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Why the NHS and Private Clinics Should Look Further than Alcohol-Based Sanitizers

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The CoViD-19 pandemic has brought alcohol to the fore; whether it is the amount the British public is consuming to get through self-isolation or the level required in hand sanitizer to make it effective, the news stories are everywhere.

Many of these revolving around the shortage of traditional alcohol-based hand sanitizers and how prices are soaring. With this being the case, why then don't the NHS and other health care facilities look elsewhere? Is there no other option?

In fact, there is another option which is rapidly emerging as the new go-to sanitizer during the CoViD-19 pandemic; Hypochlorous Acid (HOCl).

What is Hypochlorous Acid?

HOCI is generated when white blood cells attack harmful bacteria and is harmless to the human body. In December 2019 *Optometry Times* published an article on HOCl and they explain it much better than I can… "HOCl is a weak acid that occurs naturally in our body. Neutrophils are white blood cells that are the first to arrive on site when an invading pathogen is detected. Neutrophils will chase down and engulf the pathogen through phagocytosis. Upon contact, neutrophils release a burst of bactericidal chemicals including its most powerful oxidizing agent, HOCl. This kills the pathogen by tearing down the cell membranes and proteins".

Optometry Times called HOCl "the perfect weapon to fight germs. It hits hard against pathogens like Methicillin-Resistant Staphylococcus Aureus (MRSA) and Pseudomonas Aeroginosa. ***Yet this powerful weapon is 100 percent safe for humans, chemical free, non-toxic and all-natural".***

Due to these attributes HOCl is being widely used in South Korea in their battle against CoViD-19, disinfecting everything from food to people to hospital wards and their mass transit systems. Looking at

the way in which they have taken control of the spread of the virus it is clear to see that HOCl can also help the United Kingdom to gain the upper hand in this struggle.

How does HOCl compare to other common disinfectants such as Bleach? They are from the same chlorine family. Research shows that both bleach and HOCl kill bacteria, fungus, spores, and viruses. However, bleach is highly irritating to the eyes, skin, and lungs—and inhalation over long periods could be carcinogenic. In contrast, HOCl has a mild, temporary chlorine-like smell that dissipates quickly, it is non-irritating, and it does not have poisonous side effects.

When compared to alcohol-based sanitizers, HOCl fares even better. Whilst both are effective against viruses, fungi and bacteria, alcohol-based sanitizers do not kill bacterial spores.

Alongside this deficiency there are other concerns with alcohol-based sanitizers. Back in 2017 *Pharmacy Today* published an article looking at the risks of alcohol-based hand sanitizers to children following a report from the Centers for Disease Control (CDC) in the USA. Dr Cynthia Santos from CDC's National Centre for Environmental Health said "Young children may inadvertently consume these hand sanitizers because of their appealing scents, like apple, vanilla, and citrus." The report published by the CDC analysed data reported to the US's National Poison Data System (NPDS) between 2011 - 2014 on exposures to alcohol and non-alcohol-based hand sanitizers in children who were 12 years old or younger. A total of 70,669 hand sanitizer exposures in this age group were reported to NPDS, including 65,293 (92%) alcohol-based exposures and 5,376 (8%) non-alcohol-based exposures. The report found that adverse health effects were more likely to be reported for alcohol-based hand sanitizer exposures, and they tended to be worse than those for exposure to non-alcohol-based hand sanitizer. "Younger kids are more susceptible to adverse effects [from these products] because there is not as much glycogen in their liver," said Greene Shepherd, PharmD, clinical professor at the University of North Carolina Eshelman School of Pharmacy.

The report stated that the most common type of adverse health effects were ocular irritation, vomiting, conjunctivitis, oral irritation, cough, and abdominal pain. Rare effects included coma, seizure, hypoglycaemia, metabolic acidosis, and respiratory depression.

What is clear is that we need to be very careful having so much of this sanitiser around. It is not a harmless substance. The World Health Organisation (WHO) information sheet *Alcohol-Based Handrub Risks/Hazards* also identifies them as a potential fire hazard.

Finally; there is no shortage of HOCl and it can be produced easily. It is for these reasons that the NHS and other healthcare facilities should look to Hypochlorous Acid.