

BODY POSITION AND KICK

Over the past decade, the butterfly stroke has evolved to a more efficient, flatter stroke than the up-and-down stroke of the 1970s. Contemporary world-class butterfly swimmers maintain a gentle undulation, or pulsing, while focusing on forward momentum. This gentle undulation, produced by the body's core muscles, is at the heart of a relaxed and efficient butterfly stroke. For this reason, this chapter's skills progression begins by discussing pulsing motion and then moves on to kicking and breathing. The range of butterfly kicking drills, all designed to improve the efficiency and power of critical components of the stroke, will help you build strength and confidence.

Pulsing Relax your arms at your sides, position yourself horizontally in the water, and place your head in alignment with your neck and spine. Keep your eyes focused on the bottom of the pool and imagine your neck as long and straight. Begin to undulate your chest under and over the water line. Lead with the top of your head, and think about lifting your lungs and flowing the motion forward. If you're doing the movement properly, you will feel your abdominal muscles working. Focus on engaging the upper abdominal muscles as you press the chest under the surface. Keep the energy flowing from your center, resist the temptation to kick, and do not rush.

Kicking When done correctly, the butterfly kick fits into the undulating rhythm quite naturally. Keep your arms at your sides, imagine that your legs are an extension of your chest and hips, and let the energy flow through your thighs, knees, shins, ankles, and toes in a whiplike fashion. Think of your legs as unfurling or unrolling with this release of energy. As your chest goes down, your feet finish their final snap, and your hips sit high on the water surface (see figure 6.1a). As your chest rises up, both of your legs lift up together and your knees are straight (see figure 6.1b). Work your leg muscles through both the up and the down movements. Perhaps the most common mistake that beginning

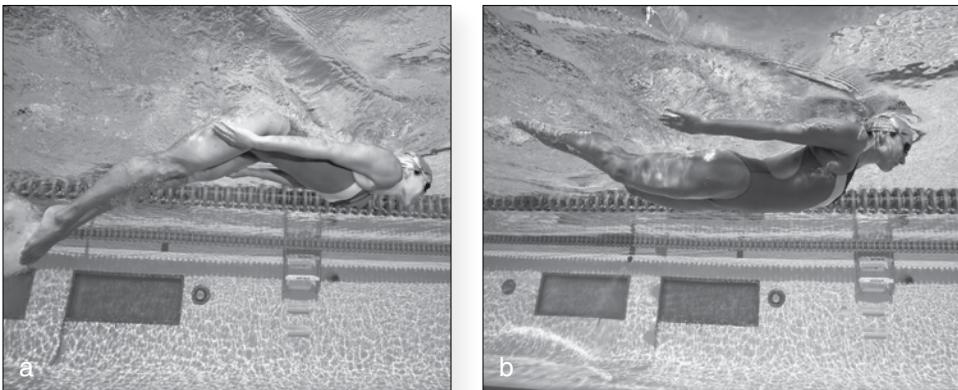


Figure 6.1 Butterfly kicking rhythm: (a) chest low and hips high while feet finish snap and (b) chest high while legs lift with knees straight.

butterfly swimmers make is initiating the kick from the knee. Remember to keep your legs straight and connected to your core and to move them using the power of your abdominal and hip muscles. Ideally, your knees will be relaxed enough to allow the pulsing motion of your core to move down your legs. Keep the height of the undulations to a minimum and concentrate on forward momentum.

Breathing Breathing in butterfly, as in all strokes, must be synchronized with the rhythm of the stroke. Inhale when your chest is at the highest point of undulation and keep your eyes focused down on the water. As you inhale, visualize having a long neck without wrinkles. Keep your neck long and straight and lead with the top of your head. Exhale slowly as you press your chest and lungs below the surface of the water again. Accelerate the flow of air and blow the remainder out with a final puff, then inhale as your chest rises back to the top. Relax your face and jaw muscles, focus on breathing in and out, and maintain a steady, pulsing rhythm.

Begin practicing kicking by holding your arms at your sides and taking a breath on every fourth upbeat of your legs. Next, kick with your arms extended in front of you. Again, breathe every fourth kick. Minimize any disruption to the flow of the undulations by inhaling quickly and exhaling slowly as you press your chest under the water.

All swimmers will improve core strength through butterfly kick drills, whether they practice on their backs, underwater, horizontally, or vertically, which is described later in this chapter. The dolphin kick was recently introduced into the underwater pullout of breaststroke as well as freestyle and backstroke starts and turns, so it can now be legitimately used in every stroke for masters competitions.

ARMS

Keeping the motion of the arms in rhythm with the movement of the core is critical to keeping the butterfly stroke relaxed and sustainable. The section reviews the mechanics of the butterfly's arm motion by examining a complete stroke cycle, which begins and ends just after your hands enter the water at the top of the stroke. This progression allows you to focus on one stroke cycle at a time, and then gradually build into swimming the complete stroke.

At the beginning of the stroke cycle, your hands and arms enter the water, your chest presses down, your hips are at the surface of the water, and your legs are finishing the snap of the kick. Your hands will spread naturally, moving your arms into a Y position just beyond your shoulders (see figure 6.2a). This phase of the stroke feels as though you are grabbing up high on the sides of an open doorway and leaning through it with your chest. Although you do not actually stop moving, you may feel like you are pausing at this phase as you ride out the momentum of the previous stroke cycle and set up for the next. Beginning butterfly swimmers often err by rushing through

or completely omitting this critical extension of the body, press of the chest, and momentary pause. This mistake makes it difficult to achieve a rhythmic and flowing stroke.

As in every stroke, a proper catch will set swimmers up for a more powerful and efficient butterfly. Similar to the freestyle catch, butterfly swimmers maintain a high-elbow position as they press their fingertips, hands, and forearms down and slightly out to effectively grab the water for the underwater pull. The hand position at the widest point in the catch phase is often called the *corner*. During the underwater phase of the stroke, swimmers pull their arms back from the corner and under the body, maintaining the high-elbow position (see figure 6.2*b*). From there, they push their arms back and out to the finish of the stroke. At the transition between the pull and push, swimmers hold their hands about a hand's width apart, just in front of their bellies (see figure 6.2*c*).

During the underwater phase of the stroke, the chest moves from the lowest point of undulation to the highest point, which is just above the water's surface. Your hands must increase to their peak speed through the powerful press to the stroke finish. This acceleration of your hands and forearms from the slower catch to the faster finish provides maximum power and lift as you transition into the recovery. In a breathing stroke cycle, take a quick breath while your chest moves up and over the water and your hands accelerate through the push phase of the stroke.

The recovery of the arms in the butterfly is wide: the arms are straight, relaxed, and in line with the shoulder blades, the pinky fingers are up, and the backs of the hands are leading forward. The arms should be just above the surface of the water during the recovery. Resist the temptation to bend your elbows, as you would in the freestyle, by imagining you are making a snow angel: Hold

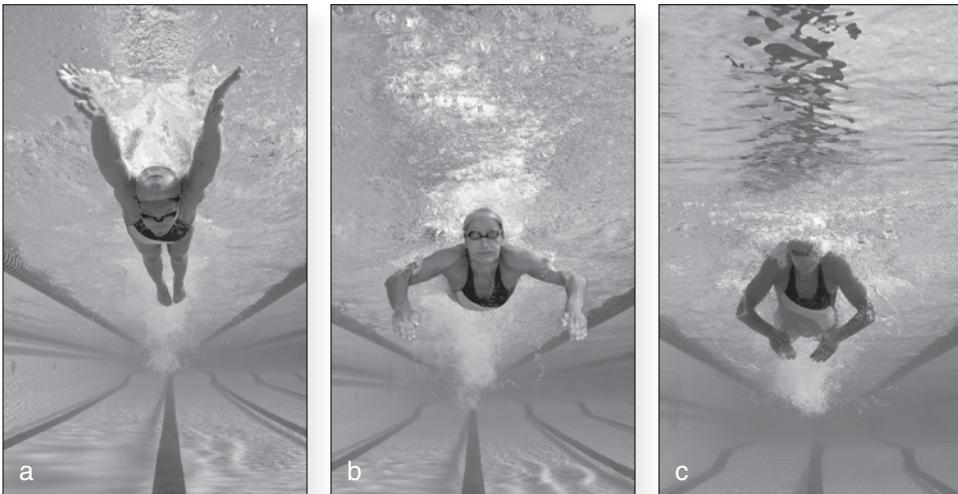


Figure 6.2 Butterfly stroke mechanics: (a) arms in Y position, (b) sweeping in from the corners, and (c) pushing through to the finish.

your elbows straight while your fingertips draw large semicircles on either side of you. Relaxation is essential during this phase of the stroke in order to ride the surge of power to the front of the stroke. Imagine that you are tossing your arms to the front as your chest moves forward over the water (see figure 6.3). Your arms, chest, and head should reach the front of the stroke and the water's surface at the same time.

A critical element to maintaining the rhythm in the butterfly stroke is to quickly and cleanly connect the underwater phase with the low, above-water recovery. New butterfly swimmers sometimes get their hands stuck at the back of the stroke, which makes it difficult to initiate the recovery. To avoid this, finish the stroke just before the elbows straighten out completely. Your elbows should lead as your arms exit the water, followed by the forearms and hands. The back of the hand should always face forward (see figure 6.4).



Figure 6.3 Front view of arm recovery.

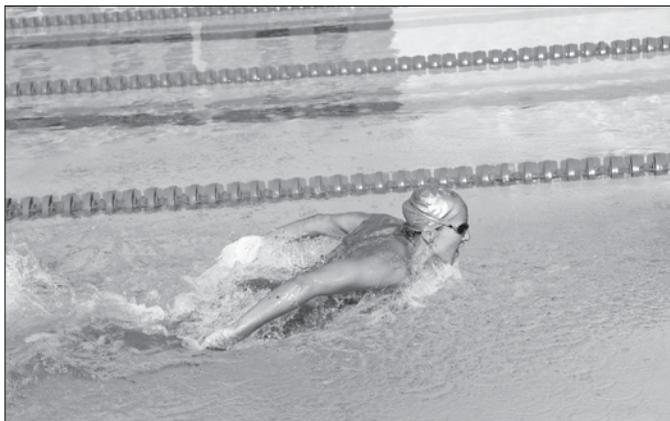


Figure 6.4 Butterfly stroke finish with transition into recovery.