KEEP YOUR TOYS IN THEIR BOX?

Pull buoys, kickboards and paddles... When it comes to training toys, **Tracey Baumann** and **Emma Levy** recommend caution

In pools around the world, you will see swimmers with various types of equipment: most commonly kickboards, pull buoys, and hand paddles. Swimmers use these tools in the belief that they will help them become better swimmers, but will they?

KICKBOARDS

Swimmers usually hold the back end of the board as they attempt to kick themselves up and down the length. Because of physics and anatomy, this poses a problem: the kickboard is typically made of foam or plastic and therefore floats at the surface of the water. This means that for the swimmer to hold onto the board their hands are always at the surface of the water. Having the hands in that position puts the arms too high and causes the scapulae (shoulder blades) to depress and retract i.e. to move towards the spine and away from your ears. As a consequence of that scapula position, the ribcage will posteriorly tilt and the pelvis will anteriorly tilt, causing the lower back to arch excessively, and the psoas (hip flexors) to shorten. All of this leads the swimmer to perform a kicking motion much like that of kicking a football, driven almost solely by the quads and hamstrings, and causing the feet to kick up and down from the knee. So the very tool (or toy, as we like to call them) that they are using to help them kick is actually hindering them by causing an incorrect body position and therefore an inability to perform the kicking motion using the correct position and muscles.

EXPERT ADVICE

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To move our legs without compromising the connections needed for a streamlined, efficient body position, the pelvis must be posteriorly tilted, with only a moderate arch in the lower back, and long psoas. In this position, where we also access muscles in the core including the abs, glutes, spinal stabilisers, and obliques, movement of the legs flows from the hips. In contrast, a kick from the knee driven by the quads and hamstrings is very inefficient because these are large muscles and very oxygen hungry, so it can cause the swimmer to tire easily. This kicking motion also creates an excessive amount of form drag, as the bend in the knee breaks the streamline

position and puts the brakes on. It also creates wave drag: through the knee bend, the foot tends to break the surface of the water and create splash and lots of bubbles behind the swimmer, which can slow them down.

PULL BUOYS AND HAND PADDLES

These are two very common bits of equipment that you may take to the pool. Their intended purpose is to aid and encourage an effective "pull".

The pull buoy is a small, figure of eight shaped piece of foam that a swimmer puts between their thighs to give extra buoyancy in the legs, so they do not need to kick and can put all the focus on the "pull" element of the stroke. However, we cannot swim efficiently without using our legs as we lose the essential connection between our torso and legs, leaving this large proportion of our body mass uncontrolled. Having this buoyancy aid between the thighs also serves to hinder the swimmer's ability to rotate using the whole body. This, and the fact that the swimmer is not using their legs, promotes fishtailing of the back end, leaving the swimmer to rely solely on pulling themselves along using their arms. This puts an enormous amount of load onto the shoulder joint. This is the most unstable joint in the human body, so we must take extra measures to protect it, to ensure we are not putting it into a compromised position or putting too much load on it. Practising a stroke that is solely driven by the pulling action also encourages breaks in connections and the all-important synchronisation points, which are where the magic happens. It also encourages the swimmer to focus on pulling when what we need to focus on is a well-timed "catch", where you hold on to the water rather than slipping your arm through it. Just as a paddle holds its place and the kayak moves past it, the catch acts as an anchor so the body can rotate and lengthen past that point.

No matter what the shape and size of hand paddles, they have the same purpose as the pull buoy. While you may still rotate effectively and maintain leg connections, there are the same risks associated with focussing on the pull.

TEMPO TRAINER

The Finis Tempo Trainer is a metronome that helps you consistently hold a chosen stroke rate. It is a fantastic way to create measurable improvements, working with stroke count. To swim faster, use Mode 1: speed up the tempo (reduce the seconds per stroke), while maintaining the same stroke count per length; alternatively maintain the same tempo while reducing your stroke count.

Many other strategies are available to help you make the progress you are looking for, without resorting to unhelpful pool toys in your swim practice. We've mentioned some of these strategies here: enhance your connections, modify your catch, explore the gains to be made with synchronisation points. Which will you focus on next?

FALSE FRIEND? Using a pull buoy encourages the swimmer to focus on pulling instead of a well-timed "catch", where you hold on to the water rather than slipping your arm through it.

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