7 Theoretical Reasons to Use a Pull Buoy

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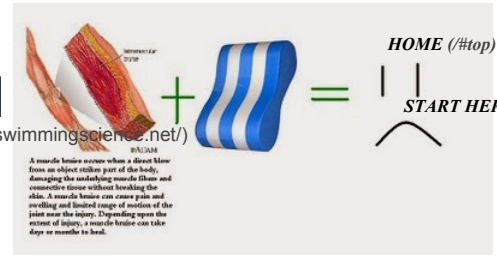


Take Home Points on 7 Theoretical Reasons to Use a Pull Buoy

- Limited research exists on the pull buoy as a tested variable.
- The pull buoy does not fit into training if one ascribes literally to the concepts of specificity.
- Many justifications exist for pull buoy usage often without scientific backing, but at the least coaches should use critical thinking in the absence of scientific fact rather than relying on tradition alone.

Like most of the equipment found on the pool deck, the reasons for pull buoy usage span from tradition to art to informal science. There is research in which pull buoy is used, but it is typically not variable being studied. Understanding the pull buoy requires accepting the nebulousness of "feel for the water."

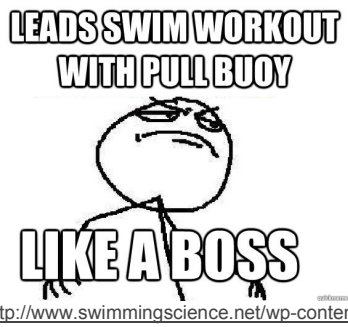
There's no doubt the pull buoy deprive the swimmer the opportunity to practice those imperceptible micro corrections we all use to maintain flotation and maximize force. However, a literal reading of specificity concepts would deem pull buoy to be waste of time and even poisonous to stroke mechanics:

"Training equipment alters the mechanical properties of swimming movements and confounds the kinesthesis that is paramount for developing the "feel" of efficient and productive movements.

(http://www.swimmingscience.net/wp-content/uploads/2013/12/Swimming-fabulous.png)

The claims of benefits from equipment use are largely unsupported or uncorroborated. Existing supportive evidence often is highly selected, distorted, or unreliable. Although equipment activities provide "variation," they do not contribute to racing performance enhancement" (Rushall 1996).

Despite this bold conclusion, the pull buoy remains a fixture on pool decks and workout white boards. Though many coaches and swimmers include pull buoy training to simply alleviate boredom, several justifications do exists of pull buoy usage. Whether they stand up to scientific rigor remains unresolved, but they do merit closer look individually.



(http://www.swimmingscience.net/wp-content/uploads/2013/12/3pcjqo.jpg)

7 Theoretical Reasons to Use a Pull Buoy

1. **Train and sustain body position:** The pull buoy places the swimmer in a horizontal alignment they might otherwise achieve without assistance. You can't do something right if you don't know what right is. Since most of swimming takes place where the coach cannot provide immediate, kinesthetic feedback, the pull buoy is one method to offer constant feedback in the

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center of the pool (See Optimizing Feedback in the Pool (http://www.swimmingscience.net/2012/06/optimizing-feedback-in-the-pool.html)).

2. **Make swimming easier:** The pull buoy can allow for continued practice without stroke deterioration. Heart rate is lower, also reducing the overall session stress. The pull buoy may also spare the legs after heavy kicking sets. The real debate is whether this rationale adequately balances the risks of stroke distortion and musculoskeletal injury from shoulder overuse (See Autonomic Nervous System Readiness (http://www.swimmingscience.net/2012/09/autonomic-nervous-system-readiness.html)).
3. **Make swimming harder:** When paired with paddles, buoy swimming can overload the arms, especially when paired if the legs are banded. Unfortunately, since paddles represent another variable, conducting research on both the pull buoy and paddles adds more complexity to the research task. This makes quantifying the claims that pulling will increase in-water specific strength impossible.
4. **Breath control:** Long distance lung buster sets are often accomplished with pull buoy assistance, as kicking may elevate heart rate and respiratory rate. The justification here is particularly artful, as research has consistently shown limited application of hypoxic training (Maglischo 2003, Truijens 2002). However, the mental factor cannot be denied, as many claim lung buster sets condition swimmers to the mental rigors of breathlessness. Whether this justifies the lung buster remains an unresolved question, particularly with the trend toward less restricted breathing in races.
5. **Drills:** Often occur at low velocity which allows the legs to drop, particularly in beginners (This is most prevalent among adults/triathletes). You lose the drill's purpose if the legs begin to drag toward the pool bottom. Still, part of learning a drill includes maintaining horizontal body position at all speeds rather than relying on the kick to remain buoyant.
6. **Prevent getting dropped from the lane, or swim in one lane faster:** You don't need a study to prove this one! If someone is having difficulties keep up, sometimes pulling allows them to stay up with the group, helping build confidence and participation.
7. **Alleviate back stress:** Once again, an unresearched area, but one could speculate a pull buoy can decrease back motion (less perturbation) though in some it may increase low back stress due to chronic extension. Ultimately, this depends on the type of low back issue in the swimmer (See, The Science of Performance, Lumbar Illusions Part II (http://www.swimmingworldmagazine.com/lane9/news/Commentary/30767.asp)).

Conclusion

Ensure you are using the pull buoy for more than mere variety, if at all. Ask whether the buoy's purpose align with the actual usage rather than a mindless set of 800s to give the coach a coffee break or nap. Likewise, avoid relying on the buoy. The buoy may indeed serve a teaching function, but as with any intervention, take care to avoid overdose. Just as a patient with a broken leg must rehabilitate the injury and learn to walk unassisted, the swimmer who uses the pull buoy to hide faults must confront the faults directly.

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3. Truijens MJ, Toussaint HM, Dow J, Levine BD. Effect of high-intensity hypoxic training on sea-level swimming performances. J Appl Physiol (1985). 2003 Feb;94(2):733-43. Epub 2002 Oct 11.

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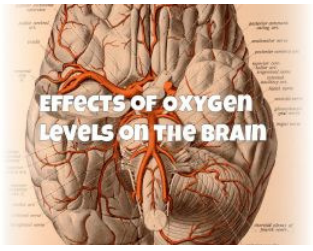

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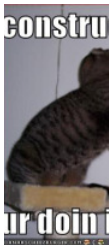

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