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**Mainstream Backstroke Teaching**

- Is the best technique being emphasized?
  - Two common points of emphasis are:
    - Deep catch
      - Dig deep upon arm entry to find the “still” water
      - Then pull up and finish down
      - Bernoulli-based propulsion (lift)
    - Rotation
      - Swim on your side, rotate as much as possible
      - Generate velocity/power through constant hip rotation

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**The Foundation**

- Best head position:
  - Extended neck line and slight head tilt
    - A relaxed position in the arms and shoulders!
    - Arms and shoulders can move about very freely
  - Best body position with rounded back and hips at surface

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**The Foundation**

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**The Foundation**

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**The Foundation**

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**The Foundation**

- The legs are CRUCIAL to body position
- The legs also impact:
  - Rotation
  - Distance per cycle

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**The Arm Stroke & Rotation**

- Path of the arm stroke
- Amount of rotation
- Timing of the rotation

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**Backstroke Arm Stroke**

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**Backstroke Arm Stroke**

**Moving Forward**

- Bend the elbow after entry such that the hand/forearm face back

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**Backstroke Arm Stroke**

**Moving Forward**

- Keep the arm anchored throughout the arm stroke
  - Path of hand should be flat
  - Palm and forearm should always be facing back
  - Fingers should be pointed toward the side

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**Backstroke Arm Stroke**

**Moving Forward**

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**Backstroke Arm Stroke**

**A deep catch?**

- A deep catch is both inefficient and weak
  - Pushes downward with hand/arm before pushing back
  - Arm is in a relatively weak position behind the body

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**Backstroke Arm Stroke**

- From a front view...

- The arm is strongest when it remains to the side of the body and connected to the core

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**Backstroke Arm Stroke**

- Arm should be at a natural angle relative to the body
  - Not over reaching behind the back
- Shoulder angle depends on flexibility, but should normally be about 170-180°

18  **Backstroke Arm Stroke**

19  **Rotation**

- The magnitude of rotation is dictated by the depth of the arm stroke
  - If not rotating to get a deep catch, there is no need to rotate a lot
- Rotate just enough to get the ideal catch and for the shoulder of the recovering arm to clear the surface
- A relatively small rotation makes it easy to rotate from side to side quickly

20  **Rotation**

- Hand depth  $\approx$  8-12 inches below the surface
- Shoulder angle  $\approx$  170-180°
- Elbow bend  $\approx$  120°
- Rotation angle  $\approx$  30-40°

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Our best backstrokers rotate in the range of:  $30^\circ \pm 10^\circ$

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23  **Rotation myths**

- Rotating all the way onto the side does not reduce drag any more than a 30° rotation.
- Rotating during the arm stroke does not increase arm propulsion (unlike freestyle rotation).
  - In backstroke, if rotation occurs during the arm stroke, the body rotates away from the arm, creating a weaker stroke
  - In freestyle, the body rotates toward the arm stroke which supports the arm propulsion.

24  **Rotation Timing**

- Rotating too much puts the swimmer in a situation where they will be rotating against the strongest part of the arm stroke
- In order to get the most out of the arm stroke, minimal rotation should occur between the catch and finish

25  **Rotation Timing**

26  **Rotating Timing**

- Rotation should be quick and snappy
- Rotation should be connected to both the finish and entry of the stroke!!
- The combination of those two movements (downward push & dynamic entry) will get the hips over as quickly as possible

27  **A Common Rotation Flaw**

- Many swimmers rely on the shoulder to rotate
- Not using the entry/finish combination...
  - Can result in a slow, late rotation
  - Can result in entering while still rotated to the opposite side
    - That, in turn, can result in entering with the back of the hand or entering too narrow
- Think about rotating hips up, not rotating down
- The entry, finish, and rotation must be dynamic
  - It cannot be slow and lazy

28  **Shoulder rotation**

29  **Backstroke Drills**

- Six kicks per side
  - Teaches connecting the rotation properly
- Double arm
  - Teaches wide shallow stroke
- One arm backstroke

- Be careful because it relies partly on a shoulder rotation
- Drills that exaggerate the rotation
  - Can teach balance in the water, but be careful of how it translates to whole stroke

30  **Backstroke Drills**

- Surgical tubing extended from above
  - Can teach the proper arm mechanics and help strengthen all the right muscles

31  **Backstroke Summary**

- Head position: Relaxed; slightly tilted with extended neck
- Body position: Rounded back, not arched
- Arm stroke: Early, shallow catch with hand/arm at side and always pushing back
- Rotation: Quick and tight occurring in conjunction with the entry and finish

32  **Interesting...**

The very best haven't changed much

33  **Backstroke turn**

- Take advantage of 2<sup>nd</sup> to last arm stroke!
  - Carry more speed into the wall
  - Roll over sooner and take a freestyle stroke
  - Adjustments:
    - Start turn further away from the wall
    - Hold breath for a little longer

34  **Backstroke turn**

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