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Sue Haugh
Masters Coach
RAM (Raleigh Area Masters)

University of California, San Diego

Although there is no “perfect stroke” and since all of us have room for improvement, we as coaches and swimmers need to work together to identify both weaknesses and strengths. We as coaches can provide stroke drills to be incorporated into daily practice/training sessions so that these learning tools, stroke drills, and recommendations can lead to improved technique, efficiency, and performance.

Backstroke (by Ron Marcikic)

An efficient backstroke relies on a strong kick, neutral head position, proper arm alignment, and a good body balance. A balanced body position includes good hip and shoulder rotation, arm stroke rotation, and hand speed acceleration throughout the stroke:

- Balance Drills
 - Kick on each side with opposite shoulder out of the water. Align the chin with the top shoulder.
 - Side-to-side kick (STS Kick) – one stroke, top arm enters and glides with bottom arm at side; 4-6 kicks then rotate and repeat.
- Dog Back
 - Backstroke with an underwater recovery on both arms. Use one arm at a time with good body rotation. Keep the other arm at your side. You can watch your arm stroke underwater as you do this. Enter-catch-down sweep-up-sweep-down sweep-finish-recovery.
- Broken Back Drill
 - 2 right/2 left arm strokes with 1/3 up and down recovery on first stroke. On second stroke do an entire recovery and pull. Repeat with other arm. Maintain shoulder and hip rotation throughout.
- 1 arm Back and 1 arm Combo
 - Right and left arm with opposite arm at side
 - 2 right/2 left arm/4 regular strokes focusing on specifics
- 3 Second Delay
 - Normal backstroke pausing on the entry of each arm stroke for 3 seconds, rotating your hips and shoulders into each stroke. Keep a strong kick. Align chin and recovering shoulder to swim straight
- Roll-Over Drill
 - 3 strokes of backstroke, 2 strokes of freestyle with full rotation from back to front and from front to back. Rotate while extended arm is still above the head. Rotate from your

center axis. This drill works on all components of backstroke and freestyle without actually doing the whole stroke.

- Slow Motion Backstroke
 - Swim the stroke in slow motion concentrating on fitting all components together. Strong kick, neutral head position, entering with pinkie, rotating core, accelerating the hands, and maintaining should/arm alignment to maximize the power of the pull.

Butterfly (by Gary Hall, Sr.)

Drills as presented by Gary Hall, Sr. focused on introducing swimmers side breathing. Side breathing, when done correctly, can help keep the shoulders down, maintaining a horizontal body position, and reducing drag.

- Left/Right/Both
 - Using left arm first, breathing to the left side, then the right arm second, breathing to the right side. Then use both arms together, breathing to the preferred side. Use sequence of 1:1:1 or 2:2:2.
 - Do above using fins
 - Butterfly with fins – Full stroke with flutter kick – emphasis on follow-through of hands at the back of the stroke.
- Kicking
 - Dolphin kick quickness underwater – short bursts
 - Extended dolphin kicking on the back underwater – works endurance and breath control
- Use of snorkels – with front breathing verses to the side
 - Incorporating the use of a snorkel removes the breath timing, allowing the swimmer to better feel their arm recovery, their hand entry, the stroke pattern, and their body dolphin.

Breaststroke (by Frank Marcinkowski)

Breaststroke relies on a strong kick and pull, good body position throughout the stroke, and proper timing and coordination. Recovery of the legs within the streamline of the body and accelerating the hands throughout the pull are essential. Power and efficiency can be achieved by engaging the core and hips, while minimizing the upward movement of the body.

- Flat swim Drill
 - Two kick to every arm stroke – to work on lengthening the body and forward reach. On second kick, point the hips higher and reach more forward in a streamlined position.
- Hand Acceleration
 - Take multiple strokes for each breath. 2 or 3 strokes per breath.
 - Pull breaststroke while maintaining a vigorous six beat flutter kick.
 - Scull – initiate the pull 6-8 inches, then recover, trying to reach a half inch more each stroke.
- **Generate Power from the Hips**
 - Pull breaststroke with dolphin kick, engaging the torso in the stroke.
 - Alternate one stroke cycle with one cycle butterfly.

- Kick Drills
 - To help build a recovery where the legs stay within the streamline created by the body, kick with small pull buoy between the knees.
 - To build power and distance between kicks, do kick sets decreasing the number of kicks by one per 25. Decrease by two kicks/25 if using breaststroke fins.

- Generating Speed
 - To generate speed for a breaststroke sprint, begin the front pull as soon as the kick finishes.
 - Do 25s breaststroke underwater.

Freestyle (by Lauren Welting)

- Kicking
 - Kick continuously without hesitation – six kicks to every single arm stroke
 - Point toes as you kick
 - Kick from hips, not knees
 - Use of fins good for ankle flexibility
 - Quick dolphin kicks off all walls/turns

- Breathing
 - Breath out – exhaling under water - to get proper air exchange. Do not hold your breath.
 - Avoid turning head too far when breathing
 - Do not breath in and out of turns – focus on one stroke in; two strokes out.
 - Finish to wall with head down, no breathing flags in
 - Practice breathing on both side so to balance your stroke
 - Practice breath control so to learn to relax and breathe slowly

- Core
 - Pull in lower abs. Engage abdominal muscles as you swim

- Other Drills
 - Streamline position
 - No space between arms and head when pushing off walls
 - Keep spine neutral with head facing straight down (not forward)
 - Whatever arm is on the bottom of your streamline starts your breakout
 - Keep elbows high throughout the entire pull. Don't drop the elbows under the surface.
 - Accelerate into turns/walls
 - Be in a tight ball when doing flip turn; quick snap with the legs
 - Plant feet shoulder width apart as you land on the wall
 - Maximize your distance per stroke
 - Visualize long, smooth, powerful strokes, with fast, small, continuous flutter kicks