## BACKSTROKE

Through various advancements in recent years, the backstroke has made great strides in speed and mechanics. World class backstroke swimmers have recently not only equaled butterfly times, but also surpassed them! Underwater kicking, forward turns, and stand up starts have in some cases reduced the actual amount of swimming backstroke to as little as 50 to 60 yards over the course of a 100 yard race. For that reason, it is particularly important to pay attention to details such as streamlining, wall exits, and turn speed.

While this section is concerned with the stroke itself, strong backstroke swimmers will not hesitate to spend additional time on streamlining drills, turn speed drills, and underwater kicking drills, both flutter and dolphin style.

To begin the stroke, the backstroke swimmer should exit the walls, be it from the start of turn with both arms extended overhead in the streamlined position. Once the stroke has begun, the entry of the arm is made with the hand extended to full arm length above the head with the elbows straight, the little fingers entering first and the palms facing outward. This way, the swimmer will be able to roll to the side easier and the arms and hands will enter the water with a minimum or resistance. Common mistakes on the entry is that swimmers will enter the water with arm over reaching beyond the center line of their body, under reaching, whereby the swimmer does not get the hand extended above the shoulder, and smashing their hand into the water. Smashing or slapping the hands on the water increase resistance and thus slows the swimmer down. The swimmer should be rotating about the waist so that at the point of entry, the stroking shoulder is driving down and the recovering shoulder is rising out of the water. The swimmers head should be very still and breaking the water at or just below the very top of the head. It is imperative that the head be held completely still during the stroke and that there is no side to side movement by the head. The entire stroke should rotate around the head.

After your hand has entered the water, the next phase is the catch. During the catch, you hand will travel forward, downward, and outward while you palm is rotated to a downward pitch. When you have rotated your hand far enough, the force you exert on the palm of your hand will cause your elbow to flex and the propulsive phase of the arm stroke will begin. If you do not rotate your hand correctly, your body will begin to “bounce” in the water. This will cause undue resistance and will slow your forward motion. A common error for the swimmer during the catch is to drop the elbows. This is caused because the swimmer is not forcing the palm downward and outward.

The next phase is the down sweep. Your hand should be pitched downward, outward, and backward. Some swimmers will actually cup their hand very slightly to increase the “airfoil” effect during the backstroke. The down sweep of the backstroke should gain in speed throughout the motion. As speed of the arms increase, the forward motion and momentum of the swimmer will also increase, if the hands are pitched correctly.

The next phase is the up sweep. This is a short phase of the stroke and is more of a transition phase than an actual propulsion phase. During this phase, the swimmers hand pitches the palms slightly up and moves upward as the swimmer’s body begins to rotate back in the opposite direction.

The final down sweep is completed by pushing the hands past the thigh. This force has many scientific explanations for pushing the swimmer forward, but basically, the swimmer will move faster the more force that is exerted on the back of the stroke. With a good force, the hands will bounce into the recovery.

Once you have completed the final down sweep, the palms of your hands should be rotated inward so that you exit the water with your thumbs up. The arms are recovered straight up and over the head with a high, straight, elbow. The shoulders should be high on recovery to insure that there is no drag by having the shoulder low in the water. Some of the most common errors in the backstroke recovery is not rotating the elbows backward, recovering low and to the outside, and not initiating the recovery by lifting the shoulder first. Remember to lift the shoulder first as you begin your recovery.

Keep your kicks quick and narrow. There should be six kicks per arm cycle. Dolphin kicks should be used coming off the walls, if the swimmer has an efficient dolphin kick. Swimmers should look to improve their dolphin kicks as they have been proven to be much faster kicks than flutter kicks coming off the walls.

## BACKSTROKE ARM DRILLS

**Hesitation:** This drill is done by swimming backstroke normally, but each arm stroke recovery has two hesitations or stops within the stroke. As the arm recovers overhead, it stops in the straight up position. The swimmer should look at the hand to be sure that the pinkie finger is correctly lined up for the entry. Once this is accomplished, the stroke continues. The stroke stops just before the hand enters the water. The position of the hand and fingers is noted again by the swimmer, and the stroke continues with the same hesitations for the other arm.

*This drill promotes the correct position of the hands and it also promotes strong kicks from the hesitation in the arm stroke. It should be used where swimmers have weak kicks and/or where swimmers have incorrect arm strokes.*

**Elbow Rotation:** This drill is a variation of the hesitation drill. The hand stalls only once. The swimmers strokes normally, but when the hand is recovering and is directly overhead, it stalls. The wrist is held still, but the elbow rotates to the back and again to the front to make the palms of the hands rotate from one side to the other. It is very important that the swimmer rotates from the elbow and not from the wrist. By rotating the elbow, the swimmer will naturally raise the shoulder out of the water. Rotating the wrist will not cause the same effect. Once the palm of the hand is rotated out because of the elbow rotating back, the stroke continues.

*This drill creates awareness by the swimmer of where the hand is and in what position the hand is being held. It also develops body balance and promotes a strong and steady kick.*

**Flipper swims:** This drill is a combination arm and leg drill. By using flippers and kicking forcibly, the legs become stronger. The arms are intended to stroke cleanly (not thrashing about) and strong. Emphasis should be placed on the correct mechanics of the stroke.

*This drill is intended to have the swimmers feel what it is like to go fast. Done in sets of 100's, 75's, and 50's, they can prove to be some real ego builders!*

**Double Arm Stroke:** This drill is done with or without fins. The swimmers will swim a normal backstroke, except that both arms will recover and stroke at the same time. Emphasis should be placed on the push phase of the stroke. The swimmer should feel a definite thrust forward as he/she finishes the push phase. As the arms recover overhead, the swimmer will have to kick harder to stay up and on top of the water.
This drill will help to correct arm entry and recovery problems such as bent arm recoveries, over-reaching, under-reaching, and deep pulls.

## BACKSTROKE KICKING DRILLS

**Land Kicking:** Sit with your legs fully extended in front of you, toes pointed, and back straight. Support yourself by placing your hands on the ground next to your hips.

Raise your legs eight to twelve inches off the ground, keeping your legs straight and toes pointed. You will lean back slightly, but keep your back straight. Slowly begin to flutter kick in the air, keeping straight knees and pointed toes. Remember to keep your kick "tight," meaning that your legs shouldn't travel more than eight to ten inches.

*This drill will help you see that the kick is generated at the thigh, not the knee. As you begin to get better, gradually add some knee bend, but still kick from the thigh with pointed toes. Remember that the knee bends only to allow your legs to feel relaxed and not stiff.*

**Land Kicking Variation:** For more advanced swimmers, repeat the above drill with the hands on the hips.

**Two Hands Up Kicking:** This drill is done by interlocking the hands together with the palms facing each other and they raising them above the head with straight elbows. The swimmer then kicks on his/her back. The swimmers head should rest comfortably in the upper-arms. The kick should be steady and constant. The toes should just break the surface and should go no deeper than ten inches and the knees should not break the surface.

*This drill will promote stronger kicking, correct body position, and streamlining.*

**Underwater Kicks:** One of the best drills used to develop a streamlined kick is to kick very short distances underwater. Both arms are extended overhead - one hand in the palm of the other. Control your air supply by exhaling in a controlled manner throughout the length of the kick. Kicking can be done timed or un-timed.

The underwater kick drill develops proper body position and streamlining quickly. If the swimmer goes too deep or surfaces too quickly, he/she will learn to adjust the body position to correct this problem. The underwater kick drill also allows the swimmer to develop "feel" for the water or the legs and feet much quicker than kicking only on the surface. When the swimmer kicks underwater, he/she will remove air bubbles and increases the body surface that is reacting directly to the "feel" of the water. The kicking underwater drill can be done for longer distances, but should be done with fins.

**Dolphin Under waters:** These are done the same as regular underwater kicks, except that they are done with a dolphin kick. Many swimmers have found that dolphin kicking off the start or turns greatly increases their speed and momentum from the wall.

**Flipper Kick-Outs:** The drill is a combination of the two above drills and is done from a wall. The swimmer does this drill with fins on the feet. The swimmer goes underwater, and kicks as they would during a race (dolphin kickers kicking dolphin kick and flutter kickers kicking flutter). The swimmer should "explode" to the surface, take two or three kicks on the surface and then relax and swim easy to the next wall. The drill is then repeated.

**Two Hand Straight Up:** This drill is done with the hands held straight up from the shoulders and with fins on or off. The hands are held up to weight down the shoulders and to create a harder and stronger kick. If the kick is not strong, steady, and constant, the swimmer will sink. This drill develops strong legs and good kicking technique. More inexperienced swimmers might want to start with their hands at less than vertical, or with fins.

**Spoon Drill:** In this drill, the swimmer starts by crossing their hands and interlocking the fingers palm to palm. The arms and hands are held straight down and close to the body. This will cause the shoulders to be rounded (like spoon) and the swimmer will kick the length of the pool, rocking from side to side. Swimmers should roll from one side to the other about every 3 to 6 kicks.

**One Arm Up, One Arm Swim:** This is a variation of the two-arm straight up drill. This drill can be done with or without fins. The swimmer would swim with the right arm up and the left arm stroking for one length and then switch to the left arm up and the right arm stroking for one length. If the swimmer does the drill with fins, the arm should be held straight up. If the swimmer does the drill without fins, the arm should be held at approximately a 45 degree angle, working towards vertically.

*This drill will promote a good high shoulder recovery, a deep pull, and strong and proper balance with a strong kick.*

**1/4 Raisers:** This is a variation of the one arm up, one arm swim drill. With this drill, the swimmer will stroke with the right arm, but when the left arm begins its recovery cycle, it comes only 1/4 of the way out of the water and then drops back into the water as the right arm continues to stroke. The drill continues for one length and then the stroking arms are switched for the next length.

*This drill will promote a strong kick and also stroke balance. Arm stroke efficiency will also be increased.*

**1/2 Raisers:** 1/2 raisers are done exactly the same way as 1/4 raisers, except that the arm is raised 1/2 way out of the water (to straight up position) and then return to the water next to the thigh. This drill will benefit the same areas as 1/4 raisers, but it is a more difficult drill to perform.

**Six Beat Switch:** The six beat switch drill is the last of the primary kicking drills. The swimmer holds the head straight and still during the drill. The swimmer rolls slightly to the right (about 45 degrees) with the right arm stretched overhead. The head is straight, and the eyes are looking at about a 60 degree angle to the water. The left shoulder is out of the water and the left arm is held straight at the side.

After six kicks, the right arm pulls through the bottom of the stroke and stops when the hand reaches the bottom of the stroke and stops when the hand reaches the hips. Meanwhile, the left hand and arm have recovered and the swimmer has rolled to the left side. The right shoulder should now be out of the water. After six kicks, the

cycle is repeated. The swimmer should take care not to "over kick," but his/her kicks should be eight to ten inches.

*This drill promotes correct head position, body position, and kicking.*

## BACKSTROKE BALANCE AND POSITION DRILLS

**Dixie Cup Drill:** This drill is done by swimming backstroke normally with a half filled dixie cup on the forehead. Any weighted object will work. The swimmer should try to swim the entire length without the weight falling off of the forehead. The swimmer will start off swimming slowly at first, but will swim quicker as he/she becomes more proficient at the drill.

*The drill will greatly increase the balance of the stroke and should be sued on swimmers who have an excessive roll or rock to their stroke.*

**Chin Touchers:** This is a variation on the dixie cup drill. When the swimmer brings his/her recovering arm out of the water, the swimmer should keep their head straight, but roll their shoulder over far enough to touch their chin with their shoulder. The stroke should be done slower than normal speed to assure proper technique. It is important to stress the fact that the swimmer keeps their head perfectly still.

*This drill is used for backstroke swimmers who have little or no body roll. It is also effective for swimmers who have a flat, wide recovery with the backstroke.*

**Spin Drill:** This drill is done by starting in a sitting position and the arms are spun as fast as can be done. The momentum of the arm swing will create straight arms. The swimmer will gradually slow down the arm swing at the same time leaning back into the water to begin swimming. Finish the drill by lying back in the correct swimming position for backstroke and then continue to the end of the length with good mechanics.

It should be stressed that the head is to remain perfectly still during the entire drill.