Chris Schaefer Expert Witness Report

Introduction

This report discusses the hazards of the types of so-called "masks" that are typically mandated by governments to be worn to purportedly prevent the spread of COVID-19. These "masks" are the medical, non-medical, and procedural masks. Some government mandates only permit the wearing of medical and procedural masks.

The Nature of "Masks"

Masks designed to cover the mouth and nose of the wearer are required to have engineered breathing openings for air to flow in during inhalation and to be purged during exhalation. Examples of masks include respirator masks, scuba masks, hockey goalie masks, and Halloween costume masks.

The medical, nonmedical/cloth, and procedural "masks" that have been government mandated to be used to purportedly prevent the transmission of COVID-19 do not have engineered breathing openings for air to flow in and exhaled air to be purged out. Therefore, they are not respirator masks, or even masks at all. It is erroneous to call these devices "masks", as they are simply breathing barriers that interfere with normal healthy inflow of atmospheric oxygen and outflow of toxic carbon dioxide.

Wearing any of these barriers creates a lower oxygen and higher carbon dioxide breathing environment that is hazardous to the wearer, regardless of contaminant filtration efficiency. Simply put, all closed barriers or covers worn over the mouth and nose are hazardous to the wearer, regardless of whether there is an atmospheric contaminant.

These barriers, by design, cause the wearer to rebreathe their own exhaled air, which is hazardous.[1] Proper respirators have an engineered breathing system that eliminates the risk of capture and re-inhalation of exhaled air. They are designed with two inhalation valves, covered by filters, through which atmospheric air enters with inhalation, and an exhalation valve in between that causes exhaled air to exit.

"Masks" and Increased Carbon Dioxide

Carbon dioxide is a toxic gas that is produced from cellular respiration. Ordinary outdoor atmospheric air contains 400 ppm (parts per million) of carbon dioxide depending upon the environment that a person is located in.[2]

[1] http://thebetteroxygenmask.com/harmful-effects-of-rebreathing-carbon-dioxide-co2/
[2] https://climate.nasa.gov/news/2915/the-atmosphere-getting-a-handle-on-carbon-dioxide/

The MultiRAE Lite air testing monitor, which I am competent to operate, measures both oxygen and carbon dioxide levels in air. Using a calibrated MultiRAE Lite, I observed that the carbon dioxide concentration detected from inside a wearer's non-medical, procedural and medical "masks" was in excess of 1000 ppm within 30 seconds of measuring.[3] The Health Canada standard, as of 2021, sets the maximum indoor exposure limit regarding carbon dioxide at 1,000 ppm.

As a result of the testing which I have performed, the measured results indicate that all persons wearing a non-medical/cloth, procedural, or medical "masks" immediately exceed the Health Canada limit for carbon dioxide exposure within less than 30 seconds.

"Masks" and Decreased Oxygen

In addition to being a toxic gas, carbon dioxide is also an asphyxiant, and displaces oxygen and creates an oxygen deficient atmosphere between a wearer's "mask" and their face.

Using the MultiRAE Lite, I have observed that upon commencement of wearing a nonmedical/cloth, medical or procedural cover, oxygen levels inside the "mask" immediately drop. Readings showed oxygen levels often below 19.5%. The *Occupational Health and Safety Code*, Alberta Reg. 87/2009 describes oxygen levels below 19.5% as "hazardous", an "emergency", and a "respiratory danger".[4] According to the Occupational Health and Safety Administration (OSHA), below 19.5% oxygen is immediately dangerous to life and health (IDLH).[5]

The measured results of the testing I have performed show that while wearing a medical, non-medical/cloth mask, or procedural "mask", the oxygen level available to the wearer rapidly drops and stays below the acceptably safe oxygen level most of the time.

Conclusion

1. A proper mask is a specially engineered device for ***safe*** breathing.

2. A respirator mask is designed to prevent contaminants from being inhaled with also permitting ***safe*** breathing.

3. The government mandated procedural, nonmedical/cloth, and medical "masks" are not true masks or respirators.

4. Testing demonstrates that theses "masks" create for the wearer hazardously high levels of carbon dioxide and dangerously low levels of oxygen.

---

[3] https://www.canada.ca/en/health-canada/services/publications/healthy-living/residential-indoor-air-quality-guidelines-carbon-dioxide.html
[4] See sections 52(1)(a), 55(3)(b), 244(1)(b), 252(a)(i), 253(a), 254(1)(a)(ii).
[5] https://www.osha.gov/laws-regs/standardinterpretations/2007-04-02-0

5. Testing showed hazardously high levels of carbon dioxide and dangerously low levels of oxygen inhaled by wearers of mandated procedural, nonmedical/cloth, and medical “masks in as little as 30 seconds of wearing.

Chris Schaefer

SafeCom Training Services Inc.

August 11, 2021