



28 April 2020

The Rt Hon Boris Johnson MP, The Prime Minister
10 Downing St
London
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Dear Prime Minister,

We are all pleased to hear that you have recovered from COVID-19 and we wish you well in getting back up to speed.

In recent weeks and months we have sent several letters to yourself, your Cabinet Ministers and various government entities including DHSC, NHS Improvement and PHE offering our assistance to help to prevent the spread of the SARS-COV-2 coronavirus in the air and on surfaces using our advanced air disinfection technology. Unfortunately it appears all our letters and emails have been ignored.

I am sending you this letter to further recommend and affirm that air disinfection should be included in the lockdown exit strategy which will help save lives, livelihoods and help the economy recover faster. I will be sending a copy of this letter to HM Leader of the Opposition, Sir Keir Starmer.

It is clear to us that managing the SARS-COV-2 crisis requires not just the expertise of health service practitioners, mathematical modelling and medical science, but also engineering, technology, social behaviour and economic sciences.

We are experts in the field of indoor air quality and we have been frustrated by leading health and governmental authorities in the UK who, from Day 1 of this crisis, have dismissed the suggestion that the SARS-COV-2 coronavirus can be transmitted via aerosols. Other countries were not so fast to dismiss this suggestion and demonstrated a more open minded approach. For example Asian and US research teams writing in the New England Medical Journal have reported the SARS-COV-2 coronavirus remains viability in aerosols inside

buildings for 3 hours (latest research show live RNA in the air after 17 hours) and since then empirical evidence that the virus can indeed survive on aerosols and on airborne particular matter has emerged.

We feel that the advice from HM government from the outset of the emergency – wear masks (not mandatory yet), clean hands, don't touch the face and maintain social distancing has been incomplete and has not made any reference to the key issues of indoor air quality management and how it can help reduce the risk of infection transmission and HAIs in NHS hospitals. These are key issues especially as we consider the implications of emerging from the lockdown and the steps various sectors will need to take before they can re-open to demonstrate their facilities are safe for customers, patients and workers. No stone should be left unturned to minimise the risk of a second wave of infections post lockdown.

We know HM Government has stipulated that dental practices must demonstrate they have taken steps to minimise the risk of infection transmission before they can re-open especially considering that some of their work produces aerosols in close proximity to the dental practitioner. Why doesn't HM Government make this a mandatory stipulation for every business or service to protect the people and staff – NHS hospitals, GP surgeries, schools, office buildings (elevators), universities, hospitals, warehouses, factories, food processing facilities, restaurants and coffee shops, hotels, theatres, beauty/hair saloons, underground/tube trains, airports, aircrafts etc ?

We can offer a unique and highly effective process for infection transmission control. Our advanced air disinfection technology distributes safe oxidisers throughout the indoor space which continuously disinfects all of the air and surfaces. This is a fundamentally unique process compared to any passive HEPA filter or PCO technology which must push the air through a chamber before it can be treated thus exposing people to viruses at the point they come onto the air (via aerosols for instance) and offer nothing for surface contaminations. This difference can be illustrated by our lab controlled sneeze test which destroyed 99% of emitted microbials from the source at 100 mph before it had travelled 3 feet. Passive HEPA technologies are promoted as safe by airlines such as Easyjet as solutions to IAQ management and viruses when in fact they do not offer continuous air disinfection so when an infected person sneezes, coughs, speaks or even breathes, healthy persons in close proximity are exposed to the contaminated aerosols before the air is recirculated and filtered.

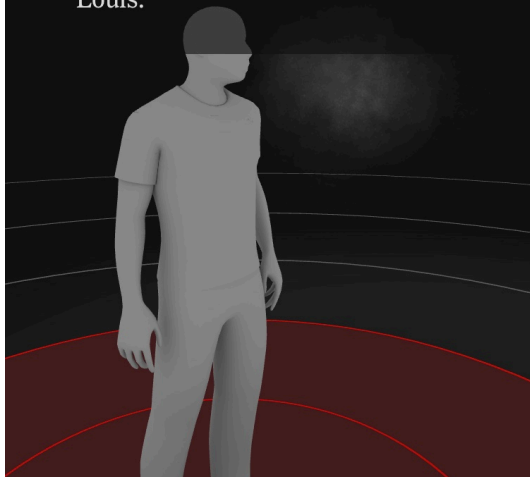
HM Government has a duty of care for the health and safety of its citizens and people have the right to be protected and stay healthy at work and schools. I hope serious reforms will be introduced with mandatory measures that are enforced and policed to make work environments healthier, not just energy efficient.

Our advanced air disinfection technology is uniquely placed to help in this regard. It is proven to destroy a multitude of dangerous pathogens in the air and on surfaces on a continuous basis and it can be integrated in existing HVAC infrastructures or installed standalone depending on the ventilation strategy of the property.

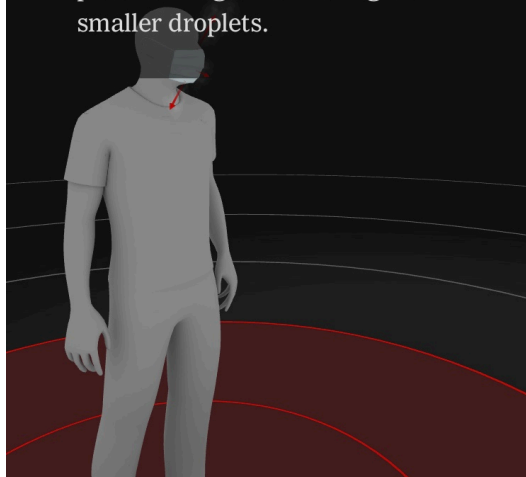
As a parent, I am very concerned about the lack of measures taken for schools. I am reading that social distancing will be the major measure in schools which I consider will not be effective enough considering virus spreads in aerosol form up to 2m by speaking, up to 5m by coughing and 8m by sneezing (these distances are taken from recent research and testing performed by Don Milton, Professor of Environmental Health, Applied Environmental Health at Maryland Institute for Applied Environmental Health and Affiliate in Cell Biology and Molecular Genetics and Professor, Internal Medicine at the University of Maryland School of Medicine and endorsed by Professor Pratim Biswas, Professor in Aerosol Science and Engineering at Washington University). Bigger droplets will settle on desks, chairs and floors and the SARS-COV-2 coronavirus survives on wooden/laminated surfaces up to 3 days. How will this be addressed in schools? Will these surfaces be disinfected after each class period? Only continuous air and surface disinfection can offer an effective method beyond social distancing in schools, universities and any other indoor space for that matter.

Aerosol distribution simulation for social distancing:

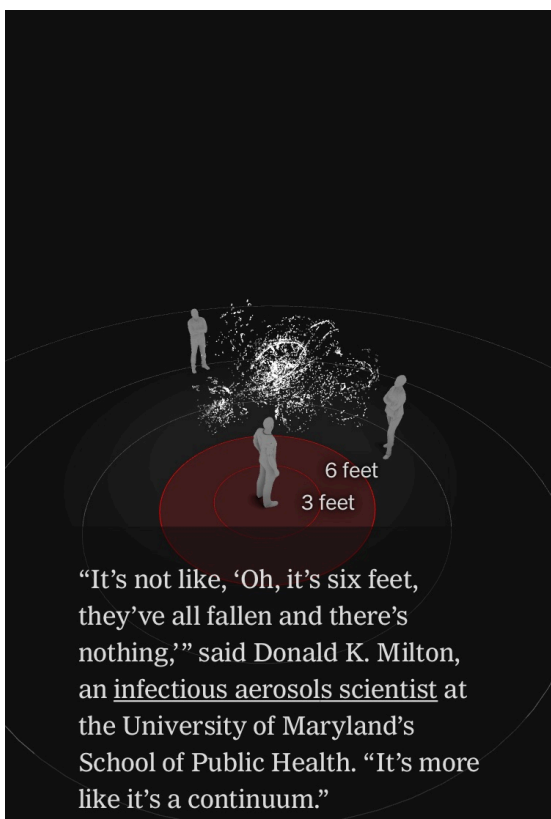
An infected person talking for five minutes in a poorly ventilated space can produce as many viral droplets as one infectious cough. “If there are 10 people in there, it’s going to build up,” said Pratim Biswas, an aerosols expert at Washington University in St. Louis.



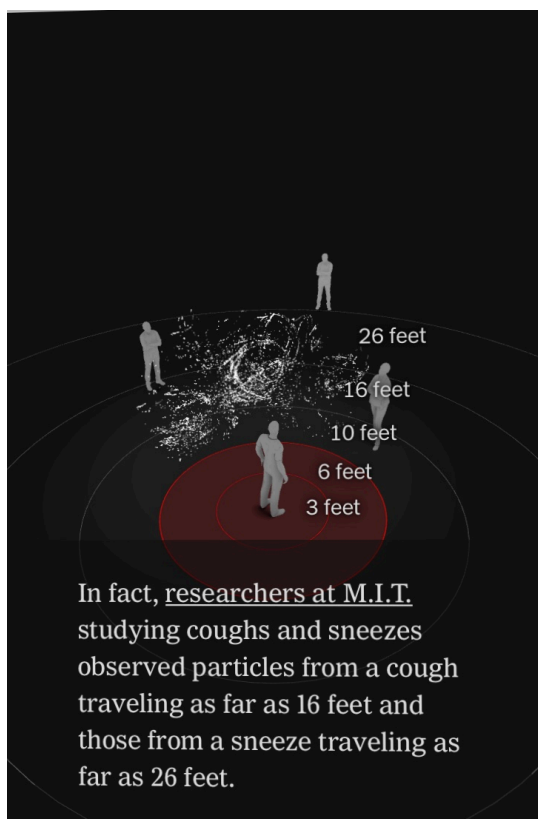
A mask disrupts the trajectory of a cough, sneeze or breath and captures some respiratory droplets before they can spew out. A mask can also prevent large infectious droplets from landing on the nose and mouth, even though it provides minimal protection against inhaling the smaller droplets.



“It’s not like, ‘Oh, it’s six feet, they’ve all fallen and there’s nothing,’” said Donald K. Milton, an infectious aerosols scientist at the University of Maryland’s School of Public Health. “It’s more like it’s a continuum.”



In fact, researchers at M.I.T. studying coughs and sneezes observed particles from a cough traveling as far as 16 feet and those from a sneeze traveling as far as 26 feet.



As experts in indoor air quality, we strongly recommend the continuation of existing measures such as wearing of masks and social distancing in the workplace must remain mandatory as part of the lockdown exit strategy. We also strongly recommend mandatory and policed Part F ventilation performance compliance and the introduction of mandatory air disinfection measures for domestic, commercial and industrial premises plus the mandatory monitoring of specific pollutants for each indoor space. We would be delighted to offer consultancy in this area should you require it.

Yours sincerely
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Acknowledgement:

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Dr. Linsey Marr, Engineering Professor at Virginia Tech with expertise in airborne transmission of viruses, air quality and nanotechnology

Dr. Joseph Allen, Professor at Harvard University and Director of Harvard Healthy Buildings program

Dr. Charles Haas, Professor Head of Environmental Engineering at Drexel University

The Lancet, New England Medical Journal, medrxiv.com and biorxiv.com