Lesson 2: Breathing

First, you might review the contents of Lesson 1, which included:

1. The many things that can contribute to open water swimming anxiety.
2. The optimal use of important equipment used by open water swimmers.
3. How to acclimatize to cold water.
4. The confidence builder pop-up drill.
5. Finding your "happy place" rest/recovery position in open water.

This lesson is intended to teach arguably the most important basic skill of all: BREATHING! Specifically, breath control in water, i.e., breathing normally while swimming. As you will discover, swimming is the only sport where breathing matters—a lot! In fact, if you don't have your breathing under control, you can't swim, your anxiety will increase quickly, and your stroke mechanics, however good, won't matter.

On Breathing

You have, of course, long mastered breathing--it is almost automatic—you don't usually need to even think about it, and you can do it whenever you want to. But virtually all new swimmers will find that they have breathing issues while swimming. How is it possible to find and maintain a steady, relaxed breathing rhythm while your face is submersed most of the time? Here is what you need to know:

THE IMPORTANT PRINCIPLES

1. **The drive to breathe** is ***not*** based on your need for oxygen—**it is based on the build-up of carbon dioxide (CO_2)**. And so, to keep the urge to breathe controlled, you have to focus primarily on getting air ***out*** of you. This is a paradox for many new swimmers. To prove it, try the following experiment: Take a deep breath in, and the blow about half of it out before holding your breath for at least 10-20 seconds. What is your next urge—getting more air (oxygen) in, or blowing out what is remaining in your lungs? You will discover it is the latter—your building need, and thus, the driving force to breathe, is

to get rid of CO_2! Breath control is therefore about how well you are expiring, not inspiring.

2. **While swimming, breathing rhythm** and inhalations in swimming are no longer automatic. Unlike on land, you can't breathe in whenever you want to, especially doing freestyle/front crawl where you are face down in the water. You can only breathe in when your mouth is briefly above water, and so, swimming seems to restrict and regiment your inhalations.
3. **Breathing out is different** as well: If you want to keep a semi-normal breathing rhythm while swimming, you must expire in water. This does not feel natural, and worse, **exhaling into water requires some physical effort,** which also does not feel normal, since you are pushing air out against the resistance of water.
4. In swimming, it becomes important to **understand two kinds of breathing** that we don't concern ourselves much on land:
    - **Diaphragmatic (belly breathing)** is what most of us do at rest (such as what you are doing while reading this). Only your diaphragm muscle works, moving up and down to suck air in and out of your chest cavity.
    - **Chest breathing** describes your chest heaving up and out when there is a need to get more air into your lungs, such as when your level of physical activity increases significantly. Small muscles attached to your ribs help open your chest up more, requiring more work on the inhalation phase, but the expiration of this increased air in is automatic and easy because the chest wall easily falls back into place.

Using both your diaphragmatic breathing muscles as well as your chest wall muscles are used in swimming, to help push out air against the resistance of water, to completely empty the lungs of CO_2, and, most importantly, to keep your drive to breathe (and therefore your anxiety) under control.

The Lesson

1. **Dry Land: Feel two kinds of breathing**
   Put a hand on your chest and on your belly while at rest. Notice your belly moving and not your chest. Diaphragmatic breathing uses one muscle, contracting easily--totally effortless, right?

Now, for chest breathing: take in a deeper breath. Feel the chest move, and not the belly. This takes more work, since you are now engaging a lot of extra muscles to lift the chest. Try taking a deep breath in and holding it for a few seconds before releasing it: Notice how easy it is for air to start escaping as the chest returns to its normal position. This is because of chest wants to collapse back down to where it was—the rib muscles (the intercostals) don't like being stretched out, and so with the chest's elastic recoil, it starts to push air back out.

2. **Completely empty your lungs.** Repeat the chest-expanding breath in, and passively release it. Although you will notice lots of air being released, there is lots of air still in your chest that can come out. Tighten your chest wall and especially your diaphragm to exhale more air—notice more air coming out? This what you must do when distance swimming to keep CO2 levels low. This forced diaphragmatic finish is the last part of your expiration as you turn your head to breathe in and will also be useful to keep water from entering your nose just before you inhale.
3. **Integrating breathing with your swimming stroke**
   Whether breathing every 2nd or every 3rd stroke in freestyle, you take a chest breath inhalation in through your mouth (since that is the quickest way to get a lot of air into your lungs) on one stroke, and then you can recoil exhale for and forceably expire (diaphragmatically) for one or two strokes to maximize emptying of your lungs before breathing in on the opposite side.
   One useful trick to know that you are continuously expiring is to hum while your face in in the water. To prevent getting water up your nose when turning to breathe, finish the last part of your exhalation with a snort through your nose.
4. **In Open Water: Integrating Breathing with swimming**
   Try these same breathing processes while swimming: A quick, powerful inhalation in through your mouth using your chest, followed by a two phased expiration, emphasizing complete emptying of your chest, using humming and a finishing snort to help you as necessary. Try to swim this way for 50 to 100 meters and use a recovery position if necessary if you lose control of your breathing. If you can do this breathing routine for 100 meters without becoming short of breath, try to go longer.
5. **Varying your breathing cadence**
   Once you have nailed breathing every 3 without becoming short of breath, it

is time to get comfortable with varying your breathing without losing control of your breathing. Try 20-25m of breathing every 2 strokes, or until it feels like you are breathing too much. Then start missing every second inhalation, so that you are breathing every 4 strokes, and maintain that until you feel you can't handle it anymore before reverting back to every 2 strokes. Then experiment with breathing every three, every 2, or every 4 strokes as you feel you can tolerate, all without losing control of your breathing. Advanced swimmers can vary their breathing cycles to as long as once every 9 strokes without becoming short of breath.

6. **Distance practice**
   Can you swim 500 meters without stopping, while varying your breath cycles from once every two or three strokes to once every five or six strokes without becoming short of breath?