

Alright stingrays i know that this probably looks like homework but dont worry its not. This packet is a swimmers guide to understanding basic stroke technique. The guide includes stroke breakdowns from the start through the turns and finish. It also explains the drills that we practice as well as important concepts swimmers should think about while they train and race. Swimming is a physical activity that requires focus and control. Yours arms and legs dont think they listen to your brain and if your brain doesn't know what its doing your body doest have a chance to swim its fastest.

The more you know about swimming the easier it is and the more confident you will be in your racing. There are many important aspects to every stroke and although as coaches we try to teach all these ideas during practice we have 200 swimmers and the pool is a rather loud crazy place for detailed instruction. That is why i wrote this packet so that swimmers who want a more clear cut breakdown of strokes can study them on their own. Stingrays who dont read this packet are not making mistakes but those who do are greatly improving their understanding of the sport and i guarantee it will help.

I learned to swim on rec teams I learned how to race when i got to college and most of this packet is information that i learned from my ncaa coach but the rest i learned from the stingrays. I learned it by listening to the other coaches and getting their perspective as well as watching all of you practice. My job is great because every day i see proof of how certain technique makes you slower and also how good technique makes you faster.

### **Freestyle:**

**Streamline:** All swimming is based upon streamline. Streamline is our fastest position in the water. While in streamline we are causing the least amount of resistance to the water. We always cause resistance but we want to avoid any extra resistance know as drag. Streamline hold the least resistance so we want to always start in this position. Once you have your body position set you start to add the power. While kicking and pulling we increase our friction with the water increasing the amount of drag we create. A swimmer racing freestyle with their head focused to the wall is literally slowing themselves down because their face catches water and is forced to push it out of the way. A swimmer with their head relaxed eyes on the bottom of the pool is swimming with a stronger tighter streamline is helping themselves swim to their highest potential. The difference in angle is tiny but so are hundredths of seconds that can often be the difference in first or second place or qualifying to finals at champs. If we are trying to swim as fast as we can lets not make it harder.

Streamlining includes every muscle in your body fingertips to toes need tighten together focusing to one point. The opposing wall. Do not hold your body in place in the water always pull and stretch for the wall (Hundredths). Arms are extended over the swimmers body locking over the swimmers ears. Your elbows and ears are going to be best friends by the end of the summer. If you lock your head into position with your arms than you have the first third of your body set. This also presents your neck from moving up or down which is going to move your butt up and down. If you look around your room in a circle you dont usually turn your whole body in one position around in a circle. We lead with our head and turn our body when we need a better angle. Your body responds to head and neck position so essentially you control most of

your body simply by tilting your head. (for all my soon to be licensed swimmers...this is true about driving as well dont look to the side of the road while you drive because your hands will turn that way also and as a bike rider i dont want to get hit just cause you see me on the road). The rest of your body from shoulders to toes want to be set in place. If your legs are spread apart they are dragging the water.

Free style and backstroke are what is call cycle strokes. Meaning that the body can cycle through them faster and in greater volume than breaststroke or butterfly. The strokes are done with one arm at a time and take less energy per stroke. Since a swimmer uses one arm at a time they are only in a full streamline coming off their start and turns. However every stroke should start and finish in a half streamline. The arm that has just finished recovering should finish along the body holding the half streamline. Assuming that your head is relaxed and your torso and legs are tightly working that only your pulling arm is out of streamline and that is necessary to provide power. Your body is still in an efficient position while providing the appropriate energy to move. If your head is facing the wall or your taking large kicks that require bending your knee than you will provide power but some of that power will go to overcoming the drag you are creating.

I know that it would seem logical that bigger kicks create more power....and this is true but more isn't always better in the pool. A baseball player trying to hit a home run want to crush the ball to create the necessary impact. But a baseball player is working though air which is much lighter and kinder to movement than water. We are up against a pool full of water. Have you ever seen a tsunami? that is how powerful and heavy water is. Luckily we are not so weak ourselves and we have the tools to move through the water. Th first tool is your legs. Your legs are incredibly strong think about every step you either walk jog or run throughout your life. All the soccer balls you kick and the dances you go to depend on your legs being capable of supporting great weight with consistent effort. How often are you incapable of standing up? Your legs are just as strong in the water and if you can train them to be strong as iron than swimming becomes much more enjoyable. Your legs require a lot of oxygen to work and they usually get tired the fastest because as we grow tired and let them relax first. This is the wrong way to train. Kicking need to be a priority. Rather than allowing your legs to lay off you need to train them to be relentless. Dont deal with the pain and frustration of having weak kicking. Work everyday to exhaust your legs. Because if you work your legs to their end all week long than they will never fail you on the weekend. I you know everyone else's legs are dead and you have the confidence of comfort in your legs it is a great mental edge. Swimmers want to practice with a six beat kick. This means that for every two arms strokes(one left and one right) the want to kick three times with each foot a total of 6 kicks. This will also increase your arm speed because when the legs start working the arms are pushed to keep the body ahead of the legs. This is not the same for the arms. While pulling increasing your tempo will not change the intensity of your kick. But increasing your legs will produce faster arm speed. Most swimmers wait till the end of their race the start this fast kicking. Why not start today? If you do it makes it much easier to kick them in whenever you want all race long.

### **Free style Pull:**

High Elbows! Finger tip and shark-fin are two drills that we use all the time. These focus on maintaining a high elbow while recovering. I know your parents are watching you but don't wave at them while you swim. Keep your hands near the surface and push forward with your hand below your elbow. This extends your shoulder farther than reaching hand over elbow. Fingers should enter the water before the arm is fully extended but finish extension before pulling back. When starting to pull your hand set an anchor. Your anchor is how much water your hand pulls and you decide how powerful it is by how much force you put behind it. The deeper you swim the heavier the water is this means two things. One it will move you farther when you pull it, but it will also require more energy to move the water. Start with your elbow near the surface and your arm bent almost at a 90 degree angle. This is the shallowest water and can be moved with the least effort as you get stronger dig deeper.. I'm assuming you can handle that?

Even though your eyes should be focused on the bottom of the pool you can still focus on body position. You need to spend practice making sure you know how the correct body position feels. While swimming freestyle you want to keep your arms from crossing your center. There is a line running down your body splitting you in half. Each side has a leg an eye and on most of you a goofy looking ear. You want to keep your arms from crossing this line because when you pull over it you pull water against your body. Keep your pull slightly outside your body to avoid extra drag.

### **Alternate Breathing:**

I know isn't alternate side breathing annoying. Isn't breathing every other stroke so much better i mean it feels better..that is because it is easier. But you are a swimmer and that means that you are not in the sport for easy. You've picked the sport that is based upon making it harder. Every lap every day how can you go faster work harder and kick even more butt... even if it is your own. And that is what makes swimming so sweet. Not just as a sport not just for your body but for yourself. Because you will always know how hard you can work and what you can achieve.

We alternate the side we breath on because it makes sure that we develop both sides of our body. When breathing our entire body weight is forced onto our submerged side. That is why our submerged arm always gets so tired. This arm is over worked and as a result the body develops poor rhythm. Alternating our breaths encourages stronger rhythm better tempo and a balanced muscular system. If you are most comfortable breathing on one side while you race that is fine but you alternate during all drill, endurance, and pull sets. Only breath on one side if it is at a cycle of four or more during races and sprint sets. For 25's you shouldn't need to breath more than twice for 10&under and zero for 11&up. When starting the season if you cant sprint with such limited breaths thats fine. It is your most important goal during the summer to master your lungs and breathing. Like you legs your lungs will be a quick surrender to the stress of racing unless you push your lungs all practice to be as strong as they can be. The toughest strongest swimmers breath only when they have to. They realize that while racing the water is their friend and air is their poison. Every time you breath your streamline is broken. The longer you take to breath or the more often you breath the tougher you are making you it to get to the finish. If you dont need to breath you are only helping yourself. But you have to prove it to yourself all week long. When you

breath you need to kick extra small and fast to make sure that the increased drag is countered with force of your kick. Not the size but the force. If you increase the force than it should help to maintain your momentum and speed. If you increase the size you increase the drag even more.

### **Freestyle Flip turn and finish:**

Every Flip turn you ever take should be as if you are racing. Your brain is a huge vault of memories and many of those memories are stored by what you see or hear other memories are stored by what you feel. How your body feels is stored away like everything you see and do. This is called muscle memory. When you swim you are teaching your body what to do every stroke and good technique is beneficial the same way as poor technique is detrimental. Whether you swim correctly or badly your body remembers. And it will naturally do whatever you teach it most often. You can change how you swim every day but you want to be comfortable while you race and you want to be confident in what you are doing. If you don't practice turns the way you want to race them you are going into meets blind. Over the course of the summer you will do literally thousands of laps and most laps will be followed by another meaning you have thousands of chances to practice your turns even when we are not doing a turn session. Take that opportunity to make all your turns as fast and strong as possible. Turns are not a place to rest. They are a place to work and increase your speed and momentum. Water is heavy and you can push it to move. But the concrete wall at either end of the pool is a great place to re boost your energy. You want to hit the wall at full speed so that you can get the most power off the wall. The faster you go in the faster you come out. And like most speed this starts with your feet. You want to kick as hard as you can approaching the wall because many young swimmers focus on the wall and forget to kick slowing their momentum.

When approaching the wall swimmers should take their last breath two strokes before the wall. These last two strokes are important because they allow the body to solidify their streamline and maximize speed. The last pull has the most important anchor and needs to be as forceful as possible to flip the feet over your head and hit the wall. Your feet should hit the wall shoulder width apart to maintain balance after leaving the wall. Swimmers leave the wall on their back than rotate onto their stomach. To make this rotation faster swimmers should dolphin kick but want to make sure that they do not rotate before they leave the wall. This slows the turning process.

Since turns are a time when you can gain speed and power you want to stay in streamline as long as possible and breath as many strokes away from the wall as possible. Until you breath you are building momentum but once you breath you slow down and need to start rebuilding momentum..

When finishing a freestyle race you want to overextend your arm and slide on to your side maximizing your length. Keep your head stretching forward but maintain your elbow ear connection and hopefully they will be talking about winning. What do you have to kick into 5th gear when you finish? Yup your legs for sure no matter how tired you are no matter what your body or mind says control yourself realize you are almost home and get to the wall. Never breath inside the flags if you do its a tenth you gave away. You can breath when your done finish the race.

Freestyle drills:

I would explain every drill but instead i am going to make you pay attention at practice instead make sure you know which ones relate to which strokes.

All these drills need to be swam will legs going full steam they do not take any sets off.

Streamline kicking is obviously important. If you add in two breathers per lap you have the holy trinity of swimming. This includes Streamline kicking on your back.

Catch Up practices taking single strokes and returning to streamline. The swimmer should focus on their arm position and how to catch as much water as possible with their anchor. Finishing their stroke and returning with a high elbow to their streamline.

Fingertip Drag uses both arms but during the recovery keep your fingertips submerged forcing a high elbow. (you can swim with your fingertips submerged during catchup drill. But Do Not catchup during fingertip drag they are separate drills and fingertip need to be swam full stroke.

Shark-fin is a holding fingertip drill where the swimmer holds their elbows high stationary for 3 seconds midway through the recovery making sure they have a strong kick keeping them balanced.

Freestyle is the core of swimming and the other strokes can all be related to it. Especially backstroke which relies on many similar principles. The only difference is that you are inverted. Ever seen top gun?

## **Backstroke**

Backstroke and freestyle are similar strokes. Like freestyle backstroke is a cycle stroke meaning that the pull can be cycled through at a high rate. The backstroke pull is swam one arm at a time and the kick is small. The difference between backstroke and freestyle is that a swimmer is inverted. Being inverted is fancy swimmer lingo for being on your back. When inverted your head position is even more important than on your stomach. Your head acts as a rudder for your body and the more it moves out of position the more your body moves increasing your drag. When swimming on your back your eyes deceive you and what you see is not always accurate. You will think your head is all the way back because you cant see the pool but you are still not flat you the surface. When your arms are recovering if they appear to slide right by your head then they are too close and your arms will bend behind your head twisting your body out of streamline. This is why backstroke drills are so important you cannot use the bottom of the pool or the walls or even other people as reference points when you are on your back so you need to drill to lock your body into position.

I have a friend who was a very strong backstroker. He swam his 100 yard backstroke in 52 seconds. Actually he could swim his 100 yard backstroke faster if he only swam backstroke for 100 yards. His streamline was inconsistent off his walls and he didn't keep his head back. The result was a diagonal stroke across the lane amounting to about 106 yards of swimming. Granted swimming 106 yards in 52 seconds is sweet but that was the intended distance and it resulted in a higher time.

When in Streamline position the elbows are covering the ears. This is how we make sure our heads are all the way back and it is why we do so much streamline kicking on our backs. Water will splash you in the face when you swim. It is important to train with goggles even if you do not race with them it will allow you to focus more on what you are doing.

Every lap of backstroke should begin with a backstroke start. This includes a tight streamline and three inverted dolphin kicks. The Streamline dolphin kick is part of every freestyle and backstroke lap. This is what Michael Phelps prides himself on and he is the fastest underwater swimmer in the world. Oh that's right he is the fastest swimmer in the world ever. The backstroke stroke is almost a mirror image of freestyle and the kick is exactly the same. But because you are inverted the kick is more important. Your balance and ability to float are connected to the speed and force of your kick. Your head, shoulders and torso will be on the surface but without a consistent kick your legs will become anchors dragging behind you. If you wait till you're far off the wall to start kicking your legs will already be down. You have to start kicking from the wall and use your abdominal muscles to pull your torso towards the surface. Remember although your arms and legs do most of the work swimming requires all your muscles to work together. Kicking is not just moving your feet. You need to create power by moving the water. When you push the water you move through it so don't just move your feet push with them. Everyone is a kicker.

#### Backstroke pull:

Backstroke pull has changed over the years usually swaying towards the technique of the current world record holder but right now there are a trio of swimmers; the three fastest in the world who all have similar technique. This current pull is different than how I was taught to race but perhaps that's why I wasn't a backstroker... You want to swim backstroke with a high hand and a bent elbow. As the hand enters the water pinkie finger first the elbow should bend pushing the hand forward just below the surface. This water is lighter and can be pushed faster than deeper water. Your shoulders and hips should rotate around the body meaning that the body should hold a tight streamline position while your shoulders and hips rotate your torso as one unit. As your arms finish their pull they recover straight but want to enter the pool not directly next to your head but slightly outside. Remember your eyes deceive you and your arms are curling around your head if you think they are next to it. Instead think of your body as a clock with your head being 12 and your feet being 6. Your hands want to enter the water at 10 o'clock and 2 o'clock making sure they do not move the body out of streamline. Just like in freestyle you have to set an anchor as your elbow bends to start the pull. The stronger your anchor the more water you push and the farther you move.

#### Backstroke flip turn and finish:

When swimming backstroke laps the last five yards should be given a lot of attention. Because you are on your back the wall isn't in plain view many races can be lost in the last five yards. If you do not know your stroke count you cannot be confident swimming hard and fast into the wall. The flags are not a cue to slow down they are a marker so you can race harder into the wall. By finishing every backstroke lap at full

speed you can really attack the finish. You want to make sure you practice kicking full speed into turns and finishes because it will change your stroke count and you want your finishes and turns to be a habit.

My stroke count is two so when i see the flags pass my head i swim two more backstrokes and than turn over onto my stomach leading my body with a strong freestyle pull. This free pull centers the body as well as providing necessary power to compensate for the drag I just created by rolling over. The last pull with a forceful anchor should duck your head and whip your feet towards the wall. Land on the wall the same as during a freestyle turn sitting as if in a chair feet shoulder width apart but when you extend into streamline stay on your back dolphin kicking to the surface.

Backstroke finishes have the same approach to the wall but the last stroke is not on your stomach. For my backstroke finish my stroke count is 3. Turns always have one less strokes than finishes. Actually they have the same number of strokes with one less backstroke and one freestyle stroke. I pass under the flags kicking as hard as i can take three backstrokes and rotate my body to the side keeping my head facing the blue california sky. I trust my stroke count and never take an extra stroke because i have practiced it enough to know i am doing it correctly. Backstroke should finish on the swimmers side with their head facing up. It is important to look at the sky on your finish because when swimmers turn their head to the pool or wall they are likely to turn their shoulders and DQ for finishing on their stomach.

Backstroke starts:

When starting a backstroke lap you place your feet against the wall shoulder width apart for balance. Pull your body up towards the wall tightening all muscles so they can explode off the block. Like diving backstroke starts require the swimmer to completely clear the water giving the swimmer time to lock in streamline without the drag of water. As they enter the water with a strong tight streamline they are minimizing drag starting positive momentum. Once locked into streamline the swimmer should kick 3 inverted dolphin pushing them towards the surface and building momentum to break into their stroke. Backstroke starts with one arm at a time. Swimmers should not break streamline with both arms to start their pull. One at a time keeping their other arm in streamline along with the head minimizing resistance.

Just like in freestyle swimmers want to follow a breathing pattern. Breath every 3 or 5 strokes to keep your body controlled erratic breathing disrupts streamline and focus.

Backstroke Drills:

We drill a lot of inverted dolphin kicking as well as back streamline kicking because it uses all muscles if the swimmers are in streamline but these kicking drills also emphasize the core muscles.

**6 kick** which is one pull every six kicks is a way of focusing on our pulls one at a time while maintaining a good body position though kicking

**corkscrew** is a fun drill to work on hip rotation. A swimmer takes three backstrokes than rotates to their stomach for three freestyle strokes and than back to their backs.

**backstroke catchup** to work on each arms specific technique. Backstroke catchup is the same as freestyle only on your back.

## **Cycle strokes and power strokes**

Backstroke and freestyle are what I call cycle strokes because it is much easier for swimmers to cycle through the stroke and they are intended to repeat the process at a faster rate. Breaststroke and butterfly are much different types of strokes requiring much more energy and being much harder to repeat at greater volume. I call these power strokes because they require and produce larger amounts of power. Both types of strokes are hard and both require total body control but how we swim and train our bodies are different.

So what separates the two types of strokes. The first difference is how we use our bodies. While swimming backstroke and freestyle we use one arm at a time we also separate our kick allowing our legs to take turns handling our weight. While swimming breaststroke and butterfly we use both arms for every stroke as well as both legs. This increases the distance per stroke as well as the amount of energy needed. You give and you get when you swim butterfly or breaststroke because the strokes require much more energy but they also move you down the pool with less repetition. Count the number of strokes you take while swimming freestyle and compare it to breaststroke or butterfly. In a freestyle lap you are going to take more strokes than a lap of breaststroke even though you are covering the same amount of distance.

When swimming power strokes think of your arms as mirror images. They should work together to take on your full body weight and pull it through the water then recover together and start again. Because breaststroke and butterfly require so much more energy or power I call them power strokes and they require even more drills and even more focus. Because the arms are working together and not taking turns a bad butterfly stroke is double as bad as a poor freestyle stroke. Your streamline is never perfect in butterfly and rarely in a breaststroke race so you need to make sure that your head is strongly aligned and your shoulders through hips are in the correct position.

## **Power strokes:**

**Breaststroke** is a tough stroke to teach young swimmers because the way you are supposed to race breaststroke is different than how you are taught to swim at a swim lessons. Children learn to swim survival breaststroke with their heads out of the water taking large wide strokes. This is a great way to swim for hours but not the way to swim for seconds.

Breaststroke is the anti streamline so the actual stroke needs to take as little time as possible and the glide that the stroke produces is the majority of the stroke. Every breaststroke begins and ends in streamline position. Your hands front skull from the streamline to your shoulders and your elbows bend bringing your forearms and hands ( blades) in towards your stomach. When your hands meet at your belly button they shoot forward into streamline with your head leading the way. I call the skull and pull the "RIP" and the arms shooting forward the "Throw" and they should be just that. Your arms should anchor the water at the end of the skull and RIP it towards your body than you THROW your arms forward into streamline pulling you body over the water you have just pulled. Your arms should not spread wider than your shoulders before they

anchor because the larger strokes will take more energy than you want to expend. Once you are swimming anything more than a 25 your energy at the end of the race is vital because once you are dead racing breaststroke is impossible. IM's are built for breaststrokes because they can take over the second half of the race while everyone else limps home.

Breaststroke Kick like the pull needs to be energy efficient. Bigger may be better but it isn't faster your legs will quit real fast if they are kicking too wide. You should be able to hold a pull buoy between your thighs and kick breaststroke without the buoy popping out. The feet need to whip together finishing once they have touched. Most of the power generated by the kick comes during the final push together. As your feet clap and finish your toes want to point so that they are into streamline.

Breaststroke is a pull a kick and a glide. The kick starts when your hands anchor (shoulder-width apart) and should finish while the arms are throwing forward. The power from the short quick breaststroke results in a burst of energy that can be optimized with a long strong streamline (THE GLIDE).

**Pull Out:** Every lap of breaststroke swim starts with a pullout. Like all swimming pullouts need to be rehearsed until they are a habit. A pull out is the simplest way of moving the most amount of distance and in short races like a 25 or a 50 pullouts are half of the race. Power strokes require more energy so if you have a good long pullout you will have less distance to swim and can take fewer strokes and put more energy into the strokes you do have to take. The pullout should be spaced out to make sure that distance is at a maximum. After entering the water in streamline count to three before beginning the pullout.

The pullout begins like an other breaststroke with a front skull to shoulder-width apart. Then the arms want to anchor and pull down as if you are pulling yourself out of the pool. Instead on coming together at the belly button to throw forward your arms fully extend during a pullout trying to push past your knee. The hands should be positioned outside the shoulders but you should not spread your arms too wide. Pull down with a quick snap and remember to keep your head in a streamline position.

Then count to two and whip a quick small breaststroke kick while your arms push forward tight against your chest. Your head needs to exit the water before you start your second pull and your second pull has to be a normal breaststroke pull. pullouts are the most commonly dq'd part of any race in rec swimming because swimmers rush their pullouts to get to the race.

Dive-Streamline 3 2 1 SNAP(pull) 2 1 WHIP (kick) 1 EXPLODE out of the water. you arms recover close to your body while your legs start their kick. Your head should not look forward until it breaks the surface of the pool and by then your lap is half over.

### **Breaststroke Turns and Finish:**

You want to finish every breaststroke lap in streamline. Your arms and legs should finish their last strokes so that you can connect to the wall with a burst of energy to change your direction. You know where the wall is so you can keep your head in streamline. As your hands hit the wall evenly you want to push against the wall for balance and pull you legs in tight towards the wall. Your head should leave streamline only to flip backwards. Your

left hand should pull against your body UNDER WATER extending as long as possible towards the far wall.

Your right hand should pull over your head OUT OF THE WATER reaching towards your left into streamline. Your hands do not move at the same time. Left and then right. Your head flips into streamline and your feet should meet the wall at the same time your streamline is set. Then surge off the wall countdown 3 2 1 and begin your pullout. You want to keep your arms as extended as possible keeping your torso as far from the wall as possible. The closer you swim to the turning wall the farther you have to swim back to the finishing wall

Finish the same way you begin your turn. In a long time streamline with you last stroke finishing strong to the wall. HEAD DOWN! You should approach your wall timing your strokes to hit the wall at the end of a stroke in streamline.

### **Breaststroke Drills:**

Breaststroke requires more drills than any other stroke because in a breaststroke race you will take the least amount of strokes while racing breaststroke this means that each stroke is more important. Since each stroke takes a large amount of energy if your strokes are inefficient you create more drag and make it even harder to swim.

**2 kick 1 pull** is a great drill to focus on a single pull and kick ending in a tight streamline that you hold until you finish a second kick.

**crazy legs** is a breaststroke pull drill to practice fast turnover as well as anchor placement. You swim with breaststroke arms and freestyle legs (flutter kick) breathing every stroke. Turnover is the amount of time each stroke takes from start to finish.

**Shooters** is just like crazy legs but you do not breath every stroke you breath on a pattern of 3 or 5 strokes.

If your legs are kicking wide during breaststroke practice with a buoy in between your knees. Your kick will not be as powerful but will build better technique and once you have that you can take the buoy out and swim with power and technique.

### **Butterfly:**

Butterfly is known as the hardest of all strokes. This is because it takes the most energy per stroke and in a sport that is centered around balance and rhythm fly seems to have the hardest rhythm for young swimmers to understand. What is most important about swimming butterfly is that your head stays down. When the head goes up the butt falls down and you are creating more drag than your stroke can overcome. Your eyes should stay locked on the bottom focusing on using your oxygen at a premium and breathing as rarely as possible.

The fly pull like breaststroke pull is initiated with a front skull to shoulder width apart your hands should turn to face the wall you are leaving. Your arms than do a double freestyle pull. The elbows should be bent with the hands pushing back and then away from the body as your arms pass your navel(belly button). Your arms should not finish completely extended if so you have pushed passed your maximum efficiency and you have to pull your arms 180 degrees from your legs around to your streamline.

Other than off the start and turns your hands should never finish all the way in streamline. They should finish shoulder-width apart at the same place they will pull back. This eliminates unnecessary movement. Any movement you save is energy you

save. Like in freestyle you want to set a strong anchor. You are pulling with both arms get the most out of your pull turning your hands outward at your belly button recovering forward as fast as possible and right into the water setting the anchor and pulling again. Keep your head down and your shoulders pressed towards the surface of the pool. When you do breath push your face forward keeping your head down. Push your face forward just enough to get a breath and than back down stretching your lungs and pushing your momentum.

Fly kick is all about rhythm. This means that when you kick you need to move your hips through your feet and control when you kick. Your knees should be almost completely extended allowing slight give without bending the knee. Your kick starts with the hips and ends with the pointed toes. By starting your kick from your hips you make sure that all your leg muscles are used rather than from your knees down. Your hips can also push your legs and the water around the while causing significantly less drag than when using your knees to initiate the kick. Your upper body needs to hold a streamline position because if your whole torso is not locked into gear all the power generated by your kick is lost inside your own body. Your feet should push up and down for every kick and there are two kicks per stroke. The first kick should be in sync with your anchor. You want to set your anchor at the same time you kick so that you help your arms begin their pull through the water. With help from your legs there is less stress on your shoulders. As you are setting the anchor your feet push up and down so that they are constantly generating power. The second kick begins the recovery so that your arms have help getting back to the beginning of the stroke. Again you are pushing up and down to maximize the power and distance of every kick.

When breathings swimmers need to focus on keeping their knees straight because as they breath and push their face forward their hips and butts are already going to drop and when they bend their knees they are at ultimate drag.

### **Butterfly turns and finish's**

Butterfly turns are approached and turned the same as breaststroke with the last stroke finishing in streamline at the wall. The left hand pulls along the body underwater while the knees tuck to the wall and the head flips back. The right hand pushes over the head above the water pulling the arms into streamline. The difference of the turn comes while the swimmer extends off the wall into streamline dolphin kicking tightly towards the surface to break out into their stroke. There are no pullouts in butterfly.

### **Drills**

Drills are an important way of breaking down strokes but the best way to practice butterfly is to swim fly because you want to find this rhythm at a strong pace.

Inverted dolphin kicking is important for good hip action but swimmers need to make sure they keep their head down when they are on their stomach the same way their head is back during inverted dolphin.

Dolphin dives are good for younger kids to work on the diving motion but they want to make sure they are holding streamline while diving.

We also practice one arm fly but this is only useful if the swimmer focuses on the actual fly motion and not just a lazy flop. This is also a good drill for timing between arms and hips.

The most important drill for fly is breath control. You want to be comfortable breathing once per lap at a maximum. A butterfly stroke is extremely powerful. But breathing during fly creates much more drag. If you can race without breathing you can race faster and breath as much as you want when you finish. It is only hard if you do not practice it.

When swimming any stroke you want to identify where you can integrate streamline into your technique. Freestyle and backstroke begin every stroke in a half streamline. While swimming butterfly every stroke should start in a 90% streamline with only the elbows to fingertips not in a streamline. (These should be extended to shoulder-width apart.) Breaststroke begins every stroke in a clear streamline and finishes every stroke gliding in that streamline. Creating drag is like missing free throws in basketball...Now matter how skilled of a swimmer may be you are hurting yourself.

It is much more important to think about what you are doing than to spend practice swimming as fast as you can. Speed comes with technique. Technique comes with time and focus. In the pool all you have is time...how much focus do you have?