

THE BENEFITS OF COLD WATER SWIMMING

Is swimming in a freezing lake the antidote to modern life burnout?

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The benefits of exercise on our emotional and physical health have long been known. Swimming bestows additional rewards, above and beyond the usual advantages of other forms of land-based exercise. The benefits of swimming are seen across the ages, from infants to the elderly, and as such have become the focus of many national and international public health initiatives.

The hydrodynamic principles of water immersion confer the unique health benefits of swimming. Research has identified that participation in any amount of swimming compared to engaging in none, was associated with a 41 per cent reduction in cardiovascular disease mortality.¹

Hydrostatic pressure increases venous return, raising pressure in the right atrium and causing a cephalad displacement of the diaphragm. The increase in preload results in a concomitant increase in stroke volume of around 35 per cent, and a reduction in heart rate, secondary to baroreceptor stimulation. Immersion also results in a decrease in systemic vascular resistance by reducing sympathetic tone and stimulating nitric oxide release. Interestingly, this phenomenon persists even after emerging from the water. Furthermore, augmented atrial pressures associated with immersion influence neuro-humoral systems, including suppression of the renin-angiotensin-aldosterone axis. Swimming has proven to confer protection against diabetes and obesity.²

Swimming improves our pulmonary function by improving lung volumes and breathing techniques. Additionally, hydrostatic pressures reduce the work of breathing during expiration, making it beneficial for those with pulmonary diseases, especially asthma and COPD.

Buoyancy results in offloading of body weight by up to 75 per cent, relaxing joints and aiding movement, making it an attractive option for those suffering from musculoskeletal disease. When immersed, the increase in cardiac output is preferentially distributed to the skin and muscle rather than the splanchnic circulation. This results in a 225 per cent increase in blood flow to muscle.³

The benefits of swimming extend beyond the physiological and physical changes. Wellbeing is a multifaceted and subjective construct. It encapsulates factors such as

personal fulfilment and purpose, feeling connected, mental health, cognitive alertness and a feeling of belonging. Swimming has been found to reduce the onset of depression, alleviate symptoms of anxiety, and improve quality of life. Furthermore it has been linked to improved life satisfaction, mental health and self-perception of health.

Swimming is an activity that people can participate in regardless of age, level of fitness or ethnicity. Compared to other popular sports, swimming is considered more inclusive across the genders. The popularity and accessibility of swimming across the generations and sexes makes it an unrivalled pastime for promoting wellbeing in the population.

There is something magical about being outdoors and close to the natural world. The benefits of swimming are magnified when we take the sport out of the swimming pool and get back to nature. Be it swimming in the sea, a river or a lake, wild swimming – the act of breathing fresh air, immersing yourself in magnesium-rich water or soaking in the natural surroundings – gives you a boost that can't be matched by its indoor counterpart.

The term 'eco-therapy' was defined by Wallace J Nicholls in his book *Blue Mind* as 'the mildly meditative state we fall into when near, in, on or under water'.⁴ 'Blue Mind' has been described as 'the antidote to what we refer to as 'Red Mind', which is the anxious, over-connected and over-stimulated state that defines the new normal of modern life. By connecting us with nature, wild swimming provides us with the opportunity to engage in self-care, away from the pressures of the busy modern world.

Research suggests that swimming outdoors in cold water is particularly good for us. It allows us to work on aspects of mental resilience, training our minds to challenge self-doubt and realise that we are actually capable of more than we realise.

Cold water immersion can boost dopamine levels by over 500 per cent and stimulates the release of endorphins. While the initial exposure to cold water is hugely invigorating and stimulating, adaptation to cold water results in activation of the parasympathetic nervous system and modifies your chronic stress response. It is also associated with a widespread decrease in inflammation.

As part of an initiative to promote wellness, our anaesthetic department organised a lake-swim and talk on the benefits of open-water swimming and cold-water immersion.⁵ The course took place on a small spring-fed lake in Worcestershire in early November. The experience was very popular and we had hugely positive feedback from attendees. The sense of community and the buzz of achievement shared by our colleagues has spurred us on to share this experience with the wider anaesthetic body.

We hope that the revitalising tonic of open-water swimming and cold-water immersion can help promote the wellbeing and physical health of others, and contribute towards alleviating the stresses of everyday life.

References

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