into your lungs.

‘How to’ Pointers

The easiest way to do this is to buy a ready-made sterile saline solution. If you use tap water, it's best to boil it first to rid the water of potential contaminants. I also recommend using a natural, unprocessed salt for the same reason. Heating the water isn't necessary to dissolve the salt, but it will accelerate the process. Make sure the water is at your body temperature before you use it.

Stir in one-quarter to half a teaspoon of salt and let the water cool until it's lukewarm. If you want, you could also add half a teaspoon of baking soda. Higher amounts of salt can be helpful if you're severely congested, but it may burn a bit.

Gargle for one minute, then use the remainder of the water to rinse your nasal passages using a neti pot or NeilMed sinus rinse bottle. The water pressure you get from a sinus rinse bottle can provide a more effective flush. If higher pressure is uncomfortable, a neti pot, which relies on gravity, may be a more comfortable choice.

Povidone-Iodine Alternative

You can also do nasal rinses and gargle with povidone-iodine instead of saline. For a nasal rinse, simply swap out the salt water or store-bought saline with half a teaspoon of povidone-iodine in 8 ounces of lukewarm water.

Povidone-iodine has been shown to effectively kill not only *Klebsiella pneumoniae* and *Streptococcus pneumoniae* bacteria, but to also rapidly inactivate SARS-CoV, MERS-CoV, H1N1 influenza virus A and rotavirus after just 15 seconds of exposure.⁵

The mixture used in that study – 7% povidone-iodine diluted 1-to-30, which equates to a total concentration of 0.23% povidone-iodine – inactivated over 99% of the coronaviruses causing SARS and MERS.

Other research has shown that high-risk patients with COVID-19 who irrigated with povidone-iodine reduced their risk of hospitalization by eight times compared to the national rate.⁶

Gargling is also beneficial. In one study, patients who gargled with a povidone-iodine solution at least four times a day for several months up to two years significantly lowered their incidence of chronic respiratory infections.⁷

If you want to use povidone-iodine for gargling, be sure to look for solutions formulated specifically as a sore throat gargle, such as Betadine. Do not use products intended for cuts and wound care. Povidone-iodine solutions sold as skin disinfectants are not suitable for gargling as they contain potentially harmful ingredients that should not be ingested.

Nebulized Hydrogen Peroxide – Another Prevention Strategy

While gargling and nasal irrigation may certainly be useful, I believe nebulizing hydrogen peroxide may be even more effective. The video above has my latest recommendations on how to prepare the hydrogen peroxide/saline nebulization solution and equipment to use.

Over the last three years, I've interviewed [Dr. Thomas Levy](#) and [Dr. David Brownstein](#) about this remarkably effective, yet simple and inexpensive treatment option.

Both treated COVID patients with nebulized peroxide with great success.^{8,9} In most cases, including severe ones, improvement is seen within just a few hours. To inactivate viruses with hydrogen peroxide, all you need is a face mask that covers your mouth and nose and a nebulizer that emits a fine mist with properly diluted food grade hydrogen peroxide.

The microscopic mist, like smoke or vapor, can be comfortably inhaled deep into your nostrils, sinuses and lungs. I recommend using a desktop nebulizer, as they're stronger and provide a much finer mist than handheld battery-operated versions.

Hydrogen Peroxide Rapidly Inactivates Viruses

Hydrogen peroxide (H₂O₂) consists of a water molecule (H₂O) with an extra oxygen atom (O₂), and it is the additional oxygen atom that allows it to inactivate viral pathogens.

Some of your immune cells produce hydrogen peroxide to destroy pathogens. By killing the infected cell, viral reproduction is stopped. So, hydrogen peroxide therapy aids your immune cells to perform their natural function more effectively.

Many studies have investigated the use of hydrogen peroxide against different pathogens. For example, a 2020 review¹⁰ of 22 studies found that 0.5% hydrogen peroxide effectively inactivated a range of human coronaviruses, including those responsible for SARS and MERS, within one minute of exposure.

According to Brownstein, all pathogens studied to date have been found to succumb to hydrogen peroxide, albeit at varying concentrations and for different amounts of exposure.

How Hydrogen Peroxide Works

In addition to aiding your immune cells in doing their job, other mechanisms of action that help explain how and why hydrogen peroxide works so well against respiratory infections include the following:

- It's a key redox signaling agent that creates oxidative eustress. Contrary to oxidative stress or oxidative distress, oxidative eustress denotes an oxidative challenge that has positive or beneficial effects and is essential in redox signaling.
- Hydrogen peroxide freely crosses cell membranes and does not readily oxidize biological molecules, including lipids and proteins. It does, however, react with iron. The presence of free, unbound iron in high concentrations in pathogens allows them to be selectively targeted by hydrogen peroxide.

High concentrations of iron result in a rapid breakdown of hydrogen peroxide into hydroxyl radicals and water. The hydroxyl radical, a potent oxidizing agent, kills any pathogens present. (Under normal, healthy circumstances, hydrogen peroxide merely breaks down into oxygen and water.)

- Peroxide is generated by activated phagocytes (pathogen-killing immune cells) at sites of inflammation.¹¹ Phagocytes also contain high amounts of ascorbate (vitamin C), which directly donate electrons to peroxide to generate the pathogen-killing hydroxyl radical inside the infected cells. Vitamin C also helps generate increased amounts of extracellular hydrogen peroxide, which further boosts the elimination of pathogens.¹²
- Hydrogen peroxide is continually generated inside all cells in your body, including the epithelial lining of your lungs. The presence of excreted peroxide on these surface cells in the airways is part of a healthy, at-the-ready immune response.¹³

- Aside from its antipathogen properties, hydrogen peroxide is also recognized as an important signaling molecule, both intracellular and extracellular, influencing and modulating multiple metabolic processes.¹⁴

How to Properly Dilute the Peroxide

While you can use virtually any percentage of food grade peroxide, it's crucial to dilute it properly before use. What you want is a 0.1% dilution, so even a 3% hydrogen peroxide will need to be diluted at least 30 times.

In a pinch, you could use commercial 3% hydrogen peroxide, the stuff used for wound care, but I don't recommend routine use of it as it contains stabilizing chemicals that can detract from the benefits.

Also, you want to dilute the hydrogen peroxide with hypertonic saline, not plain water, as the lack of electrolytes in the water can damage your lungs if you nebulize that. Using saline prevents the osmotic differential that can damage lung cells. To end up with a final peroxide/hypertonic saline solution concentration of 0.1%, you need to go through two steps:

1. Create the hypertonic saline solution
2. Dilute the peroxide

I used to recommend using normal saline, which contains 0.9% salt, but a 2021 study found that a 1.5% sodium chloride solution (hypertonic saline) achieved a 100% inhibition of SARS-CoV-2 replication in vitro (in cell culture). Using lower levels of saline, like 1.1%, only inhibited 88%. So, I now recommend using hypertonic saline instead, which would be slightly less than double the amount of salt used to make normal saline.

To make hypertonic (1.5%) saline, simply mix 1.5 teaspoons of high-quality unprocessed salt to 1 pint of purified or distilled water. Stir until the salt is thoroughly dissolved. Be sure to use proper measuring spoons and not a regular kitchen teaspoon. For even greater precision, you could use a digital scale to measure out exactly 7.1 grams of salt.

If the 1.5% hypertonic solution causes nasal burning, irritation or cough, you can lower the concentration to 0.9% salt, which is isotonic normal saline. For this you would decrease the salt to 1 level teaspoon to 1 pint of water. Once you have your saline solution and a food grade hydrogen peroxide, dilute the peroxide according to the following chart, based on the concentration you're starting with.

STARTING PEROXIDE CONCENTRATION	HYDROGEN PEROXIDE	+	SALINE SOLUTION	=	FINAL PEROXIDE CONCENTRATION
3%	16 ml (1 tbsp)	+	1.5%	=	0.1%
12%	4 ml (1 tsp)	+	1.5%	=	0.1%
36%	1.3 ml (1/4 tsp)	+	1.5%	=	0.1%

! WARNING:

Food grade peroxide at concentrations of 12% and 36% should NEVER be used full-strength either topically or internally. It MUST be diluted or severe injury can occur. Your safest bet is to use 3% food grade peroxide and dilute it as indicated so you end up with a solution of 0.1%.

Once you have your peroxide-saline solution, simply pour 1 teaspoon of it into the nebulizer and inhale the entire amount. If you like, you can add one drop of 5% Lugol's iodine solution to the nebulizer as well. Some find it boosts the effects.

I recommend using nebulized peroxide for any suspected respiratory infection, and the earlier you start, the better. If you're already presenting with a runny nose or sore throat, use the nebulizer for 10 to 15 minutes four times a day until your symptoms are relieved.

You can also use nebulized hydrogen peroxide for prevention and maintenance, which may be advisable during flu season. There is no danger in doing it every day if you're frequently exposed, and there may even be additional beneficial effects, such as a rapid rise in your blood oxygen level.

Sources and References

- ^{1, 2} [ACAAI Press Release November 8, 2023](#)
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- ⁴ [Nature 2019; 9 article number 1015](#)
- ⁵ [Infectious Diseases and Therapy 2018; 7\(2\): 249-259](#)
- ⁶ [medRxiv December 8, 2021](#)
- ⁷ [Dermatology. 2002;204 Suppl 1:32-6. doi: 10.1159/000057722](#)
- ⁸ [Science, Public Health Policy, and the Law July 2020; 2: 4-22 \(PDF\)](#)
- ⁹ [An At-Home Treatment That Can Cure Any Virus, Including Coronavirus by Thomas Levy, MD, JD \(PDF\)](#)
- ¹⁰ [J Hosp Infect. 2020 Mar;104\(3\):246-251](#)
- ¹¹ [The Journal of Clinical Investigation May 1975;55\(5\):945-955](#)
- ¹² [Biomedicine & Pharmacotherapy January 2019; 109:2119-2127](#)
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- ¹⁴ [Neuroscientist May 12, 2012;17\(4\):389-406](#)