



## Using Antiseptic Mouthrinses to Reduce Sars-Cov2 Oral Viral Load

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**Citation:** Benegiamo M, Sammarro A, Rella E, D'Addona A, Garcia-Godoy F. Using Antiseptic Mouthrinses to Reduce Sars-Cov2 Oral Viral Load. *Electron J Gen Med.* 2021;18(1):em273. <https://doi.org/10.29333/ejgm/9616>

### ARTICLE INFO

Received: 2 Aug. 2020

Accepted: 20 Sep. 2020

### ABSTRACT

Virucidal activity of Povidone-Iodine (PVP-I) have not yet been performed specifically on SARS-CoV-2. There have been in vitro studies demonstrating its effectiveness against multiple viruses including related coronaviruses. PVP-I could be effective to reduce viral load from asymptomatic COVID-19 patients and also provide a protective oropharyngeal hygiene measure for the health professionals.

**Keywords:** Coronavirus, COVID-19, oral health, risk management

## INTRODUCTION

The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is mainly transmitted through droplets, especially in closed and poorly ventilated rooms, or after prolonged, close contact with an infected individual, after considerable exposure to viruses particles; there's the possibility of catching the infection by touching a surface that has been contaminated by SARS-CoV-2, as it can survive for some hours, but the chances are quite low [1-6]. In order to avoid the spread of the infection, all preventive measures and personal protective equipment (PPE) are to be implemented and properly adopted. The standard recommendations to prevent the spread of Coronavirus Disease 2019 (COVID-19) include washing hands with soap and water, or when not possible, using an alcohol-based hand rub; it's also important to cover the nose and the mouth with an elbow or with a disposable tissue when coughing and sneezing; and also to avoid close contact with anyone that has a fever and cough [7,8].

As we have now passed the first peak of the infection, and many social, and productive activities are now returning to the normality, there is a serious risk of an increase of new cases, and therefore, of a new second peak of the infection. In some activities, it is not possible to wear a facemask: for example, when people eat in a restaurant, or practice some sport, or go to the barbershop, to the dentist, or to an ENT specialist. During these activities, viral particles have the ability to become aerosolized after speaking, coughing, or sneezing; these particles can become airborne and can remain in the room for 3 or more hours, and may contaminate multiple surfaces in the surrounding area [9].

While no studies have been conducted on the virucidal activity of Povidone-Iodine (PVP-I) on SARS-CoV-2, some in vitro studies have demonstrated its effectiveness against multiple viruses including some related coronaviruses, similar to the SARS-CoV-2; for example, Eggers et al. observed the effects of a diluted PVP-I (0.23%) formulation against Severe Acute Respiratory Syndrome Coronavirus 1 (SARS-CoV-1), Middle East Respiratory Syndrome Coronavirus (MERS-CoV), and influenza A (A/H1N1); they found, after an application of 15 seconds a >99.99% reduction of the viral titers.

Furthermore, many studies have demonstrated that, as oral health can influence systemic diseases, PVP-I can be used to both reduce viral and bacteriological transmission from the oral cavity to other districts and organs, such as the heart and the liver [10-16].

In the oral cavity and the oropharynx, it has been used safely at a range of doses from 1% to 10%<sup>9</sup>, and the concentration of PVP-I in commercial, over the counter, oral mouthwashes usually ranges from 7.5% to 10%.

The authors believe that if one should engage in an activity that cannot be conducted with a face mask, they should also do mouthwash/gargles for 1 minute with a solution of PVP-I diluted 1:3 (for 7.5% PVP-I) or 1:4 (for 10% PVP-I), so to achieve a lower than 3% concentration; this may help reduce the viral load, and the potential aerosolization, of SARS-CoV-2.

This could also provide a protective oropharyngeal hygiene measure for individuals at high risk of exposure such as health-care professionals.

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