



Breathe in to Boost Performance!

Training The Inspiratory Muscles Can Improve Performance For Rugby Players

The modern professional game of rugby is an extremely physically demanding sport that is played by some of the biggest and most powerful athletes in sport. The physical demands of rugby are highly specific to the player's positional role - contrast, for example the demands placed upon a prop and a fly half. Nevertheless, all players require high levels of aerobic fitness, lactate tolerance, strength and power.

Although most activity during a game is sub-maximal, the intermittent sprints, tackling, scrums, rucks and mauls that are integral to the game, are supra-maximal. This pattern of exertion places extreme demands upon breathing because these activities are anaerobic and generate high levels of lactic acid. Lactic acid, stimulates breathing to increase as part of a compensatory strategy to overt fatigue of other muscles. A unique feature of rugby is the involvement of high intensity upper body activity. This can induce conflicting demands upon the breathing muscles, which as well as bringing about breathing, are also essential in activities that involve the upper body.

"Following an intense bout of activity such as a sprint, breathing is driven to its highest levels, inducing extreme breathlessness. If players are to continue to make an active and effective contribution to the game, their breathing must recover quickly" explains sports scientist and respiratory physiologist Dr Alison McConnell. "Most of us will be familiar with the site of players, at all levels, bent double, clasping the legs of their shorts, fighting to 'get their breath back'. Being out of breath is one of the most potent factors preventing a player from exerting maximal effort in the continuation of play." But avoiding this 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 trainer - POWERbreathe® - improves the rate of recovery during a repeated sprint test.

"The 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 show that the demands of breathing during exercise are so high that these vital muscles experience fatigue during rugby match play, even in professional players.

"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.

The breathing muscles are an integral part of rugby in less obvious ways than their role in breathing. "The breathing muscles are also essential for fixing, twisting and flexing movements of the trunk", explains McConnell. "They make a contribution to stabilising and turning the trunk during the scrum, ruck and maul, as well as being involved in kicking and passing, so fatigue of the breathing muscles can affect more than your running ability."



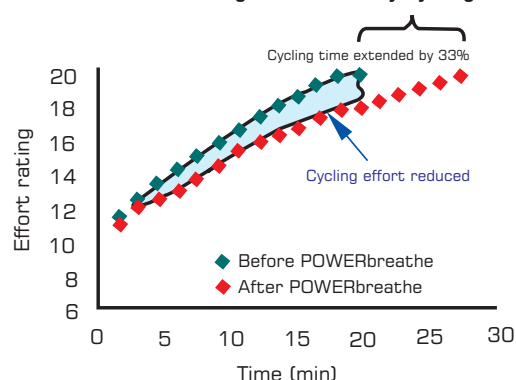
As well as helping players to recover more rapidly and avoid breathing muscle fatigue, inspiratory muscle training can be used as part of a pre-match and pre-substitution warm-up. “Our research has shown that normal warm-up routines fail to warm-up the inspiratory muscles. We experience this as a sense of increased breathing effort and breathlessness during the first few minutes of activity,” explains McConnell. “By warming-up your breathing, you can avoid this phase and enter the match firing on all cylinders from the moment you step onto the pitch.” This technique is particularly helpful during substitutions where players are joining a match in which everyone else is already warmed-up and there is no time for them to ‘get into the game’.

McConnell and her team have worked with the England Rugby squad to help them to use an inspiratory warm-up to aid the transition of substitutes from the bench and into a fast-moving international game. “The players felt that it really helped them to be fully prepared for the transition,” said McConnell.

You'd think that something this good would require hours of devoted, excruciating effort, but you'd be wrong. The POWERbreathe® training protocol can be done in the comfort of your arm chair and training takes less than 3 minutes a day! 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 cycling and rowing.

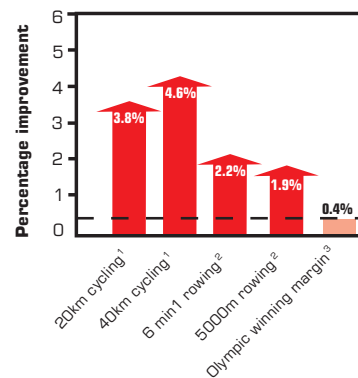
So if you want to keep up with the England squad, at least in terms of their gadgets, get into some heavy breathing and give POWERbreathe a try.

Improvements in exercise duration and effort sensation during fixed intensity cycling



From: Caine & McConnell, 1998

Improvements in time trial performance after POWERbreathe training



¹ Ramer et al, J Sport Sciences, 20: 547-552, 2002
² J. Ramer et al, Med Sci Sports Exerc, 33: 2003-2008, 2001
³ Rowing trials - average gold vs. silver, 2004 Olympic Games

