



PADI Dive Center/Resort/Dive Boat Best Practices to Reduce COVID-19 Transmission Risk

As the most sought-after dive professionals in the world, PADI Dive Centers, Resorts and Dive Boats are readying their operations to carefully resume diving, training and business operations while responsibly reducing COVID-19 transmission risk and giving the health and safety of their staff and clients top priority.

Though no business can guarantee zero risk, implementing a proactive policy to manage and reduce the threat of COVID-19, and implementing it consistently, is key to reducing the risk of spreading this disease. Providing staff training on your COVID disinfection and risk reduction procedures both assures them that you take health and safety seriously, and demonstrates that you expect deliberate attention to it. Communicating your policy to your customers assures them of your interest in protecting their safety and develops confidence in returning to diving with your operation.

Most dive operators find that with a little forethought and a few resources, they can make COVID-19 risk reduction part of their normal business practices without a significant burden.

Use the following resources to get started, or to cross check what you already have in place.

Dive Operation Recommendations

1. Use the COVID-19 Risk Reduction in Diving and Diver Training guidelines below in your PADI courses, experiences and dive briefings.
2. Download, print and post the [Eight Simple Steps COVID-19 Risk Reduction for Divers \(available on the PADI COVID-19 Member Hub\)](#) to your website and display in your dive centers and boats to remind divers of recommended best practices.
3. Go to your PADI Regional Headquarters COVID-19 Hub on the PADI Pros' Site ([Training Bulletin/Training News](#) at the bottom of the page) to find the business survival webinar series – live and recorded business and training seminars specific to helping you through the current crisis and preparing you to emerge stronger than ever. Also find other business solutions.
4. The Divers Alert Network Europe (daneurope.org) published [COVID-19 and Diving Operations: 10 Recommendations on Risk Prevention and Mitigation](#), which provides practical information on these relevant topics:
 - What measures should be taken for the safety of customers and staff?
 - How should disinfection operations be managed?
 - What is the best way to manage infection control of rental equipment?
 - How should rinsing of customer-owned dive equipment be carried out?
 - What protective measures should be taken on diving boats and ribs?
 - How can buddy checks and gas sharing be managed safely?
 - How can cylinder refills be managed safely?
 - First aid and CPR: How should an emergency be managed?
 - Can the virus survive in water?
 - What operating procedures and emergency action plan apply during this pandemic?
5. DAN Americas provides answers to frequently asked questions regarding [Dive Operations and COVID-19 – Prepping for Return](#) at [diversalertnetwork.org](#).
6. For information on dive equipment disinfection and disinfection solutions, see [Disinfection of Scuba Equipment and COVID-19](#) from DAN at [diversalertnetwork.org/covid-19](#).

COVID-19 Risk Reduction in Diving and Diver Training

Like every other activity in the near-term, reducing COVID-19 transmission risk is an important practice in diving, with some specific considerations. Fortunately, forethought and some simple adjustments meet this need without being overly complex or onerous.

Only staff and students who are healthy should go diving and/or attend classes. This is no different from at any time in the past but is especially important now. Also, those who may have been exposed to COVID-19 (or other communicable disease) should avoid others until it's clear there is no transmission risk as advised by medical professionals.

General Disease Transmission Risk Reduction Tips

The main transmission risk issues with COVID-19 (and other respiratory viruses like the flu) are respiration (inhaling droplets from another person's exhalation, especially if the person coughs, sneezes or talks) and transmission through contact (touching an infected surface and then contacting the face/nose). By staying aware, risk reduction is usually straightforward. Keeping things simple usually works well. This document suggests practices, procedures, and tips based on prevailing medical recommendations, but there may be other ways to reduce transmission risk. **While such steps are expected to substantially reduce disease transmission risk, dive students and staff must accept that, just as when they go *anywhere* that people are present, some risk remains.**

For briefings, check-ins etc., follow local requirements and practices for distancing and medical masks to reduce respiratory exchange risk. When in doubt, be conservative. Use tissues (and dispose of them properly) if one has to cough or sneeze, and then wash/sanitize hands. Similarly, divers can spread out to set up gear, etc.

Pay attention to breathing patterns, direction and breeze/wind to reduce respiratory transmission concerns. Diving changes how we breathe, such as breathing hard after a freedive or while clearing water from a snorkel. Regulators help protect the user, but not those who might be close enough to breathe the user's exhaled breath. Snorkels angle breathing behind the head, which can be advantageous or disadvantageous in different circumstances. The wind can carry exhaled breath farther – away from others or toward them. Adjust diver directions, distances, locations, etc. to account for breathing.

In the water at the surface, buoyant staff and buddies can stay appropriately distanced and still reachable within the two seconds guideline. Keep in mind that, as always, student skill level and conditions will affect your ability to control divers on the surface. With divers more spread out at the surface, surface floats near divers can be used for added conservatism, reduce ratios and/or add assistants if needed for control, so divers can be more spread out yet remain properly supervised.

Underwater, social distancing isn't needed. Diving has an advantage with respect to risk reduction in that breathing from scuba substantially reduces respiratory transmission concerns at the surface and underwater. This is obviously important underwater because close contact is important for safety, control, skill conduct and maintaining buddy contact.

Wash or sanitize hands frequently, keep masks on and don't touch the face, to reduce contact transmission risk. Divers should avoid touching each other's gear, but sometimes it is necessary before, during or after a dive. This is particularly true for skills including alternate air sources use and CESA, as well as actual emergencies. So, the best practice is for divers to wash/sanitize hands before *and* after touching their own *and* someone else's gear, meaning before and after the dive in most instances. Note that being in water may reduce contact transmission risk, but experts remain divided on the degree or duration required to inactivate COVID-19 in particular, so a conservative approach is recommended.

Use voice, gestures and signals for positive reinforcement. Although handshakes, high-fives and other contact gestures are traditional ways to tell students they've done well, replace these with verbal reinforcement (at the surface) and "good job" signals underwater.

Disinfection specific to diving. Masks, snorkels, regulators, BCD oral inflators/bladders and anything that will be shared should be disinfected after use. DAN reviewed disinfectants in a recent webinar (<https://www.facebook.com/DiversAlertNetwork/videos/2870342669749405/>) and also has tips at this link: [Disinfection of Scuba Equipment and COVID-19](#)

Use all disinfectants according to manufacturer-recommended strength and immersion times specific to COVID-19. Disinfecting solutions are harmful to the environment, so dispose of them properly according to local guidelines.

The US Center for Disease Control (CDC) and other sources recommend making and using a 1000 ppm chlorine solution from unexpired household bleach and cold water:

- 22 ml bleach to 1 litre water
- 1/3 cup (5 tbsp) bleach to 1 gallon water

Immerse (not simply spray on) in this solution for five minutes (authorities differ, with five minutes the most conservative), then rinse thoroughly with uncontaminated water. Dry, pack and store equipment in a disinfected bag or container using washed/sanitized hands.

Note: Never mix bleach with any other chemicals/cleaners – highly toxic gases can result. Wear hand and eye protection while mixing and using disinfecting solutions, always in a well-ventilated area. Make fresh solutions frequently, and at least daily and after any moderate use. Aluminum can be affected by bleach contact if it is not rinsed promptly, so rinse immediately after the five minute soak. **Do not use bleach in CCR counterlungs and other breathing loop components unless advised otherwise by the manufacturer.** Disinfect counterlungs as directed by the manufacturer.

Non-isolated buddies/students have more latitude. Couples, families and others already socially exposed to each other have more latitude in distancing/contact restrictions. This can be advantageous in training and buddying, but it's still important to reduce transmission risk between those "inside" and "outside" such pairs/groups.

Stay prepared for emergencies. All staff should have rescue breathing masks. Masks that will not get wet should have the valves in them (the valves fail when wet). First aid/O₂ kits should have multiple rescue breathing masks, medical masks, gloves and sanitizers to allow quick responses to real problems without significantly elevating transmission risk. **Divers and staff must accept that responding to a real emergency may elevate disease transmission risk for the victim and/or rescuer(s).**

Think it through and use common sense. Divers should use defog, not saliva. Shared rinse barrels for personal gear are *highly* discouraged; if used, the water and gear in them should be considered "contaminated" until disinfected separately. (Note: Rinse barrels for accessories like cameras are much less of a problem, of course, but still be cautious because unwashed hands may go into that rinse water.) Dive centers, changing rooms, etc., should follow social distancing, medical mask and high-contact disinfection practices being used locally. After someone tries on a dive mask, disinfect it (such as by using disinfecting wipes or a disinfection solution). Dive extra conservatively to further reduce the chance of an incident that would require emergency medical services.

Course Skill Tips and Techniques

Here are some tips and techniques (not necessarily the only ways) for specific skills/situations:

Open Water Diver Course

Skill/Situation	Suggestion
Gear set up	Clean or sanitize hands before <i>and</i> after setup; do not test breathe disinfected alternate air source (or if you do, re-disinfect it). To reduce risk of contaminating breathing gas, avoid contact with cylinder valve openings and regulator first stage openings, and dust cap sealing surfaces. Clean/sanitize hands before changing o-rings.
Donning gear and entries	Noncontact options: don seated followed by entry without standing; exposure suits that don't require buddy assistance; staff/buddy in full gear wears mask/breathes from regulator while assisting.
Alternate Air Source Use	<p>Disinfect alternate air source second stages prior to skill practice. Plan who will practice with whom, so only one person uses each alternate air source second stage. This avoids having to surface and re-disinfect to complete skill training.</p> <p>When working with an odd number of students, this method works: Begin the skill with students in front of you in a line/semi-circle. Start on the left with the first two students. The one on your right is out of air and the one on the left is the donor. After completing the skill, the donor goes to the end of the line on your far right. The student who was out of air is now the donor on your left, and the next student on your right is the receiver. Repeat the process, with the student on the left always the donor and the one on the right always the receiver. When you get to the end of the line, that first student who was the donor is now a receiver and you're done. This is particularly useful in open water to avoid having to surface to re-disinfect the alternate air source stage. If necessary, you can have a student complete the skill using your certified assistant's disinfected alternate air source.</p> <p>When conducting the skill in open water, be mindful of supervisory responsibilities if you pair a student with yourself for alternate air source skills, and reduce ratios or use other control measures.</p> <p>For alternate inflator regulators, some simulation must occur to avoid sharing the same second stage without disinfection between users:</p> <ul style="list-style-type: none"> The preferred method is to add an <i>extra</i> disinfected second stage to the regulator first stage coming off the diver's right like the primary second stage. Upon getting the "share air" signal, the donor and receiver link up and position as they would for a real exchange. The donor passes <i>the not-used, disinfected extra second stage</i> to the receiver, <i>simulating</i> taking it from the donor's mouth. The receiver breathes from the extra second

	<p>stage, and the donor switches to the alternate inflator regulator as they normally would. After the exercise, the donor returns to breathing from the primary second stage they were using before the exercise. The extra second stage remains unused again until disinfection after the dive.</p> <ul style="list-style-type: none"> • If you are unable to add a second stage, a simulated exchange may be useful and is acceptable. Upon getting the "share air" signal, the donor and receiver link up and position as they would for a real exchange. The donor extends the second stage from the mouth and the receiver takes it, purges as if clearing, but does not breathe from it. Instead, the receiver removes and replaces their own primary second stage. Meanwhile the donor switches to the alternate inflator regulator as they normally would. Because there is no hose connecting the two divers as there would be in a real scenario, securing the buddy team (such as arm link up) is a strong focus using this technique.
BCD Oral inflation at surface	Those not doing the skill stay socially distant using regulator but within immediate reach. Remember that BCDs that have been orally inflated will need their bladders disinfected before use by another diver.
Swimming on the surface	Use regulators for surface swimming, or snorkels with tips pointed away from other divers; for snorkel exercises, buddies take turns, with snorkeling buddy positioned with snorkel opening pointed away from other divers. Put adequate space between buddy pairs.
Exits	Exiting divers keep their masks on until out of water and socially distant from others. Rinse mask/regulator second stages over sink/safe ground or in moving, open water that is flowing away from self and others. Avoid touching the face after removing mask until hands are sanitized, and/or have sanitized towel available.
Pre-dive Safety Check	Carry out visually/verbally, spaced for social distancing separation. Dive teams can have masks on, breathe from regulators and have sanitized hands if contact needed (e.g. valve open confirmation). Some checks can shift to set up (e.g., buddies watch each other open valves).
Five Point Descent	Exchange snorkel for regulator while socially distant and buoyant, then get close for descent.
Surfacing	Establish buoyancy and spread apart before switching to snorkel. Stay on regulators when appropriate and able.
Skills with snorkel clearing	After assuring ample buoyancy, students practice while socially distant from each other and staff. Have divers clear/exhale with snorkel pointed away from buddies.
Mask clearing, remove and replace	If a panicky ascent requires contact and surfacing, instructor keeps mask on, breathes from the regulator. After assuring buoyancy and safety at the surface, the instructor backs away to give voice instruction if needed.

Gas depletion exercise	The concern is contact transmission, so all sanitize hands prior to and after gear contact.
Scuba kit removal & replacement at surface	First assure ample buoyancy (weights donned after going to regulator, removed before going off regulator). Buddies/staff back away on regulators, while student practices steps without a regulator.
Tows	Sanitize hands. Both divers use regulators and simulate out-of-the-mouth if respiratory exchange is a concern (depending upon the tow, wind direction, etc.)
No Mask Swim	Have students with clean/sanitized hands. Remind students to avoid touching face with unsanitized/unwashed hands.

Skills from Other Courses

Adaptive Support Adventure Dive	Wash/sanitize hands before and after personal contacts. Breathe from regulators when close. Have someone not isolated from the student help. Lifeguard (full size) mannequins may be used for some skill practice.
Full Face Mask Adventure Dive	Follow mask manufacturer's disinfection recommendations.
Sidemount Adventure Dive	Because divers use <i>all</i> regulators during the dive and for gas sharing: The preferred option is to add 1 or more additional second stages (shorter hose) that the diver uses. For gas sharing, they switch to their other cylinder and pass off the disinfected long hose second stage. Alternatively, a simulated switch method like previously described for alternate inflator regulators (see Alternate air source use under Open Water Diver Course skills) can be used.
Tired/panicked diver skills	Sanitize hands before and after each exercise, have verbal exchanges at a distance, allow rescuer/victims to use regulators, keep masks on during technique practice, even when the "victim" might reject them (panicked).
Unresponsive diver/freediver at surface	<p>Wash/sanitize hands and face before and after each drill. The easiest option is to pair non-isolated buddies.</p> <p>Use rescue breathing masks (valve may be used if it can be kept dry), each specific to one student only. All divers must be very aware of exhalation directions. Rescuers do not make lip contact with the rescue breathing mask and after demonstrating they <i>could</i> blow into the mask, turn their head and exhale away from the victim.</p> <p>For mouth-to-mouth practice, options include:</p> <ul style="list-style-type: none"> • Use a rescue breathing mask on the victim, but use mouth-to-mouth techniques (i.e. pinching nose over rescue breathing mask) and follow the procedures as mentioned in the rescue breathing mask technique.

	<ul style="list-style-type: none"> • Use face shields that are commonly used with CPR mannequins during the exercise to avoid skin-to-skin contact. Rescuers do not make mouth contact and exhale away from the victim. • Simulate removing the victim's mask but leave it in place. This avoids the rescuer from having to touch the victim's nose directly. Again, rescuers and victim avoid breathing toward each other.
Freediver blow-tap-talk	For blow-tap-breathe (freediving), simulate removing the victim's mask to avoid direct nose contact. When blowing, face away from victim but state "blowing across victim's face" instead of actually doing it.
EFR Primary/Secondary Care and emergency oxygen use	<p>During CPR, first aid, and emergency oxygen training, avoiding contact and maintaining social distancing may be more difficult. Participants can reduce risk by wearing medical masks and using barriers, sanitizing/washing hands often and remaining aware. Disinfection wipes are useful for disinfecting oxygen masks and other contact surfaces (again, following manufacturer instructions). Disinfect everything after classes prior to storage.</p> <p>Note: Recommended hand sanitizers are 60%+ alcohol and highly flammable. Do not use hand sanitizer near oxygen nor a fire source. Be sure hands are fully dried before using either.</p> <p>For lay single-person CPR training, provide each student with an individual mannequin that will be fully disinfected (including replacing the lungs) according to manufacturer recommendations before use by a different person, and after training. Assure medical mask use and social distancing between students. CPR mannequins typically require disinfecting the head and chest and discarding the lung bag.</p> <p>Follow these links for specific mannequin hygiene resources:</p> <ul style="list-style-type: none"> • United Kingdom • American Heart Association • Australian Resuscitation Council/New Zealand Resuscitation Council
EFR and rescue scenarios	Social distancing becomes more difficult as the scenario becomes more realistic, so advise students to pay attention and conservatively apply steps that reduce transmission risk. Allow "time outs" to put on medical masks, sanitize hands, etc. as needed. Emphasize that more distancing than would be used in a real emergency is acceptable. Having CPR mannequins take the place of humans during a rescue scenario is a useful option.
Freediving pre-dive & recovery breathing	Pay attention to breathing direction, wind and proximity during breathe ups and recovery breaths when divers tend to breathe more deeply and sometimes more forcefully.

General Local Recommendations and Requirements for Dive Operations

- Ensure that you conservatively follow local social distancing restrictions, medical mask requirements and other recommendations and requirements dictated by your local government.
- Check with your local retail bureau or other advising body for business-related guidelines and other resources to help you engage in business while addresses COVID-19 precautions. For example, see the National Retail Foundation in the US, "[Operation Open Doors – Path to Reopen Retail](#)" including guidance on gradual re-openings including social distancing and safety issues, and how to bring employees back to work:

Dive Center and Classroom Considerations

The same broadly applied disinfecting and social distancing guidelines used in most publicly accessed areas apply to a dive operation.

Follow social distancing requirements and require staff and visitors to wear medical masks as appropriate under local guidelines. Have sanitizer readily available *except* where oxygen may be used (during training/gas blending) and high heat sources, due to fire hazard. In these areas, have visitors and staff wash hands regularly. Shift business outside/curbside as much as practical.

Disinfect all surfaces regularly. The overall premises should be disinfected at least daily. Disinfect high contact surfaces like door handles, railings, light switches and so on frequently. A scheduled cleaning checklist may be useful in larger operations to be sure nothing gets missed and that it occurs regularly. There are many disinfecting wipes and solutions that work well, but check manufacturer recommendations for items like computer keypads and screens.

Divers try on items like masks before purchase or rental, so have a ready means of disinfecting such items. Have them sanitize/wash hands before trying on any equipment.

Print and post copies of the Eight Simple COVID-19 Risk Reduction Steps for Divers (available on the PADI COVID-19 Member Hub) to encourage appropriate practices among divers. Put these on the showroom floor, in classrooms, near gear pickups and on dive vessels.

As previously mentioned, to avoid virus entering breathing systems, staff should wash/sanitize hands before filling cylinders, servicing valves or regulators or changing o-rings. All divers should avoid touching valve outlets, fill whip openings or regulator inlets. Compressor manufacturers may have useful information regarding reducing disease transmission risk at fill stations. For example – <https://www.bauer-kompressoren.de/b-virusfree>.

Rental equipment needs specific attention to disinfection. Keep disinfected and not disinfected equipment well separated. Store disinfected equipment in closed containers to protect them from contamination. Only authorized staff with washed/disinfected hands should handle rental equipment.

Divers should have individual rinse stations for their gear. Drying areas should have enough space to allow each diver's gear to dry separately.

In classrooms, space setting for social distancing. Disinfect desks/tables regularly as well as before and after each use.

Boat Diving Considerations

Depending upon vessel size and number of divers, boating in general can make social distancing more difficult, and high contact surfaces are common. These include ladders, railings, seats and other surfaces divers and boaters use to stabilize themselves. The following can help keep transmission risk low:

- Respect social distancing. This may mean reducing passenger numbers. Note wind effects, and that passengers often want to avoid the sun, or be in the sun, depending on the weather. Having all aboard wear medical masks can help reduce risk.

- Have ample hand sanitizer for passengers.
- Have divers set up their gear before boarding if feasible, with masks and snorkels kept in a dive bag until brought out for use. (The idea is to reduce opportunities for accidental contact transmission).
- Extend the trail line if necessary to allow distancing while waiting to exit.
- Disallow rinse buckets for masks and gear.
- Encourage extra conservatism among divers.

COVID-19 makes us change how we think and how we do things, and sometimes there are a lot of details. But, none of this is particularly difficult if we form some new habits and practices, take them seriously and adhere to them strictly until COVID-19 is past us.

Resources and References

[Australian Resuscitation Council](#)/New Zealand Resuscitation Council Cross Infection Risks and Manikin Disinfection

[American Heart Association Equipment Decontamination Guidelines for CPR Training](#)

[CDC \(Centers for Disease Control and Prevention\)](#)

DAN (Divers Alert Network) and DAN Europe

[COVID-19 and Diving Operations PDF](#)

[Disinfecting Scuba Equipment webinar](#)

[Disinfection of Scuba Equipment and COVID-19](#)

[Dive Operations and COVID-19: Prepping for Return](#)

[NRF \(National Retail Federation\)](#)

PADI Resource Hubs

[PADI Americas](#)

[PADI EMEA](#)

[PADI Asia Pacific](#)

[United Kingdom European Resuscitation Council](#)

[WHO \(World Health Organization\)](#)