

Strength Training

Strength training is a type of [physical exercise](#) specializing in the use of resistance to induce [muscular contraction](#) which builds the [strength](#), [anaerobic endurance](#), and [size](#) of [skeletal muscles](#).

When properly performed, strength training can provide significant functional benefits and improvement in overall health and well-being, including increased [bone](#), muscle, [tendon](#) and [ligament](#) strength and toughness, improved [joint](#) function, reduced potential for injury,^[1] increased [bone density](#), increased [metabolism](#), increased fitness,^{[2][3]} improved [cardiac](#) function, and improved lipoprotein lipid profiles, including elevated [HDL \("good"\) cholesterol](#).^[4] Training commonly uses the technique of progressively increasing the force output of the muscle through incremental weight increases and uses a variety of exercises and types of [equipment](#) to target specific muscle groups. Strength training is primarily an [anaerobic](#) activity, although some proponents have adapted it to provide the benefits of [aerobic exercise](#) through [circuit training](#).

Sports where strength training is central are [bodybuilding](#), [weightlifting](#), [powerlifting](#), [strongman](#), [Highland games](#), [shotput](#), [discus throw](#), and [javelin throw](#). Many other sports use strength training as part of their training regimen, notably [American football](#), [wrestling](#), [track and field](#), [rowing](#), [lacrosse](#), [basketball](#), [hockey](#) and [football](#). Strength training for other sports and physical activities is becoming increasingly popular.

Uses

The benefits of weight training include greater muscular strength, improved muscle tone and appearance, increased endurance and enhanced bone density.

Increased physical attractiveness[\[edit\]](#)

Many people take up weight training to improve their [physical attractiveness](#). There is evidence that a body type consisting of broad shoulders and a narrow waist, attainable through strength training, is the most physically attractive male attribute according to women

participating in the research.^[5] Most men can develop substantial muscles; most women lack the [testosterone](#) to do it, but they can develop a firm, "toned" (see below) physique, and they can increase their strength by the same proportion as that achieved by men (but usually from a significantly lower starting point). An individual's [genetic](#) make-up dictates the response to weight training stimuli to a significant extent.

Workouts elevate [metabolism](#) for several hours following the workout, which also promotes fat loss.^[6]

Increased general physical health

Strength training also provides functional benefits. Stronger muscles improve posture, provide better support for [joints](#), and reduce the risk of [injury](#) from everyday activities. [Older](#) people who take up weight training can prevent some of the loss of muscle tissue that normally accompanies [aging](#)—and even regain some functional strength—and by doing so become less frail.^[7] They may be able to avoid some types of [physical disability](#). Weight-bearing exercise also helps to prevent [osteoporosis](#) and to improve bone strength in those with osteoporosis.^[8] The benefits of weight training for older people have been confirmed by studies of people who began engaging in it even in their 80s and 90s.

Though strength training can stimulate the [cardiovascular system](#), many exercise [physiologists](#), based on their observation of maximal [oxygen](#) uptake, argue that [aerobics](#) training is a better cardiovascular stimulus. Central [catheter](#) monitoring during resistance training reveals increased [cardiac output](#), suggesting that strength training shows potential for [cardiovascular exercise](#). However, a 2007 meta-analysis found that, though aerobic training is an effective therapy for heart failure patients, combined aerobic and strength training is ineffective.^[9]

Strength training may be important to metabolic and cardiovascular health. Recent evidence suggests that resistance training may reduce metabolic and cardiovascular disease risk. Overweight individuals with high strength fitness exhibit metabolic/cardiovascular risk profiles similar to normal-weight, fit individuals rather than overweight unfit individuals.^[10]

For rehabilitation or to address an impairment

For many people in [rehabilitation](#) or with an acquired [disability](#), such as following stroke or orthopaedic surgery, strength training for weak muscles is a key factor to optimise recovery.^[11] For people with such a health condition, their strength training is likely to need to be designed by an appropriate health professional, such as a [physiotherapist](#).

Increased sports performance

Stronger muscles improve performance in a variety of sports. Sport-specific training routines are used by many competitors. These often specify that the speed of [muscle contraction](#) during weight training should be the same as that of the particular sport.

For the pleasure of the activity

One side effect of any intense exercise is increased levels of [dopamine](#), [serotonin](#) and [norepinephrine](#), which can help to improve mood and counter feelings of [depression](#).^[12][[dubious](#) - [discuss](#)]

Developing research has demonstrated that many of the benefits of exercise are mediated through the role of skeletal muscle as an endocrine organ. That is, contracting muscles release multiple substances known as [myokines](#) which promote the growth of new tissue, tissue repair, and various anti-inflammatory functions, which in turn reduce the risk of developing various inflammatory diseases.

https://en.wikipedia.org/wiki/Strength_training