



Backstroke streamlining and skill development

Streamlining

The simplest way to improve swimming speed is to improve the streamline of the head and body

- Poor skills in starting/turning/transfer to stroke will put you at a disadvantage to other swimmers in the race who have superior skills.
- The older you become improvements become minimal, superior streamlining skills and transfer to stroke ability off starts and turns, should be addressed early in the training programme.
- Technique is the number 1 avenue for improvement!

- It is difficult for humans to progress through water because they incur resistance, which causes a swimmer to slow down.
- Reduce resistance caused by the head and body and the swimmer will go faster when seeking speed or go further each stroke when attempting to swim long distances.



- Most Olympic Champions swim with less strokes than their competitors (improve streamline improve stroke length)
- Most are more streamlined within the actual swimming stroke for longer



Small drag in streamlined position

- *Better streamline = less frontal drag*



Large drag in unstreamlined position

- *Poor streamline = increased frontal drag*



Perfect streamline

Teach streamline focus on tension through Joints

- Ankles - Knees – hips
 - Shoulders - Neck
 - Elbows - Wrist
- Apply strength in these areas
 - Maintain flexibility

Your turn.....

Essential technical points

- Body / head Position
- Breathing
- Body roll (Hip shoulders)
- Entry / re position / catch
- Pulling phase
- Recovery phase
- Kicking
- Stroke Length/DPS
- Stroke Rate
- Acceleration
- Rotation
- Rhythm
- Consistency of application
- Flexibility and ROM
- Overall efficiency

***Newtons 3rd law – for every action
there is an equal and opposite
reaction.....***

Backstroke key technical points

- The nature of the stroke demands that balance, rhythm, relaxation and controlled rotation are key to good technique.
 - Timing of rotation is important to keep the stroke flowing and maintain balance
- Build a strong core strength to maximise underwater skill off the wall
 - Important to hold SR throughout the race, this is a common fault particularly when swimming 200 BK
- Have the ability to maximise underwater transition from the start and turns, accelerate into first stroke at the surface.
- Rate of underwater kick is crucial to maintain momentum and speed off the wall
 - Important to maximise u/w kick in sets (don't ignore or be lazy off walls)

Backstroke body and head position: Reducing resistance

- The posture of the swimmer should embrace being flat along the surface (good posture in water).
- Head held back and aligned with the horizontal axis with the eyes looking directly up at the ceiling of the pool.
 - Keep the head still and stable (no movement).
- Body position should be firm along a horizontal axis in the water
- Some part of the hip should be visible through out the stroke: If hips are too low more resistance is encountered = slower swimming.

Streamlined Backstroke position



Backstroke body roll: Reducing resistance, increasing efficiency

- Body roll consists of the hips and shoulders rotating to $\sim 45^\circ$ to both sides. That reduces frontal resistance and positions the pulling arm closer to the mid-line.
- The harder a swimmer kicks, the greater is the amount of resistance developed. Kicking should remain small and fast and deviate to each side in concert with the roll of the shoulders/hips.
- Backstrokers should emphasize body roll by performing a vertical recovery that lifts the shoulder / facilitates the roll.
 - Do not move the head with the body roll



Hip at surface / kick shallow and fast



Backstroke key technical points

- Slight incline in body position acceptable to accommodate head position.
 - A high head = lower hips = more resistance.
 - Fixed head position throughout stroke cycle.
 - Rotation of body through hips and shoulders
- Early flexed elbow in pull, accelerate continually through pull phase
 - Hand finishes below body line.
- Thumb first recovery on exit, turning to lead / entry with back of hand (slightly rotated hand acceptable)
 - Continuous kick from hips
 - Slight in-toeing of feet
 - Propulsion on up-kick