

# Physical Complications of Over-Exercise

Exercise is a healthy part of life, however when it becomes a way to control weight and shape, alleviate negative emotions, and manage anxiety, an unhealthy relationship with exercise can develop. It is thought that poor physical activity and being sedentary is not advantageous for health, however over-exercise can do much more harm than sedentary life (Bianco et al, 2019).

Over-exercise can often be termed as compulsive, excessive, obligatory, dependence on, addiction to exercise (Leuenberger, 2006).

"An individual who is addicted to exercise will continue exercising regardless of physical injury, personal inconvenience or disruption to other areas of life including marital strain, interference with work, and lack of time for other activities", and "experience disturbing deprivation sensations when unable to exercise" (Landolfi, 2012).

Over-exercise is physically and emotionally damaging and is linked to overtraining syndrome (Kreher & Schwartz, 2012), injury (Lichtenstein et al, 2017), body dysmorphia (Trott et al, 2020), menstrual dysfunction (De Cree, 1998), low testosterone levels (Hackney, 2020), osteoporosis (Beals et al, 1999), stress fractures (Joy & Campbell, 2005), social impairment (Lichtenstein et al, 2017), and depression (Lichtenstein et al, 2017).

When exercise becomes disordered and unhealthy, individuals often ignore their body's signs of distress or injury, and the negative impact that exercise is having on their life.

## Complications

Over-exercise often has severe health impacts, especially when paired with the body not receiving proper nutrition due to other disordered eating behaviours.

## Cardiovascular Damage

Although regular exercise should result in the positive effects on the cardiovascular system, over-exercise can do the opposite and cause impairment of the cardiac system (Adams & Kirkby, 2001).

Extensive and prolonged exercise can put the body at increased risk for impaired cardiac functioning. Frequent, excessive exercise, especially exercise that is endurance-focused, can cause damage to cardiac muscles. This can result in irregular heart rhythms and can increase the risk of heart attack (Schreiber & Hausenblas, 2017).

## Internal Complications

Frequent excessive exercise can cause suppression of the immune system, leading to infections and illness, and in some cases, the development of Chronic Fatigue Syndrome (Adams & Kirkby, 2001; Mountjoy et al, 2014).

Further, increased cortisol levels – the hormone that is produced under periods of physical stress – can be detrimental to the immune system, increasing the risk of illness (Adams & Kirkby, 2001).

## Bone Damage, Muscular Injuries and Delayed Recovery

Over-exercise can cause bone damage by increasing the risk of breakages and stress fractures (Mountjoy et al, 2014), which are very small bone breaks, commonly caused by fatigue and overuse. Excessive exercise can also lower sex hormone production (oestrogen and testosterone), which have a bone protective effect, and so can place the body at a higher risk of low bone mineral density, bone loss, and developing osteoporosis (Mountjoy et al, 2014).

Over-exercise also decreases the overall concentration of testosterone, leading to an increase in circulating cortisol concentration. Cortisol is a stress response hormone that encourages breakdown of tissue, rather than tissue growth observed in normal training. This leads to illness, stress fracture and/or joint injury, reduction in muscle strength, and muscle soreness (Adams & Kirkby, 2001).

## Reproductive Complications

Irregular sex hormone concentration (oestrogen and testosterone) can cause amenorrhoea (loss of menstruation), impaired ovarian function, reduced menstrual flow, anovulation (absent ovulation), and reproductive difficulties or infertility in females; and a reduction in sperm count and a decline in fertility in males (Adams & Kirkby, 2001).

## Psychological Complications

Over-exercise can be a form of psychological stress. Negative adaptations to the stress of over-exercise often lead to injury and psychological distress (Adams & Kirkby, 2001).

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