# Masters Swimmer Need to Focus on Drills

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**Introduction**

As a younger masters swimmer, I was always focused on faster times. I relentlessly tried to catch the feet of any swimmer in front of me, consistently flogging myself in training and trying to get better each year. It was always about pushing harder rather than smarter. Yes the repeat times would improve a little, the race times a touch, but I always felt the hard work was not paying off as it should. Now I may have the answer! Some recent research from Europe suggests I may have been far better off spending more time on my technique and doing drills than trying to push myself physically to cut one second off each 100m repeat.

**The Research**

The aim of the research was to see what changes occurred in performance, fitness and technique over one whole swim season in masters swimmers. Twenty-five masters swimmers between 20 and 50 years of age were recruited for the study – 11 female swimmers (34.7±7.3 years; 163.0±5.0 cm; 58.5±5.4 kg; personal record in 200 m freestyle event of 200.7±25.0 seconds) and 14 male swimmers (35.6±7.4 years; 176±6 cm; 73.7±8.3 kg; personal record in 200 m freestyle event of 173.0±31.4 seconds). Not high performers but typical masters swimmers in their age group.

Over a six month season the swimmers swam 3 sessions a week for about 90 minutes a session. The training consisted of easy, moderate and hard aerobic sets, sprint sets and drills with approximately 9 k's covered per week. Every two months, so three times over the six-month season, the scientists measured 200m freestyle performance, speed at anaerobic threshold, VO2max, peak blood lactate after the 200m time trial, and stroke frequency, stroke length and a mathematically-determined propelling efficiency (the ratio of the power used to overcome drag to the total mechanical power produced including power wasted in moving water) of the arms during the 200m swim.

**The Results**

Predictably, the male masters swimmers had better 200m freestyle performance, stroke length and peak lactate than the female swimmers at all time points. The female masters swimmers significantly improved the 200m freestyle performance over the season mainly due to the improvement in swimming technique as measured by stroke length and propelling efficiency with some smaller but significant changes in energetic factors (anaerobic threshold and VO2max). However, over the season the male swimmers did not significantly improve their 200m swim times despite improvements in VO2max and propelling efficiency. Doing some complicated statistics, the researchers found that, as a group, the performance changes over the season were mainly determined by changes in stroke frequency, stroke length and propelling efficiency at each of the three testing sessions at the start, middle and end of season. The researchers concluded that, as a group, the masters swimmers improvements were mainly the result of improvements in technical factors rather than energy production (fitness) factors.

**The *So What?***

The researchers concluded that performance in typical masters swimmers is more dependent on technical factors than energy production factors such as VO2max and lactate production. They concluded that it is possible to improve the performance of masters swimmers by swim training three times per week, 90 minutes per session per session for a swim season. Critically, they also concluded that in masters swimmers changes in performance seem more dependent on technical factors rather than energy production factors.

Thus, they suggest that the training should aim to preserve the energy production (fitness) factors as much as possible and, at the same time, develop the technical skills. Thus, the training should include a higher percentage of technical drills to enhance technical performance of the swimmers. The focus could be to link technical training with aerobic and anaerobic training, allowing the swimmer to increase technical efficiency.

*Source: Ferreira, M. and others (2015). The effect of gender, energetic and biomechanics on swimming masters performance. Journal of Strength and Conditioning Research, Published ahead of Print. DOI: 10.1519/JSC.0000000000000848*

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