Butterfly guide

**Introduction**

Butterfly is one of the tougher strokes to learn due to the physical requirements and the toll it has on the body. Even an experienced swimmer may not be able to swim butterfly for prolonged periods of time because of how taxing on the body it can be. When teaching someone butterfly in a short amount of time, it is crucial to place a lot of attention on the kick as I believe that the kick is what sets the tone and the tempo for a strong stroke. Do keep in mind when teaching butterfly to implement short bursts so participants have enough time to rest and recover in between. To break it down, we begin with the kicks, body undulation, hand positioning, hand and arm movement, drills, and putting it all together.

This might be the best time to stress that it is nearly impossible to teach butterfly in an hour or even a few lessons, therefore, this clinic will act as a brief introduction into the different areas of butterfly and will give participants the base skills to practice and slowly put together the stroke as they develop physically. Remember, a vast majority won’t have the physical requirements to swim the stroke skillfully, nor should you expect as much.

When teaching butterfly, the assumption is that participants have a good understanding of the other three strokes and can swim them with ease. This helps when learning how to swim butterfly as I like to draw upon the aspects from the other three strokes to develop the necessary skills. For example, butterfly kicks are freestyle kicks with the legs together, butterfly timing is fairly similar to breaststroke timing, etc.

**Part I – Kicks and Undulation**

Kicks

I like to think of butterfly kicks as freestyle kicks with both legs together at the same time as opposed to being apart and opposite of one another. I like to start with a drill that combines the freestyle kick which then transitions into the butterfly kick we will be using. This drill is a combination of 6 freestyle kicks and 3 butterfly kicks on the wall; start with the freestyle kicks and after 6 kicks, kick 3 fly kicks.

When progressing onto the board, place an emphasis to press the chest to initiate the kick instead of initiating from the hips. There’s nothing wrong with initiating from the hips, however, I feel as if there is more power when initiating from the chest as there are more muscles engaged and it becomes a full body motion. Butterfly is probably the only stroke where you want the kick to start from the chest and use the entire body since the kick should be the one to set the tempo and pace for the rest of the stroke.

Butterfly has an established timing system for its kick and that translates to the stroke itself. I time it as one small kick and then one big kick, and we’ll see how this plays out later when we combine everything. The one-two timing drives different parts of the body and allows for said parts to come out of the water easily.

Undulation (Body motion)

Undulation is the type of motion the body makes when swimming butterfly (think of a dolphin swimming) which can be described as an up and down motion. Once we are familiar with the idea of butterfly kicks, undulation becomes a lot easier as it is simply using the whole body to kick butterfly. There are two methods I like to employ to help build undulation, both methods use fins for extra propulsion and focus on the undulation than the leg strength. They should first be done underwater before above water. Note that adjusting to kicking underwater and then coming up for air before going back down to continue kicking may need some practice:

1. Full body streamline. For this you want to try and focus on starting the undulation process from the fingertips. Then, have the rest of the body follow the fingers in that up and down motion. Focus on big motions, this helps to prime the body for the motion we would require when swimming butterfly. Ensure that the kick is smooth and relaxed, don’t tense up the legs trying to force a lot of water. With a large motion, the momentum should correlate to a strong kick, essentially a strong kick comes with good, controlled movement and should be advertised as such.
2. Hands on the side. This is the same motion as the full body streamline, however, in this instance, the hands are on our side as opposed to in front in a streamline. The difference between the two is the difficulty. This particular drill requires you to lead with the chest, pressing down on the water and raising it up to instigate that undulation movement. Note that this requires large movements before they can be done with smaller ones. Again, don’t force anything, try to let the body naturally roll into the undulation process with the legs finishing the movement.

There is a third method which is to kick butterfly on our backs in a tight streamline. However, this is more core oriented and focuses on building the push down of the normal butterfly kick. When teaching the butterfly kicks on our back, try to keep in mind that most people will be extremely stiff with their upper body. Try to reintroduce the first method of starting the rolling from the fingers and letting the body follow it. This third method isn’t critical to someone just learning butterfly, but I like to teach it for some variability when a participant is practicing in their own time.

Undulation is the foundation for the movement in butterfly and it makes it so much easier once we have built it. A lot of people may try to progress from kicking into arms, as is the case with the other three strokes where body positioning is usually the last item (at least for me), with butterfly, giving them this base to build upon makes it a lot easier to combine the arms with the legs and gives a much smoother transition.

**Part II – Arms**

The arm and the upper body are physically demanding and that should be on one’s mind when teaching butterfly. Understand that no one has had your experience with butterfly and therefore, it should not be assumed that they are able to accomplish what you can do nor swim how you swim. Do explain to participants the physical toll that butterfly can have, and to stop someone if they are commenting on shoulder pains or cramps. In this section, I will be providing some drills that one can do to build that upper body strength as well as the usual drills that work on stroke technique.

A common mistake that one may make when swimming butterfly, is to force the stroke. This is incorrect and a misconception they may have regarding the stroke. It is somewhat true that butterfly is a “power” stroke, where one needs a lot of power in order to be able to swim well. This is only true in the sense that one needs the right amount of power to be able to propel their body out of the water. Rather, I like to think of butterfly as a “delicate” stroke, where it is not power that matters – of course once you have satisfied the minimum physical requirements – but the details and technique of the stroke. Think of it in this sense, power means nothing if the technique is not there. You could be pushing on a box with all your might, but if the box needed to be pulled instead of pushed, it won’t budge no matter how much strength you put into it. Details are important so a lot of work with the drills focuses on breaking down the details into small bite sized bits that we will bring together at the end.

I like to break down the stroke into several parts. The first part is showing and trying the catch for each arm. Second involves the arm movement from the catch into the rest of the pull. Third is the recovery. Fourth is attempting to combine both arms together. For an initial demonstration, I prefer to be in shallow water where participants can also follow along while I demonstrate. For some, it may be easier to see both arms, however, for majority of the people I have taught, breaking it down into separate arms has been preferred. It also helps that you are only focused on one arm at a time and can fully dedicate the proper attention required.

Building Strength

Drills to perform to build the upper body strength for butterfly:

1. As mentioned above, pushing the body out of the water using only your arms. Try to have the hands at shoulder width to mimic our initial catch position. When pushing out of the water, try to keep the rest of the body as straight as possible, with the arms being the only part of the body that moves. Note that this should only be performed under supervision of an instructor as there is an extremely high chance on hitting your chin on the wall. Take extreme caution when teaching/using this drill.
2. Skipper drill. This drill is slightly more advanced as it is the catch and pull part of butterfly with a push back recovery underwater as opposed to the normal recovery of butterfly. Also a useful drill when trying to build the pull part of butterfly. Essentially, you are performing the part of the stroke from the beginning till the end of the pull. This involves everything from the catch to the head coming up to breathe to the end of the pull. Note that there is no normal recovery portion of this drill. The recovery involves pushing your hands back to starting position underwater. Tuck your hands close to your body and push them out. Kick during this process to keep your body moving. This drill can be done with fins, and it’ll most likely make it easier to focus on the catch and pull.
3. Pull ups/chin ups. This is an out-of-the-water drill, but pull ups are a great way to build the upper body strength that one would need to swim butterfly with no trouble. I want to say that being able to do at least three unassisted pull ups would indicate that you have sufficient upper body strength, however, it may differ per person. Do note that while strength in the gym does not translate to strength in the water, it can certainly help.
4. Swim butterfly. The only way to get stronger at swimming butterfly is to swim it. Lots of practice builds the right muscles for the stroke. Please don’t rush it. It takes time to build that strength and rushing it could lead to injury in the shoulders and back. If there is any sharp pain in the shoulders when swimming, stop immediately and seek medical attention from a physiotherapist or chiropractor. The last thing you want is to need shoulder surgery from exerting too much force at once on the shoulders.

Catch

The catch in butterfly is quite similar to freestyle, and when done with only one arm, is almost identical. The only difference is the lack of rotation in the hips, meaning that there is less power in the initial start of the stroke. The same goes for the rest of the pull which alongside needing to bring the entire upper body out of the water, contributes to a demanding physical requirement. To make up for losing that power in the rotation, we are going to try a catch that is a little sharper and focuses on grabbing water towards the inside of our body. Comparing to freestyle, the freestyle catch is more focused on finding a hold on the water and pulling your body past it. The butterfly catch looks to grab the water and pull your body over it. Very similar but slightly different. Think of getting out of the pool. We use our arms to push our body out of the water and onto the deck. Similar situation. In fact that is one of the drills I do when building strength for butterfly. It’s about the same body weight – give or take due to Archimedes’ Principle – and the motion is replicative of a catch and pull in butterfly.

Steps to do for the catch:

1. Start with a standing demonstration in shallow water. Bend down at the hips with one hand in front and the other at the hips or wherever you choose. Instead of extending the hand as one may do when teaching the freestyle catch, have it straight in front of you, no extension at all. Bring the hand towards you in a high elbow position where only the forearm and hand are moving. The upper arm should stay still. Perform a few times and tell participants to feel as if they are grabbing the water and bringing it towards them. Swap arms. In this step we are familiarizing our body with this catch. It may initially feel like freestyle, but when swimming butterfly there is going to be a notable difference.
2. Float and catch. Hold onto the wall with one arm, can be done in the shallow end, the other arm is going to be out in front. You can have your head up for this but try a couple times with the face in the water too. Perform the catch with the same motion as the previous step. Put a little more power into the catch as participants become more confident in the catch feeling.
3. Putting both arms together, we go back to bending down at the hips. Have the arms at shoulder width as we are able to exert the most amount of force in this position. Practice moving both arms in sync, feeling the water on the palms and forearm. There may be some initial discrepancies between the two but practice enough and that feeling of unbalance should go away.
4. To put this into motion, grab a pull buoy. We are going to use the pull buoy to float with our hands in front of us. Arms outstretched, shoulder width apart, perform the catch. With this step, we are trying to practice the catch movement and to feel it in motion as you would when swimming butterfly. You want to feel as if you are beginning to pull your body forward and up a little. Practice a couple of times to reinforce that feeling.
5. We can then progress onto the pull.

Pull

The pull is where the similarities between butterfly and freestyle end. In freestyle, as previously mentioned, we are grabbing and pulling water behind us, past our bodies. In butterfly, the catch and pull are used to launch the body out of the water. Therefore, after the catch, we pull the hands towards the body and when it has reached the hips, out towards the recovery phase. Note that we should try and extend the arm at the end of the pull phase before recovery to maximize propulsion.

The pull portion of the stroke is where most of the power is going to come from. The catch initializes that power whilst the pull builds on the momentum generated in the catch. Think strong throughout the pull stage as a verbal cue to pull hard and with purpose. As previously mentioned, there is no strength without technique. Focusing on pulling correctly should be the first priority before power comes into play. I’ll discuss more drills at the end as the following sections all blend into one another.

Recovery

The recovery is the most relaxed part of the stroke where you shouldn’t be exerting any energy at all. In butterfly, the recovery involves bringing both arms back to the front through a sweeping motion from the side. As this should be as relaxed as possible, try to move the arms in a way that allows for ease of movement. This could start with either having your palms face down or to the back depending on comfort levels or lifting the shoulders out of the water or keeping it as low as possible. Recovery looks very different for everyone when it comes to butterfly and the only reason, I could come up with is how different everyone’s stroke is due to physical advantages, whatnot. How I recover is not how you might recover; therefore, it is of great help to demonstrate a general recovery or even your own, and work together to adjust it to individual needs.

In general, a relaxed recovery has a few components: the first and most important, is to not tense, squeeze, or restrict your shoulders. This can cause great strain and may result in a muscle being pulled or if repeatedly done, dislocation in either one or both of your shoulders. Emphasis on relaxed as it is a recovery. The second component involves the hands; as mentioned earlier, you could have your palms facing down or behind you, so long it doesn’t lead to stress in the shoulders, either position is fine. What you don’t want with the hands is for it to drag the water. This creates resistance and makes it so that you might need to work harder on the catch and pull to make up for the self-inflicted drag. The third component of the recovery is the head position. I’ll go into more detail in the next part, but the gist of it is you want the neck to be relaxed and the head to be in a natural position. Don’t force or tense it as that may lead to locking up the shoulders.

Try doing some recovery standing up in shallow water to begin with. Start with the catch and pull and then attempt moving the arms over the water back to the starting position. Start with the head up, then slowly incorporate mimicking head movement. We will discuss trying to swim in the next part; for now, simply mimicking the motions through the stand at the hips position is sufficient.

One thing to keep in mind is the hand positioning during the recovery. We have discussed how the hands should look during the recovery but not the position at the end. Most folks will bring their hands in as close as possible at the end, almost touching; rather we want to have shoulder width entry in the same position where we began our stroke. The reason why this is the ideal recovery is due to the extra effort it takes to shift the hands back into position from touching into shoulder width; the extra motion contributes nothing and uses unnecessary energy.

Positioning

With butterfly you want to try and ride the water. At any one time, a part of your body is going to be out of the water, be it your legs or arms or upper body. The head is probably the most volatile part of the body. A lot of swimmers tend to force the head movement because they either don’t trust that their head will come up high enough for air, or struggling to breathe, or want to look cool swimming butterfly. With regards to head positioning, I tend to use the freestyle method of having the head follow the rest of the body, rather than use it to lead. I find that letting the head follow the body removes risk of injury, prevents the body from being thrown out of position, and gives the stroke a more natural feel.

The best advice I could give for someone worrying about where to place their head or what to do with it, is to trust that it’s in the right position and to not think about it. Sure it’s going to feel a little low and that may lead to a little panic of water getting in, but trust that the body will take care of it. Personally, it took me a long time to get my head right, especially when I got tired.

To help someone with their head, focus on looking down at the bottom of the pool and not in front. There really isn’t any point to looking in front if you are the only one swimming in the lane and the line at the bottom of the pool should be a good indicator of how much more you need to swim. An indicator for when you’re looking in front is if you feel any kind of tension in the neck or if you can see above the opposing wall.

**Part III – Putting it together**

With any stroke, when putting the catch and pull together, it all begins with one arm swims. We can then progress from the one arm to doing a drill called 2-2-2: 2 right arm, 2 left arm, and 2 both arms (full stroke). This drill is designed to help build strength and confidence with swimming the full stroke by allowing you to feel the movement in each one arm before combining them together. The other drills all work towards timing, flexibility, strength, or feel for the water.

Timing

Timing plays a huge role in good butterfly as it connects and holds the stroke together. Without a good tempo system going, you could have all the strength in the world, but you won’t be moving as efficiently as you possible could. Think back to our kicking section where I discussed the one small kick, one big kick. That’s our tempo. It’s a one-two beat and there isn’t a simple workaround, it has to be instilled from the get-go. Here is where most people may find it difficult because whenever one learns a new stroke, one tends to kick more as their arms slowly adjust to the feeling of this new stroke. With butterfly the number of kicks is fixed, swimming differently results in an illegal stroke. We can do kicks in between the strokes when starting out to familiarize the body with the undulation and tempo, however, when actually swimming I prefer jumping in the deep end, so to speak. Someone else may have a different opinion regarding this, but butterfly is one of those things that you have to go for it and adjust along the way.

There are a couple of ways we can focus on timing but really, we are simply building on what we have done before only with a greater emphasis and focus. The first method is the streamline kick with fins, focusing on big undulation and taking it nice and slow. Try to place a larger emphasis on the one-two beat and feel the difference between the small and big kick. If they can’t feel the difference, move back to the wall to perform the kicks. The second method is slightly simpler as a theoretical approach; this can be done standing in the water and using your hands to mimic leg movement: one small, one big kick. This helps to establish in our subconscious the timing of our kicks and eases us into method three. Third method is to be done by us, the instructors, where we demonstrate standing at the hips, moving one arm, and vocalizing the timing. This demonstration should help participants visualize in their minds what the stroke should look like with every part incorporated.

One Arms

One arms. Self-explanatory, difficult to start for butterfly. We can begin with the standing at the hips drill, recall we have already done a version of this earlier with the recovery section. Now we’re going to focus on the feel of the stroke, grabbing the water, pushing it behind you, and bringing the arm over nice and loose. Moving on from there, let’s go back to the streamline undulation drills we were doing with the fins. We’ll be doing it on the water’s surface, so start with a couple of kicks with the undulation to familiarize the body. Try alternating each arm per lap as to not mix up the feel or any potential differences you may find with each arm. For our one arms, we aren’t going to go straight into doing one arms, rather we’ll perform streamline kicks and add one arms here and there, we can worry about doing full-on one arms later when we’re more confident with the stroke.

Keep it consistent with how many kicks you do in between the one arms, I prefer starting out with 6 kicks, then bringing it down to 4, 2, and finally regular one arms. We’re priming the body to add in the strokes on top of our kicks, so we want to keep the kicks consistent and the undulation present when doing this drill. Slowly progress the kicks along, removing one or two each time you get more familiar with the motion. When doing regular one arms, it’s critical to keep in mind the one small kick, one big kick I mentioned earlier. This sets the timing and tempo of the stroke and really, should be present no matter what you are doing: kicks, pulls, or drills.

Additional Drills

1. 2 right, 2 left, 2 full strokes (both arms). One of my favorite drills to warm up with due to its simplicity and effect as a standard drill. With this drill we feel out both arms and then put it together. Take it slow as this should be a first taste of swimming butterfly with both arms.
2. 4 kicks, 1 pull. Another method for establishing the undulation and then incorporating it into the stroke.
3. 2 up, 1 down. Focused more so on breath control, a good drill to expand lung capacity.