## Fifty Reasons to Train

1. **Resistance training** has the potential to improve muscle strength and endurance, enhance flexibility and body composition, decrease risk factors for cardiovascular disease and improve glucose tolerance and insulin sensitivity.

2. **Regular physical activity** promotes beneficial physiological changes including lower resting and submaximal heart rate, increased stroke volume and cardiac output, enhanced oxygen extraction and lower resting and exercise blood pressure.

3. **A strong inverse relationship** has been shown to exist between physical fitness and mortality due to all causes. Major reductions in all-cause death rates are apparent with only modest increases in VO2max values of 6 METS (metabolic equivalent).

4. **Numerous studies** show that exercise protects your body by maintaining vital capacity and therefore maintaining adequate oxygenation of tissues.

5. **Regular exercise** will lower heart rate and blood pressure in almost everyone.

6. **Average cholesterol levels** in male and female bodybuilders and runners range between 158 mg/dl and 183 mg/dl. Sedentary men and women average over 200 mg/dl in their 30s and reach about 220 mg/dl by age 45.

7. **Incidence of all forms of cancer** is closely related to lack of physical fitness. Unfit men and women are 300% more likely to develop cancer! Exercise prevents cancers by regulation of estrogen and other sex hormones, which, when left unchecked, cause uncontrolled cell proliferation in the reproductive system.

8. **The right exercise is a major strategy** for preventing and treating ALL disease. Physicians who do not incorporate exercise into their treatment protocols may be guilty of malpractice, but then, how many physicians exercise themselves and how much time is spent in the promotion of exercise in medical school compared to expensive drug therapy and surgery?

9. **Moving the body** maintains and improves insulin function and can reverse decades of damage. Scientists have discovered that exercising moderately every day improves the function of insulin receptors. Intense training does it even better.







10. **Exercise increases overall white cell counts** in the blood including lymphocytes, interleukin 2 and neutrophils. Exercise strengthens immunity and improves resistance to all forms of damage, including decay, bacteria, viruses, toxins and radiation.

11. **Maintaining good health** and physical fitness directly enhances well-being, improves our immune system, enables us to participate more actively in life and research has shown that it can even prolong life. Staying active and healthy can even reduce the likelihood that you will need medical attention.

12. **Exercise prevents fat buildup** in the coronary arteries of the heart. The inner lining of arteries - the endothelium - secretes a chemical called nitric oxide (NO) that signals the blood vessels to relax when the heart needs more blood. Training keeps these endothelial cells in shape as shown by Dr. Stefano Taddei and co-workers at the University of Pisa, Italy, who found that endothelial cells of fit people secreted more nitric oxide than those of sedentary control subjects.

13. Weight training not only benefits metabolism, it builds muscle and

preserves bone mass. Dr. Robert Staron and colleagues at Ohio State University found that eight weeks of weight training not only increased muscle mass and strength, but in people with high blood fats it also lowered blood cholesterol.

14. **A Finnish study** by Dr. Jaakko Tuomilehto and coworkers, involving 522 older overweight men and women, showed that a program of modest weight loss, eating a reduced fat, high-fiber diet, and weight training caused a 58% decrease in the incidence of diabetes during the five-year study.

15. **Dr. Young-Moo Na** and coworkers from Japan found that patients who exercised two days after surgery to remove stomach tumors showed better immune responses than patients who didn't exercise. Exercising patients had more natural killer cells – important for controlling cancer cells - than sedentary controls.

16. **Dr. Rainer Hambrecht** and colleagues at the University of Leipzig, Germany, found that six months of moderate exercise training in heart failure patients improved their heart function and exercise capacity. Resting and exercise heart rates were much lower in the trained men, which showed that training reduced the load on the patients' hearts.

17. **Regular exercise** is the best way to fight impotence. Dr. John McKay, a researcher involved in the Massachusetts Male Aging study, noted that declining sexual performance in men is due more to sedentary living than aging.





18. **Regular exercise** helps slow the age-related decline in cardiovascular capacity. Exercise is most effective in preventing cardiovascular decline when it is performed above 80% of maximum intensity for at least 30 minutes. You get some health benefits



from moderate physical activity, but you get the greatest benefits when you train harder.

19. A **study by Dr. Kevin Vincent** and colleagues at the University of Florida in Gainsville, found that in elderly subjects, moderate-load weight training increased antioxidant levels by about two percent, just another good reason for older people to lift weights.

20. **Exercise eliminates back pain.** Start by exercising every day. Stretch the major muscles in your back, pelvis and legs.

Strengthen your trunk muscles - do back extensions for low back muscles and crunches for your abs. Get moving and change your life by stopping back pain.

21. Weight training increases bone mineral density, strength and muscle mass, helps lower blood fats, fights obesity and prevents diabetes. Strength increases in heart patients improves their mobility, even when cardiovascular changes from their aerobics program are small.

22. **A 21-year study** from the University of Helsinki, Finland, involving more than 3,200 men, showed that those who exercised vigorously in their 40s and 50s were much less likely to sustain hip fractures than men who were sedentary. Even moderate exercise offered some protection.

23. **A hidden benefit** of exercise is that it increases metabolic rate even after the workout is over. In other words, you continue to burn extra calories even during recovery. A study by Drs. Kristin Osterberg and Christopher Melby, Colorado State University, showed that weight training in women produces modest but prolonged increases in post-exercise metabolic rate and possibly fat use.

24. **Drs. Scott Paluska** and Thomas Schwenk say that an exercise program helps people with symptoms of depression, anxiety and panic disorders. Exercise is just as effective as meditation and relaxation. Training distracts people from their daily problems. It improves self-confidence and helps people become more social, which often improves mental health. Exercise also releases "feel-good" substances, such as endorphins, that elevate mood.

25. **Regular physical exercise** helps people resist many diseases by lowering blood fats, improving insulin sensitivity and reducing abdominal fat.

26. **Studies show** that physically fit people secrete less insulin after given carbohydrates than people who are out of shape. Stepping up physical activity even a little helps the body process carbohydrates more efficiently. This reduces risk of obesity and Syndrome X.

27. **Exercise improves the digestion** of food, the intestinal absorption of nutrients and increases the efficiency of energy produced in the body.

28. **Exercise improves body posture** and prevents lower-back pain. It helps people to manage stress more effectively and combat substance abuse. Training improves mental alertness, improves physical appearance and increases productivity at work. Fit people are sick less often and spend less time at home due to infection and illness. Fitness is where it's at!

29. **Various group** and case studies have shown that regular exercise results in decreased self reported symptoms of depression, decreased psychotic symptoms and psychomotor agitation, and decreased overt hallucinatory symptoms, while social competence was improved.



30. In one study of 36 inpatients with anxiety, eight weeks of aerobic training reduced most subcategories of symptoms of anxiety disorders. This reduction was maintained for the entire year when regular exercise was continued.

31. **The August issue of Urology** (2000) published a study indicating that remaining active or becoming physically active in midlife may reduce the likelihood of erectile dysfunction.

32. **According to Dr. Frank B. Hu,** Harvard School of Public Health, one hour of brisk walking every day can cut a woman's risk of developing type-2 diabetes in half.

33. **Those who do not exercise** routinely experience 37 percent more symptoms of stress and anxiety than those who do (reported in the Annals of Behavioral Medicine).

34. **In studies of newly retired people**, mental capacity in sedentary people declined markedly in four years but was unchanged in active people. Exercise helps preserve normal metabolism in the brain and seems to protect sensitive cells from injury.

35. **Exercise training enables a person to work harder** (higher oxygen uptake) while deriving more energy from fat (both plasma FFAs [free fatty acids] and intramuscular triglycerides) and less from carbohydrate (blood glucose and glycogen). Training adaptations include the following:

• Increased number of mitochondria and the activity of enzymes within the mitochondria

- Increased levels of LPL, lipase, carnitine and carnitine transferase
- Increased triglyceride storage and oxidation of fat within muscle cells
- Increased FFA uptake by muscle and increased capillary density of muscle which improves blood flow and exchange of FFAs and oxygen
- Increased delivery of FFAs from the fat cell to the blood and
- Improved cardiovascular respiratory system which enhances oxygen delivery to the muscle for fat oxidation.

36. **The Harvard Alumni Health Study** published in Circulation (102: 975-986, 2000) showed that only participation in high intensity sports or vigorous exercise reduced the risk of coronary artery disease. Low intensity activity provides little protection. People who exercise for short periods (15 minutes) benefit as much as people who train longer - provided they train intensely.

37. **A study of more than 11,000 people** found that active men had a 50 percent lower risk of developing a duodenal ulcer than sedentary men. The amount of exercise men did was important. Men who ran more than ten miles a week reduced their ulcer risk by 62 percent, while those who ran less than that still had half the risk of sedentary men. Researchers speculated that exercise boosted immune function, which protected the men from infection and that fit people are less stressed.

38. **Unfit people die sooner**, have more heart disease and cancer, suffer from impotence, sluggish sex drive and slow metabolism, and get more stomach ulcers than fit people. According to a study by Dr. Kathleen Hutchinson and co-workers of Miami University, people with excellent cardiovascular fitness can also hear better than those with poor fitness. People with good muscle strength could hear even better - if they also had good cardiovascular fitness. Researchers speculated that fit people have superior bearing because they have better circulation and healthier.

hearing because they have better circulation and healthier levels of blood fats.

39. **Exercise can help patients with fibromyalgia** (FM). FM patients have unexplained whole-body muscle and joint pain. FM affects nearly four million Americans, most of whom are women. Symptoms include chronic fatigue, muscle and joint pain not caused by inflammation, impaired sleep, morning



stiffness and sometimes irritable bowel syndrome. Patients typically have lower strength, endurance and flexibility than normal. Anyone with FM should start with lowimpact aerobics, stretching activities, such as yoga, Tai Chi or relaxation exercises. They can begin weight training after doing aerobics for about four weeks. It is likely FM is at least partly a metabolic disorder, associated with lack of exercise and poor diet. As with most disease, the cure lies in the prevention.

40. **Chronic exercise provides a protective role** in reducing the extent of hepatotoxicity induced by halothane (a volatile anesthetic) administration in rats.

Exercise training in mice reduces myocardial tissue damage after the administration of the antitumor antibiotic, doxorubicin. Exercise increases activities of hepatic antioxidant enzymes and lowers products of lipid peroxidation in both the liver and heart. It is conceivable that routine exercise alters the toxic effects of alcohol and several drugs in the liver and protects cells, vital organs and tissues from toxins and free radicals generated through the metabolism of various pharmacological agents.

41. **Persons with stroke** can make significant gains in fitness and thereby reduce the potential for further disease and functional decline. Gains in cardiovascular endurance, muscular strength and endurance, flexibility and body composition can have a dramatic effect on improving the overall health of stroke survivors.



42. **Incidence of duodenal ulcers is lower** in men who exercise either intensely or moderately according to a poll of nearly 12,000 men and

women conducted by the Cooper Clinic in Dallas, Texas. This suggests that exercise training boosts the immune system and prevents some types of stomach ulcers.

43. **A 12-year study of 21,481 men** published in the New England Journal of Medicine found that those who exercised at least five times a week were only 10 times as likely to die suddenly during heavy exercise, compared to men who exercised vigorously less than once a week who were 74 times more likely to die doing heavy yard work, jogging or playing a racquet sport. Dr. Christine Abler, of Brigham and Women's Hospital, Boston, states "The benefits of routine exercise on heart disease, especially when performed consistently (compared to sporadic workouts) clearly outweighs the small risk of sudden death during an episode of vigorous exertion."

44. **A healthy lifestyle** that includes routine exercise cuts heart disease by more than half. In the Nurses' Health Study presented at the 72nd Scientific Session of the American Heart Association (84,000 women, aged 34-59, studied over 14 years), researchers concluded that combined with healthy food, nonsmoking and no excess body fat, daily exercise was essential to health of both mind and body.

45. **A variety of mechanisms** have been hypothesized to account for the beneficial effect of exercise to lessen the incidence of cancer, the most popular of which are either hormonal or immunological or both. Exercise increases DHEA while decreasing insulin. Regular moderate exercise leads to elevated natural killer cell (NK) activity and numbers. Sedentary living has the opposite effect.

46. **Back injuries occur ten times less** often in people who perform aerobic and resistance training. Chronic low back pain is caused by simple strains and sprains of muscles, ligaments or tendons located in the low-back area about 85% to 90% of the time. After 10 weeks of an intensive back strengthening program using resistance

exercise and stretching, 57 of 60 patients (95%) no longer required surgery and were virtually pain free. Each patient was led to believe prior to the incorporation of the exercise treatment that surgery was inevitable (Archives of Physical Medicine and Rehabilitation, 1999).

47. **Hundreds of studies** have confirmed the benefits of exercise on brain and nervous system function. Exercise training enhances mood, improves memory, increases brain blood flow, delays or slows the progression of Alzheimer's disease and reduces brain damage after an injury (HealthGate, June 30, 2000).

48. **According to a study of 3,069 men and 589 women** conducted at the Cooper Institute of Aerobics Research in Dallas, people with higher levels of strength develop far fewer functional problems with age than weaker people do. Maintaining strength through resistance exercise reduces functional limitations that reduce the quality of life (Med. Sci. Sports Exer. 32: 412-416, 2000).

49. Weight training improves insulin metabolism, enhances good cholesterol (HDL), reduces bad cholesterol (LDL), lowers resting heart rate and blood pressure, improves endurance and raises basal metabolic rate (Circul. 101: 828-833, 2000).

50. **Dr. Barry Franklin**, president of the American College of Sports Medicine, states that weight training is effective for improving many medical conditions, reducing the risk of heart disease and enhancing psychological well being. Weight training can substantially reduce the blood pressure response to physical work that typically raises the blood pressure, such as shoveling snow or twisting the stubborn cap off a condiment jar, thus reducing risk of damage to the heart and arteries.



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