

Iodine's Effectiveness Against COVID-19

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The coronavirus known as SARS-CoV-2, which causes COVID-19 disease, is presently responsible for a global pandemic. Why is the effectiveness of Iodine being left out of treatment protocols? Below is a document for the study and effectiveness of Iodine when treating COVID-19 and the ability to sanitize and even remove toxic pollutants.

Mantlo E, et al. Efficacy of a novel iodine complex solution, CupriDyne, in inactivating SARS-CoV-2. Galveston National Lab, University of Texas Galveston Medical Branch. Accessed 20 May 2020.

<https://www.biorxiv.org/content/10.1101/2020.05.08.082701v1.full.pdf>

“Oral iodine can be a stop-gap measure or it may become a general pandemic-preventing approach.”

Warren G. Iodine Intake to Reduce Covid-19 Transmission and Mortality. 10.13140/RG.2.2.18989.84964.

https://www.researchgate.net/publication/340769844_Iodine_Intake_to_Reduce_Covid-19_Transmission_and_Mortality

“Iodine is known to destroy coronavirus both inside and outside the human body. It is also known to be safe for people at doses much higher than most people currently get in our food. The question is whether iodine can be used in a way that is practical and valuable for slowing the covid-19 pandemic. The finding is that iodine very likely can be of value to slow transmission and reduce mortality.”

Warren G. Iodine for Covid. 10.1111/jvim.14903.

https://www.researchgate.net/publication/340535851_Iodine_for_Covid

Iodine Can Be a Valuable Tool In the Fight Against COVID-19

Iodine is also an important nutrient for a healthy immune system. In the paper, “In Search for Effective and Safe Drugs Against SARS-CoV-2: Part II] the Role of Selected Salts and Organometallics of Copper, Zinc, Selenium, and Iodine Food Supplements,” Abdel-Mottaleb et al write:

Abdel-Mottaleb MS, Abdel-Mottaleb Y. In Search for Effective and Safe Drugs Against Sars-cov-2: Part II] the Role of Selected Salts and Organometallics of Copper, Zinc, Selenium, and Iodine Food Supplements. Web. Accessed 20 May 2020. <https://doi.org/10.26434/chemrxiv.12234743.v1>

“Trace elements such as copper, zinc, selenium, and iodine are micronutrients in our diet that are necessary to sustain optimal biological functions and optimal immune responses to infections including viral ones.”

Bailey RL, et al. The epidemiology of global micronutrient deficiencies. Ann Nutr Metab. 2015;66 Suppl 2:22-33. <https://pubmed.ncbi.nlm.nih.gov/26045325/>

McMillan DC, et al. Relationship between nutritional status and the systemic inflammatory response: micronutrients. Proc Nutr Soc. 2019 78(1):56-67. <https://pubmed.ncbi.nlm.nih.gov/30220267/>

Jayawardena R, et al. Enhancing immunity in viral infections, with special emphasis on COVID-19: A review. Diabetes Metab Syndr. 2020;14(4):367-382. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7161532/>

Rashed MN. The role of trace elements on hepatitis virus infections: a review. J Trace Elem Med Biol. 2011 Jul;25(3):181-187. <https://pubmed.ncbi.nlm.nih.gov/21880473/>

There’s also a considerable amount of evidence suggesting that iodine is effective against viruses. In the paper, “Iodine Intake to Reduce COVID-19 Transmission and Mortality,” Warren describes how iodine is the only substances that meets all the criteria used to identify potential strategies to protect against COVID-19:

- (1) *Known to deactivate coronavirus,*
- (2) *Known role in relevant immune functions inside the body,*
- (3) *Known to be safe for people to take,*
- (4) *Broad availability at low cost,*
- (5) *No additional FDA approval required.*
- (6) *And a lack of contrary evidence.”*

Warren G. Iodine Intake to Reduce Covid-19 Transmission and Mortality. 10.13140/RG.2.2.18989.84964.

https://www.researchgate.net/publication/340769844_Iodine_Intake_to_Reduce_Covid-19_Transmission_and_Mortality

Iodine's Use Against Viruses and Other Organisms

In the paper, "In Search for Effective and Safe Drugs Against SARS-CoV-2: Part II] the Role of Selected Salts and Organometallics of Copper, Zinc, Selenium, and Iodine Food Supplements," Abdel-Mottaleb et al write:

Abdel-Mottaleb MS, Abdel-Mottaleb Y. In Search for Effective and Safe Drugs Against Sars-cov-2: Part II] the Role of Selected Salts and Organometallics of Copper, Zinc, Selenium, and Iodine Food Supplements. Web. Accessed 20 May 2020. <https://doi.org/10.26434/chemrxiv.12234743.v1>

"Iodine is a general antiseptic that can cripple viruses, bacteria, fungi, and their spores. Iodine proved effective against a multitude of viruses such as influenza, herpes, chicken, and smallpox [8-14]. Studies have suggested the use of iodine orally to prevent/treat viral infections. This suggestion is backed by the already established use of iodine in the treatment of thyroid disorders [15]."

"Iodine has been exploited as a prophylactic and therapeutic agent in the treatment of diseases caused by bacteria, viruses, and fungi, and to sanitize eating utensils. Iodine kills within seconds of bacteria, viruses [32, 33] fungi, protozoa, and even spores of bacteria and fungi, including anthrax spores. Iodine has been used successfully and efficiently against influenza, herpes, smallpox, and chicken pox viruses [33]."

8. Gershenfeld L. Iodine as a virucidal agent. J Am Pharm Assoc Am Pharm Assoc. 1955 44(3):177-182. <https://pubmed.ncbi.nlm.nih.gov/14353747/>

9. Gershenfeld L. Povidone-iodine (PVP-I) as a trichomonacide. Am J Pharm Sci Support Public Health. 1962 Sep;134:324-331. <https://pubmed.ncbi.nlm.nih.gov/13960584/>

10. Gershenfeld L. Povidone-iodine (PVP-I) as a vaginal microbicide. Am J Pharm Sci Support Public Health. 1962 Aug;134:278-291. <https://pubmed.ncbi.nlm.nih.gov/13960582/>

11. Gershenfeld L. Povidone-iodine as a sporicide. Am J Pharm Sci Support Public Health. 1962 Mar;134:78-81. <https://pubmed.ncbi.nlm.nih.gov/13898055/>

12. Gershenfeld L, et al. Iodine as a tuberculocidal agent. *Mil Surg*. 1954 Mar;114(3):172-183. <https://pubmed.ncbi.nlm.nih.gov/13132570/>
13. Gershenfeld L, Witlin B. Iodine as an antiseptic. *Ann N Y Acad Sci*. 1950 Aug;53(1):172-182. <https://pubmed.ncbi.nlm.nih.gov/15433173/>
14. Eggers M. Infectious Disease Management and Control with Povidone Iodine. *Infect Dis Ther*. 2019 Dec;8(4):581-593. <https://pubmed.ncbi.nlm.nih.gov/31414403/>
15. Derry D. Iodine: The Forgotten Weapon Against Influenza Viruses. *Thyroid Science*. 2009 4(9):1-5. <https://realrawfood.com/sites/default/files/article/Iodine-Weapon%20Against%20Viruses.pdf>
16. Carroll B. The relative germicidal activity of triiodide and diatomic iodine. *J. Bacteriol*. 1955 Apr;69(4):413-417. <https://pubmed.ncbi.nlm.nih.gov/14367295/>
17. Gershenfeld L. Iodine. In *Disinfection, Sterilization, and Preservation*. Les & Febiger, Philadelphia, 1977.

Successful treatment of pneumonia with iodine dates at least as far back as 1904.

“Is Potassium Iodide a Specific in Lobar Pneumonia?” *Hospital (Lond)* 1886). 1904 May 14;36(920):113-114. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5205649/?page=1>

In June of 1905, the NYT printed an article about the use of iodine for tuberculosis.

Iodine as a Cure for Tuberculosis. *New York Times*. June 1, 1905, Page 10. Accessed 20 May 2020.

<http://query.nytimes.com/gst/abstract.html?res=9406E4D81E3DE633A25752C0A9609C946497D6CF>

Iodine was used to curb transmission of the Spanish Flu in the early 20th century.

Washington State University. *Influenza Epidemic of 1918 at WSU*. Accessed 20 May 2020. https://content.libraries.wsu.edu/digital/collection/wsu_flu

How Iodine Neutralizes Viruses and Harmful Organisms

“Mechanistically, iodine is believed to react with and inactivate bacteria and viruses by oxidizing and/or iodinating critical proteins, DNA, RNA, and fatty acids (Gottardi, 1999; Gottardi, 2014).”

Mantlo E, et al. Efficacy of a novel iodine complex solution, CupriDyne, in inactivating SARS-CoV-2. Galveston National Lab, University of Texas Galveston Medical Branch. Accessed 20 May 2020.

<https://www.biorxiv.org/content/10.1101/2020.05.08.082701v1.full.pdf>

“Influenza virus is destroyed by heat (167-212°F [75-100°C]). In addition, several chemical germicides, including chlorine, hydrogen peroxide, detergents (soap), iodophors (iodine-based antiseptics), and alcohols are effective against human influenza viruses if used in proper concentration for a sufficient length of time.”

2009 H1N1 Flu ("Swine Flu") and You. CDC Website. 10 Feb 2010. Accessed 20 May 2020. <https://www.cdc.gov/h1n1flu/qa.htm>

In the paper, “The Healing Power of Potassium Iodide,” Kunin writes:

Kunin, R. The Healing Power of Potassium Iodide (SSKI). 19 April 2011. Accessed 20 May 2020.

<https://www.olaloa.com/resources/articles-on-nutrition/381-the-healing-power-of-potassium-iodide-sski>

“Research on the ability of iodine to destroy AIDS virus was commissioned by the maker of the povidone-iodine solution, Betadine. HIV was measured by reverse transcriptase levels as well as the cytopathic effect in T-cells. The research at Massachusetts General Hospital concludes: “HIV was completely inactivated and could no longer replicate after exposure to the povidone-iodine preparations even at very low concentrations.”

Goldenheim PD. Inactivation of HIV by Povidone-Iodine. JAMA. 1987 May 8;257(18):2434.

<https://pubmed.ncbi.nlm.nih.gov/3646340/>

“This study tested the in vitro efficacy of three formulations of (PVP-I: 4% PVP-I skin cleanser, 7.5% PVP-I surgical scrub, and 1% PVP-I gargle/mouthwash) against a reference virus (Modified vaccinia virus Ankara, MVA) and MERS-CoV. These data indicate that PVP-I-based hand wash products for potentially contaminated skin, and PVP-I gargle/mouthwash for reduction of viral load in the oral cavity and the oropharynx, may help to support hygiene measures to prevent transmission of MERS-CoV.”

Eggers M. Rapid and Effective Virucidal Activity of Povidone-Iodine Products Against Middle East Respiratory Syndrome Coronavirus (MERS-CoV) and Modified Vaccinia Virus Ankara (MVA). *Infect Dis Ther.* 2015 Dec;4(4):491-501.
<https://www.ncbi.nlm.nih.gov/pubmed/26416214>

“Iodine exhibits activity against bacteria, molds, yeasts, protozoa, and many viruses; indeed, of all antiseptic preparations suitable for direct use on humans and animals and upon tissues, only iodine is capable of killing all classes of pathogens: gram-positive and gram-negative bacteria, mycobacteria, fungi, yeasts, viruses and protozoa. Most bacteria are killed within 15 to 30 seconds of contact.”

Sircus M. Iodine - Bringing Back the Universal Medicine. International Medical Veritas Association; 2 edition (April 3, 2011).
<https://books.google.com/books?id=KcRZCAAQBAJ&pg=PT353>

Iodine’s Activity Against Harmful Organisms Is Internal

In 1961, the Royal Society of Medicine published information stating that free iodine in the stomach kills bacteria and viruses and it deactivates biological and chemical toxins.

Kelly FC. Iodine in medicine and pharmacy since its discovery, 1811-1961. *Proceedings of the Royal Society of London—Series B: Biol. Sci.* 54:831-836.

Kunin describes how iodine’s internal action supports the immune system:

Kunin, R. The Healing Power of Potassium Iodide (SSKI). 19 April 2011. Accessed 20 May 2020.
<https://www.olaloba.com/resources/articles-on-nutrition/381-the-healing-power-of-potassium-iodide-sski>

“Not only does iodide inactivate microbes by direct contact, it also arms the eosinophil cells with hydrobromous acid, a bleaching agent more powerful than Clorox — powerful enough to destroy allergy-causing antigens and to kill the larger sized organisms, including the larvae of intestinal parasites. Experiments by Dr. S J Weiss at the University of Michigan found that iodine yields up to a five-fold increase of bromine in eosinophils and that iodinated tyrosine interacts with a myeloperoxidase enzyme within these white blood cells to produce the acid. Eosinophils coat their targets, ie. bacteria, fungi, viruses, parasites and other antigens, with the positively charged myeloperoxidase, thus attracting the negatively charged bromine acid.”

Weiss SJ, et al. Brominating oxidants generated by human eosinophils. Science. 1986 234:200-202. <https://www.ncbi.nlm.nih.gov/pubmed/3018933>

Iodine’s Mechanism of Action Can Protect the Respiratory System

In a paper titled “Iodine: The Forgotten Weapon Against Influenza Viruses,” Derry describes how iodine’s internal action can protect the respiratory system:

Derry D. Iodine: The Forgotten Weapon Against Influenza Viruses. Thyroid Science. 2009 4(9):1-5.

<https://realrawfood.com/sites/default/files/article/Iodine-Weapon%20Against%20Viruses.pdf>

“Iodine circulating in the blood is captured by many tissue sites and ends up in mucus secretions. The tissues include thyroid and salivary glands, nasal secretions, stomach, and lungs. Collectively, these tissues and mucus products contain free iodine which defends against invasion by bacteria and viruses.[16, 20]”

“The salivary glands, nasal mucosa, and lungs all secrete mucus which contains iodine. The [16] lungs not only secrete mucus, but Salter thought volatile iodine mixes with alveolar air to enter the bronchioles. If this occurs, it would serve as [17] an additional barrier to the invading air borne viruses in a manner similar to aerosol iodine.”

“Stomach mucosa captures iodine from blood and secretes it into stomach cavities. Free iodine in the stomach kills bacteria and viruses and it deactivates biological and chemical toxins. Dead viruses are still immunologically competent and thus antibodies can be made to dead viruses.[20, 22] Overall, we see there is a complex integrated system for protecting humans from viral or bacterial invasions via oral, nasal, and gastrointestinal routes. This system depends on taking adequate iodine orally.”

“Our current recommended iodine intake by the WHO is 150 to 200 micrograms daily. This dose first started by David Marine in 1920 has successfully prevented goiters, cretinism, and mental retardation. If the daily iodine dose is above 3 mg [21] for over 2 weeks, the thyroid gland becomes saturated and no longer takes up much iodine.[25]”

“Then, dietary iodine goes to other sites named above and is excreted into the upper respiratory and gastrointestinal tract mucus. It seems logical[16] that air borne viruses become stuck in mucus and killed by free iodine.”

“Free iodine is believed to react with the amino acids tyrosine and/or histidine at low concentrations. The reaction denatures proteins and causes the death of cells.[5, 6, 20, 22]”

5. Carroll B, et al. The Mode of Action of Iodine on Infectious Agents. J. Neward Beth-Israel Hosp. 1955;6(1):129.

6. Carroll B. The relative germicidal activity of triiodide and diatomic iodine. J. Bacteriol. 1955 Apr;69(4):413-417. <https://pubmed.ncbi.nlm.nih.gov/14367295/>

16. Brown-Grant K. Extrathyroidal iodide concentrating mechanisms. Physiol. Rev. 1961;41:189.
<https://journals.physiology.org/doi/abs/10.1152/physrev.1961.41.1.189?journalCode=physrev>

17. Salter WT. The Endocrine Function of Iodine. Cambridge, Harvard University Press, 1940.

20. Derry DM. Breast Cancer and Iodine. Trafford, Victoria Canada, 2001.

21. Kelly FC. Iodine in medicine and pharmacy since its discovery, 1811-1961. Proceedings of the Royal Society of London—Series B: Biol. Sci. 54:831-836.

22. Heneine IF, Heneine LG. Stepwise iodination. A general procedure for detoxification of proteins suitable for vaccine development and antiserum production [comment]. Biologicals. 1998 Mar;26(1):25-32.
<https://pubmed.ncbi.nlm.nih.gov/9637746/>

25. Wayne EJ, et al. Clinical Aspects of Iodine Metabolism. Philadelphia: F.A. Davis Company, 1964.

“The administration of a single dose of 130 mg of oral potassium iodide to human subjects increased serum I(-) concentrations, and resulted in the accumulation of I(-) in upper airway secretions. These results suggest that the LPO/I(-)/H(2)O(2) system can contribute to airway antiviral defenses. Furthermore, the delivery of I(-) to the airway mucosa may augment innate antiviral immunity.”

Fisher AJ, et al. Enhancement of Respiratory Mucosal Antiviral Defenses by the Oxidation of Iodide. American Journal of Respiratory Cell and Molecular Biology 45(4):874-881. <https://www.ncbi.nlm.nih.gov/pubmed/21441383>

“High-dose KI supplementation can be used in vivo to lessen the severity of respiratory syncytial virus infections, potentially through the augmentation of mucosal oxidative defenses.”

Derscheid RJ. Increased concentration of iodide in airway secretions is associated with reduced respiratory syncytial virus disease severity. Am J Respir Cell Mol Biol. 2014 Feb;50(2):389-397.
<https://www.ncbi.nlm.nih.gov/pubmed/24053146>

Gargling Iodine Solutions May Stop Respiratory Diseases

A 2002 study found that gargling with a povidone-iodine solution led to a 50% reduction in the incidence of acute respiratory infections.

Nagatake T, et al. Prevention of respiratory infections by povidone-iodine gargle. Dermatology. 2002;204 Suppl 1:32-36.
<https://www.ncbi.nlm.nih.gov/pubmed/12011518>

A manufacturer of a povidone-iodine-based sore throat gargle solution sponsored a study and reported that the solution eliminated more than 99% of the coronaviruses that cause SARS and MERS.

Eggers M, et al. In Vitro Bactericidal and Virucidal Efficacy of Povidone-Iodine Gargle/Mouthwash Against Respiratory and Oral Tract Pathogens. Infect Dis Ther. 2018 Jun;7(2):249-259.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5986684/>

“Bioscience Laboratories (Bozeman, Montana 2016-2019) did a comparison of molecular iodine (I₂) to CHX oral rinse (Fig. 5). The two were compared for efficacy against: 1) Fusobacterium nucleatum (periodontal), Streptococcus mutants (dental decay), and Rhinovirus (upper respiratory infections) and human Coronavirus. Molecular iodine came out ahead of CHX for all three cases. In fact, it was the only one that killed the Rhinovirus and it was more effective against ariogenic and periodontal bacteria, and Coronavirus, taking only 15 seconds to completely inactivate all of these pathogens. In another BioScience Laboratories study, comparing the virucidal effect of several oral rinses, a 25 ppm I₂ oral rinse completely inactivated Rhinovirus and Coronavirus in 30 seconds, where Listerine, Scope and Colgate were ineffective.”

Moskowitz H, Goodman J. Molecular Iodine: Could This Be a Game Changer for Dentistry? Oral Health. March 3, 2020.

<https://www.oralhealthgroup.com/features/molecular-iodine-could-this-be-a-game-changer-for-dentistry/>

Iodine Is An Effective Surface Disinfectant

“Iodine-containing disinfectants have been used since the mid-19th century (Sneader, 2005), and today iodine complexes such as povidone-iodine (PVP-I) are used in diverse applications that include surgical antiseptic, skin disinfection, and water disinfection”

“Iodine-containing solutions have historically been employed against other respiratory virus infection outbreaks. In 2006, PVP-I was used to inactivate the SARS coronavirus of the so-called SARS epidemic to below detectable levels in a laboratory study (Kariwa et al, 2006), and it was demonstrated effective against the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in 2015 (Eggers et al, 2015). Limited evidence also suggests iodine was successfully used to combat the spread of the 1918 H1N1 flu pandemic, also known as the Spanish Flu (Derry et al. 2009).”

“Iodine-containing solutions have been proven effective against a wide variety of viruses including influenza A, poliovirus, adenovirus type 3, mumps, and HIV (Wada et al, 2016; Kawana et al, 1997), with some indication of greater virucidal spectrum of activity compared to other commercially available disinfectants.”

Mantlo E, et al. Efficacy of a novel iodine complex solution, CupriDyne, in inactivating SARS-CoV-2. Galveston National Lab, University of Texas Galveston Medical Branch. Accessed 20 May 2020.

<https://www.biorxiv.org/content/10.1101/2020.05.08.082701v1.full.pdf>

A 1979 experiment found that iodine-treated tissues reduced respiratory illnesses by 50%.

Condor B. Nothing to Sneeze At. Chicago Tribune. Dec 28, 1994. Accessed 20 May 2020.

<https://www.chicagotribune.com/news/ct-xpm-1994-12-28-9412280010-story.html>

“Regarding topical use of iodine on hospital equipment: The polyurethane polymer provided a sustained release of iodine that effectively inactivated HIV.”

Shikani AH. Polymer-iodine inactivation of the human immunodeficiency virus. J Am Coll Surg. 1996 Sep;183(3):195-200.

<https://pubmed.ncbi.nlm.nih.gov/8784311/>

“The results of this study provide a rationale for the use of povidone-iodine as a topical antiseptic against HIV in the clinic or laboratory.”

Kaplan JC. Inactivation of human immunodeficiency virus by Betadine. Infect Control. 1987 Oct;8(10):412-414. <https://www.ncbi.nlm.nih.gov/pubmed/3667119>

In the paper, “Mechanisms of the Action of Povidone-Iodine Against Human and Avian Influenza A Viruses: Its Effects on Hemagglutination and Sialidase Activities,”

Sriwilaijaroen et al write:

Sriwilaijaroen N, et al. Mechanisms of the action of povidone-iodine against human and avian influenza A viruses: its effects on hemagglutination and sialidase activities. Virol J. 2009;6:124.

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2739848/>

“In the nineteenth century, povidone-iodine (PVP-I), a polyvinylpyrrolidone iodine complex, was developed and found to have a potent broad-spectrum activity against bacteria, mycobacteria, fungi, viruses and protozoa [20]. PVP-I has become widely used

as an antiseptic and disinfectant. Despite long-term use, development of PVP-I resistance in microorganisms has not been reported [21,22].”

“Our study confirms the inhibition of avian and human influenza A virus infection by povidone-iodine (PVP-I) and demonstrates that PVP-I inhibits both viral HA binding activity and viral NA catalytic hydrolysis, mediating virus entry into host cells, and virion release and spread to a new host cell, respectively. Thus, PVP-I, for which there has been no report of resistance, is a potential agent that not only prevents viral infections but also reduces the spread of influenza viruses in epidemic and pandemic areas.”

20. Zamora JL. Chemical and microbiologic characteristics and toxicity of povidone-iodine solutions. Am J Surg. 1986 Mar;151(3):400-406. <https://pubmed.ncbi.nlm.nih.gov/3513654/>

21. Lacey RW, Catto A. Action of povidone-iodine against methicillin-sensitive and -resistant cultures of Staphylococcus aureus. Postgrad Med J. 1993;69 Suppl 3(818):S78-83. <https://pubmed.ncbi.nlm.nih.gov/8290463/>

22. Mycock G. Methicillin/antiseptic-resistant Staphylococcus aureus. Lancet. 1985 Oct 26;2(8461):949-950. <https://pubmed.ncbi.nlm.nih.gov/2865446/>

The Role of Iodine for Internal Cleansing and Detoxification

Consuming 12.5-50 mg of iodine daily increases urinary excretion of lead and mercury within 25 hours.

Abraham GE. The historical background of the iodine project. The Original Internist. 2005;12(2):57-66. <https://www.optimox.com/pdfs/IOD08.pdf>

“Iodine intake immediately increases the excretion of bromide, fluoride, and some heavy metals including mercury and lead. ... with fluoride, chlorine, bromide, and even mercury, iodine is a necessary mineral to protect us from harm for immediately these toxic substances will start flowing out of the body in the urine.”

Sircus M. Iodine - Bringing Back the Universal Medicine. International Medical Veritas Association; 2 edition (April 3, 2011). <https://books.google.com/books?id=KcRZCAAQBAJ&pg=PT353>

“According to the 11th edition of the Encyclopedia Britannica, published in 1911, the pharmacological action of compounds containing potassium iodide, “is as obscure as their effects in certain diseased conditions are consistently brilliant. Our ignorance of their mode of action is cloaked by the term deobstruent, which implies that they possess the power of driving out impurities from the blood and tissues.”

“As for the observation that iodine supplementation “promotes the urinary excretion of potentially toxic halogens such as bromide and fluoride. While that effect might be beneficial for some people, it is not clear to what extent it would shift the risk-benefit ratio of megadose iodine therapy for the general population.”

Morell S. The Great Iodine Debate. Weston A. Price Foundation. June 22, 2009. Accessed 20 May 2020.

https://www.westonaprice.org/health-topics/modern-diseases/the-great-iodine-debate/?fbclid=IwAR2IZ3v3WEYww69DRESn64wgcZJoujSFQn-WCdOIK7oeyZyrGG1uO_mew

The Capacity of Iodine to Slow COVID-19 Transmission

“Currently, exploiting iodine has not been attempted, and it has been forgotten; while it has been used successfully in the treatment of the Spanish flu that started early 1918 and killed 30 million people. The results obtained strongly suggest the beneficial use of iodine. The results reported indicate the association of common food supplements to offer protection and/or treatment against coronavirus S-protein COVID-19. These findings indicate also that these simple methods could help with the fight against COVID-19.”

Abdel-Mottaleb MS, Abdel-Mottaleb Y. In Search for Effective and Safe Drugs Against Sars-cov-2: Part II] the Role of Selected Salts and Organometallics of Copper, Zinc, Selenium, and Iodine Food Supplements. Web. Accessed 20 May 2020. <https://doi.org/10.26434/chemrxiv.12234743.v1>

“It is reported in the literature that sufficient iodine supplementation makes the nasal mucus replete with iodine which then kills the virus on contact, thus reducing the chance of infection. (See for example, animal study at <https://onlinelibrary.wiley.com/doi/full/10.1111/jvim.14903>)”

“Iodine is known to destroy Covid-19 at a concentration of .023% iodine. That corresponds to 230 mcg of iodine per gram of mucus, more than the RDA, less than the

UL. More precisely the UL is 14 mcg per pound of weight, which provides a range from 1000 mcg to over 3000 mcg, allowing for more iodine-replete mucus for larger people.”

Warren G. Iodine for Covid. 10.1111/jvim.14903.

https://www.researchgate.net/publication/340535851_Iodine_for_Covid

“A preliminary technical report here showed evidence that increasing our iodine intake within safe levels might be sufficient to help against covid. This report adds subsequently identified information that conclusively shows that raising our iodine intake within safe levels will fully supply the body with amounts that it needs to fight covid in three ways: (1) on the skin before you touch your face, (2) in your nasal passages before you are infected, and (3) if infected, by helping kill infected cells that are replicating the virus.”

Warren G. Iodine Intake to Reduce Covid-19 Transmission and Mortality.
10.13140/RG.2.2.18989.84964.

https://www.researchgate.net/publication/340769844_Iodine_Intake_to_Reduce_Covid-19_Transmission_and_Mortality

“The team recommends using pre-procedural chlorhexidine wipes, 2 doses of nasal povidone iodine within one hour of incision, and chlorhexidine mouth rinse.”

8 evidence-based steps to protect patients from coronavirus spread in the operating room. University of Iowa Health Care. 27 March 2020. Accessed 20 May 2020.

<https://medicine.uiowa.edu/anesthesia/content/8-evidence-based-steps-protect-patients-coronavirus-spread-operating-room>

“The high viral loads in the nose and mouth create a transmission risk, especially in health care settings. Nasal and respiratory aerosols and droplets have been shown to be a main source of COVID-19 transmission.”

“Viral aerosols and droplets can remain infectious for up to three hours. Masks can help protect against infection, but with nasal and oral antiseptics that are proven to be effective against the virus, aerosol transmission may be able to be reduced. Masks alone cannot eliminate the virus. Dr. Pelletier emphasized, “Nasal antiseptics and oral rinses are an important part of transmission reduction with masks, just like handwashing is important with gloves.”

“Veloce BioPharma LLC reports today that their Halodine® Antiseptics have demonstrated rapid virucidal efficacy against SARS-CoV-2, the virus that causes COVID-19. Halodine® is a proprietary povidone-iodine antiseptic developed in partnership with leading clinicians for repeated nasal and oral administration. In experiments conducted with The Institute for Antiviral Research at Utah State University, a BSL3+ laboratory, the proprietary Halodine® nasal and oral antiseptic preparations were proven to rapidly inactivate SARS-CoV-2. It has been proven to be effective against SARS-CoV-2 even at dilutions as low as 1/20 of the commercially available solutions.”

“This study shows that a non-toxic nasal and oral solution is also effective against SARS-CoV-2. This is the first iodine-based antiseptic that has ever been shown to have activity against the virus that causes COVID-19,” said lead author Jesse Pelletier MD FACS, of Ocean Ophthalmology Group (Miami, FL). “Now that we finally have proven efficacy against SARS-CoV-2 for povidone-iodine solutions that are safe for mucosa, we can incorporate them into our COVID-19 transmission reduction efforts.” Dr. Pelletier is leading efforts to design safe return-to-work protocols for ophthalmology outpatient clinics and ambulatory surgery centers.”

Veloce BioPharma. Halodine® Nasal and Oral Antiseptics Show Rapid Antiviral Activity Against SARS-CoV-2 (COVID-19). 14 May, 2020. Accessed 20 May 2020.

<https://www.prnewswire.com/il/news-releases/halodine-r-nasal-and-oral-antiseptics-show-rapid-antiviral-activity-against-sars-cov-2-covid-19--803376282.html>

Iodine as a Surface Disinfectant for COVID-19

“Treatments effective against coronavirus include steam and heat. The virus is susceptible to many active ingredients (AI), such as sodium hypochlorite (0.1%–0.5%), 70% ethyl alcohol, povidone-iodine (1% iodine), chloroxylonol (0.24%), 50% isopropanol, 0.05% benzalkonium chloride, 1% cresol soap, or hydrogen peroxide (0.5%–7.0%), etc.²² Just like the WHO recommendations for Ebola virus (RG4) disinfection, the environment with spills of blood or body fluids could be cleaned up with 1:10 dilution of 5.25% household bleach for 10 minutes.”

Wu Y, et al. The outbreak of COVID-19: An overview. J Chin Med Assoc. 2020 Mar;83(3):217-220. <https://pubmed.ncbi.nlm.nih.gov/32134861/>

“Povidone-iodine (PVP-I) products have been used for the disinfection of various bacteria and viruses for years because of their strong bactericidal and antiviral activities. If reliable data confirm the efficacy of PVP-I for the elimination of SARS-CoV infectivity, these products will become extremely useful for the destruction of the virus in various settings.”

Kariwa H, et al. Inactivation of SARS Coronavirus by Means of Povidone-Iodine, Physical Conditions and Chemical Reagents. *Dermatology*. 2006;212 Suppl 1(Suppl 1):119-123. <https://pubmed.ncbi.nlm.nih.gov/16490989/>

Iodine Dosing & Safety

“Iodine is known to deactivate coronavirus very quickly at very low concentrations. Multiple published scientific analyses confirm that, to best fight any coronavirus, our iodine intake needs to attain the safe upper limit specified by the United Nations Food and Agricultural Organization. (FAO). That amount is much more than the FDA’s Recommended Daily Allowance (RDA), which is the amount we currently average. The FAO dose is weight dependent at 30 micrograms of iodine per kilogram of body mass – 13mcg/lb. For a 60kg (176 lb) person the amount is 2400 micrograms.”

Warren G. Iodine Intake to Reduce Covid-19 Transmission and Mortality. 10.13140/RG.2.2.18989.84964.

https://www.researchgate.net/publication/340769844_Iodine_Intake_to_Reduce_Covid-19_Transmission_and_Mortality

Warren goes on to write:

“The United States iodine RDA for adults is 150 mcg and its UL is 1100mcg. The United Nations Food and Agriculture Organization documentation (FAO, 2001) makes clear that the 150 mcg RDA only regards iodine requirements for thyroid function. That same document specifies a safe upper limit for iodine intake as 30mcg/kg of weight which is higher than the United States UL for adults heavier than 80-pounds.”

“One approach taken to estimate the necessary iodine intake was to search the literature specifically for work that already determined an upper bound for that amount. The other approach was to compute the amount of iodine needed to perform the three particular body functions for which iodine is known to be needed to fight covid:”

- “1. Deactivation of covid in the nose by the presence of enough iodine in the nasal mucus.*
- 2. Iodine in sweat to deactivate covid on skin before it can enter the body.*
- 3. Participation in apoptosis to kill cells infected with covid to stop the cells replicating the covid virus.”*

“The reference (Aceves, et al., 2013) directly estimates that the total iodine required to support all functions is at least 3 mg/day for certain pathologies. Another reference (Rychlik, 2017) that examines the iodine requirements to support all functions recommends, “In order to maintain optimum health, adults need 2-5 mg of iodide daily.” That reference further notes that their recommendation is in line with “upper safe limit of dietary intake of iodine established by FAO (30 mcg/kg/day).”

“This work’s efforts to do its own computation was partially successful and produced results very compatible with the results by (Aceves, et al., 2013), (Rychlik, 2017) and the FAO.”

“1. Iodine requirements for nasal mucus are estimated in a publication this month (KirkBayley, et al., 2020) that proposes nasal spray to deactivate covid on inhalation. Their estimate is 330 mcg sprayed into the nasal passages every 6 hours (4 times per day). That equates to a total of 1320 mcg per day for the nasal passages. The body will exhale some of that. When the body has acquired a sufficient store of iodine it can recycle that which is not exhaled.”

“2. Iodine requirements for sweat are available in another study (MAO, et al.). It measured iodine loss in sweat at 37 mcg/liter of sweat. That is a small adjustment within the uncertainties of the recommended iodine intake of (Aceves, et al., 2013) and. However, it is a substantial amount compared to the RDA of 150 mcg, especially during covid induced fever.”

“3. Iodine intake requirements for apoptosis could not be found in the literature. Also, iodine used for that function can be fully recycled by the body. Thus, that requirement may be more about available iodine stores than daily intake.”

“For fighting covid, 150 mcg is insufficient and sustained buildup of iodine stores via intake at the FAO upper limit, or a small multiple of it should be sufficient.”

“It would be very beneficial against covid for people in the United States, and everywhere, to ensure that their iodine intake at least matches the United Nations FAO

upper limit of 30mcg/kg of weight. Intake at the United States FDA UL of 1100 mcg is not sufficient, but it is better than the RDA of 150mcg.”

“Nasal Spray or Oral Intake? Both have value. The nasal spray provides a good first line of defense at the nasal passages, however, it does not improve the second line of defense. That is, once infected, it does not improve the ability of the body to kill infected cells to stop viral replication.”

“Sustained oral intake improves the body’s first- and second-line defenses. It may be of value to temporarily raise intake above the FAO safe upper limits for a few weeks to accelerate the buildup of the body’s iodine stores.”

“A small spray bottle of iodine nasal spray may be helpful when among people, especially during the time when your body is first building up iodine stores. It may have extra value for front line medical staff and their covid patients. The same spray also has value for cleaning touch surfaces, and the face in case you accidentally touch it. It is even safe in the eyes. Much of the world uses it (Kirk-Bayley, et al., 2020) as a better, faster sterilization agent than most alternatives used now in the United States for covid. (Kampfa, et al., 2020). Suggestion – Raise oral intake to the FAO upper-limit (30 mcg/kg), and keep handy a small spray bottle of diluted iodine. Use the forms of iodine discussed below.”

Aceves C, et al. The Extrathyronine Actions of Iodine as Antioxidant, Apoptotic, and Differentiation Factor in Various Tissues. *Thyroid*. 2013 Aug; 23(8): 938-946. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3752513/>

Rychlik W. Integrative Medicine: OMNS – The Need for Iodine Supplementation. [Online] July 2017. Accessed 20 May 2020. <https://i2p.com.au/integrative-medicine-omns-the-need-for-iodine-supplementation/>

FAO. Human Vitamin and Mineral Requirements -- Chapter 12 Iodine. [Online] 2001. Accessed 20 May 2020. <http://www.fao.org/3/Y2809E/y2809e0i.htm>

MAO IF, et al. The Stability of Iodine in Human Sweat. *Jpn J Physiol*. 1990;40(5):693-700. <https://pubmed.ncbi.nlm.nih.gov/2086989/>

Kirk-Bayley J, et al. The Use of Povidone Iodine Nasal Spray and Mouthwash During the Current COVID-19 Pandemic May Protect Healthcare Workers and Reduce Cross Infection. 30 Mar 2020. Accessed 20 May 2020.

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3563092

Kampf G, et al. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. J Hosp Infect . 2020 Mar;104(3):246-251.

[https://www.journalofhospitalinfection.com/article/S0195-6701\(20\)30046-3/pdf](https://www.journalofhospitalinfection.com/article/S0195-6701(20)30046-3/pdf)

“The UL defined for each nutrient is the highest level of nutrient intake that is likely to pose no risk of adverse health effects for almost all individuals. Doses at 50 and 100 times the UL are safely given for days and weeks in other emergencies. Also, doctors give 25 times the UL for three months. So, again, intake of the UL of iodine is safe.”

“Hypothyroid is the main side effect of long-term iodine intake in excess of the UL – a much lower risk than Covid-19. Australia is having a hypothyroid issue – they are adding iodine to their diet by eating seaweed. However, iodine content in seaweed varies by a factor of 400; many are getting excess iodine by choosing the wrong seaweed for the wrong meal. Thus, Australia’s issue is really only evidence that, for now, we should get the UL of iodine from well dosed sources, a l drugs, and vaccinations. All of these methods can be improved by incorporating iodine into them. When impregnated with iodine, masks become much more effective, and hand washing is more effective when done with mild iodine solutions.”

“The 11th edition of the 1910-1911 Encyclopedia Britannica cites “usual” doses of 300-900 milligrams (300,000-900,000 micrograms!) of iodine daily. This is over 2,000 times more than common recommendations.”

Sircus M. Dosages and Treatments for Coronavirus Infections. 31 January 2020. Accessed 20 May 2020.

https://drsircus.com/general/dosages-and-treatments-for-coronavirus-infections/?fbclid=IwAR0U-3B0pk0ZDL_ECR4HRypGoDkLShd_oJO6fA-bcDs32wg7qLtQYRKexB8

According to Dr. Gabriel Cousens, a dose of six grams of iodine per day has been used to cure syphilis, skin lesions, and chronic lung disease.

Cousens G. Iodine – The Universal & Holistic Super Mineral. Dec. 26, 2017. Accessed 20 May 2020.

<http://treeoflifecenterus.com/blog-posts-by-gabriel-cousens-m-d-iodine-96-the-universal-holistic-super-mineral-2/>

In "Iodine: The Forgotten Weapon Against Influenza Viruses," Derry writes:

Derry D. Iodine: The Forgotten Weapon Against Influenza Viruses. *Thyroid Science*. 2009 4(9):1-5.

<https://realrawfood.com/sites/default/files/article/Iodine-Weapon%20Against%20Viruses.pdf>

"Dietary iodine found in iodized salt is below the amounts needed to fill mucus defense roles. To protect themselves, people wishing to boost their defense against infections should supplement their diets with iodine in the form of Lugol's. Most people will probably be protected by an amount of Lugol's that provides the average amount of iodine ingested by Japanese populations for centuries. This amount is about 12 mg daily. Two drops of Lugol's daily in the liquid of their choice will provide 13 mg."

"Lugol's consists of 5% free iodine and 10% potassium iodide in water. Lugol's has a distinct advantage over most other iodine oral medications by having a high level of free iodine, which is the active ingredient that kills viruses."

"Medical personnel and others interacting with highly infectious persons should consider protecting themselves with 2 drops daily of Lugol's iodine orally in the liquid of their choice, as all liquids work. At this dose, no noticeable side effects occur."

"In the 1930s, iodine's use therapeutically was stated in the US Pharmacopeia. The Usual dose for treatment is 300 mgs (46 drops of Lugol's) to 1 gm (1000 mg, 154 drops). The maximum safe dose in 24 hours should seldom exceed 6 gm as at these extreme doses iodine is not without danger. Such high doses are not needed to prevent or treat influenza virus infections."

Carroll B, et al. The Mode of Action of Iodine on Infectious Agents. *J. Neward Beth-Israel Hosp*. 1955;6(1):129.

Carroll B. The relative germicidal activity of triiodide and diatomic iodine. *J. Bacteriol*. 1955 Apr;69(4):413-417. <https://pubmed.ncbi.nlm.nih.gov/14367295/>

Gottardi W. Iodine and iodine compounds. In Disinfection, Sterilization, and Preservation, 4th Edition. Edited by S.S. Block. Philadelphia, Lea & Febiger 1991.

Derry goes on to say:

“With few exceptions, humans tolerate large doses of iodine. High doses are not required to kill viruses.”

Danowski TS, et al. Alterations in serum iodine fractions induced by the administration of inorganic iodide in massive dosage. J Clin Endocrinol Metab. 1950 May;10(5):519-531. <https://pubmed.ncbi.nlm.nih.gov/15422040/>

Derry DM. Successful human scar regeneration by topical iodine. Med. Hypotheses. 2009 May;72(5):553-561. <https://www.ncbi.nlm.nih.gov/pubmed/19168293>

Derry DM. Breast Cancer and Iodine. Trafford, Victoria Canada, 2001.

Kelly FC. Iodine in medicine and pharmacy since its discovery, 1811-1961. Proceedings of the Royal Society of London—Series B: Biol. Sci. 54:831-836.

Heneine IF, Heneine LG. Stepwise iodination. A general procedure for detoxification of proteins suitable for vaccine development and antiserum production [comment]. Biologicals. 1998 Mar;26(1):25-32. <https://pubmed.ncbi.nlm.nih.gov/9637746/>

Salter WT. Endocrine Function of Iodine. Cambridge, Harvard University Press, 1951.

Pennington JA. A review of iodine toxicity reports. J Am Diet Assoc . 1990 Nov;90(11):1571-1581. <https://pubmed.ncbi.nlm.nih.gov/2229854/>

Vagenakis AG. Effects of iodides: clinical studies. Thyroid. 1990;1(1):59-63. <https://pubmed.ncbi.nlm.nih.gov/2135986/>

“The Great Iodine Debate,” published by the Weston A. Price Foundation, indicates that:

Morell S. The Great Iodine Debate. Weston A. Price Foundation. June 22, 2009. Accessed 20 May 2020.

https://www.westonaprice.org/health-topics/modern-diseases/the-great-iodine-debate/?fbclid=IwAR2IZ3v3WEEdYww69DRESn64wgcZJoujSFQn-WCdOIK7oeyZyrGG1uO_mew

“In a 2000 review paper on use of iodine as a water disinfectant, author Joe Hollowell notes that studies indicate marked individual sensitivity to iodine; the most vulnerable to adverse effects are those with underlying thyroid disease and previous low iodine intake. Problems from consumption of iodized water—including both hypothyroidism and hyperthyroidism—usually resolve after consumption is discontinued. A safe dose is 1-2 mg per day, and most can tolerate much higher amounts without problems.”

Hollowell J. Use of Iodine for Water Disinfection: Iodine Toxicity and Maximum Recommended Dose. Environ Health Perspect. 2000 Aug;108(8):679-684.

<https://pubmed.ncbi.nlm.nih.gov/10964787/>

Summary

Simple methods could be of value if the pandemic continues. Iodine has been used in limited capacity but the research and data suggests it could be effective.

“This is not a proposal to do research or clinical trials. The literature tells us how to use iodine against covid. We just have to do it. We have all changed behaviors several times to help stop covid. This paper is a suggestion that we each voluntarily make this one more, smaller change that could have large benefits. Let’s raise our daily oral iodine to the safe upper limit per the UN FAO (30mcg/kg).”

Warren G. Iodine Intake to Reduce Covid-19 Transmission and Mortality.

10.13140/RG.2.2.18989.84964.

https://www.researchgate.net/publication/340769844_Iodine_Intake_to_Reduce_Covid-19_Transmission_and_Mortality

Derry contends that:

Derry D. Iodine: The Forgotten Weapon Against Influenza Viruses. Thyroid Science. 2009 4(9):1-5.

<https://realrawfood.com/sites/default/files/article/Iodine-Weapon%20Against%20Viruses.pdf>

“Hard, fast, and exacting rules for preventing an Influenza Pandemic cannot be laid down. However, definite, prearranged, overall systematic planning is necessary. All possible methods of prevention and intervention should be taken into consideration so that the greatest amount of good to the largest number of people results.”

“The methods using iodine are untried in pandemic conditions. It is likely that trying the methods during a pandemic will present new problems.”

“Nor are these proven methods of protection, as no epidemic has been tested this way. However, data reviewed here indicate that this approach, done properly, could help arrest an epidemic and possibly save many lives, especially those of medical personnel, from this horrible disease. For stockpiling, it is more economical to store a supply of a mixture of iodine and a soluble iodide in glass bottles. The bottle sizes should be such as to make quickly available solutions of desired concentrations of free iodine without the necessity of weighing at the time of use. In this form the germicide shelf life is indefinite.”

Reddish GF. Antiseptics, Disinfectants, Fungicides, and Chemical and Physical Sterilization. Philadelphia, Lea & Febiger, 1957.