Safety Message

April 2020—Cigarette smoke and COVID-19

I've really struggled this month with my safety article. Clearly the most pressing safety concern for any of us at this time is the COVID-19 outbreak. It seems that everybody has different "knowledge" on this issue and some seem to take great pleasure in using their "knowledge" to rebuke other's "knowledge". It's a sorry state of affairs to say the least. I delayed writing my piece so that additional facts could work into the public consciousness. With the recent reversal on many agencies position on the employment of masks I'm ready to weight in – for your safety and mine.

When the original stay at home recommendation was issued from the Federal Government and the somewhat arbitrary 6 foot distance advice was given it was widely believed that this virus was primarily distributed in droplets rather than aerosol. Droplets are relatively large and fall out of the air within a few feet. So the 6 foot distance made sense, as did the advice against wearing masks. What changed? Since that time science has determined that not only will the virus last on surfaces for a crazy long time for a virus – but also it's **effectively distributed in aerosol**. To use a well-worn phrase – this is a game changer. Suddenly the 6 foot separation is minimal at best, and wearing masks make sense. What's important to know is that droplets are expelled from coughing and sneezing – aerosols are expelled while talking or even just breathing.

As an aerosol particle COVID-19 is slightly larger than one micron in size – the same size as cigarette smoke particles. **I believe** it's safe to assume COVID-19 aerosols will move in the air much like cigarette smoke particles, although with lower concentration and greater susceptibility to UV light. Remember when bowling alley's and bars were heavy laden with smoke hovering in the air – this is how the aerosols hang in the air indoors. Outdoors they will quickly disperse and blow away. However, if you're close enough to a person to smell their cigarette smoke (if they had one) – I propose that you are close enough to inhale their aerosolized viruses.

The same metric can be used to roughly assess the efficacy of face protection. Even a T-shirt will filter out some smoke (not all) – but more layers and tighter weave will do more. If exposed to COVID-19 with face protection you may not stop all viral particles from infecting you – but you can drastically reduce your viral load. **It's not known yet** how significantly virial load reduction will play out with COVID-19 – however extrapolating from other respiratory virus' I think it's safe to assume that lower initial viral load may well decrease the severity of the infection.

Finally, we have several health care professionals in our club. If **they** think my information or assumption are out of place, I would invite them to correct me and I'll share that with you.

What I hope you take away from this safety article is to think of cigarette smoke as you make decisions regarding your exposure. The big difference is that one breath of cigarette smoke doesn't reproduce in your lungs and in many cases even the person breathing out COVID-19 doesn't know it.

Reading resources:

- https://www.sciencemag.org/news/2020/04/you-may-be-able-spread-coronavirus-just-breathing-new-report-finds
- https://www.livescience.com/coronavirus-can-spread-as-an-aerosol.html
- https://www.the-scientist.com/news-opinion/the-covid-19-coronavirus-may-travel-in-aerosols-67380
- https://oeh.tandfonline.com/doi/abs/10.1080/0002889778507712#.XokWw8hKhPY