



COLD WATER THERAPY EDUCATION BOOKLET

[Abstract](#)

A brief introduction to the world of Cold Water Dunking and the many benefits it has to offer. For use of University of Aberdeen Cold Water Dunking Society. Includes links to scholarly articles, books and podcasts for further research purposes.

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Main Benefits

Reduced Inflammation

- Submerging yourself in the chilled water instantly numbs the nerves that surround your joints and muscles, causing the release of hormones and endorphins. Studies¹ show the release of hormones and endorphins acts as an analgesic, which relieves inflammation and alleviates muscle strain and joint pain.

Improves the body's antioxidant capacity and increases White Blood Count

- A study by Britain's Thrombosis Research Institute found that those who took daily cold showers had increased numbers of disease-fighting white blood cells (compared to people who took hot showers). The investigators suggested that as the body tries to warm itself during and after a cold shower, metabolic rate speeds up and activates the immune system, which leads to the release of more white blood cells.
- A further study² suggests that consistency is essential! Those who only participated in an occasional winter swim in cold water had increased oxidative stress, but done regularly, such swimming leads to an adaptive antioxidant response. Those who regularly partook in cold water swims had bodies better equipped to combat oxidative stress in general once they were accustomed to cold-water swims.

Helps improve Blood Circulation

- As cold water hits your body and external limbs, it constricts circulation on the surface of your body. This causes blood in your deeper tissues to circulate at faster rates to maintain ideal body temperature.

¹ Shibata R, Ouchi N, Murohara T. Adiponectin and cardiovascular disease.

² QJM: An International Journal of Medicine, Volume 92, Issue 4, April 1999, Pages 193–198

Boosts Immune System

- A plunge in cold water causes your lymph vessels to contract, which forces your lymphatic system to pump lymph fluids throughout your body. The flushing of fluid triggers the white blood cells to attack any foreign bodies in the body. Cytokines and other chemicals that boost the immune system receive a release in cold plunging. According to a trial conducted by Dutch scientists³, cold water baths have shown to stimulate the lymphatic and immune system, which helps in boosting the production of infection-fighting cells thereby increasing your immunity. This same study found that people who take cold showers are 29% less likely to call in sick for work or school. Also, try these natural foods to boost your immune system.

Can help alleviate Rheumatoid Arthritis

- For those with rheumatoid arthritis, taking a cold shower after a sauna has been shown to reduce pain and improve circulation which can help minimize symptoms throughout the remainder of the day⁴.

Can improve Lung Health

- Your lung function improves tremendously when you take a plunge in cold water suggests a study published in the North American Journal of Medical Sciences⁵. That feeling of breathlessness you get when you take a plunge into cold water is what improves your lung function. When you hold your breath each time you take a plunge and slowly release your breath, you improve your lung function.

Good for willpower

- Let's face it, the first few seconds of a cold plunge are tough, but powering through can work wonders at training your brain. Getting into freezing cold water every day

³ Buijze GA, Sierevelt IN, van der Heijden BCJM, Dijkgraaf MG, Frings-Dresen MHW (2018) Correction: The Effect of Cold Showering on Health and Work

⁴ Hinkka H, Väättänen S, Ala-Peijari S, Nummi T. Effects of cold mist shower on patients with inflammatory arthritis: a crossover controlled clinical trial. Scand J Rheumatol. 2017

⁵ Mooventhan A, Nivethitha L. Scientific evidence-based effects of hydrotherapy on various systems of the body

trains the brain to do things it otherwise wouldn't. This positive attitude could then translate to other areas of your life.

Good for the Nervous System

- Nerves in the autonomic nervous system are activated during the cold plunge immersion. The cold also stimulates you to take deeper breaths, decreasing the level of CO2 throughout the body, helping you concentrate. Also, studies show that the increase in fat burning during cold exposure is modulated by the sympathetic nervous system. Cold temperatures act as a mild "workout" for the nervous system, which adapts and strengthens.

Aids at Fat-Burning, regulating Blood Sugar, and Weight Loss

- One study⁶ found adiponectin levels increase by 70% after cold exposure. Adiponectin is a protein involved in blood glucose regulation, with low levels often found in insulin resistance. In another study⁷, subjects who were exposed to cold stress had an 80% increase in their metabolism over "warm" levels. Studies⁸ also show that cold exposure increases Brown Adipose Tissue activity, which leads to increased calorie expenditure. Researchers concluded that frequent cold exposures might be an acceptable and economical complementary approach to address the current obesity epidemic.

<https://www.healthfitnessrevolution.com/10-health-benefits-of-cold-plunges>

⁶ Imbeault P, Dépault I, Haman F. Cold exposure increases adiponectin levels in men.

⁷ J Clin Invest. 2012;122(2):545-552

⁸ van der Lans AA, Hoeks J, Brans B, Vijgen GH, Visser MG, Vosselman MJ, Hansen J, Jörgensen JA, Wu J, Mottaghy FM, Schrauwen P, van Marken Lichtenbelt WD. Cold acclimation recruits human brown fat and increases nonshivering thermogenesis. J Clin Invest. 2013

Cold Water Therapy Books/Journals

1. The Wim Hof Method by Wim Hof
https://www.amazon.co.uk/Wim-Hof-Method-Potential-Transcend/dp/1846046300/ref=sr_1_1?adgrpid=1188572968441727&hvadid=74286013761428&hvbmt=be&hvdev=c&hvlocphy=69156&hvnetw=o&hvqmt=e&hvtargid=kwd-74285949245041%3Aloc188&hydadcr=24398_2219429&keywords=wim+hof+book&qid=1677007868&sr=8-1
2. The Cold Therapy Code by James Smart
https://www.amazon.co.uk/Cold-Therapy-Code-Rediscover-Cryotherapy/dp/B09PHG3Q7Z/ref=sr_1_2_sspa?adgrpid=1176478340249172&hvadid=73530099344641&hvbmt=be&hvdev=c&hvlocphy=69156&hvnetw=o&hvqmt=e&hvtargid=kwd-73530031634128%3Aloc188&hydadcr=22584_2171560&keywords=cold+water+therapy+book&qid=1677007601&sr=8-2-spons&sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&psc=1
3. Chill The Cold Water Swim Cure
<https://www.ebay.co.uk/itm/175496127170?chn=ps&norover=1&mkevt=1&mkrid=7101533165274578&mkcid=2&itemid=175496127170&targetid=4584826055637461&device=c&mkttype=&googleloc=&poi=&campaignid=412354546&mkgroupid=1299623041023876&rlsarget=pla-4584826055637461&abclid=9300541&merchantid=87779&msclid=1a0f2948fed119b8a86e4abde479362e>
4. Winter Swimming: The Nordic Way Towards a Healthier and Happier Life
https://www.amazon.co.uk/Winter-Swimming-Towards-Healthier-Happier/dp/1529417465/ref=sr_1_11?crid=1WC0OCZJ1XCQO&keywords=cold+water+book&qid=1677008711&srefix=cold+water+book%2Caps%2C271&sr=8-11

Cold Water Articles

1. The Science & Use of Cold Exposure for Health & Performance
<https://hubermanlab.com/the-science-and-use-of-cold-exposure-for-health-and-performance/>
2. What to Know About Cold Water Therapy
<https://www.healthline.com/health/cold-water-therapy>
3. Hydrotherapy: Types of treatments
<https://www.medicalnewstoday.com/articles/hydrotherapy>

Cold Water Podcasts

1. Just One Thing – with Michael Mosley: Cold Showers

<https://www.bbc.co.uk/sounds/play/m000v83f>

2. How Does Cold Water Therapy Work? By Mark Whittle
<https://podtail.com/podcast/mentally-yours/how-does-cold-water-therapy-work/>