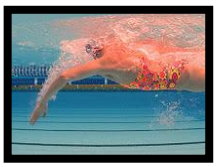
Freestyle Stroke Mechanics

In order to better understand stroke mechanics the arm stroke is broken down into 5 different phases - reach, catch, pull, in-sweep or push, and recovery. Each arm goes through this cycle in about on second.

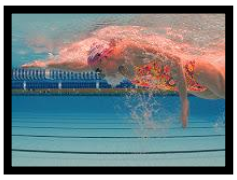
Reach-Entry Phase: This is the point at which the hand enters the water. This point went the finger tips enter the water first, just before full extension. Entry is in line with the shoulder. The wrist, elbow and shoulder should then follow the same entry position into the water as the fingers to insure linear movement of the body. At the completion of the entry phase the arm should be fully extended, the hand turned slightly onto the pinky finger and the elbow locked. This extension is again, generated by the skating or driving motion of the hips as you roll side to side.

In order to keep proper lateral alignment it is important not to overreach the hand and arm as it enters the water so that the hand does not cross the centerline of the body. When this occurs, the legs counter balances that movement by moving in the opposite direction and thus creating a snake like movement in the water.

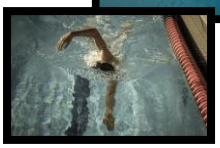
Catch Phase: this portion of the stroke allows you to "catch" as much water as possible underneath the fully extended arm and hand. This phase begins at the point at which the arm is fully extended. It begins with a bend the elbow, which keeps the wrist from flexing, and forces the forearm and hand down to begin facing backward instead of sweeping towards the bottom of the pool. It is important to keep the elbow above the forearm, high in the water as the forearm and wrist drop. Picture yourself lying flat and having your forearm and hand wrapped over a barrel. This forearm and hand movement act as the paddle in your stroke, so if they are positioned incorrectly you will sacrifice significant pulling power. In the beginning of the phase you are not applying force to the water. Allow the flexed arm to drop passively initially degrees before applying force.



Pull Phase: during this phase the elbow remains bent and above forearm to create a paddle that is facing backward not towards the bottom of the pool as in straight arm pulling. As you pull down and backward past the hips, the palm of the hand should remain in alignment with the shoulder. This allows the forearm and hand to engage "new" water as it acts as the paddle pulling you through the water. It is important to visualize yourself getting pulled through the water with every stroke verses pushing water past you with every stroke. Apply force in this phase until the hand passes the hip.



Push Phase - This phase begins at the deepest point of the pull phase. The push starts at the shoulder and finishes at the hip as you are driving the hips and rolling to the side. As the hand and upper arm begin to travel toward the center of the body, the elbow flexes at 105-120 degrees. During this phase, it is important for the hand to be pressing (palm facing backwards) through the water not slicing (palm angled to either side) through the water. Remember not to lift the head forward and up during your breathing pattern as well. Many novice swimmers will first lift their head forward then turn to breathe which again can cause in efficient lateral movement and the hips to drop causing drag. As the hand and upper arm move from towards the hips they push through the water so the thumb could brush the outside of the hip joint. Once just past the hip stop applying force but let the hand extend before exiting the water.



Recovery Phase- the elbow breaks the surface of the water first and it continues to rise upward until the hand and wrist also break the surface. The elbow flexes as the shoulder and upper back muscles bring the elbow out of the water. With traditional pool swimming the next phase of recovery is to keep the hand and wrist **well** below the height of the elbow and close to the torso, with the elbow leading the hand during the early and middle phases of the recovery. For triathlon open water swimming the preferred recovery is a more open recovery. This involves a high elbow position as well but the hand and wrist are only slightly below the elbow and further from the torso. This positioning allows the swimmer to manage the rough water conditions that occur during open water swimming. In both styles, as you hand passes the head the upper arm and hand pendulum forward in a relaxed manner, while the elbow remains high, in preparation for a finger tip entry into the water. This "follow through" sets you up for a good entry phase.

Hansen Multisport Training System