

Easy Science - Freestyle Stroke Counts

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Coaches have plenty of responsibilities to attend to during a training session. Stroke counting is something that swimmers can do to help coaches and to help themselves. Most importantly, stroke counts provide quantitative information about the effectiveness of technique.

Guidelines For Stroke Counts

For the stroke counts to be meaningful and comparable, it is important that a swimmer push-off, glide, and surface the same way on each swim. When a swimmer surfaces, he/she should count every hand entry to determine a stroke count for the pool **length**.

Stroke counts provide feedback about the effectiveness of technique, providing a swimmer consistently follows the guidelines.

1. Push-off and kick underwater at top speed.
2. Surface and swim at a constant velocity.
3. Move the arms continuously (i.e., no gliding).
4. Count the strokes of each hand entry until touching the wall.

It is probably best to first count strokes for the slowest swimming velocity, as stroke count increases with velocity. It is important to repeat the stroke count many times to insure accuracy.

Stroke Count Varies with Technique

A coach must first be satisfied that the stroke count is representative of a swimmer's technique. The coach can then recommend technique changes and note if there is a change in the stroke count.

If a swimmer complies with the guidelines, the stroke count usually decreases with a more effective technique. A swimmer can then track technique consistency and/or changes without feedback from a coach.

Stroke Count Decreases with More Effective Technique

Swimmers often decrease their stroke count because they improve their push phase. Many swimmers finish the push at the waist (Figure 1, top image). When a swimmer improves his/her technique and finishes the push at the hip (bottom image), the stroke count usually decreases.

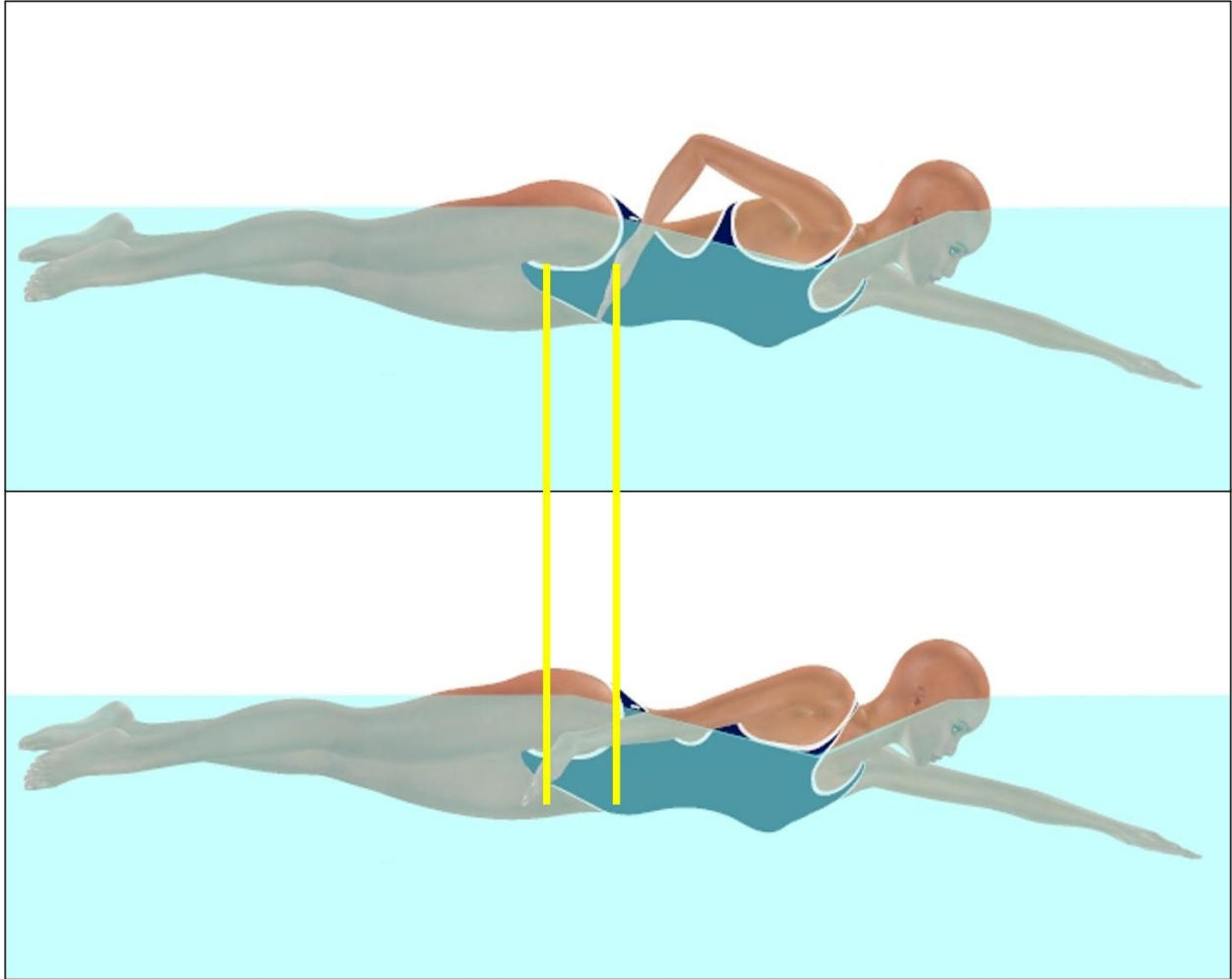


Figure 1. The biomechanical model demonstrates an ineffective (top) and an effective (bottom) push phase. The yellow lines show the difference in underwater hand motion between the two examples.

For example, a group of young teenagers counted their strokes before and after one week of technique instruction. They decreased their stroke count as shown in Figure 2.

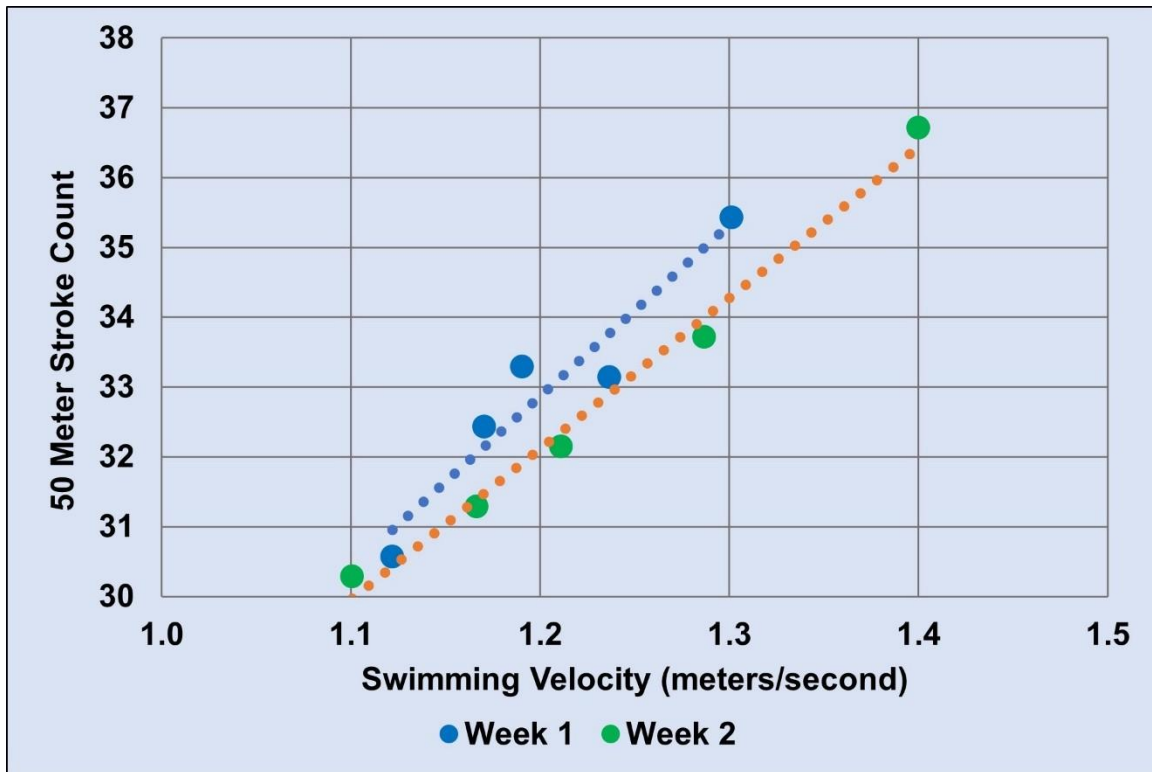


Figure 2. A group of young teenagers decrease their stroke count after one week of technique instruction.

Stroke Count Increases with More Effective Technique

It's possible that a stroke count increases with a more effective technique. For example, removing wasted motion on the arm entry means the hand has a shorter distance to travel and requires more strokes to swim a length. However, the vast majority of swimmers do not usually improve their arm entry.

Stroke Count Increases with Swimming Velocity and Fatigue

Other factors can increase stroke count. Both an increase in swimming velocity and/or an increase in fatigue can cause an increase in stroke count. Fortunately, a coach can control both variables.

Summary

A swimmer can count strokes to reduce a coach's workload and also regularly quantify his/her own technique. A stroke count usually decreases with a more effective technique. Swimmers can count strokes on most lengths in a training session to determine consistency.

Author Notes

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