

## Starts, Turns And Underwater Kick

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## Main Theme?

“Avoiding Unnecessary Movements”



## Why?

- Starts, turns and underwater can make up more than 25% of race long course and 50% short course
- Important to learn skills and develop good habits at an early age
- How often do you spend practicing high quality starts and turns?



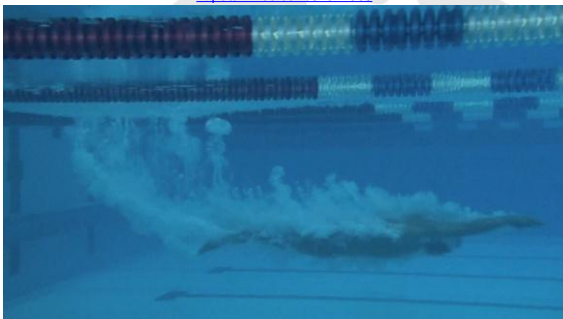
## Importance of Good Streamline

<https://vimeo.com/61315758>



## Underwater and Breakout

<https://vimeo.com/62844569>



## Underwater and Breakout Checklist:

1. Small, fast kicks (like a fish)
2. Kick in both directions!
3. Maintain strong streamline position
4. Maintain kick tempo through breakout (or quickly transition to flutter kick)
5. Begin first pull with your bottom hand (freestyle/backstroke)
6. Maintain a neutral head position during streamline and breakout



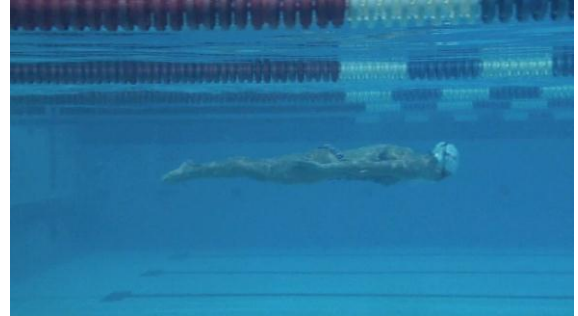
## Underwater and Breakout Common Problems:

- No streamline on pushoff/entry
- Kick begins too early
- Kick is too big and/or too slow
- Kick timing is asymmetrical
- Head sticks out, not between arms
- Head lifts into first stroke
- Pause in kick before first stroke, slow transition to flutter kick in freestyle



## Breaststroke Underwater & Breakout

<https://vimeo.com/62581311>



## Breaststroke Underwater & Breakout Checklist:

1. Tight streamline during glide
2. Maintain horizontal body line during arm pull, with a small, powerful dolphin kick at the end of the pull
3. Pullout redirects you towards the surface
4. Glide with arms by side, head in neutral position
5. Recover arms bent tight to body, extend into tight streamline position with hands side by side
6. Recover portion of kick occurs with arm recovery, begin propulsive portion of kick once arms are streamlined
7. First stroke occurs after feet touch together on kick
8. Maintain neutral position during first stroke



## Breaststroke Underwater & Breakout Common Problems:

- No streamline on pushoff
- Pullout begins too early
- Feet and bum lift up before/during pullout
- Dolphin kick too big and slow during pullout
- Head sticks down or lifts up during glide
- Arms recover away from body
- Propulsive portion of kick begins before arms are in streamline position
- Head lifts into first stroke
- First stroke begins before kick is finished



## Starts

### Ready Position:



Which is best?



## Starts

### Ready Position – Checklist:

1. Legs staggered, hip width apart, toes pointing forward
2. Grab block with hands, arms straight with elbows pointing back, fingers gripping block edge and pulling up on block
3. Head in a neutral position, eyes looking down
4. Hips high, chest off of the front leg
5. Weight forward, shoulders at the front of the start block



## Starts

### Ready Position – Common Problems:

- Feet too narrow “walking on a tightrope”
- Heels/toes turned out
- Resting on hands
- Head lifted up, looking back
- Chest resting on front leg
- Hips low and shifted back (crouch position)



## Starts

### Block Movements

<https://vimeo.com/62843121>



## Starts

### Block Movements – Checklist:

1. React first with arms by pulling through shoulders and back, push with the back leg
2. Immediate forward hip motion is critical (maintain high hip position)
3. Keep head in neutral position (head lifting lowers hip position, decreases power from legs)
4. Once hips pass front ankle, front leg begins powerful push
5. Arms recover bent, extending into streamline
6. Arm movement should be timed with pushing from front leg (simultaneously reach full extension)



## Starts

### Block Movements – Common Problems:

- Hips drop and knees flex
- Head lifts up and upper body follows
- “Collapsing” off block instead of pushing
- Delayed arm recovery



## Starts

### Flight & Entry

<https://vimeo.com/62843123>



## Starts

### Flight & Entry – Checklist:

1. Maintain strong /stable core throughout flight and entry
2. If legs are split then lift the bottom leg to the top leg (allows you to enter through the smallest hole possible)
3. Hide head between arms
4. Glide before first kick/underwater pull
5. STREAMLINE position!



## Starts

### Flight & Entry – Common Problems:

- Excessive head movement (shouldn't move)
- Soft core, piking
- No streamline before entry
- Head in front of arms during streamline position (turtle head)
- Beginning underwater kicking immediately after entry



## Backstroke Starts Ready Position



## Backstroke Starts Ready Position – Checklist:

1. Grip handles high
2. Toes above water level
3. Back straight, torso vertical
4. Head/neck neutral
5. Pull hips toward ankles, leaving a gap between hips and ankles
6. Gap between thighs and chest



## Backstroke Start Wall Movements & Flight

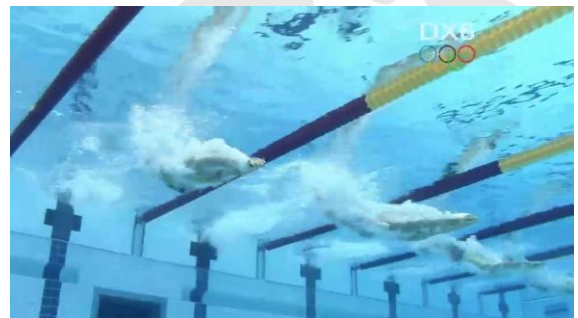


## Backstroke Start Wall Movements & Flight – Checklist:

1. Early hip elevation and forward motion is critical
2. Using handles as leverage, lift through shoulders and extend back
3. Throw head back and simultaneously throw arms back bent
4. Leg drive occurs simultaneously with arm movements
5. Press hips up as legs prepare for final push
6. Body straight before leaving wall
7. Lift legs out of water early to avoid feet dragging, keeping feet close to surface of the water
8. Early streamline is essential, with head between arms
9. Avoid hyperextending shoulders/upper back



## Backstroke Start Entry, Underwater & Breakout



## Backstroke Start

### Entry, Underwater & Breakout – Checklist:

1. Maintain straight body line and glide after entry
2. Dolphin kicks are small and fast in both directions
3. Maintain kick tempo into first pull, and transition quickly to flutter kick during first pull
4. Begin first pull with your bottom hand
5. Maintain a neutral head position during streamline and breakout



## Flip Turns

### Approach & Rotation:

<https://vimeo.com/62581317>



## Flip Turns

### Approach & Rotation Checklist:

1. Stay flat on the surface of the water
2. Keep eyes focused on the bottom of the pool on the "T"
3. Last stroke is full and deep, your head follows your hand and head remains neutral
4. Hips continue to move forward during rotation
5. Feet are hip-to-shoulder width apart during rotation
6. Feet touch wall at same time below surface (at T) and pointing to side (free) or surface (back)



## Flip Turns

### Approach & Rotation – Common Problems:

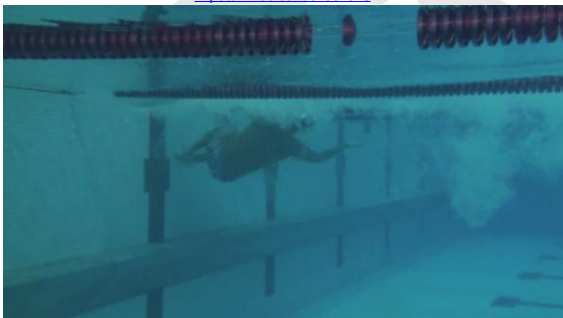
- "Pumping" up and down heading into the wall
- Lifting your head to look up at the wall
- Chin tucked into chest during rotation
- Keeping legs together during rotation
- Twisting onto front during rotation



## Open Turns

### Approach & Rotation:

<https://vimeo.com/62581313>



## Open Turns

### Approach & Rotation – Checklist:

1. Stay flat on the surface of the water
2. Hands touch wall simultaneously at or below surface
3. Staying close to the wall, drop one hand and follow it around, legs pass under torso, body falls back and away
4. Feet should touch wall at or below the "T" pointing to the side with hands in front of head



## Open Turns

### Approach & Rotation – Common Problems:

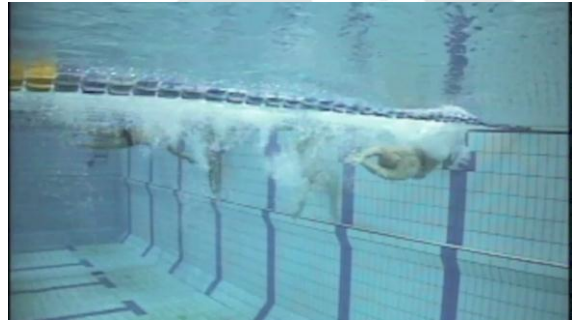
- Diving down and back up into turn
- Gliding into wall
- Placing hands above water surface or grabbing the gutter
- Legs too extended during rotation
- Leaving hands on wall too long
- Staying on back or twisting on to front during rotation
- Keeping hands at side instead of finding early streamline position



## Flip Turns

### Pushoff:

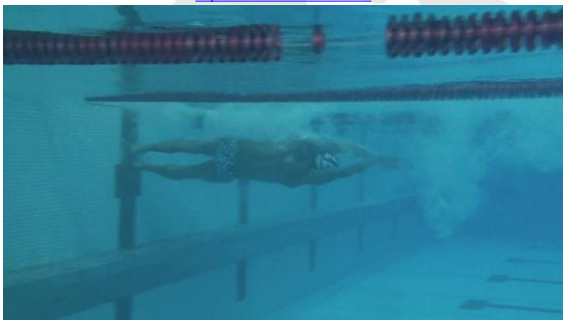
<https://vimeo.com/62581316>



## Open Turns

### Pushoff:

<https://vimeo.com/62581314>



## Flip/Open Turns

### Pushoff – Checklist:

1. Hands in front of body, in streamline position as soon as possible
2. Ideal pushoff position has feet, hips, shoulders, head, and hands in line
3. Pushoff should occur approximately 0.5m below the water surface
4. Feet hip-shoulder width apart, feet pointing to side (free, fly, breast) or surface (back)
5. Maintain streamline position during pushoff



## Flip/Open Turns

### Pushoff – Common Problems:

- Elbows stuck at sides, chin tucked in to chest
- Feet too far from wall
- Feet, hips, shoulders and arms not in line (chair position)
- No streamline until after pushoff
- Twisting onto front during pushoff (free, fly, breast)



## Strategies to Improve

- Spend more time in workout practicing good turns, starts, and underwater kicking
  - Swim straight up and down lane, Avoid rushing dives/sacrificing quality for quantity
  - If performing long UW kick, pushoff deeper to maintain straighter body line
  - Swim 25s as 5m-in + 20m-out (straight in & out)
- Monitor start (15m) & turn times (5m-in + 15m-out) and compare with Club/National/World best
  - Ask Dean or myself for this data



## Dry Exercises/Drills

- Single leg squats
  - Leg Drive, engaging posterior chain
- Streamline squats
  - Streamline position during pushoff
- Squat jumps w/ arm timing
  - Finding streamline position quickly
- Backstroke start squats  
 (<https://www.dropbox.com/s/70b52cj34ob2j4u/Back%20Start%20Iand%20drill%20Wrigley.m4v>)
- Streamline drill/progression  
 (<https://vimeo.com/61317829>)
  - Importance of GOOD streamline



## Wet Exercises/Drills

- Arm swing dive (<https://vimeo.com/61307584>)
  - Finding entry point and tight streamline on entry
- Arm recovery dive (<https://vimeo.com/61307584>)
  - Practice arm recovery and streamline position
- Single leg dive (<https://vimeo.com/61307582>)
  - Isolate each leg's contribution to the start

