

## Research on Nasal Sprays to Avoid COVID + Severe Cases/Hospitalization

**Disclaimer:** I am not a doctor. I have a PhD in computer science and AI. But here are 3 easy and safe things I personally do that some research shows may help avoid COVID infection and bad outcomes if positive:

(1) Nasal sprays w/Carrageenan e.g. NoriZite or Betadine Cold Defence, (2) Gargle with CPC or Betadine mouthwash, (3) Saline rinses using a neti pot. Note that all three help relieve symptoms and can shorten duration of regular colds so worth doing even if it's not COVID. Amazon should be able to send overnight.

If you do test positive, you'll want to consult your doctor about anti-virals like Paxlovid & Metformin, etc. Of course, using a kn95 or n95 mask when indoors or in crowded spaces outdoors is most important of all!

**Nasal Sprays Containing Iota-Carrageenan (I-C).** NoriZite (best, [order from UK](#)) or Betadine Cold Defense ([Amazon](#)): NoriZite I-C spray with gellan gum is good for about 6 hours. Betadine is good for about 4 hours.

**My Usage:** Two puffs each nostril before and 4 hours later (1) In any higher-risk situation like travel, medical visits, or indoor places. (2) 4x daily if I get any kind of flu-like symptoms. (3) Use it or Enovid (see below) if tested positive.

-- **Prophylaxis use reduced chances of testing positive with COVID-19 by 80%.<sup>1</sup>** 394 hospital personnel dedicated to care of COVID-19 patients, 1 puff 4 times a day of I-C spray or placebo for 21 days. Randomized, double-blind study. 2 out of 196 tested positive using I-C vs. 10 out of 198 using placebo. Not perfect study but still very positive.

-- **I-C sprays decrease disease duration for regular coronaviruses (common colds) by 3.9 days. 1.9 days for rhinovirus.<sup>2</sup>** "Carrageenan nasal spray showed significant antiviral efficacy in all three virus subgroups, the highest effectiveness was observed in human corona virus-infected patients".

Table 1: Summary of clinical trials on the iota-carrageenan nasal spray as a treatment for the common cold.

| Publication                                                                 | Patients                                                      | Treatment                                                        | Antiviral                                                                                                                                                                                                                                                | Symptomatology                                                                                                |
|-----------------------------------------------------------------------------|---------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Eccles <i>et al.</i> (2010)<br>A double-blind placebo-controlled trial [22] | n = 35 Adults<br>mean age 19.6 years                          | 0.12% iota-carrageenan nasal spray, 3 times a day for four days  | Nasal lavage was analyzed by real-time RT-PCR for the presence of viral genomes. Viral load in the respiratory virus-positive patients increased by almost sixfold, whereas it decreased by 92% in the iota-carrageenan treatment group ( $p < 0.009$ ). | Carrageenan treated group had a reduction in total symptom scores between days 2-4 of the trial ( $p=0.046$ ) |
| Fazekas <i>et al.</i> (2012)<br>Double-blind placebo-controlled trial [24]  | n = 153<br>children aged between 1-18 years, mean age 5 years | 0.12% iota-carrageenan nasal spray, 3 times a day for seven days | Topical application of the iota-carrageenan spray reduced viral loads in nasal secretions to a significantly higher degree than placebo after 3 to 5 days of treatment ( $p = 0.026$ )                                                                   | A non-significant reduction in total symptom scores between days 2-7 of trial                                 |
| Ludwig <i>et al.</i> (2013)<br>Double-blind placebo-controlled trial [27]   | n = 211 adults<br>mean age 33 years                           | 0.12% iota-carrageenan nasal spray, 3 times a day for seven days | Viral titers in nasal fluids showed a significantly greater decrease in carrageenan treated patients in the intention-to-treat population ( $p = 0.024$ ) and in the per-protocol population ( $p = 0.018$ ) between days 1 and 3/4.                     | Significant reduction in total symptom scores in later days of cold ( $p=0.048$ )                             |
| Eccles <i>et al.</i> (2015)<br>Double-blind placebo-controlled trial        | n = 200 adults<br>mean age 20 years                           | 0.12% iota-carrageenan nasal spray, 4 times a day for four days  | Non-significant trend for a reduction in viral titres in the iota-carrageenan group compared to the placebo group.                                                                                                                                       | Significant reduction in total symptom scores between days 2-4 of the trial ( $p = 0.0364$ )                  |

<https://www.lesswrong.com/posts/cA24NRxMDDdWxPJUR/nose-throat-treatments-for-respiratory-infections>

**Xlear (Xylitol) Nasal Spray:** One [study of 556 hospital personnel](#) showed Xylitol sprays reduced infections by 62%.

**Enovid SaNOtize (NONS): May be best if you test positive.** One study showed [reduced avg. time for patients who test positive to show negative PCR test from 7 days to 3 days](#). Another "found participants who took NONS after COVID-19 exposure were [75% less likely to become infected](#) when compared to the control group." But have to order from Israel or eBay & more expensive. Only lasts 60 days after opening. So maybe keep a bottle for if infected.

<sup>1</sup> "Efficacy of a Nasal Spray Containing Iota-Carrageenan in the Postexposure Prophylaxis of COVID-19 in Hospital Personnel Dedicated to Patients Care with COVID-19 Disease", [Int J Gen Med](#). 2021; 14: 6277–6286.

<sup>2</sup> "Carrageenan nasal spray in virus confirmed common cold: individual patient data analysis of two randomized controlled trials", 12 Nov 2014 in Multidisciplinary Respiratory Medicine, <https://mrmjournal.org/mrm/article/view/392/1075>.

## **Research on Gargling With Mouthwashes Containing Diluted Povidone Iodine (e.g. Betadine Gargle Mouth Wash) or CPC (e.g. Crest Pro Health)**

Povidone-iodine (PVP-I) gargle/mouthwashes are used for the prevention of respiratory and endotracheal infections in hospital settings so likely helpful overall. CPC mouthwashes have similar effect.

Journal paper recommended every 2-3 hours, up to 4/times a day, for people (1) who have confirmed/suspected SARS-CoV-2 infection, (2) are undergoing high-risk procedures (e.g. those involving nasal, oral, pharyngeal, and pulmonary secretions), or (3) have residence in COVID-19 hotspots.<sup>3</sup>

**My Usage:** I use as above after (1) I'm in any higher-risk situation like travel, medical visits, or close conversations with unmasked people (especially indoors). (2) If I get any kind of cold/flu-like symptoms (gargling helps regardless of whether its COVID or not!). (3) I would use after testing positive.

I use Betadine Gargle Mouth Wash (with PVI-I) because when I tried Crest Pro Health (w/CPC) I temporarily lost taste, but that only happens for some people. So could be worth trying Crest Pro Health or other mouthwash with CPC as the only active ingredient because it's cheaper and good for regular mouthwash.

**Gargle for at 30-60 seconds** and swish it around everywhere, including your cheeks and gums — they can test positive also. I also purposefully gargle slower and deeper part of the time to go lower in my throat.

### **Studies:**

**Multiple studies show virtual elimination of COVID virus reproduction in vitro** by both PVP-I<sup>4</sup> and CPC (cetylpyridinium chloride)<sup>5</sup>.

**PVP-I study of 411 randomized COVID Positive Patients Found 38% Reduction in Saliva Testing Positive.**

Gargled 4x a day w/diluted PVP-I solution vs water. "The viral clearance rate of SARS-CoV-2 was significantly higher for mouthwash and gargling with PVP-I for 3 days than for mouthwash and gargling with water ( $p = 0.015$ ).\" Saliva tested negative after 3 days for 34.5% of PVP-I vs. only 21.4% of water.<sup>6</sup>

**No studies for prevention of COVID, but a study showed 50% reduction in occurrence of respiratory tract infections** of 23 patients w/chronic respiratory diseases showing repeated infections.<sup>7</sup>

**CPC system review** "indicates that mouthwashes containing CPC are effective in reducing salivary viral load of SARS-CoV-2 in vivo and provides a rationale for larger studies to evaluate the efficacy of CPC mouthwashes in reducing transmissibility and clinical severity of COVID-19."<sup>8</sup>

**Betadine Gargle Mouthwash can be purchased on Amazon or in many drug stores:**

[Amazon.com: Betadine Antiseptic Medicated Gargle, Povidone-Iodine 0.5% , 8 FL OZ](https://www.amazon.com/Betadine-Antiseptic-Medicated-Gargle-Povidone-Iodine-0.5%-%2F8-FL-OZ/dp/B000APLW02) \$10.44 for 8oz.

**Crest Pro Health and other mouthwashes containing CPC can be purchased almost anywhere.**

**Note:** Avoid mouthwashes that also have other active ingredients because may inhibit the action of CPC.<sup>9</sup>

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<sup>3</sup> "Can povidone iodine gargle/mouthrinse inactivate SARS-CoV-2 and decrease the risk of nosocomial and community transmission during the COVID-19 pandemic? An evidence-based update ", Jpn Dent Sci Rev. 2021 Nov; 57: 39–45.  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7959263/>

<sup>4</sup> "Povidone iodine gargle and mouthwash", British Dental Journal volume 228, page900 (2020),  
<https://www.nature.com/articles/s41415-020-1794-1#further-reading>

<sup>5</sup> "A common compound in mouthwashes found to inhibit SARS-CoV-2 in vitro ", 12/24/20. <https://www.news-medical.net/news/20201224/A-common-compound-in-mouthwashes-found-to-inhibit-SARS-CoV-2-in-vitro.aspx>

<sup>6</sup> [A prospective, randomized, open-label trial of early versus late povidone-iodine gargling in patients with COVID-19 | Scientific Reports \(nature.com\)](https://www.nature.com/articles/s41415-020-1794-1#further-reading), 11/28/22.

<sup>7</sup> [Prevention of respiratory infections by povidone-iodine gargle - PubMed \(nih.gov\)](https://pubmed.ncbi.nlm.nih.gov/2002/), 2002.

<sup>8</sup> [Efficacy of Cetylpyridinium Chloride mouthwash against SARS-CoV-2: A systematic review of randomized controlled trials - D'Amico - 2023 - Molecular Oral Microbiology - Wiley Online Library](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7959263/), 2/20/23.

## Research on Saline Rinses to Avoid COVID + Severe Cases/Hospitalization

Saline rinses e.g. using neti pots are commonly used to relieve congested sinuses, colds and allergies, help people breathe, reduce sinus pain or headache, and improve taste and smell and improve sleep quality.<sup>9</sup> So should be generally helpful if you have COVID or “just a cold or flu”!

**My Usage:** I use twice a day, starting immediately after (1) whenever I’m in any extra high-risk situations like travel or medical visits. (2) If I get any kind of cold/flu-like symptoms. (3) I would use after testing positive. I then follow with carrageenan or Enovid nasal sprays that have better prevention/clearing data.

Studies are more mixed than for nasal spray studies so I use the sprays more regularly than saline rinses. But I still use saline rinse (before nasal spray) when I’ve had much higher exposure risk or have symptoms.

### Recent Studies Have Indicated that Saline Nasal Rinses May:

-- **Significantly reduce chances of testing positive with COVID-19** (up to 90%).<sup>10</sup>

-- **One study showed significantly decrease chances of hospitalization** (up to 8.5x) after symptoms.<sup>11</sup> Author of study said “The solution to pollution is dilution.” “By giving extra hydration to your sinuses, it makes them function better. If you have a contaminant, the more you flush it out, the better you are able to get rid of dirt, viruses and anything else.” But no controls in this study.

-- **But another small study showed little if any effect for lessening COVID viral load.**<sup>12</sup>

-- **Must use distilled water or water boiled for 5 minutes. Use at close to body temperature, e.g. 96-100 degrees.** Irritates nose if you use much higher or lower temperature. After using up saline packets you can buy more packets, e.g. [Rite-Aid Sinus Wash Refills at Amazon](#).

You can use any traditional Neti Pot, but I use this Nasal Wash Bottle that costs \$11.85 at Amazon:

[Amazon.com: Waterpulse Nasal Wash Bottle Model YT-300 : Health & Household](#)

-- **See Youtube video** “[Using Neti Pot Nasal Flush](#)” for example of using and cleaning.

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<sup>9</sup> [Effectiveness of nasal irrigation devices: a Thai multicentre survey - PubMed \(nih.gov\)](#), 5/27/19.

<sup>10</sup> “**Nasopharyngeal and oropharyngeal rinses with neutral electrolyzed water prevents COVID-19 in front-line health professionals: A randomized, open-label, controlled trial in a general hospital in Mexico City**”, *Biomed Reports*, 2/16, 2022. A randomized, open-label, controlled trial in a general hospital in Mexico City, where they took 170 front line medical staff who all used normal PPE but whom: “followed a prophylactic protocol with SES (oral and nasal rinses, three times a day for 4 weeks). All participants were monitored for COVID-19 symptoms and disease in a time-frame of 4 weeks and the incidence of illness per group was registered.

The relative risk of disease, associated with each treatment was calculated. The presence of COVID-19-positive cases, in the group that received the nasal and oral rinses with SES was 1.2%, while in the group that did not do the SES rinses (control group), it was 12.7% (P=0.0039 and RR=0.09405; 95% CI of 0.01231-0.7183). The prophylactic protocol was demonstrated as a protective factor, in more than 90%, for developing the disease, and without adverse effects.

<https://pubmed.ncbi.nlm.nih.gov/34987795/>

<sup>11</sup> “**Rapid initiation of nasal saline irrigation to reduce severity in high-risk COVID+ outpatients**”, *Ear, Nose & Throat Journal*, 8/25/2022. The study found that less than 1.3% of the 79 study subjects age 55 and older who enrolled and did twice daily sinus irrigation within 24-hours of testing positive for COVID-19 between Sept. 24 and Dec. 21, 2020, experienced hospitalization, an 8.5-fold reduction in hospitalizations compared to comparable people during the same period (alas, no controls during the study itself, and pre-vaccines and Paxlovid, but still very positive outcomes.

<https://journals.sagepub.com/doi/10.1177/01455613221123737>

<sup>12</sup> [Pharmacokinetic-based failure of a detergent virucidal for severe acute respiratory syndrome–coronavirus-2 \(SARS-CoV-2\) nasal infections: A preclinical study and randomized controlled trial - PMC \(nih.gov\)](#), 9/12/22. Randomized study compared three groups of 24 COVID positive people who did (1) twice daily nasal irrigation with J&J Baby Shampoo in hypertonic saline, (2) hypertonic saline alone, and (3) no intervention. No significant effect of either (1) or (2) on viral load or symptom scores.