

## Beginning Resuscitation

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You can provide open-water rescue breathing in two ways: mouth-to-mouth or mouth-to-mask. *Mouth-to-mask* refers to rescue breathing using a resuscitation mask or similar barrier device. In today's society, with the increased concern about the transmission of various diseases, giving rescue breaths with some sort of barrier device is highly recommended. Obviously, mouth-to-mouth rescue breathing carries the risk of contact with another diver's bodily fluids, not to mention having to deal with vomitus, which occurs regularly in a diving or submersion incident scenario. Mouth-to-mask rescue breathing may also make it easier to get a good seal and control a diver's airway, especially in open water. The choice of which type of rescue breathing to attempt should be made before you even get in the water. If you plan to use a mask, you will need to make sure you have one with you and that it is prepared for use.

Having a barrier device such as a resuscitation mask available in a diving rescue scenario may not always be an option, however. Even if you keep one in your BCD pocket, it has to be accessible; and unless you've been meticulous about caring for the mask, it may not be usable when the time comes. One problem with keeping a resuscitation mask in your BCD pocket is the fact that it has a positively buoyant, inflated cuff. Divers have been known to reach into their pockets and find that their masks have floated away.

To perform either version of open-water rescue breathing, you need thorough training and frequent practice. In general, the techniques for delivering rescue breaths are the same for both, so we will describe mouth-to-mask rescue breathing. Where appropriate, we will highlight the differences between the two techniques. To begin, with your thumb and forefingers in the shape of a C, seal the resuscitation mask to the diver's face, covering her mouth and nose (see figure 8.3). You will need to press down firmly to completely seal the resuscitation mask to the diver's face.

When you have the resuscitation mask sealed, give two normal rescue breaths, each about one second in duration. Let the first breath completely escape from the diver's lungs before delivering the second breath. Leave your dive mask in place unless you can't get a good seal or deliver effective breaths with your mask on. It will protect your eyes and nose from water and spray. If you have corrective lenses built into your mask, you will need your mask to see properly. It's always a good idea to keep your own mask with you during a rescue. There have been many cases where rescuers jettisoned their own masks during a rescue attempt only to be compromised later when the injured diver slipped out of their grasp and was lost, or when they entered the surf zone and had to try to manage a diver with water in their faces.

In the case of mouth-to-mouth breathing, position your mouth over the top of the diver's mouth, while pinching the diver's nose closed with your right hand. If the diver is much smaller than you are, it might be easier to cover the diver's mouth and nose with your mouth. If you meet resistance when you attempt to deliver the breaths, reposition the head and airway and try again.



FIGURE 8.3 Press your resuscitation mask into position to create a seal and ensure that your rescue breaths enter the diver's airway.

You may not have gotten the airway open all the way the first time. If you still can't get your breaths in, check the airway for any blockage, such as vomitus or objects such as regulator mouthpiece bite tabs, then clear the mouth and try again.

If the diver doesn't cough and begin breathing again after your two initial breaths, continue to deliver one breath every five seconds. Fill the diver's lungs with each breath. Between breaths, maintain a positive seal on the diver's face and continually reassess for signs of choking and vomiting. As the rescue progresses, check to see if the diver's equipment is impeding your ability to perform rescue breathing. If the BCD appears tight, you may need to release the BCD chest strap or loosen the cummerbund to allow the chest to fully

## MOUTH-TO-SNORKEL RESCUE BREATHING

Mouth-to-snorkel rescue breathing was heavily promoted many years ago, but was ultimately found not to be practical or effective because of equipment and practice issues. Most divers today use snorkels that allow water to drain out through one-way valves near the bottom of the snorkel. Delivering rescue breaths through these snorkels is nearly impossible. Many snorkels also have covers at the top to reduce the entry of water, making their use equally difficult. Mouth-to-snorkel breathing requires a lot of practice because you have to get a good seal around the end of the snorkel. Don't bother with mouth-to-snorkel breathing unless you are well practiced in the skill and an appropriate snorkel is available.

or adequately expand. However, be cautious about removing the BCD and scuba unit. If the diver isn't wearing a buoyant exposure suit, removal of her BCD may make it difficult to maintain surface orientation and provide appropriate emergency care; and if you lose contact with the diver, she may begin to sink. Don't overinflate either your BCD or the diver's. Too much air will make it more difficult to get close to the diver and to get a good mouth seal. If either BCD causes problems with ventilations, it can be partially deflated or, if necessary, removed.

In the water, there is no need to worry about checking the diver's pulse or signs of circulation. Your hands may be cold, the diver's skin may be cold, and wetsuits and drysuits make it very difficult to make a definite determination as to whether the diver's heart is beating. Also, practically speaking, there is nothing you can do about it until you reach a stable platform such as the boat or the shore. The best thing you can do for a diver in cardiac arrest is to get her out of the water and to a place where rescuers can perform CPR and defibrillate her heart using an automated external defibrillator (AED).

## Towing and Delivering Breaths

While you are delivering breaths, you should begin towing the diver to safety and further help. There are two positions you can use to tow the injured diver through the water while delivering in-water rescue breaths: at the top of his head or at his side. In either position, kick down and back, toward the diver's feet as shown in figure 8.4. This will keep your head out of the water and keep you in a position to give breaths while moving you and the nonbreathing diver toward the shore.

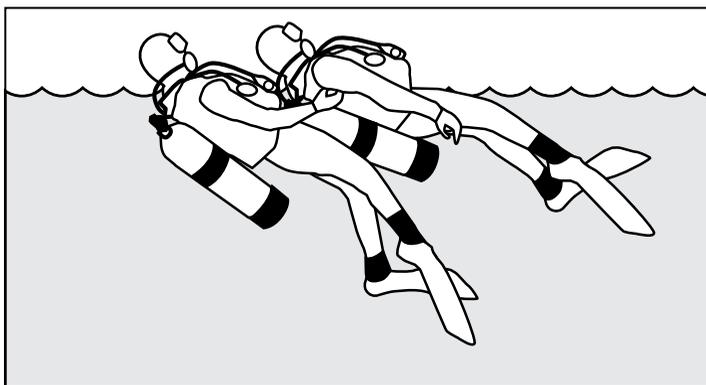


FIGURE 8.4 Use your dive fins to propel you and the injured diver through the water by kicking down and back, toward the diver's feet.

**Head Tow Position** In the head tow position (see figure 8.5), you cradle the diver's head in your lap while holding it with both hands. Positioned on your back, kick while you move the diver through the water and give breaths as you move.



FIGURE 8.5 The head-to-mouth position allows you to ensure a good mask seal and continue to pull the injured diver to safety.

Open the diver's airway by tilting his head back. Your hands will support the diver's head and neck. Hold the resuscitation mask in place using both thumbs and then ventilate the diver by pulling his head toward your mouth.

***Do-Si-Do Position*** The do-si-do position is another desirable option when you are attempting to provide rescue breathing or when you are attempting to remove the diver's equipment while you are moving through the water (see figure 8.1 on page 92). You can add or vent air from the diver's BCD as appropriate to make it easier to give rescue breaths, and loosen or remove equipment if necessary.

Take your arm and cradle the diver's neck and head. You can effectively establish and control the diver's airway in this manner. Hold the diver's arm to your chest and swim on your side as you provide rescue breathing.

In either position, when you are giving the diver rescue breaths, try to establish and maintain a rhythm. If you feel dizzy, then slow your swimming or breathing and the rate at which you deliver your rescue breaths. The exertion of towing the diver and giving breaths may be too much. Don't exhaust yourself in your efforts to get the diver to the boat or shore. Signal for help at the earliest possible moment, and let help come to you, if necessary.

You may also have to adjust your respirations to match sea conditions. Rough water and waves may splash into the diver's mouth, further complicating