3 – Breathing

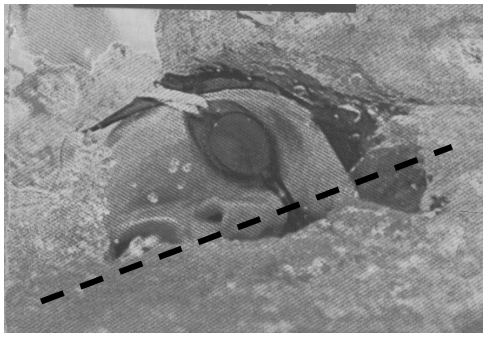
Breathing patterns vary according to the stroke being swum or the distances being raced or covered in training. Also, swimmers will find their natural rhythm with breathing. It is generally accepted that bilateral breathing, (as long as the stroke is symmetrical) is best because over a lifetime it helps the swimmer build a better-balanced and more symmetrical stroke.

Breathing unilaterally can also, over a lifetime, develop muscle imbalances and contribute to soft tissue injuries. However, if the swimmer is not breathing properly in the first place, they will be using energy needlessly that could be directed into other aspects of their stroke. It is surprising how many swimmers – even good swimmers, don't inhale or exhale properly.

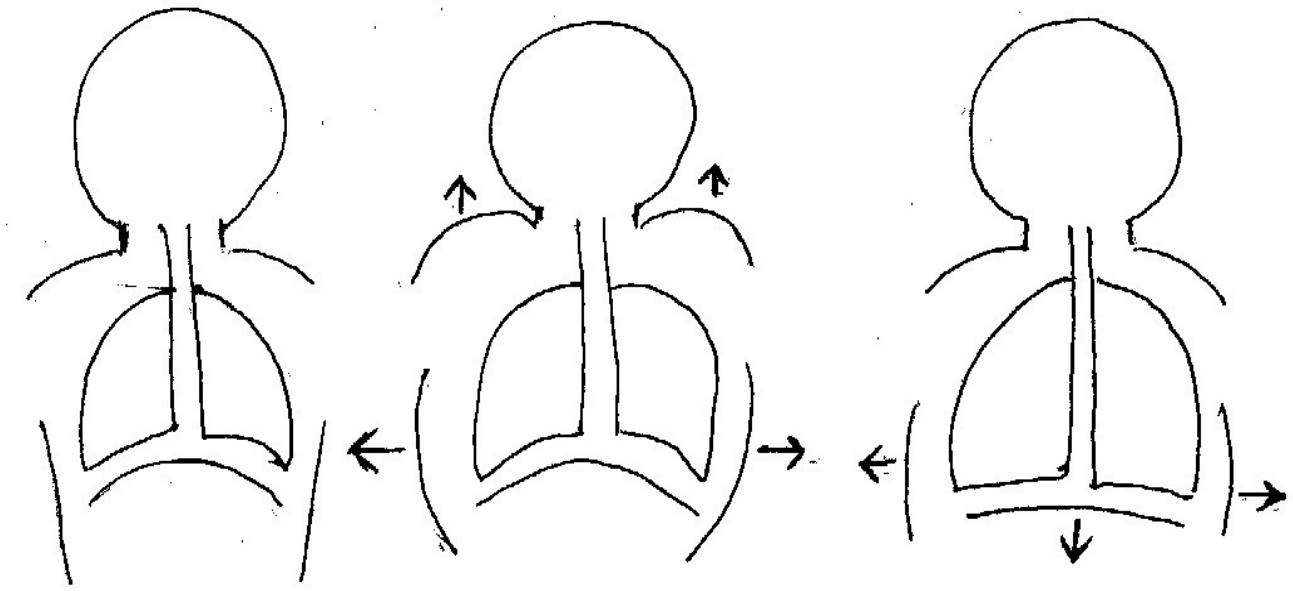
- It may seem obvious, but swimmers have to breathe through their mouths. As land based animals we are conditioned to breathe through our noses. Learners will often try to inhale through their nose.
- The breath *in* should always be quick and short, but the breath *out* is *always* longer than the breath in. At the end of the exhale, there should be a forceful puff or explosion using the abdominal muscles, to rid the lungs of any remaining stale air, prior to inhaling. Try this. Holding your hand in front of your mouth, breathe in on the first count and out for the next 4 counts. On the last count, (number 5) explode any remaining air and inhale quickly on number one in the next cycle. Repeat this cycle of 5 counts over and over until it becomes rhythmic. Feel your breath on your hand as you do this. Direct your attention to what you are feeling throughout. ie you should notice the exhale is one continuous stream of air from the mouth. On number 5, you should feel the stomach push the air out. The important point is that you should be able to control the *outflow* of air. Some swimmers in fact hold their breath as they swim, only exhaling as they turn for the next breath. This is OK for a 50 metre sprint where you want to race with minimum breaths, but even so, as stale air pressure builds, it is advisable to release some of the pent up pressure rather than holding it all in. Actually, holding the breath can be quite dangerous, particularly in older adults, not only from the buildup of carbon dioxide, but also because breath holding increases blood pressure. Anybody with high blood pressure, or older adults, should be discouraged from any breath holding activities often known as *hypoxic* training.
- You can practice this anywhere. Try it in the car at the stop lights; try it in bed lying on your back, hands on your abdomen feeling the gentle rise and fall of your stomach.
- Once you have mastered the 5 count, play around with exhaling even slower, building up to a 10 count or beyond. Visualise the volume of your lungs and make sure your exhale is controlled enough to last for the whole amount count.
- Top athletes will relax the exhale like a 'sigh' and air can flow from nose, mouth or a combination of both. The face remains relaxed when swimming at slow speeds.
- The breath in should be quick, but deep. Most people will take a deep breath by raising their shoulders and trying to expand their ribcage or intercostal muscles. However, if combined with diaphragmatic breathing as used by opera singers, the breath will be more relaxed, easier and fuller. Try this exercise lying down. In a relaxed position with both hands on your abdomen, feel your breath in and out. Every now and then take a deep breath, but imagine that your lungs are expanding outward into your back and the floor, and that the air is flowing downward into your stomach. Your hands should feel your abdomen rising or expanding, not sinking. Don't allow your shoulders to rise upward toward your ears. This is a sure sign that you are breathing incorrectly.

- Take both of these ideas into the pool as you swim Freestyle. Imagine you are inhaling the air deep down into your stomach and back, then control the outflow for either 2, 3 or 4 strokes, remembering that final puff out as you turn to breathe.

Not only is the technique of breathing is important, but so too is the *exact timing* of the breath. If it is out of time, the whole stroke can become unbalanced. Many swimmers try to breathe too long, or turn their head back into the water too early, or simply turn at the wrong time. Also when the head is in the perfect position breathing, one goggle will be under water and one above.



The photo left shows the perfect head position of the former 100m World Record holder in Freestyle Pieter Van Den Hoogenband. Notice how he breathes into the bow wave caused by the side of his face. It almost looks as if he is breathing under the water level.



At Rest

Shallow 'intercostal' breathing
Note how the ribs expand sideways and the shoulders rise upward. Often this will be accompanied by the abdomen being 'sucked' in.

Diaphramatic breathing
Note how the ribs expand and the diaphragm lowers thus creating a larger cavity for the lungs to expand into. The sensation can be likened to breathing down into the stomach.

Another good exercise to try is to practice on the kickboard. As you can see from the above picture, it's important that the head is in a NEUTRAL position where the neck muscles can relax. Your head weighs about the same as a bowling ball, so holding it at anything other than a neutral position will use energy unnecessarily as well as risk long term damage, perhaps pain. We cover this neutral position both in dry land activities and with side kicking drills (see over). For this reason I discourage swimmers to breath to the side when using a kickboard – it sets the head at an unnatural angle. Breathing to the front can also incur a risk to swimmers with neck related problems, but if you have none of those, it is the preferred method of breathing. Those with problem necks will need to hold the board with only one hand and use body rotation to the side, OR don't use a board at all.

When you do breathe, a useful image is to imagine a birthday cake with candles and pretend you are blowing out the candles before inhaling. This ensures your lungs get rid of any stale air so the next breath is all fresh air. Many swimmers accumulate stale air in their lungs and feel increasingly more puffed, then they try to inhale deeper to compensate with each successive breath. If you have exhaled properly, the breath in should be short and not too deep.

Thought for Today: **We are what we repeatedly do.**
Excellence then is not an act but a habit.

Great shot of Grant Hackett demonstrating perfect head alignment, body rotation, high elbow and relaxed hand.

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