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COVID-19 AND UK DIVING OPERATIONS

14 RECOMMENDATIONS ON RISK PREVENTION AND MITIGATION

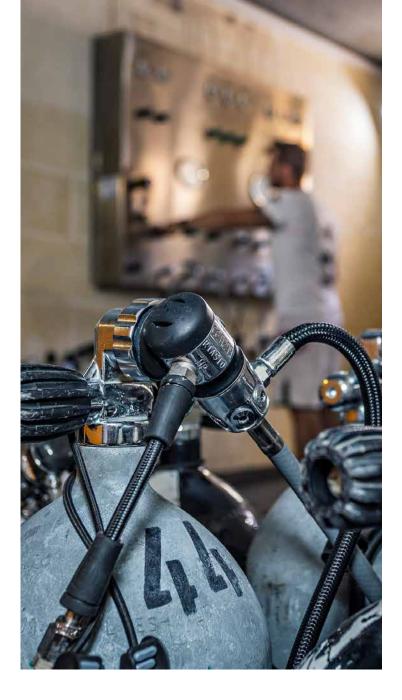


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This document is based on the original DAN document which had 10 recommendations, but we have added 4 more sections and made this version UK specific. It provides some useful recommendations on risk prevention and mitigation procedures that diving operators may consider when national, regional or local authorities officially allow the reopening of diving activities Directives issued by the respective administrative authorities (e.g. Maritime and Coastguard Agency, HSE, etc.), should also be taken into account.

PLEASE NOTE

The epidemiological and regulatory situation is constantly evolving. As a result, this document may be subject to changes and updates.

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REGIONAL STATUS AND MEDICAL GUIDANCE?

- INTRODUCTION
- REGIONAL GOVERNMENT STATUS
- MEDICAL GUIDANCE



1.1 INTRODUCTION

This guidance has been prepared with the assistance of a large number of organisations which are concerned with diver safety and are very experienced in their area of expertise. The medical parts have been checked by the relevant local medical authority e.g. the UKDMC and where relevant the sport's national governing body has also been consulted e.g. BSAC.

1.2 REGIONAL GOVERNMENT STATUS

Country guidelines, which are subject to change, are managed by the following governments/assemblies and should be referred to when planning any dive trips:

- England: https://www.gov.uk/coronavirus
- Northern Ireland: <u>https://www.nidirect.gov.uk/articles/coronavirus-covid-19-staying-home-and-self-isolation</u>
- Scotland: <u>https://www.gov.uk/guidance/coronavirus-covid-19-information-for-individuals-and-businesses-in-scotland</u>
- Wales: https://gov.wales/coronavirus
- Isle of Man: https://covid19.gov.im
- Jersey: https://www.gov.je/Health/Coronavirus/Pages/index.aspx
- Guernsey: <u>https://covid19.gov.gg/</u>
- Ireland: <u>https://www.gov.ie/en/news/7e0924-latest-updates-on-covid-19-</u> <u>coronavirus/</u>

1.3 MEDICAL GUIDANCE

If you have had a confirmed case of COVID-19 you should seek advice from a UKDMC medical referee to ensure you are safe to resume diving. Lung function can be affected by COVID-19, but the exact changes and implications of those changes are not known at present. Even divers who have not shown any symptoms may have lung function changes.

1.3 MEDICAL GUIDANCE

BACKGROUND

The outbreak of a world-wide pandemic caused by the novel coronavirus disease (Severe Acute Respiratory Syndrome Coronavirus 2 - SARS-CoV-2 virus) and the resulting disease known as Covid-19 has significant implications for diving.

SYMPTOMS

Initially the disease commonly causes a dry, almost continuous cough, a high temperature (>38.5 C), muscle pain, and headache, with about 60-70% of affected cases a loss or decrease in the sense of smell and loss of taste [1, 2].

HOW THE AFFECTS CAN VARY

Some people who are affected by the disease may suffer only mild symptoms or, in some no symptoms at all. Others after 5-8 days will experience shortness of breath [**3**] and resulting in some requiring admission to hospital to have extra oxygen administered via a mask. Some of the most severely affected patients will require their breathing to be taken over by a ventilator. Once on a ventilator, many patients will take between 14-21 days or even longer to recover sufficiently to be able to take over their own breathing. The most severely affected patients tend to have pre-existing medical conditions with the triad of high blood pressure, type II diabetes mellitus, and obesity being of particular note.

LONG-TERM RISKS TO DIVERS

Several academic papers have now shown that there may be added longterm risks to divers from SARS-CoV-2 virus. 104 of the 712 passengers on the "Diamond Princess" cruise ship that had tested positive for the SARS-CoV-2 virus agreed to cooperate with research [**4**]. Computed tomography (CT) scans of the lungs were carried out on all of these 104 passengers, of whom 76 were asymptomatic and 28 symptomatic for the disease. 41 of the 76 asymptomatic cases had abnormal CT findings whilst 22 of the 28 symptomatic cases also had abnormal CT findings in the lung fields. This included showing areas of lung without any signs of the normal alveoli (the tiny air sacs whose main function is to exchange oxygen from the air with the haemoglobin in the blood and to remove carbon dioxide from the plasma to the air in the lungs). Other areas of the lung showed changes that also indicated that the lung was not functioning properly with regard to gas exchange.

In symptomatic patients there have been reports that even after all signs of infection by the virus have passed breathless on exercise continues and they have been unable to resume their normal activities and sport, and some have had lung changes on CT [5].

Currently it is unclear as to how long these symptoms of breathlessness or CT changes will last for as the virus has not been present in the human population for a long enough to investigate this. Some CT changes may be permanent.

¹ <u>https://onlinelibrary.wiley.com/doi/full/10.1002/alr.22579</u>

² https://bestpractice.bmj.com/topics/en-gb/3000168/history-exam

³ <u>https://doi.org/10.1136/bmj.m1470</u>

⁴ https://pubs.rsna.org/doi/pdf/10.1148/ryct.2020200110

⁵ https://piledrivers2404.ca/long-term-impact-on-divers/

1.3 MEDICAL GUIDANCE

In a Korean patient with a very similar infection due to the related Middle East Respiratory Syndrome (MERS) coronavirus [6], serial CT imaging showed incomplete resolution of the lung changes 23 days after discharge from hospital and with the development of a condition known as "traction bronchiectasis within retracted consolidation" which is the sort of condition that has serious implications for diving, owing to the risk of gas trapping and pulmonary barotrauma [7]

It is therefore apparent that the SARS-CoV-2 virus has the potential to interfere with diving as a result of lung damage and possibly damage to other organs such as the heart. For a few, it will unfortunately stop them from diving altogether. This degree of lung damage is more likely to be seen in those who have had severe symptoms necessitating hospital admission, oxygen therapy and particularly admission to intensive care. For the rest, it may mean a rather more thorough medical than might have been the case before the pandemic, depending on the degree of symptoms. In some cases, it will be necessary to undergo quite extensive testing depending on the severity of the illness and subsequent results of investigations on normal follow up by treating physicians [**8**].

UKDMC RECOMMENDATIONS

The UK Diving Medical Committee (<u>UKDMC</u>), after examining the evidence to date, have produced the following scoring system to recommend which pathway a recreational diver should follow to assess their ability to recommence diving depending on whether they have had the most important symptoms consistent with COVID19. As there is not much evidence on which to base the advice, the guidance assumes the highest likely degree of risk to make it as safe as reasonably possible without stopping everyone from diving. It will be reviewed as new evidence becomes available. Any diver who has been exposed to SARS-CoV-2 virus, or been infected by the virus, would be well-advised to seek the advice of a diving physician before resuming diving. Any diver not knowingly exposed but concerned, is welcome to ask for advice. A list of UKDMC Medical Referees can be found at <u>ukdmc.org</u>. The UK Health and Safety Executive has published its own guidance for working divers who can find a list of <u>HSE</u> Approved Medical Examiners for Divers (AMEDs) on the HSE website.

A Case Report of Serial Computed Tomographic

⁶ Choi WJ, Lee K-N, Kang E-J, Lee H. "Middle east Respiratory Syndrome-Coronavirus Infection:

Findings in a Young Male Patient" Korean J Radiol 2016;17(1):166-170, http://doi.org/10.3348/kjr.2016.17.1.166 7http://www.sbmhs.be

⁸ SARS-CoV-2 VIRUS (COVID-19) and the Scuba diver Edge, C., Bryson, P., Cope, T., Waterman, M.K.SCUBA magazine, Issue 103 June 2020





WHAT MEASURES SHOULD BE TAKEN FOR THE SAFETY OF CUSTOMERS AND STAFF?

- RECEPTION
- PHYSICAL DISTANCING
- CHANGING ROOMS
- PERSONAL HYGIENE
- USE OF PPE
 (PERSONAL PROTECTIVE EQUIPMENT)



WHAT MEASURES SHOULD BE TAKEN FOR THE SAFETY OF CUSTOMERS AND STAFF?

2.1 RECEPTION

Customers should be reminded not to enter the Dive Centre if they have symptoms related to COVID-19 infection. To reduce the number of people in the Dive Centre, it is advisable to deny access to non-diving family members or friends accompanying the divers. Only staff who are necessary for the activities should be on the premises. The prevention measures taken by the Centre should be displayed on public signs and made clearly visible. For further information, please refer to the **Template of Public Notice** (Attachment 1).

It is recommended that registration forms are online and completed before visiting the Dive Centre. If this is not possible, please make sure that the correct personal hygiene procedures are carried out, before completing the forms (e.g. masks, gloves, alcohol wipes for all shared writing instruments, hand sanitiser, etc. should be available). It is preferable that all payments are made using online methods (bank transfer, PayPal or similar) and credit cards or contactless, rather than using cash.

2.2 PHYSICAL DISTANCING

Staff, divers, boat crew etc should follow the prevailing national guidelines on social distancing at all times.

2.3 CHANGING ROOMS

Changing rooms are areas where there are higher risks of infection. All customers' personal items, including clothing, towels etc. should be stored in a way that avoids contact with communal surfaces. If stored in lockers, the lockers should be sanitised after each use. Alternatively, customers may be encouraged to store their items in special containers (e.g. bags, boxes, cases, etc.), stored on the floor or on benches and well-spaced from each other. If provided by the Dive Centre, containers should be properly sanitised after each use. Alternatively, it is recommended that personal items are stored in their vehicles.

2.4 PERSONAL HYGIENE

The new coronavirus (SARS-CoV-2) is a respiratory virus that spreads mainly through contact with droplets from infected people, for example when they sneeze, cough or blow their noses.

Correct personal hygiene measures include:

- ✓ Wash hands frequently, for at least 20 seconds.
- ✓ Follow the prevailing national guidelines on social distancing at all times.
- ✓ Avoid touching your eyes, nose and mouth.
- Practice respiratory hygiene. This includes covering your mouth and nose with your bent elbow or tissue when you cough or sneeze.

Dive Centres should provide hand sanitising products or suitable facilities for washing hands.

2.5 USE OF PPE (Personal Protective Equipment)

MASKS

The <u>WHO</u> advises that masks should only be used if you are coughing or sneezing, or if you are taking care of a person with COVID-19. However, it is only prudent to require that everyone within the Dive Centre wears a mask. Follow instructions of local authorities, as well as your own best self-interest in this regard. Wearing masks is of particular importance to the Dive Centre staff, who spend more time in contact with customers.

Guidance does change. Please refer to National Guidelines on social distancing and "facial coverings".

Which masks should you wear? There are primarily three types of appropriate protective masks, and the choice depends on their use:

- Medical masks reduce the possibility that an infected person ejects droplets, but do not protect the person wearing them. They only offer a degree of protection if everyone in a given environment wears them.
- ✓ FFP2, KN95 and FFP3 filter masks are effective personal protective equipment and, if correctly fitted, protect both others and the person wearing them, as they block up to 99% of infected particles.
- Please note: some FFP2, KN95 and FFP3 masks have a valve on the front, which is not a filter but only facilitates exhalation. These only protect the wearer, but would not protect others from what is exhaled. Their use in diving centres is therefore not recommended.

Before putting on a mask, hands should be sanitised and the mask should not be touched while wearing it. It should be removed from the back and eventually disposed of in closed containers.

For more details, see the infographic **How to Put on, Use, Take off and Dispose of a Protective Mask** (Attachment 2)

2.5 USE OF PPE (Personal Protective Equipment)

GLOVES

Single-use gloves (e.g. latex or nitrile gloves) only protect the hands of the person wearing them while handling materials, equipment, etc. However, they do not protect other people and the surrounding environment from contamination.

Before using, check their integrity. While in use, disinfect them regularly. After use, they should be removed and disposed of in closed containers, avoiding skin contact with the outside of the gloves. For more details, please refer to the infographic **Practical Guide for the Correct Use of Single-Use Gloves** (Attachment 3)

PLEASE NOTE

Single-use gloves can give a false sense of security, so people tend to contaminate more surfaces and carry out hand hygiene less frequently. To avoid this, they should change the gloves regularly, and carry out good hand hygiene while wearing them and after removing them.



- Use of disinfectants: alcohol and bleach. Infection Prevention and Control of Epidemicand Pandemic-Prone Acute Respiratory Infections in Health Care [Internet]. Available from <u>https://www.ncbi.nlm.nih.gov/books/NBK214356/</u>
- Kampf G, Todt D, Pfaender S, Steinmann E. Persistence of coronaviruses on inanimate surfaces and their inactivation with biocidal agents. Journal of Hospital Infection. 2020Mar;104(3):246–51.
- Lai MYY, Cheng PKC, Lim WWL. Survival of Severe Acute Respiratory Syndrome Coronavirus. Clinical Infectious Diseases [Internet]. 2005Oct1;41(7):e67–e71. Available from: <u>https://academic-oup-com.proxyiub.uits.iu.edu/cid/article/41/7/e67/310340</u>



HOW SHOULD DISINFECTION OPERATIONS BE MANAGED?

- SURFACES
- DIVING EQUIPMENT



HOW SHOULD DISINFECTION OPERATIONS BE MANAGED?

Studies of other coronaviruses have shown their rate of infection can be reduced by heat, UV light and alkaline or acidic conditions. Because of this, surfaces can be disinfected using household cleaning products.

3.1 SURFACES

It is not clear how long the virus can survive on surfaces. According to the WHO, preliminary information suggest that it may persist for between a few hours or several days, depending on type of surface, temperature or humidity of the environment. It is therefore necessary to clean all surfaces and disinfect them frequently, especially those that could be touched by several people: door and window handles, light switches, taps, keypads, etc. It may be practical to create a list of all spaces and surfaces to be disinfected with a cleaning and disinfection schedule.

Among the products that are useful to eliminate the virus there are both alcohol based disinfectants with an alcohol percentage (ethanol/ethyl alcohol) of 70%, and products with sodium hypochlorite as the primary agent (such as bleach).

The percentage of sodium hypochlorite capable of eliminating the virus without causing irritation to the respiratory system is 0.1% for most surfaces. For toilets (WC, shower, washbasins) a higher percentage can be used: 0.5%.

PLEASE NOTE

Particular care is required when using alcohol-based disinfectants, including hydroalcoholic hand solutions. A small percentage of alcohol, a highly volatile and flammable substance even at relatively low temperatures, can cause fire or explosion. Avoid direct or indirect contact with equipment, cylinders and filling hoses used for oxygen-enriched air. Wherever possible, it is preferable to use simple soap and water to clean hands.

Also, please consider that both ethanol/ethyl alcohol and sodium hypochlorite can damage surfaces, so should be tested prior to use for each individual item or surface.

The Dive Centre premises must be disinfected daily. Communal areas such as changing rooms should be disinfected whenever used by different people. For general information on cleaning and disinfection, please consult the resources made available by the <u>WHO</u> as well.

3.2 SURFACES

INTRODUCTION

There are still no specific tests carried out regarding the survival of SARS-CoV-2 virus on diving equipment especially where it has penetration cavities or threaded sections. It is therefore imperative that diving equipment is disinfected after use in order to neutralise the virus. Some products, such as quaternary ammonium compounds, are effective and highly compatible with typical diving equipment materials (rubber, neoprene, plastics, metal, etc.), however difficult to source or harmful for the marine environment. Other products, such as bleach (sodium hypochlorite), are easier to find and cheaper, but must be used in accordance with the guidelines for COVID-19. There are also other products (EW80, Virkon S etc.), commonly used by divers, that have been proven to be effective against the virus.

In the United States, the EPA (Environmental Protection Agency) provides a <u>list</u> of disinfectants effective against the SARS-CoV-2 virus. In Europe, the ECDC (European Centre for Disease Prevention and Control) has published some <u>guidelines</u>.

Regardless of the active ingredients chosen or the method of disinfection, it is of the utmost importance that its effectiveness against the new coronavirus is proven.

SODIUM HYPOCHLORITE

Common **bleach**, marketed under different brands and with variable percentages (5-10%) of its active ingredient, **sodium hypochlorite**, can neutralise the virus. It is important to read the product label carefully, check the percentage of active ingredient, and dilute it in water in the right measure. Recent scientific studies (1) suggest a **1:50** dilution of bleach containing 5% of sodium hypochlorite (concentration of **0.1%** or **1,000** ppm of active ingredient), with complete immersion of the objects for at least **5 minutes**.

Here's a practical example of how to dilute the product in water, to obtain **5 litres** of solution containing **0.1%** of active ingredient:

- ✓ 5% sodium hypochlorite bleach // 100 ml of product in 4900 ml of water, or
- ✓ 10% sodium hypochlorite bleach // 50 ml of product in 4950 ml of water

Precautions:

- Perform disinfection operations wearing gloves, mask and eye protection.
- ✓ Mix solutions in well ventilated areas.
- Prepare solutions using cold water, as hot water damages the active ingredient.
- \checkmark Never mix bleach with other products or chemicals.
- ✓ Avoid splashes during cleaning.
- \checkmark Rinse with fresh water and allow to dry before use.



- Chan KH, Peiris JSM, Lam SY, Poon LLM, Yuen KY, Seto WH. The Effects of Temperature and Relative Humidity on the Viability of the SARS Coronavirus. Advances in Virology. 2011Oct1;2011:1–7.
- First data on stability and resistance of SARS coronavirus compiled by members of WHO laboratory network [Internet]. World Health Organization. World Health Organization; 2015 [cited 2020Mar27]. Available from: <u>https://www.who.int/csr/sars/survival_2003_05_04/en/</u>
- Duan SM, Zhao XS, Wen RF, Huang JJ, Pi GH, Zhang SX, et al. Stability of SARS coronavirus in human specimens and environment and its sensitivity to heating and UV irradiation. Biomedical and Environmental Sciences [Internet]. 2003Sep;16:246–55. Available from: <u>https://www.ncbi.nlm.nih.gov/pubmed/14631830</u>



WHAT IS THE BEST WAY TO MANAGE INFECTION CONTROL OF CLUB & RENTAL EQUIPMENT?

- RECOMMENDATIONS
- SHOULD SECOND STAGE MOUTHPIECES BE REPLACED AFTER EACH USE?



WHAT IS THE BEST WAY TO MANAGE INFECTION CONTROL OF CLUB & RENTAL EQUIPMENT?

For the purpose of this document dive centres and clubs are referred to as providers and equipment includes both commercially rented equipment and club loan equipment.



Equipment should be handled with particular care, especially considering the responsibility of providers in case of possible contamination. Here are some recommendations:

- Equipment should be disinfected as indicated in <u>section 2</u>, after each use, paying particular attention to regulators, BCDs, snorkels and masks.
- Masks need to be fit-tested by each diver before use, which implies disinfection after each test. Divers may be encouraged to bring at least their own mask.
- Keep areas for returned equipment separate from areas where disinfected equipment is stored.
- Divers should be prevented from entering the area where disinfected equipment is stored. Take the equipment to the diver.
- Transport equipment in individual containers, marked with diver's name, and remember to disinfect these after use.
- ✓ Once disinfected, handle the equipment safely, e.g. by storing masks, regulators and snorkels in closed bags, to be removed before use.
- ✓ Instruct divers not to touch the cylinder valve outlet or regulator inlet when assembling and disassembling their scuba equipment.

4.2 SHOULD SECOND STAGE MOUTHPIECES BE REPLACED AFTER EACH USE?

Although divers may think it good practice to replace mouthpieces frequently, an infected diver would not only contaminate the mouthpiece, but the entire second stage unit. That is why it is necessary to disinfect regulators as described above, even if mouthpiece is replaced.

- Casanova L, Rutala WA, Weber DJ, Sobsey MD. Survival of surrogate coronaviruses in water. Water Research. 2009;43(7):1893-8.
- Municipal Water and COVID-19 [Internet]. Centers for Disease Control and Prevention. Centres for Disease Control and Prevention; 2020 [cited 2020Mar26]. Available from: <u>https://www.cdc.gov/coronavirus/2019-ncov/php/water.html</u>



HOW SHOULD RINSING OF CUSTOMER-OWNED DIVE EQUIPMENT BE CARRIED OUT?

It is recommended not to use common tubs to rinse equipment after a dive. If the Dive Centre does not have appropriate facilities to allow individual rinsing with running water, customer-owned equipment should be rinsed elsewhere. If the Dive Centre provides an area for customers to dry their equipment, there should be enough space to prevent cross contamination. Always remind customers to disinfect their equipment as soon as possible after use.





WHAT PROTECTIVE MEASURES SHOULD BE TAKEN WHEN SNORKELLING OR FREEDIVING?

- PREPARATION AND TRAVEL
- PREPARING TO DIVE
- BUDDY CHECKS
- AFTER THE DIVE
- SNORKELLING
- FREEDIVING



WHAT PROTECTIVE MEASURES SHOULD BE TAKEN WHEN SNORKELLING OR FREEDIVING?

ARRIVE, DIVE AND LEAVE

6.1 PREPARATION AND TRAVEL

When drawing up dive plans there are additional considerations which need to be taken into account, these include:

- Prior to taking any student on a course it is recommended to offer a medical form which takes into account any student that has had COVID-19. <u>UKDMC</u> <u>medical form</u>, If they have had the virus, they should be referred to a <u>UKDMC</u> <u>medical referee</u> before undertaking any practical freediving activities. Divers Alert Network currently offer such a form until such time as the RSTC and freediving agencies provide their own. <u>DAN Health Declaration Form – COVID-19</u>
- \checkmark Theory classes can be taken online for the foreseeable future.
- Students should be reminded not to turn up if they have any current symptoms of COVID-19.
- Students should be sent guidance about the additional risks by reading this document and deciding whether to accept the slightly increased risks of doing a course.
- All Instructors and / or staff involved in freediving activities should be fully trained and informed of the new risks posed by COVID-19. This should include a full risk assessment, and potentially online courses and seminars such as the Airborne Pathogens course or webinars on risk mitigation for COVID-19.
- Because instructors are responsible for student safety, each instructor must unequivocally accept the risk of rescuing students before teaching each course. Instructors not accepting that risk should not lead in-water activities.
- According to the ERC and UK Resuscitation Council guidelines <u>Resuscitation</u> <u>Council UK</u> Rescue Breaths are not allowed at the moment due to the risk of a possible infection. This is a concern in freediving where rescue breathing has proved to be of extreme importance in Black Out scenarios and can be lifesaving. It has to be understood that in full respect of the Resuscitation Council guidelines, it is not possible to promote the use of rescue breathing and is a severe concern in case of a blackout. Those eventually performing rescue breathing, should take full responsibility for their actions.
- Each diver / student must take responsibility for following Government advice on distancing and cleanliness, and should also consider the possibility that, due to fear of COVID-19, he/she may not perform a rescue, or may not be rescued. Diving conservatively has always been important and is now imperative, this dramatically reduces the potential for a Hypoxic incident.

6.1 PREPARATION AND TRAVEL

- Due to the fact that in a rescue situation it may not be possible to adhere to social distancing guidelines it is prudent to consider not running the performance aspects of advanced course, or coaching to times / depths or distances that would be likely to cause a situation where the student would be susceptible to have a hypoxic incident. Low level courses have an extremely low hypoxic occurrence so are considered safer than the advanced performance aspects of courses. This can be revised in due course. Consider additional equipment on site including appropriate face covering, Oxygen units (including Oxygen administration masks such as a non-rebreather mask) and First Aid materials.
- Plans must consider the guidelines for both where the divers live and those covering the area where you are planning to dive or travel through. When travelling to a dive site, consider minimum distance requirements and currently the likelihood is that means travelling in separate vehicles to dive sites.
- At inland dive sites, divers must check with the site owners if a booking system is in place.
- "Arrive, Dive, Leave". Plans should be made so that you are on site for the minimum time possible so that everyone may maximise their allowed time on site. Will there be facilities at the site, such as the availability of toilets etc. Can your plans include safety shore cover?
- Special care must be taken when entering and exiting the water to ensure that divers do not congregate together. If possible, identify separate entry and exit points.
- Disinfect all equipment prior to use, using guidelines found in the ECDC document which can be found on the DAN website.
- Students must not swap equipment between them, they should be encouraged to buy personal equipment prior to the course. Spare equipment should be taken in case of poor fit.
- Hand sanitizer and wipes should be provided on site for when needed. Students should be encouraged to bring their own. This can be requested in joining instructions.

6.2 PREPARING TO DIVE

- When preparing masks divers should either use an anti-fog liquid. Communal mask wash buckets should not be used.
- \checkmark No dives at night or in an overhead environment.
- A dive briefing observing social distancing should be carried out including specific briefing on the additional COVID-19 risks and advice should be given on how to mitigate those risks.
- Do not share fluids for wetsuit lubrication between divers, each diver to have their own wetsuit lubrication.

6.3 DURING THE DIVE

✓ At the surface you must comply with the prevailing government guidelines on social distancing.

6.3 DURING THE DIVE

- Larger groups can be split into smaller groups on their own buoy and dive line. Individuals from the same household can share a buoy, dive line and lanyard but consider additional equipment for students from different households.
- Once a buddy pair has been set, do not swap between groups as this increases the chances of cross contamination.
- Instructors can safely instruct individual divers from behind as well as students practising skills from the side at a short, but safe distance.
- When a diver is 'breathing up' give them plenty of space to avoid being close to the exhaled air. When a diver is surfacing be close enough to render assistance if required but consider the direction which the divers airways will be in relation to your position and wind direction so you can minimise the chance of inhaling any airborne droplets.
- ✓ When using snorkels, it cannot always be guaranteed which direction the expulsion of air will go so when swimming out to the dive buoy if using one, stay at least 5 metres away from each other. When clearing the snorkel gently displace the air by tilting the head gently back rather than forcefully expiring with a blast method and use it sparingly during the session only when needed and considering the position of others. Do not swap snorkels between students. Snorkels are not used underwater on freediving courses anyway. A rescue dummy of some description can be used to demo and practice rescue skills. However, rescue breathing should not be practiced at this time, unless your freediving organisation permits rescue breathing. If you do, the minimum you must do is to make sure to disinfect the rescue dummy between students and perform rescue skills according to the guidelines of your free dive organisation. In this instance, you should disinfect the whole dummy and not just the face and airways.
- ✓ If a situation arises where a rescue is required, the distancing rule does not need to be observed, but mitigate this risk with conservative diving.

6.4 AFTER THE DIVE

- ✓ Divers on the surface should follow the prevailing guidelines on social distancing when possible and ensure they keep masks in place if closer. With wetsuits/ semi-dry suits there is sometimes a need to get help with removing these. Usually this involves helping the diver get their shoulders out of the suit from behind. In this case both people (diver and crew or diver/diver) should stand near side by side, with neither "down wind". The diver wearing the suit should face at right angles (90degs) to the wind, back to the person who is helping with removal. The person helping to remove the suit should face away from the diver as far as possible. Both divers should be washed or alcohol-based hand gel should be used, after having assisted the diver.
- Divers should refrain from rinsing their personal kit in a communal rinse tank waiting instead until they return home where they can safely rinse their kit.
- Students should be encouraged to bring or buy their own equipment, if hire equipment is used collect it back from students in a diving bucket / diving box or similar device so that it can be taken for disinfecting without touching.

6.4 AFTER THE DIVE

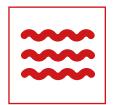
To help track and trace efforts which are being implemented in the UK as we speak, it is recommended for students with their permission to swap some basic details in case of a future confirmed case of COVID-19 in order to speed up that process.

6.5 SNORKELLING

- There is no evidence on the distance the virus might travel when clearing the snorkel by using the blow method. It is recommended that the rules around social distancing are maintain while on the surface.
- The use of the displacement technique for clearing a snorkel or the use of snorkels with purge valves is likely to reduce the dispersing of the virus into the atmosphere.

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- Steve Millard Apneists UK Freediving school owner, AIDA Freediving Instructor Trainer, PADI Freediving Instructor Trainer, RAID Freediving Instructor Trainer, BSAC Open Water Snorkelling Instructor, BFA Press Officer
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WHAT PROTECTIVE MEASURES SHOULD BE TAKEN WHEN DIVING FROM THE SHORE OR IN INLAND WATERS

- PREPARATION AND TRAVEL
- PREPARING TO DIVE
- BUDDY CHECKS
- AFTER THE DIVE



WHAT PROTECTIVE MEASURES SHOULD BE TAKEN WHEN DIVING FROM THE SHORE OR IN INLAND WATERS?

ARRIVE, DIVE AND LEAVE

7.1 PREPARATION AND TRAVEL

When drawing up your dive plans there are additional considerations which need to be taken into account, these include:

- Dive plans must take into account the guidelines for both where the divers live and those covering the area where you are planning to dive.
- Plans which involve shore sea diving should not include any diver who has never dived in the sea. Divers with substantial sea diving experience should also exercise extreme care when diving at a site which is new to them.
- When inland dive sites open, divers must check with the site owners if a booking system is in place. Plans should be made so that you are on site for the minimum time possible so that everyone may maximise their allowed time on site.
- \checkmark Will there be facilities at the site, such as the availability of toilets etc.
- ✓ Can your plans include safety shore cover?
- Are you able to obtain air/gas fills?
- Current social distancing prohibits car sharing by people outside of a single household, this has the potential for a marked impact on car parking needs and might preclude divers parking close to the point of entry.
- Whilst under the water there is no need for social distancing, however once on the surface this must always be observed.
- The depth of any dive should be very conservative; your training agencies will have some recommendations which may change. When considering depth, you should ensure that the local hyperbaric chamber is operational before diving.
- Special care must be taken when entering and exiting the water to ensure that divers do not congregate together. If possible, identify separate entry and exit points.

7.2 PREPARING TO DIVE

If help is needed (especially when closing drysuit zips) it is important that measures to reduce risk are taken and that any assistance must only be provided by the diver's buddy:

- ✓ Divers should assemble their own personal dive kit.
- Both divers should stand near side by side, with neither "down wind". If closing a rear dry suit then the diver should stand and face at right angles (90degs) to wind, back to the diver closing the zip who should face as far away from the diver as possible.

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- Both divers should stand near side by side, with neither "down wind". If closing a rear dry suit then the diver should stand and face at right angles (90degs) to wind, back to the diver closing the zip who should face as far away from the diver as possible. Both divers should wear face coverings in line with governmental guidelines' and hands should be washed or alcohol-based hand gel should be used, after having assisted the diver.
- If closing a cross chest / self-donning zip, then these sometimes require help at the shoulder and the diver should stand directly into the wind with their head turned away from the helper as near to a right angle to the wind as possible. The helper should stand to the side of the diver not down or up wind. The helper should face directly down wind. Both divers should wear face coverings in line with governmental guidelines' and hands should be washed or alcohol based hand gel should be used, after having assisted the diver.
- Divers should take extra care when donning their equipment. They should find a somewhere to sit down to and kit up. If there is unlikely to be such facilities, they should consider taking their own portable seating, aluminium hop-up steps are ideal for this.
- When preparing masks divers should either use an anti-fog liquid or spit into the mask once in the water and downwind from their buddy. Communal mask wash buckets should not be used.

7.3 BUDDY CHECKS

Refer to Section 10 for additional guidance on completing buddy checks.

7.4 AFTER THE DIVE

- ✓ Divers on the surface should follow the prevailing national guidelines on social distancing when possible and ensure they keep masks and regs in place if closer.
- ✓ Divers should be aware of facial mucous "snot" post dive.
- If assistance is required to remove fins this should be done by the buddy underwater, providing it is safe to do so.
- ✓ If assistance is required to undo dry suit zips buddies should follow the same advice above given for closing the zip.
- With wetsuits/ semi-dry suits there is sometimes a need to get help with removing these. Usually this involves helping the diver get their shoulders out of the suit from behind. In this case both people (diver and crew or diver/diver) should stand near side by side, with neither "down wind". The diver wearing the suit should face at right angles (90degs) to wind, back to the person who is helping with removal. Both divers should wear face coverings in line with governmental guidelines' and hands should be washed or alcohol-based hand gel should be used, after having assisted the diver. The person helping to remove the suit should face away from the diver as far as possible.
- Divers should refrain from rinsing their personal kit in a communal rinse tank waiting instead until they return home where they can safely rinse their kit.





WHAT PROTECTIVE MEASURES SHOULD BE TAKEN ON DIVING BOATS AND RIBS?

- RECOMMEDATIONS SUMMARY
- LOADING/UNLOADING
- PASSAGE
- DIVE PREOARATION
- AFTER DIVING





WHAT PROTECTIVE MEASURES SHOULD BE TAKEN ON DIVING BOATS AND RIBS?

Dive boat operations should be handled with extreme care: where people come into closer contact with each other the risk of infection increases significantly. In-order to dive from a dive boat above and beyond anything, is that current government guidance and advice must be observed and implemented when comes to undertaking any form of diving activity, including social distancing rules and limits on numbers of people able to meet outside of the immediate household.

8.1 RECOMMEDATIONS SUMMARY

ENSURE THAT PHYSICAL DISTANCING IS RESPECTED WHEN ON BOARD

Divers should load/unload their own kit onto the dive boat when possible, skipper to give a pre-loading brief, no loading by chain and ideally kit loaded fully assembled.

Divers and crew should wear face covering at all times. Even when distancing rules are respected, while the boat is moving and due to the effect of the wind, droplets may travel a longer distance. It is therefore advisable that all passengers wear a protective mask/covering. Remind them not to touch other people's equipment.

Divers should move to a taped off designated area on the boat (observing current social distancing guidelines)

All divers should bring their own food & drink (e.g. flask) – they should only share with household members who are on board.

Hand sanitisers should be available on board and used regularly, ideally the divers own.

Do not use buckets for mask rinsing and dissuade spitting for mask defogging. Use either defogging product, or spit in the mask once in the water downwind from any other diver.

8.2 LOADING/UNLOADING

Boat skippers, crew or dive marshal should provide a brief prior to boat loading.

- \checkmark Divers should load their own kit onto the dive boat when possible.
- If loading other divers' kit handlers must not touch pillar valves, snorkels, regs or masks. Anyone loading kit should be very aware of the benefits of hand cleaning (alcohol gel or soap/water) afterwards and wear appropriate face covering.
- Chains to load kit should be avoided where possible, to reduce touching other diver's kit.
- Dive rigs should be fully assembled before loading wherever possible. (Pilar valves on spare cylinders should be taped or covered with a protector.)
- When boarding boat divers and crew should wear some kind of face covering / mask.

8.2 LOADING/UNLOADING

- Ideally divers should board boat on their own unaided. Where this is not possible (disability or frailty) then additional PPE may be needed (e.g. eye cover/gloves).
- If help is required, then both parties (diver boarding and helper) should gel hands immediately after and follow the prevailing national guidelines for social distancing.
- Divers should be advised to move to designated areas these should be clearly marked with tape or paint where possible.
- Divers spare cylinders should be secured next to the main tank(s) and diver in their designated area when possible.

8.3 PASSAGE

- Before leaving the harbour /landing the skipper, crew or dive marshal should give a further safety brief re spacing /face covering and there should be a mandatory hand gel cleaning of the hands of all divers on board using their own gel.
- On the way to the dive site and on return (when the boat is moving) it would be cautious for all divers to have a covering of their mouth and nose (e.g. snood) to reduce the distance any droplets could spread.
- All divers should bring their own food & drink (e.g. flask) they should only share with household members who are on board.
- Those divers that tend to dive for the longest bottom times should sit towards the stern (assuming a stern lift/ladder) with the divers likely to dive for the shorter durations sat nearer to the bow. This should help reduce divers passing each other.
- \checkmark Hands should be cleaned with gel before any food/drink is taken.
- If toilets are on-board ideally, they should only be used for urinating and only if well ventilated. Naturally if anyone does have to sit, then the toilet should be properly disinfected afterwards.

8.4 DIVE PREPARATION

When kitting up if help is needed (specially to close drysuit zips) it is important that measures to reduce risk are taken. Both people (diver and crew or diver/diver) should stand near side by side, with neither "down wind". If closing a rear dry suit then the diver should stand and face at right angles (90degs) to wind, back to the person closing the zip who should face towards the wind.

If closing a cross chest / self-donning zip, then these sometimes require help at the shoulder and the diver should stand directly into the wind with their head turned away from the helper as near to a right angle to the wind as possible. The helper should stand to the side of the diver not down or up wind. The helper should face directly down wind. Both divers should wear face coverings in line with governmental guidelines' and hands should be washed or alcohol-based hand gel should be used, after having assisted the diver.

- Divers should not spit into their masks while onboard the boat.
- \checkmark There should be no communal mask wash bucket.
- Divers should either use anti-fog liquid or spit into masks once in water and downwind from their buddy.
- ✓ A clear route to the exit point (water entry point) on the boat should be clarified.

8.5 AFTER DIVING

- Divers on the surface should follow the prevailing national guideline on social distancing when possible and ensure they keep masks and regs in place if closer.
- Skippers should have access to a "throw line" with knots / markings every 2.5m (In order to keep a safe social distance).
- ✓ Divers should be aware of facial mucous "snot" post dive.
- ✓ When getting back on board divers should make every effort to follow the prevailing national guidelines on social distancing from any crew helping (e.g. operating the dive lift) they should be directed to a seating area near to the entry /exit point and should remove their own fins (if possible) before moving to their designated place.
- Crew operating lifts in these circumstances should be wearing a mask or face covering. If the crew member is likely to be needed to help divers (e.g. disabled or unable to remove own fins) then that crew member should ideally have both eye covering (face shield or goggles) in addition to face coverings/masks in line with government guidelines. The diver should keep their mask and reg in place whilst the crew(helper) is within the distance recommended under the prevailing national guidelines on social distancing.
- Crew and divers should avoid talking if possible, particularly during lift operations or when within the distance recommend for social distancing in the prevailing national guidelines.
- At the end of the day's diving divers should be directed off the boat and should if possible, carry their own kit.





WHAT PROTECTIVE MEASURES SHOULD BE TAKEN WHEN TRAINING IN SWIMMING POOLS?



WHAT PROTECTIVE MEASURES SHOULD BE TAKEN TRAINING IN SWIMMING POOLS?

The use of swimming pools will require close coordination with the pool operator or owner. The following aspects should be discussed with the pool operator and/or the pool users;

- How divers can safely access and exit from the building with dive kit, which should be clean, fully dry and assembled, with the mouthpieces of scuba and BC contained in a bag (or pocket of BC) for protection, before arriving at the pool. Any loose equipment such as fins, mask and snorkel should be carried in a clean, dry bag or container.
- If necessary, scuba sets may be carried as individual items. In which case cylinder valves should be covered or taped for protection. Regulator and BC mouthpieces should also be covered or bagged for protection.
- Plan and prepare the session in advance, briefing participants either by phone or in the open air before entering the facility, this is especially important if the session is shared with another group. Route for transporting kit to poolside.
- \checkmark Use of the changing rooms and route to and from the pool.
- Divers should shower before leaving home and arrive wearing swimwear under their outer clothing in order to reduce time spent in areas such as changing rooms.
- \checkmark Are spectators allowed and what arrangements are in place for them.
- ✓ Training should be conducted in line with your training agencies guidelines.
- Scuba provides an additional level of protection only when mask and regulator are in place or when underwater. Be aware that a mask and snorkel do not provide the same level of protection.
- During the session, normal safe practices should be followed. Those using scuba should be separated from snorkelers and swimmers. Scuba divers should avoid swimming underneath snorkelers and swimmers. Designated lanes or areas should be clearly marked off.
- After use and before removal from the pool all mouthpieces and any other equipment that has been in contact with a divers face should be fully immersed and agitated in the chlorinated water of the pool to rinse off any saliva that may be contaminated with the virus.
- On completing the session in the pool, dry off, change into dry clothing and leave the facility without delay. It is preferable to shower at home not at the pool.
- Pool related risk assessment should be reviewed and updated as necessary in cooperation with the pool operator.
 - Reference should be made to the following sections:
- Section 4 What is the best way to manage infection control of club and rental equipment?
- ✓ Section 10 How can buddy checks and gas sharing be managed safely?





HOW CAN BUDDY CHECKS AND GAS SHARING BE MANAGED SAFELY?

Distancing rules should be respected also in relation to the following operations:

- Buddy Checks: divers should be reminded to avoid touching other divers' equipment, especially those parts that come into close contact with the diver's face and mouth. A visually clear and exaggerated buddy check should be carried out, with selfdemonstration and verbal confirmation.
- Gas sharing: both in case of emergency and when performing drills, it is recommended to use an alternative gas source and where possible avoid donating the regulator being used at the time.

Divers who use long hoses on their primary regulator should execute dives using their backup regulator. The long hose/primary regulator, once disinfected properly, is clipped off, ready to donate in case of an out-of-gas emergency. Divers should only proceed with standard gear configuration and Out of Gas protocol only if all team members have agreed to the risk involved in sharing gas underwater with the use of a primary regulator, prior to the dive.

PLEASE NOTE

Guidelines provided by dive training agencies on these subjects may vary. Make sure you know and respect the latest guidelines issued by your training agency.





HOW CAN CYLINDER FILLS BE MANAGED SAFELY?

- GAS COMPRESSORS AND FILLING
 PROCEDURES
- GAS FILL AREAS

HOW CAN CYLINDER FILLS BE MANAGED SAFELY?



11.1 GAS COMPRESSORS AND FILLING PROCEDURES

Theoretically, the virus could enter the compressor through the air inlet, as the inlet filter is not able to block smaller droplets. The breathing air filters after the compression will also not provide assurance that small particles will be caught. It is therefore essential that the inlet to the compressor is located in a safe place to avoid any contamination. It has been shown that the virus is sensitive to high temperatures. When warm, a compressor can generate a gas temperature of more than 120°C, and in addition to this, very high temperatures are reached at the peak for compression, well above the virus resistance threshold (2). It is therefore unlikely that a virus can remain active after passing through the compressor.

The risk however exists when it comes to handling cylinder valves and filling whips, through the possibility of contamination by infected operators. It is therefore important that all those carrying out refilling operations follow correct hygiene procedures and always wear the recommended PPE (masks, gloves).

11.2 GAS FILL AREAS

Personal hygiene and physical distancing procedures should also be observed in gas filling areas. Only authorised people should be allowed to be in the immediate vicinity of the compressor, the filling area, and the storage area for full cylinders.

PLEASE NOTE

Particular care is required when using alcohol-based disinfectants, including hydroalcoholic hand solutions. A small percentage of alcohol, a highly volatile and flammable substance even at relatively low temperatures, can cause fire or explosion. Avoid direct or indirect contact with equipment, cylinders and filling whips used for oxygen-enriched air. Wherever possible, it is preferable to use simple soap and water to clean hands.



FIRST AID AND CPR: HOW SHOULD AN EMERGENCY BE MANAGED?

Here are some useful recommendations on how to intervene, whilst protecting both victim and rescuer from potential infections:

- Ensure that the rescuer, the victim and all other people on site are safe.
- Ensure that all PPE is being worn and that protective barriers are used.
- Evaluate consciousness by shaking or stimulating the victim without approaching the face.
- Determine if the victim is breathing by simply observing chest movements. The rescuer's face should not come close to the victim's face.
- If the victim is unconscious and not breathing, alert Emergency Medical Services (EMS) describing the situation and start chest compressions without rescue breaths/ventilations.
- ✓ Use an Automated External Defibrillator (AED), if available.
- Continue with rescue operations until the victim has resumed normal breathing, the rescuer is exhausted or EMS arrive.
- Once rescue activities are completed or the victim handed over to EMS, properly remove PPE and dispose of these according to local instructions. Wash hands carefully. Medical devices used on the victim should be disinfected after use, if possible, or disposed of following correct procedures.



CAN THE VIRUS SURVIVE IN WATER?

Research is still ongoing, and it is not clear how long the SARSCoV-2 virus can survive in water. Studies on the SARS-CoV-1 virus (2003 epidemic) have shown that it remained infectious for long periods on the surface (lakes, rivers, wetlands, etc.). It appears that sea water is not able to neutralise the virus. In properly chlorinated or bromated pools and hot tubs, the CDC ("Center for Disease Control") specifies that SARS-CoV-2 would be inactivated after a period of time (<u>3</u>).

According to current evidence, it is therefore recommended that care is taken both when in the water and out of the water. This includes respecting distancing rules and properly washing and disinfecting equipment.



WHAT OPERATING PROCEDURES AND EMERGENCY ACTION PLAN APPLY DURING THIS PANDEMIC?

The Dive Centre should update its Standard Operating Procedures, taking into account the recommendations provided in this document, together with other national rules and regulations. In particular, Emergency Action Plans for suspected infection, infected staff or customers and crew, as applicable, should include specific instructions to maintain infection control and commence with immediate isolation of suspected infected persons.



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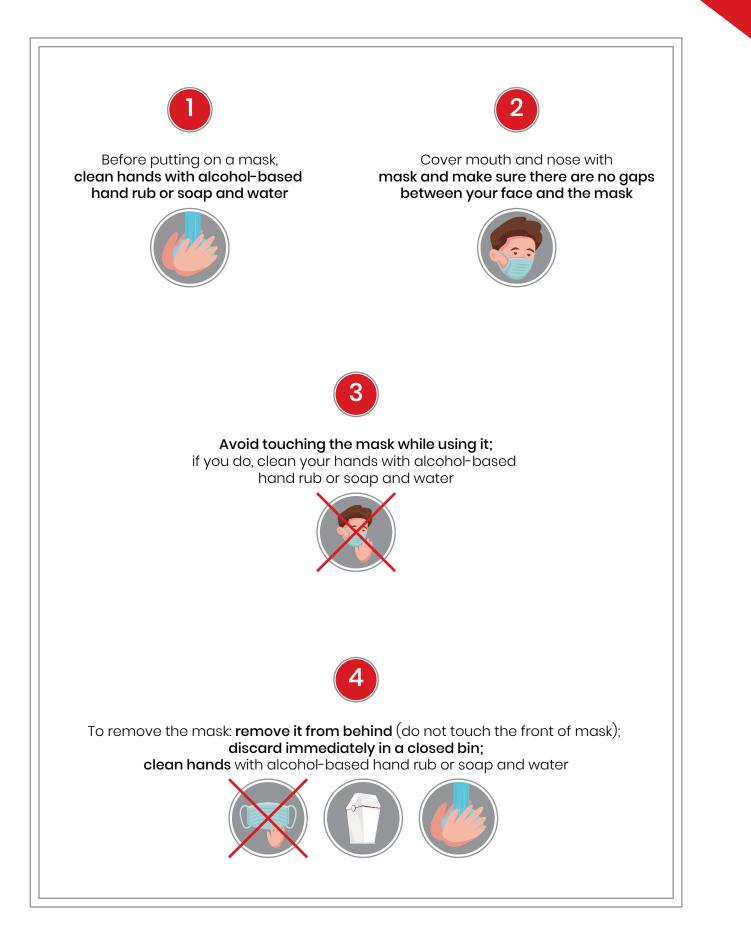
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COVID-19 PREVENTION MEASURES

- **1.** Public access to the Dive Centre is limited to diving customers only. Accompanying family members or friends are not allowed to enter the Dive Center.
- 2. Do not enter the Dive Centre premises if you have any of the following symptoms, which could be related to a COVID-19 infection:
- Fever
- Cough
- ✓ Tiredness or muscle pain
- ✓ Difficulty breathing
- ✓ Sore throat
- ✓ Lung infections
- ✓ Headache
- ✓ Loss of taste
- V Diarrhoea
- **3.** If you have traveled in the last two weeks and or if you have been in contact with people affected or potentially affected by COVID-19, please contact health authorities or your treating physician before going to the Dive Centre.
- **4.** In order to avoid crowding inside the Dive Centre, access is subject to maintaining at least a one-metre distance from each other.
- **5.** Entering the Dive Center may be limited to a specified number of people at any one time.



HOW TO PUT ON, USE, TAKE OFF AND DISPOSE OF A PROTECTIVE MASK





GUIDELINES ON SINGLE-USE PROTECTIVE GLOVES





