



## Breathe in to Boost Performance!

### How Training The Inspiratory Muscles Can Improve Tennis Performance

In a professional game with high levels of fitness conditioning, should tennis players consider a more effective regime for training the inspiratory muscles – the muscles we use to breathe in?

The game of tennis has come a long way in the past fifty years or so, the high media profile and high potential earnings have increased the level of professionalism within the sport beyond recognition. With professionalism has come 'the appliance of science' and a brave new world of physical conditioning. The modern game requires a blend of aerobic fitness, strength, power and agility.

The intensity of the average game can range from just 20% of maximal oxygen uptake, to almost 90%, with the duration of rallies being the main determinant of exercise intensity (longer rallies = higher intensity). When you then add the knowledge that players may be on court for hours on end, you begin to gain some insight into what it requires to be an elite tennis player.

The short intense bouts of running that characterise tennis have much in common with other 'repeated sprint sports' such as football, rugby, basketball and hockey. "Following an intense bout of activity such as a sprint to reach a ball, breathing is driven to its highest levels, inducing extreme breathlessness. If players are to continue to play effectively and to maintain high levels of skill performance, they cannot afford to be debilitated by their breathing," explains sports scientist and respiratory physiologist Dr Alison McConnell.

But avoiding the debilitating effect of breathlessness may not be a simple matter of needing to get fitter - research conducted at the University of Birmingham has shown that training the muscles that we use to breathe, using a specially developed, DRUG FREE inspiratory muscle trainer - POWERbreathe® - improves the rate of recovery during a repeated sprint test.

You breathe through the portable, hand-held device for 30 repetitions (this takes three mins) twice daily, and the strength of your inspiratory muscles increases by around 30-50%. McConnell's research team have also proved the ergogenic effect of the POWERbreathe in other sports, including rowing and cycling.



“The tennis players that we studied took less time to recover and were ready to sprint maximally again more quickly after the training,” explains McConnell. Her research team’s studies have also shown that the demands of breathing during exercise are so high that these vital muscles experience fatigue.

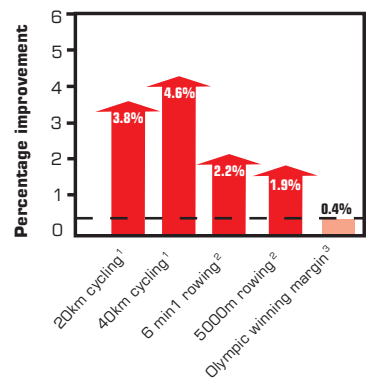
“Fatigue makes everything that much worse, because you have to use more effort to get your muscles to do what you want them to, so breathing feels even harder when your inspiratory muscles are fatigued. POWERbreathe® can come to the rescue yet again, because strengthening your inspiratory muscles also makes them less prone to fatigue” she said.

The breathing muscles also contribute to tennis match-play in less obvious ways. “Tennis involves using the breathing muscles of your torso to brace and twist during a racket stroke. Experienced tennis players use their inflated lungs to brace the impact of the ball and racket, optimising the transmission of force. The ‘grunt’ that you hear during the serve and shot, is the controlled release of the air from their lungs and this requires fine control of the breathing muscles,” explains McConnell. “Control is impaired by fatigue and improved by muscle strengthening.”

So, the performance of the breathing muscles is more important to tennis players than you’d first imagine, so just how much dedicated additional training is required to benefit from what POWERbreathe® has to offer. This is the really good news, the POWERbreathe® training protocol can be done in the comfort of your arm chair, takes less than 3 minutes a day and the results are achieved in around 4 weeks!

So if you want to out-grunt Maria Sharapova, or just want to improve the comfort of your game, POWERbreathe® could be just what you need.

Improvements in time trial performance after POWERbreathe training



1. Rimer et al. J Sport Sciences. 20: 547-562, 2002.  
 2. Volinich et al. Med Sci Sports & Exercise. 33: 805-809, 2001.  
 3. Rowing trials - average gold vs. silver, 2004 Olympic Games

## The POWERbreathe Range

Classic 1st Generation		Plus 2nd Generation		K-Series 3rd Generation		
						
<b>Classic</b> Mechanical	<b>Plus</b> Mechanical	<b>K1</b> Entry-Level Electronic	<b>K2</b> Intermediate Electronic	<b>K3</b> Advanced Electronic	<b>K4</b> Live Feedback Software Electronic	<b>K5</b> Advanced Live Feedback Software Electronic
£29.99	£49.99	£299.00	£350.00	£375.00	£425.00	£499.00