

BODY ROLL: WHAT WE NOW KNOW

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This presentation will discuss the importance of body roll in competitive swimming. It will critically evaluate the scientific evidence supporting the potential benefits associated with body roll and provide some practical recommendations for coaches.

When swimmers rotate about their longitudinal axis in the front crawl and backstroke, this is commonly referred to as body roll. This rolling movement is considered an essential component of these two strokes. Body roll occurs as a consequence of the asymmetrical movements of the lower and upper limbs, and gravitational effects. Studies have shown that the shoulders and hips do not roll as one unit and that the timing and the magnitude of hip and shoulder roll depends on a number of factors including the swimmer's speed, stroke rate, kick technique, breathing action and skill level. The key findings from these studies will be presented and their relevance to coaching discussed.

There is some speculation that body roll can enhance the amount of propulsion created during front crawl swimming. Several studies have attempted to quantify the relationship between body roll and the underwater actions of the swimmer's arm, shedding some light on the possible links between body roll and propulsion. The implications of this research for coaching will be discussed.

It seems likely that body roll would have a considerable influence on the amount of hydrodynamic drag experienced by swimmers, although the precise nature of this influence is unclear. The potential links between body roll and drag will be addressed.

Swimmers can reduce the risk of shoulder impingement injury by altering their stroke mechanics. One of the most common recommendations given to front crawl swimmers that suffer from impingement syndrome is to increase the amount of body roll they use. The scientific evidence supporting the proposed link between body roll and shoulder impingement will be discussed.