



# Future Dreams

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## IMPORTANT NOTE

Depending on how far advanced your swimming technique has evolved at the current time, this topic may vary in importance to you. Please be aware that the technical part of your stroke that should be improved initially is that of body position. Without good balance and streamline first, a focussed approach on the pull may exaggerate faults in other areas of your stroke. It may also make any incorrect habits more difficult to break. It is therefore recommended that unless you are happy with your degree of drag efficiency (streamline) and your experience of relaxation (from good balance) then you should continue to persevere with these areas of your stroke for a while longer.

## Part 2 of 2

Last month, we talked about different factors that can influence how efficient your pull technique is. We also provided descriptions of all aspects of that stroke-phase with an example of Grant Hackett's stroke. Hopefully you will be starting to form a good picture of the difference between what your current stroke looks like and what you would hope to achieve.

We now continue...

## DRILLS TO ENHANCE PULL TECHNIQUE

- Paddles - alternate reps with and without paddles aiming to feel the differences between them. Try and emulate the increased pull with paddles each time you take them off. This can be done at various speeds for another element of experimentation

- Sculling - vertical, front, back, breaststroke. Sculling is a side to side hand movement that creates "lift". Lift and drag forces are what propel you forward when pulling in any stroke. Get to know how to scull well and your pulling power will increase simultaneously. NOTE - always kick fast and stroke slow when drilling for maximum glide. This will slow you down and give you more time to think about what is happening - then change becomes easier. THE CATCH AND PULL BACK

If we are to maximise the amount of water from each pull, it is imperative to extend each arm fully (straight) in front of us first, glide for a second then accelerate through the stroke all the way back to our hips. This makes certain that we are fully utilising all water within our current reach and push limits. It also necessitates a certain amount of body roll.



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## POWER TRANSFER VIA STROKE TIMING

As we begin to improve this pulling efficiency, we must make sure that the increased power is actually driving us forwards, i.e. it is being effectively transferred into speed and not just dissipated into the water.

To transfer all of this power, you must consider the "timing" of each stroke, i.e. when do you pull relative to where the recovery-arm is. The drill most utilized to teach better stroke timing awareness is "Catchup" freestyle. In this drill the leading-arm continues to glide (effortlessly) until the recovery-arm has travelled completely back to the front and physically touches that lead-hand (this recovery action should be done slowly to enhance the glide, and with a fast kick to stabilise the body). Now due to this being a drill, the glide is exaggerated to the point where you not only maximise the distance per stroke (beneficial) but you will also have a dead spot in your momentum (detrimental).

Our aim with respect to stroke timing must therefore be to maximise the amount of forward movement we get from each stroke but also to avoid that dead spot. If we can do this successfully then we will achieve constant and fluent forward movement with maximum drag reduction (by being the streamlined glide position longer).

The actual point that you should begin the pull with the lead-arm (i.e., keep gliding until then) is roughly where the recovery-arm has just passed the head above water. Until then, you should keep the leading arm quite straight, head down and keep gliding with a strong kick. Only break the streamline by pulling (after the glide position) when you feel that all of the pull from that lead-arm will go fluently into the arm that is about to enter.

## WHY IS THE GLIDE SO IMPORTANT?

For everyone who has recently been glued to the Olympics watching the awesome efforts of those Australian and Dutch swimmers, this is a feature that shines through clearly in all their swimming styles. Especially with Ian Thorpe, the length of glide he maintains before pulling is phenomenal. For the beginner there are a couple of important advantages attained by lengthening each stroke. - Firstly and obviously you will improve your distance per stroke. Over time this make you much stronger through a longer pull movement

- Second, and perhaps even more important, is the increased awareness you will get from slowing your stroke down. You will relax more in training, and will start to notice subtleties about what you do, or perhaps don't do. Over time this will improve your speed by enhancing your awareness and therefore learning.

## ARM TURNOVER

Arm turnover is the last topic we will discuss under the heading of pulling technique. It should be quite obvious that if you increase in your stroke-rate



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and can maintain the length of glide before pulling, then you will swim faster. The trick is to combine the optimum amounts of glide and turnover together for the fastest possible speed. Or in other words, the best possible sum of your pulling power (from a high arm-turnover and efficient pull technique) minus any increased drag from a higher stroke rate. This is the equation we hope to maximise for the highest possible speed.

By applying this framework of thought to Pieter van den Hoogenband's stroke (who recently broke the 100m Freestyle World Record) we see that he is 193 cm tall but only 73 kg in weight. He is obviously quite slim for his height making him an awesome streamlining machine. This gives him an implicit advantage over other swimmers because of his drag dynamics in the water even with a high arm turnover.

PLEASE NOTE - the arm turnover exhibited by sprinters, (who tend to windmill more) will be higher than endurance swimmers, (who tend to catch up more).

#### TO CAP IT OFF

The fundamentals of improving speed are based around 2 concepts. First is learning how to generate the most force on each pulling arm and secondly is to transfer all of that power into speed by gliding forwards for the optimum time. This optimum time is dependent on the best combination of drag reduction from a long glide and the increased power from a higher stroke turnover. You do not have to be strong or excessively fit to generate power in the water, you just have to know how to grab every inch of water available to you and then slide your body forwards with that force driving you to the end of the pool. I wish you all the best and have some fun with learning about this - try a few different drills in your workouts and learn from stepping outside your mental parameters.

On behalf of the team at FutureDreams Swimming,  
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