

## **Breathe in to Boost Performance!**

## How Training The Inspiratory Muscles Can Improve Running Performance

How many runners actually think about controlling the rhythm of their breathing whilst they're running?

If the importance given to good breathing technique in most books on running is anything to go by, then not many! You might think that breathing whilst you're running was a piece of cake compared to a sport like swimming, but holding your upper body upright whilst it's moving through the air and landing unpredictably with each foot fall is hard work.

"When we are running, the breathing muscles are not only enabling us to breathe, they are also working to stabilise the upper body (especially during the foot strike when large destabilising forces are transmitted up the body)", explains sports scientist and respiratory physiologist Dr Alison McConnell. "This is one of the reasons that synchronising your breathing to your running cadence is more efficient, and more comfortable, because it prevents the stabilising and breathing functions of your breathing muscles from competing".

So if disciplined breathing technique improves breathing comfort during running, is there anything else that we should know about breathing during running? The work of breathing during exercise can be substantial and there have been many reports in the sport science literature of breathing muscle fatigue following events such as marathons, as well as shorter, more intense bouts of running.

The implications of this for your running are more wide ranging than you'd first think. McConnell says, "Fatigue of any muscle makes the activity associated with that muscle feel harder - in the case of breathing, the fatigue occurs almost exclusively in the inspiratory muscles (those used to inhale) and results in laboured, uncomfortable breathing and intense breathlessness. In addition, recent research has shown that fatigue of the breathing muscles may result in diversion of blood away from the leg muscles. This means that the supply of oxygen to the legs is reduced and performance is impaired".

Whilst based at Birmingham University, Dr McConnell and her research team, studied the effects of exercise on breathing for many years and they've come up with a surprisingly simple, yet astonishingly effective ergogenic aid. "I tend to look at things fairly simplistically and it seemed obvious to me that if fatigue of a group of muscles was occurring and that this potentially affected performance, then the obvious thing to do was to train the muscles concerned", recalls McConnell. "We've developed a very simple technique for training the inspiratory muscles, which we have called 'dumb bells for your diaphragm'. A special, DRUG-FREE training device, POWERbreathe<sup>®</sup> enables athletes to effectively lift weights with their inspiratory muscles."

You breathe through the portable, hand-held device for 30 repetitions (this takes three minutes) twice daily, and as a result, the strength of your inspiratory muscles increases by around 30-50%. McConnell's research team have proved an ergogenic effect of POWERbreathe in a range of sports, including rowing and cycling (see diagram below). "Typically, we see between 2% and 4.5% improvements in time trail performances in very accomplished endurance-trained athletes".

Could something as simple as breathing have been completely overlooked as a limiting factor to performance?

"I think that breathing is the final 'unturned stone' in the quest for total athlete preparation – sports scientists, dieticians and coaches hone every detail of the athlete's mental and physical preparation, except their breathing. I certainly think POWERbreathe offers a better guarantee of improvement than altitude training", explains McConnell.

So if you're looking for an edge this season, you could do a lot worse than getting in to some heavy breathing - POWERbreathe<sup>®</sup> is well researched, laboratory-proven, legal and a lot cheaper than an altitude training camp.

Improvements in exercise duration and effort sensation during fixed intensity cycling



Improvements in time trial performance after POWERbreathe training



