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Success in many sports is somewhat dependent on getting off to a good start. However, outside of traditional sports like swimming, skating, and athletics there is often a lack of controlled research that has identified factors that can lead to an optimal performance. For these sports, coaches and athletes rely largely on past experience and trial and error to find a technique that works for them. Unfortunately, this process can take a substantial amount of time before an optimal technique is stumbled upon due to a number of factors, i.e. lack of accurate benchmarking of past start performances. For example, is reaction time or time out of a starting gate a good measure of start performance? What about the athlete's body position when leaving the start? Having a fast reaction time but being completely unbalanced and unable to perform the skill effectively would result in an overall drop in performance. Conversely, having no change in reaction time but being in a better position to perform the subsequent skill would improve performance. Furthermore, not all sports incorporate starts from an auditory or visual cue, and many skills in team sports rely on moving from a stationary position as quickly as possible without any timing at all.



So the question is: How do you go about testing, adapting, and training efficient starts? Well, there is no single answer that can be utilized across all sports, but there are some basic principles that can be followed to facilitate the process.



- Capture the trials on video from a stationary camera that is perpendicular to the athlete.
- Focus on one adaptation at a time.
- Use the video to assess things like body position as well as reaction/movement time.
- If possible, try to estimate other factors from the video like horizontal velocity after the start.
- Think about how the body needs to be coordinated in order to maintain a good position.

Perhaps the most important aspect to consider is that a successful start depends on a number of factors, and rarely will simply monitoring one (i.e. reaction time) lead to an efficient process of technical adaptation.



Are you interested in becoming a Biomechanist? Most Biomechanists have a background in either kinesiology, biomedical engineering, or mechanical engineering. Typically a graduate degree (M.Sc. or Ph.D.) combined with experience in the sporting field is required. For more information go to: <http://isbweb.org>

## Powering Sport Performance

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