



Fina

WATER IS OUR WORLD

**Early Season Technique and Training:
Part Two**

- Moving beyond position-based stroke coaching
- Understanding COB and COG
- Understanding how the body works



Overview

The Strokes

Breathing
and UW

Conclusion

Moving Beyond Position-Based Coaching

- Currently
 - Coaches look at strokes as a combination of sequential body positions and applications of force
- The Future
 - Consider underlying traits to the body and its movement
 - Rotary movements, flexion/extension
 - Focus on whole stroke movements



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Center of Buoyancy vs. Center of Gravity

- Explanation
- The torso is a propulsive tool!
 - Initiates movements in shifting gravity and buoyancy
 - Arms and legs simply integrate into torso movements
- Focus on technique as a wholistic movement, not movement of separate body parts

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- Natural shape and Plane of Movement
 - Free and back
 - 1 plane
 - Boat-like posture
 - Fly and breast
 - Require breaks in the plane due to wave-like motions
 - Goal is to maintain balance within the stroke



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How the Body Works

- Breathing
 - Breathing can be matched into the torso's rhythm
 - Natural inhales and exhales become part of the stroke's movement
 - Current breathing limits actual breathing to the upper lungs and creates body stiffness



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- Rotary power and propulsion comes from “moment arm transfer” (perception of transfer of movement from one arm to another)
- “High side” movement from the space to the water throws weight forwards
- Think about climbing a rope!
- Maintain springiness throughout the body, especially in the hips, knees and ankles
- Pay attention to the flow of water along the back of the legs, sides of the body and back of arms/lats

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Freestyle Pictured

Picture to follow

- Make a curve-shaped body with the arc of the curve into the water, rather than upwards
- Row with curved, springy arms- no corners!
- Keep springy feeling hips, ankles and knees- no hinges!
- Don't tell a backstroker to "be long"
 - This breaks the center of mass- tempo is often the answer
- Rib ends must stay in and work overall with the torso
 - Center of mass stays in the torso

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Backstroke Pictured

Picture to follow

Short Axis Reminders

- Where does the stroke begin?
- How do we move down the pool?
- What are you looking at to identify success and speed?



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- Getting the body's mass down the pool, not pulling
 - Mainly about reducing drag
- Done in sequence
 - Find a balanced line, hip load, snap, unload
- Create energy, then use energy to move the torso forward
- Snapshot the bottom of the pool as arms start the stroke
- Let the water shape the kick, rather than the kick shaping the water

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Breaststroke Pictured

Picture to follow

- The engine of the stroke is in hip activity
 - Mid-thigh to ribs
- The tempo center is from the armpits to the collarbone to the forehead
- Get away/release/spin away
- Land on the water collectively instead of in pieces

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Butterfly Pictured

Picture to follow

Breathing Considerations

- Exhaling is vital to swimming performance
- Over time, CO₂ builds up in the bloodstream and lungs
- Causes the “need to breathe” sensation
- Better release of CO₂ will reduce this uncomfortable urge

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- Swimmers must be comfortable with breathing in order to swim optimally (the primal instinct in uncomfortable situations is to INHALE)
- In distance swimming/training, the normal response to stress is to SAVE BREATH
- This means that swimming must overcome both the inhaling and breath-holding obstacle
- Start each session/workout with breathwork
 - Directly impacts CNS, restores PH balance
 - Assists Mindfulness of Posture, alignment

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Underwater Swimming: The Fifth Stroke

- The idea is to carry push off velocity, not increase it
- Teaching should involve thoughts on amplitude, frequency and body state during movements
- Underwaters are a racing opportunity, but with a cost
- Depth, amplitude, frequency and cost must all be considered relative to size, shape and fitness

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Underwater Swimming: The Fifth Stroke

- Movement begins roughly one body length from wall
 - CARRY SPEED- don't break line too early
- Identify “knots” or body breaks in your wave/kicking pattern
 - Amplitude choice will reflect this
- Mobility development on land and in water is crucial to this skill



- Stokes have an engine, rhythm/tempo and a line
- Consider the dynamics of a streamline
 - Hands slightly apart allows greater amplitude
- Be aware of the interplay between DPS and rhythm/tempo

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