

**PRIVATE AND CONFIDENTIAL**

**HEALTH, SAFETY AND WELLBEING REPORT**

**in respect of**

**Civil Proceedings**

**MR B -v-**

**DATE OF REPORT: 9.4.2021**

**Simone Plaut CMIOSH MSc HDCR FETC**

**Chartered Health & Safety Practitioner**

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## **1. Introduction**

- 1.1. This report was written following instruction by solicitors representing Mr B (acting as litigation friend to Child A). Mr B has instructed Jackson Osborne Employment Lawyers to represent him in a legal challenge to [REDACTED] providing education Child A. He has demanded retraction of new school policies regarding the wearing of masks in schools by pupils and staff, and the introduction of other Non-Pharmaceutical Interventions (NPIs) due to the lack of risk assessment around the potential for mental and physical harm to children.
- 1.2. I have been asked to provide evidence to the Court regarding whether the Trust's risk assessment meets the Trust's obligations to provide a suitable and sufficient assessment of risk to those affected by the Trust's policy of requiring and/or encouraging the wearing of face coverings in schools.
- 1.3. I have read Dr Zenobiah Storah's report and for convenience have taken from that some of the introductory section and referred to some of the testimony from Child A.

## **2. The Writer**

- 2.1. I am Ms. Simone Plaut, Health and Safety Practitioner and Chartered Member of The Institution of Occupational Safety and Health. Prior to my Safety career, I qualified as a Diagnostic Radiographer at the Royal Free Hospital in 1979. I qualified with a NEBOSH (National Examining Board in Occupational Safety and Health) Diploma in 1998, Achieving Registered Safety Practitioner status in 2002. I have a Masters Degree in Nutritional Medicine from the University of East London in 2009, a Post Graduate Diploma in Naturopathy from The College of Naturopathic Medicine 2004, a NEBOSH Certificate in Health and Wellbeing 2015. I have experience in education, mental health, learning disabilities, and physical disabilities. I have experience at senior level in Health & Safety roles in NHS trusts, Local authorities, Housing Associations, Residential care for children and adults with learning disabilities, and Children's and Medical charities, schools and colleges. I ran the Health and Safety team for a housing association during an asbestos crisis in 2010 involving the local community, which included the exposure of children.

### **3. Background**

- 3.1. These proposed Civil Law proceedings concern claims set out in the letter sent by Mr B (dated 8th March 2021), addressed to the Headteacher at the School and Head of Education at [REDACTED]. The School is part of the [REDACTED].
- 3.2. Prior to schools reopening in full on March 8th 2021, the Department of Education recommended the use of masks inside secondary school buildings, including in classrooms. Government stated that this was not compulsory, but part of a range of measures aimed at limiting transmission of SARS-CoV-2.
- 3.3. Child A (aged 12) attends the School. On the 8th March, with the return of secondary school students to school following the third national 'Lockdown', additional measures intended to reduce transmission of SARS-CoV-2 were introduced within the School. These included the stipulation that 'staff, adults and all secondary pupils must wear a face mask at all times unless a) in a room on their own, b) medically exempt, c) teaching primary students(1). Students are required to wear a mask on arrival at school, and whenever inside the school buildings, including classrooms. NHS Test and Trace asymptomatic testing (using lateral flow devices), was also introduced. Testing is 'voluntary but strongly encouraged' (1). These measures were in addition to those introduced in the autumn term of 2020 (social distancing, phased movement around the school, one-way systems and a 'Bubble' system to group children with the aim of reducing contacts between individuals within the school).<sup>3</sup>
- 3.4. Mr B, in his letter of 8th March 2021, objected to these changes to school policy, and demanded that that the school retract:
- a policy requiring or encouraging children in the school to wear a face covering
  - any other Non-Pharmaceutical Interventions (NPIs) without conducting suitable and sufficient risk assessment<sup>2</sup>
- 3.5. I understand that the school has not retracted these policies.

### **4. Instructions and purpose of report**

- 4.1. I have been instructed to provide a report to assist the Court, commenting on the following: -

To give my expert opinion on the extent to which the Trust's risk assessment meets the Trust's obligations to provide a suitable and sufficient assessment of risk in accordance with the 1999 regulations particularly in respect of the Trusts Policy of requiring and/or encouraging the wearing of face coverings in schools.

- 4.2. Given my expertise as a Chartered Health and Safety Practitioner (with additional qualifications and experience in Health, Healthcare and Wellbeing), I can comment on the potential physical harm, risk of injury and impact on wellbeing of the pupils at the school as a result of the face covering policy in place at the school.

## 5. Aspects Considered

- 5.1. The School has introduced a number of 'Non-pharmaceutical interventions' (NPIs) in response to government guidelines around the reopening of schools in the context of SARS-CoV-2. The overall risk to students from the face covering requirement does not appear to have been risk assessed by the school, so cannot be considered suitable nor sufficient. No consideration has been given to the negligible risk of fatal outcome for children if they were to contract Sars-Cov-2, yet it has imposed a rigorously enforced NPI of face covering that carries risk of injury and harm to the students.

### **SARS-CoV-2 risk in context for children**

- 5.2. Data from the office of National Statistics (ONS) show that, during the period for which we so far have complete data, for the pandemic covering the year 2020 which included the peak weeks for deaths from Sars-Cov-2, for the 10 - 14 age group **deaths from all causes** only went into double figures on two occasions during the entire year: w/e May 8th (10 deaths), w/e October 2nd (10 deaths). Most weeks were between 4 and 8 deaths and, from the 282 total for the year, an average 5.42 deaths per week from **all causes**. Of these 282; 5 were within 28 days of a Sars-Cov-2 positive test in the 10-14 age group. For comparison, during the same period there was 1 death in the 5-9 age group, and 11 deaths in the 15 to 19 age group. During one week, w/e 17<sup>th</sup> Nov 2020 at the height of the pandemic: there were zero deaths for ages up to 19, 14 deaths in the 20-39 age group reported as from or with a Sars-Cov-2 positive test, 102 in the 40-59 age group, and the

balance 1,804 over 60's. The total for the UK for the entire period of the pandemic as indicated in this data set to 1st April 2021 is 86,308 and of those: just 40 were in the 0-19 age group (= 0.0463%). (Hospital acquired infections are not separated out). The size of this demographic, the age group 10-14 for the whole of the UK, is 3.95M which is 16.9% of the UK population. The total of the 80 years and older demographic for the UK is 3.43M.<sup>40</sup>

- 5.3. During w/e 1<sup>st</sup> May 2020: zero 9-14 year-olds at all died from any causes although over 4,500 passed away from the 80 plus age group. Over 6,000 in all age groups mentioned SARS Cov 2 on the death certificate.<sup>40</sup>
- 5.4. In the last year (since March 2020), the total number of children and teenagers under 20 who died within 28 days of a positive Sars-Cov-2 test was 39, including those with pre-existing conditions. This compares with previous year deaths for under 20s from ALL CAUSES for 2019 being 3,905 deaths, though this is just 1,506 if infants in the first year of life are excluded. (There is an elevated risk of mortality in the first year of life, due to a range of causes including birth trauma, birth defects, and greater susceptibility to infectious disease). Thus the percentage of those who died within 28 days of a positive PCR test around 2.66%. It is not known how many of those actually died *from* the disease as opposed to having the disease noted on their death certificate. The change in grouping is due to an alteration in the way that data is presented by the ONS; so deaths for the 10-14 age group cannot be extracted prior to 2019.
- 5.5. Deaths in the age group 1-14 (ONS data was not broken down into smaller age subgroups prior to 2019) 934 for 2019, 961 for 2018, 943 for 2017, 970 for 2016, 1040 for 2015, & 1055 for 2014 43,44. Hence for the year of the pandemic an additional 500 children, teens and young people's lives were lost for the entire age group, but the number in secondary school age of 10-14 was only 50. (Those with pre-existing conditions and hospital acquired infections were not separated out from the data set.) Those with a pre-existing condition are more likely to be admitted to hospital for other reasons and are then at risk of contracting infection whilst in hospital.

- 5.6. The preceding figures illustrate that the risk of death from this disease for this age group is negligible. Hence the introduction of compulsory face covering measures for extended periods of each day in the school, which have potential for a range of long-term health, safety and other harms of as yet unknown quantum, is disproportionate. To introduce these without detailed, thorough and meticulous risk assessment, is potentially reckless.
- 5.7. I am aware that, as is referred by the term 'post viral syndrome', (also known as 'chronic fatigue syndrome', or 'tired all the time' TATT) it has long been recognised that illnesses from a virus can lead to varying times of recovery and some people can have lingering effects continuing for weeks or months following initial reaction. I am unaware, however, in relation to children particularly but in fact at all, of any reliable data evidencing the significance of any condition or variety of conditions which are intended to be referred to using the term 'long covid' or to expect that, whatever is being reported in the media, is anything different from a traditional post viral syndrome.
- 5.8. The precautionary principle applies especially to children who have little power to oppose decisions made by the adults who hold authority over them and responsibility for them. Those same children will carry the health burden of any errors or omissions for the rest of their lives. The face covering measure imposed on these secondary schoolchildren are intended to reduce the risk of them contracting an infectious disease Sars-Cov-2, but the risk to this age group of death or serious illness from contracting the same pathogen is almost nil. Most don't have any symptoms at all or experience a sniffle, a cold or mild influenza like illness.<sup>3,9,40</sup>
- 5.9. The Sars-Cov-2 viral infection hazard has been viewed in isolation and allocated an inordinately high risk, at the expense of all other considerations. However, for this age group the likelihood of harm and the severity of harm from the virus, both of which are negligible, have not been used to inform what would be the most effective strategy to protect the students.
- 5.10. During the year 2020, for the 10 - 14 age group 282 deaths from all causes were reported compared to 614,114 deaths for all other ages i.e. 0.04592%. This risk of death from all causes for this age, even during the pandemic, is broadly similar to the risk of death from being struck by lightning, or from going swimming.<sup>32</sup>

5.11. The UK Sars-Cov-2 data does not separate into different age groups, and all 1-15 years are grouped together. The large impact from early childhood deaths can no longer be separated out from that of children who survive to reach school age.

**Restriction on air caused by face coverings**

5.12. The school has not considered the risk of injury, illness or health damage occasioned by the restriction of air supply to the students by making it obligatory to wear a close-fitting face covering over their nose and mouth throughout the entire school day, and additionally during journeys to and from school by public transport. The school has not examined the potential impact on various categories of student, nor carried out measurements of exposure to an elevated concentration of an asphyxiant, intoxicant gas (Carbon Dioxide). It has not examined exposure to a reduced oxygen concentration or quantified the impact on health and wellbeing or educational chances of the students.

5.13. The NPIs do not appear to have been risk assessed in terms of potential for physical or psychological harm. (I have had opportunity to see the report of Dr Zenobia Storah in relation to psychological harms. I am focusing here on potential for physical illness and injury and potential for disproportionate impact on students with a range of physical and/or sensory and/or educational impairments and/or medical conditions).

5.14. Key interventions include promoting mask wearing by students and teachers and social distancing.

5.15. Child A is a student at the school.

5.16. It is concluded that the current measures expose students to hazards that are likely to cause physical harm to the children with risk of injury and illness in both short and long term. These have not been considered in the 47-page risk assessment prepared by the school.

5.17. The face covering requirement imposed interferes with levels of oxygen availability and exposes students to elevated levels of carbon dioxide within the breathing zone inside the face covering. These levels have not been measured, nor has the risk to the health of the students posed by these reductions in air quality been evaluated.



### **Pulmonary fibrosis and other risks of breathing fibres from face covering**<sup>[FH1]</sup>

- 5.18. As face coverings are not classed as Personal Protective Equipment, they do not undergo rigorous quality control. Many of the face coverings sold in the community for this purpose have now been found to release aerodynamic nano-particulate fibres which can be inhaled deeply into the lungs, reaching the gas exchange surfaces of the alveoli.<sup>45-61</sup> These respirable nano-fibres are in the same range of physical dimensions as asbestos fibres and share the same aerodynamics once inhaled. As a result, they have the potential to cause similar type of harm as asbestos fibres, creating conditions for formation of sensitization (sore throat, cough, alveolitis, asthma) scar tissue (fibrosis) and cancer (lung cancer or mesothelioma) with the serious risk of short-term and long-term harm.
- 5.19. The HSE advise a 'precautionary approach' to nanotechnology.<sup>7,24,37</sup> I would quote one of the papers cited in the references, from the Primary Doctor Medical Journal, Winter 2020: Masks, false safety and real dangers, Part 1: Friable mask particulate and lung vulnerability<sup>17</sup>:

*"Pulmonary fibrosis is among the worst diseases that can be suffered or witnessed. It kills exceedingly slowly, by ever-thickening matrix formation, a kind of scar tissue, obstructing the alveoli and reducing their air exchange. The illness worsens over time, and suffocates the victim very gradually. Nothing is available to the sufferer from conventional medicine".*

- 5.20. This has long been seen in adults, but little is known about how children, who may suffer fibrosis, are likely to be affected as scar tissue may interfere with the growth of their lungs. As a newly qualified diagnostic radiographer in the 1970s I witnessed many patients who had worked with respirable materials prior to the 1974 Act afflicted with this horrible condition struggle to breathe. It was one of the reasons I switched careers to become a Health and Safety Practitioner, to help try and stop this from happening.

### **Moisture and clogging**

- 5.21. Additionally, these fibres have been in contact with bacteria from the skin and mouth, held in a warm, moist environment within the face covering. This creates a vector for carrying bacteria deep into the lungs with the risk of infection, their

aerodynamic features transporting a bacterial payload directly towards the undefended surfaces where gas exchange takes place.<sup>8,38,40</sup>

- 5.22. This process is exacerbated by mouth breathing, caused by wearing a face covering, as increased effort is required to breathe through the nose against the resistance provided by the face covering. Mouth breathing bypasses the protective mucus and hair lined nasal cavity, which would otherwise trap some of these fibres. Mouth breathing can lead to drying of the oral cavity and has been linked to deterioration in oral health, bad breath, gum disease and other harms.<sup>28,29,30</sup>
- 5.23. The face covering will become moisture saturated, as exhaled air contains considerable amount of water vapour which condenses on contact with the textile surface, added to saliva droplets ejected during speech and respiration, which they are intended to collect. This effect is increased in a cold environment, such as may occur due to open windows to increase ventilation, a measure mentioned in the school risk assessment. This increasing moisture steadily reduces the breathability of the membrane, interfering with oxygen intake and increasing carbon dioxide levels within the breathing space. Through the day the membrane presented by the face covering can become so moist as to become semi-permeable or gradually becoming progressively more impermeable, creates a risk of lung injuries such as pneumothorax or emphysema as the breathability gradually drops so far as to resemble a layer of plastic. The addition of food laden saliva following meals can further clog the pores of the mask.
- 5.24. The wearing of face coverings for the entire school day, extended at both ends during travelling time, and the requirement to continue during breaks and lunchtime period (other than whilst actually eating) is a far greater burden on the students than is seen for adult workers in industries where Respiratory Protective Equipment (RPE) is worn. These would be removed during regular work breaks and for the journey to and from the workplace and worn only during the actual time of work exposure to the toxic substance or environment.

### **Carbon dioxide**

- 5.25. Adults required to work with Substances Hazardous to Health (which includes Carbon Dioxide gas, as in the brewing industry for example) whilst wearing

respiratory protective equipment are subjected to an Occupational Health evaluation to confirm their fitness to wear a restrictive breathing device prior to commencing work. This is to verify that they are fit enough to wear the apparatus throughout their work shift, as detailed in the Personal Protective Equipment Regulations 1992, with repeat evaluations (including Spirometry to check for lung capacity) at regular intervals to check for any health deterioration that might have been caused. The standards that apply to Personal Protective Equipment are exacting and both trades union representatives and regulators inspect and enforce standards. The students are at risk of harm, yet the school have not considered these risks in introducing the measures, and no ongoing checks are in place to evaluate damage that may be developing, so that early intervention can be instigated.

5.26. Government guidance<sup>36</sup> for the educational sector advises increased ventilation, with additional air changes to reduce respiratory droplet exposure and lower risk of infection. The risk assessment provided has not considered any method to enhance ventilation other than opening the windows, which in the UK can only lead to cold classrooms and potential adverse impact on both teacher and students. The temperatures in the UK are frequently below the minimum recommended in the Workplace Health Safety and Welfare Regulations 1992 at 16 degrees C for sedentary work. Regulation 7 of this legislation states *“During working hours, the temperature in all workplaces inside buildings shall be reasonable”*. Keeping the windows open other than between early summer and early autumn will lead to the school being unable to comply with this regulation unless augmented warm air ventilation was provided, and this would need to be at a low noise level to avoid adversely impacting on audibility of the teacher.<sup>28</sup>

5.27. Cold classroom conditions risk having an adverse impact on students with a range of health conditions including low body mass index, circulatory issues such as Raynaud’s syndrome (poor circulation to the hands), those with asthma (cold air can trigger an asthma attack), autoimmune conditions with inflammation such as Rheumatoid arthritis, and endocrine conditions such as thyroid insufficiency diabetes and hypoglycaemia.<sup>30</sup>

- 5.28. *Hypercapnia* is a word used to describe acidification of the body due to inhalation of higher-than-normal levels of carbon dioxide, as would be found in a poorly ventilated “stuffy” room with a large number of people present.<sup>10</sup> Mild to moderate hypercapnia that develops slowly causes the following symptoms: anxiety, shortness of breath, daytime sluggishness, headaches, daytime sleepiness (hypersomnolence). All were reported in the German study of 20,000 children who had been wearing face coverings in school since August 2020.<sup>3</sup> All these are likely to adversely affect learning outcomes and wellbeing.
- 5.29. Hypercapnia is associated with Chronic Obstructive Airways disease where narrowed or constricted passages to and from the lungs restrict oxygen reaching the bloodstream and restricts the removal of carbon dioxide from the bloodstream. Wearing a face covering is thus serving to create in healthy students a condition more usually associated with a severe respiratory illness. And this is being done in order to protect them from contracting a respiratory infection from which, according to the Royal College of Paediatricians and Child Health, they are at low risk of suffering a serious illness<sup>9</sup>.
- 5.30. Hypercapnia has been linked to a suppression of certain immune system cells as well as temporary paralysis of the respiratory cilia. (Cilia are microscopic tendrils that waft mucus up and out of the lungs to remove debris; known as the “mucociliary escalator” this system helps keep the lungs clean. Some inhaled agents paralyse the cilia, disabling this natural process, and is one of the adverse effects of cigarette smoking.) This disables the normal cleaning and protection of the inside of the lungs, removal of fibres and other inhaled particles, increasing the risk of sensitization (asthma), irritation (sore throat, dry cough), and infection.<sup>11,13</sup>
- 5.31. From the guidance to the Personal Protective Equipment regulations: *“The use of PPE must not increase the overall level of risk, i.e. PPE must not be worn if the risk caused by wearing it is greater than the risk against which it is meant to protect.”*<sup>35</sup>

### **Disability considerations**

- 5.32. The risk assessment and face covering policy did not appear to have been subject to a disability impact assessment despite ample information being readily available

- on these matters. Students with a range of sensory and/or physical disabilities are likely to be adversely impacted by the wearing of a face covering requirement.
- 5.33. Visually impaired students are likely to experience steaming up of their spectacles by moisture laden exhaled air when wearing a face covering. This is especially so in a room kept at low temperature with open windows in cold weather.
- 5.34. Hearing-impaired students are more likely to be impacted by the muffled sound of the teacher’s voice through their face covering/mask. The obstructed view of the teacher’s face (and that of fellow students) obstructs the opportunity to lip read, and this forms part, or all of the communication received by students depending on the degree of their impairment, creating an increased sense of isolation. Testimony from Child A described problems understanding a masked teacher, especially during language classes. This is likely to be more problematic for a hearing-impaired student who can now neither see nor hear the teacher fully.
- 5.35. Students on the autistic spectrum often describe an experience of sensory overload and report distress from the sensation of clothing against their skin. They are thus likely to be adversely affected by the face covering requirement. The sense of “otherness” that wearing a disability lanyard for these students is a potential source of distress and could cause anxiety.
- 5.36. Students who are neuro “atypical” such as those with varying degrees of dyslexia, dyspraxia and dyscalculia would normally have their condition treated using specialist physiotherapy to improve blood supply to key areas of the brain. Such treatment has been restricted during the pandemic. It is conceivable that such students will be disproportionately affected by low blood oxygen and increased carbon dioxide exposure resulting from wearing a face covering risking further impact on their condition and educational outcomes.
- 5.37. Students with asthma or other respiratory conditions are adversely and disproportionately impacted by the face covering requirement. They are more at risk from cold classrooms (cold air is a known asthma trigger), inhalation of fibres (fibres and particles are an irritant and known asthma trigger) more likely to have difficulty breathing against a semi permeable barrier where more respiratory effort is required, and face more risk of injury to the lungs if bronchioles (respiratory tubes) go into spasm. Testimony from Child A described a teacher insisting that a

pupil who was having an asthma attack was not permitted to remove their mask on the way to seek medical assistance. This is particularly concerning as signs of severe respiratory insufficiency such as blue lips are not visible with the mask covering the mouth, and the teacher's action not indicative of concern for the student's welfare. Indeed, there is a risk of the student collapsing and sustaining injury by this approach which is not in the best interests of the child concerned.

- 5.38. Students who suffer with migraines or headaches due to spasm of the blood vessels within the brain are likely to be disproportionately affected by the impact of wearing a face covering on blood oxygen and blood carbon dioxide levels. Headaches are frequently reported by those wearing masks or face coverings throughout the working day in healthcare settings. Spasm of the blood vessels restricts blood flow. Reduced blood oxygen further impacts on oxygen availability to the brain tissue.<sup>28</sup>
- 5.39. The face covering requirement might conceivably impact students with epilepsy, but no research data is available. The epilepsy society guidance, however, recommends removing the face covering whenever possible as it may trigger seizures and hamper recovery.<sup>29</sup>

#### **A carbon dioxide measurement test**

- 5.40. There is little reliable research data on carbon dioxide exposure to children and adverse health outcome as they don't work in high-risk environments. However, there is plentiful data on the greater vulnerability of children to Carbon Monoxide gas exposure by virtue of their high metabolic rate related to requirements for active growth. Resting heart rate for children varies from over 100 for a five-year-old, to 84 for an 8 to 12-year-old, and down to 72 for 16 to 18-year-olds. Both carbon monoxide and carbon dioxide are readily taken up by haemoglobin in the red blood cells and can displace oxygen, leading to oxygen deprivation of the brain and other sensitive tissues. The symptoms of carbon monoxide and carbon dioxide exposure are broadly similar (headaches, dizziness, confusion, reduced attention span, inability to concentrate, lowered consciousness, loss of consciousness) as they are both related to lowered oxygen supply to brain tissue.<sup>26, 27,28</sup>

- 5.41. Measurements of carbon dioxide levels during normal wear, inside a range of different commonly available face coverings purchased from retailers, were performed by the author of this report on a child matched for age and gender to Child A, using a calibrated SR-510 Carbon dioxide detector. Levels of carbon dioxide in the air, measured in parts per million (PPM) are typically: outdoor 400 - 450 PPM; indoor with good ventilation 450 - 700 PPM; indoor with poor ventilation: 700 - 1000 PPM. Levels approaching the Workplace Exposure Limit 2000 - 5000 PPM will tend to result in headaches, drowsiness, declination of attention.
- 5.42. During the test conducted, the carbon dioxide levels recorded rose swiftly within the mask to levels approaching, matching and in some cases exceeding the workplace exposure limit (5,000 Parts per million or 9,150 mg/m<sup>3</sup> Time Weighted Average for an eight-hour working day) listed in EH40/2005 and the HSE guide to workplace exposure limits for use with the Control of Substances Hazardous to Health Regulations 2002. Note, however, that document relates to limits considered safe for *adults*. It would be reasonable to reduce this limit to 20% or less of that figure for children who are more susceptible to harm, and who are being exposed to this risk from the time they get onto public transport for the journey to school, throughout the entire school day, including breaks, and again during the journey home. These results were broadly similar to those reported in the literature.<sup>13,17,20</sup>
- 5.43. Information on toxic effects of carbon dioxide from the Materials Safety Data Sheet (MSDS) for carbon dioxide BOC (British Oxygen Company) is as follows:
- “In high concentrations may cause rapid circulatory deterioration even at normal levels of oxygen concentration. Symptoms are headache, nausea and vomiting which may lead to unconsciousness and even death.”*
- 5.44. And from the “Air Liquide” MSDS:
- “In high concentrations cause rapid circulatory insufficiency. Symptoms are headache, nausea and vomiting, which may lead to unconsciousness. Unlike simple asphyxiants, carbon dioxide has the ability to cause death even when normal oxygen levels (20-21%) are maintained. 5% CO<sub>2</sub> has been found to act synergistically to increase the toxicity of certain other gases (CO, NO<sub>2</sub>). CO<sub>2</sub> has been shown to enhance the production of carboxy- or met-hemoglobin by*

*these gases possibly due to carbon dioxide's stimulatory effects on the respiratory and circulatory systems... In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation. Low concentrations of CO2 cause increased respiration and headache."* <sup>23,24,25</sup>

5.45. A German report of research into the experience of students in schools wearing face coverings have included a range of symptoms, the majority of whom reported headache and difficulty concentrating. These symptoms are identical to those for carbon dioxide intoxication. In my opinion it is likely that students are being adversely affected by high carbon dioxide levels inhaled from within the air pocket created inside the face covering. In Germany, children have been wearing face coverings in school since August 2020. Researchers there have raised concerns due to accumulating evidence that children and adolescents experience significant difficulties caused by wearing the face coverings. It is surprising that this study has not been widely considered by UK government's Department of Education, or by individual schools when developing their policies ahead of the reopening of schools in March. This study reported information gathered from 20,000 respondents covering student experiences of wearing face coverings in schools. Distressing signs and symptoms related to wearing a mask were reported by 68% of the parents. These included irritability (60%), headache (53%), difficulty concentrating (50%), less happiness (49%), reluctance to go to school (44%), malaise (42%) impaired learning (38%) and drowsiness or fatigue (37%). These are broadly similar to those listed for carbon dioxide exposure.<sup>3,11</sup>

## **6. Summary of Conclusions**

6.1. In my opinion, the School's face covering policy intended to limit SARS-CoV-2 transmission has not been risk assessed for the impact on students. The policy is placing Child A and all other students at a risk to their health including of permanent physical damage to the lungs caused by fibrosis from inhalation of fibrous nanoparticles. There are real and significant dangers of respiratory infection, oral health deterioration and of lung injury, such as pneumothorax, owing to moisture build-up and also exposure to potentially harmful levels of an asphyxiant gas



(carbon dioxide) which can cause serious injury to health. This also has potential for undermining their learning opportunities due to the introduction of measures that impact on health, cognition, alertness, concentration and wellbeing. All of these risks are to an extent far in excess of any risk they face from contracting the infectious disease SARS-Cov-2 which carries negligible risk of serious illness for the overwhelming majority of school age children.<sup>9</sup>

- 6.2. Additionally, no disability impact assessment has been prepared or considered further damaging educational outcomes for certain students. Where there is particular impact on a fellow student with disability, or indeed otherwise, this is likely also emotionally to upset and impact a child who has empathy for his or her fellow students.<sup>20</sup>

## **7. Documents considered**

7.1. I was sent the following documents for my consideration, which I received and read:

- Letter from Mr B, child A's father, addressed to Mr C, Headteacher at the school Child A attends, and copied to Head of Education at [REDACTED] (dated 8th March 2021)
- A document entitled, '[REDACTED] Master Risk Assessment from March 2021 for the full reopening of schools after Lockdown 3'
- Report by expert Clinical Psychologist Dr Zenobia Storah which included a testimony from Child A describing their experience at school during the period since returning on the 8th March 2021 under the new face covering requirements.

## **8. Conclusions**

- 8.1. The introduction of a requirement for "all of school day" face covering for secondary school children, has not been adequately assessed to identify and manage the risk of physical health impact, risk of physical injury, risk of induced illness and risk of mental health impact (covered in another expert report).
- 8.2. The 47 page risk assessment that was prepared by the school looked at 3 distinct groups of affected individuals: teachers, other staff and visitors (including contractors and those leasing the premises). It did not consider the children despite

government guidance on safety in schools specifically including pupils in their list of those to be considered<sup>36</sup>. The pupils are the most vulnerable and numerous of those to be affected by the measures introduced so that any adverse impact affects a large number of individuals and harm to the population may be multiplied many times over, their greater life expectancy extending the number of years those effects will be experienced.

- 8.3. Young Persons (16 -18 yrs) are specifically identified as being more vulnerable to harm in the 1999 legislation and children under 16 even more so. The only child considered in the risk assessment was the unborn child of a teacher.
- 8.4. A disability impact assessment has not been carried out on the harm these measures are likely to have on already disadvantaged students.
- 8.5. These omissions appear to fall short of the requirements of the risk assessment as directed in the Management of Health and Safety at Work Regulations 1999 and the disability provisions of the Equality Act 2010.
- 8.6. Exposing students under the age of 18 to potentially harmful levels of a gas (carbon dioxide) that has a Workplace Exposure Limit is a contravention of the Control Of Substances Hazardous to Health Regulations 2002. Adult workers in industries where exposure to Carbon Dioxide gas is likely would expect to be protected. Secondary school pupils deserve greater level of protection due to their greater vulnerability due to age and metabolic rate yet their protection has seemingly not been considered at all.<sup>21</sup>
- 8.7. The face covering policy is subjecting students aged 11-18 years to a strictly enforced regime where they are exposed throughout the school day to inhalation of nano-fibres released from the inside of the type of masks available to the public. This release is increased whenever the masks are handled. It creates high risk of sensitization (asthma) scar tissue formation (fibrosis), cancer (including mesothelioma) and respiratory infection (bacterial pneumonia)<sup>38</sup> The Health and Safety Executive have counselled a “precautionary approach” to nanotechnology<sup>37</sup>. This policy does not apply such an approach.<sup>10</sup>
- 8.8. The Trusts risk assessment **cannot** therefore be considered ‘sufficient or in compliance’ with the requirements of the Health & Safety at Work etc. Act 1974, nor the various Health and Safety Regulations that sit under the HASAW Act

including, but not limited to: the Management of Health and Safety at Work Regulations 1999 and The Control of Substances Hazardous to Health Regulations 2002.

## **9. Duties as an Expert Witness**

- 9.1. I understand that my primary duty in writing reports and giving evidence is to the Court rather than the party who engaged me.
- 9.2. I have endeavoured in my report and in my opinions to be accurate and to have covered all relevant issues concerning the matters stated which I have been asked to address.
- 9.3. I have endeavoured to include in my report those matters which I have knowledge of or of which I have been made aware that might adversely affect the validity of my opinion.
- 9.4. I have indicated the sources of all information I have used.
- 9.5. I have not, without forming an independent view, included or excluded anything which has been suggested to me (in particular my instructing solicitors).
- 9.6. I will notify those instructing me immediately and confirm in writing if, for any reason, my existing report requires any correction or qualification.
- 9.7. I understand that:-
  - a) my report, subject to corrections before swearing as to its correctness will form the evidence to be given under oath or affirmation.
  - b) I may be cross examined on my report by an advocate assisted by an expert.
  - c) I am likely to be the subject of adverse criticism if the Court or Tribunal concludes that I have not taken reasonable care in trying to meet the standards set out above.
- 9.8. I confirm that I have not entered into any arrangement where the amount or payment of my fees is in any way dependent upon the outcome of the case.
- 9.9. I am aware of the requirements of Part 35 and practice direction 35, this protocol and the practice direction on pre-action conduct.

## **10. Statement of Truth**

I understand my duty to the court and have complied with that duty. I am aware of the

requirements of Part 35 of the Civil Procedure Rules, the corresponding Practice Direction 35 and the Guidance for the Instruction of Experts in Civil Claims 2014.

I confirm that I have made clear which facts and matters referred to in this report are within my own knowledge and which are not. Those that are within my own knowledge I confirm to be true. The opinions I have expressed represent my true and complete professional opinions on the matters to which they refer.

I understand that proceedings for contempt of court may be brought against anyone who makes, or causes to be made, a false statement in a document verified by a statement of truth without an honest belief in its truth.



Signed: Ms Simone Plaut CMIOSH MSc HDCR FETC Chartered Health and Safety Practitioner

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