

WEIGHT TRAINING STUDY GUIDE

1. Muscular strength is the maximum amount of force a muscle can produce in a single maximal effort.
2. Muscular endurance is the ability to exert a sub maximal force repeatedly over time.
3. Tendons connect muscles to bones.
4. Muscle fibers are individual muscle cells.
5. Hypertrophy is defined as an increase in muscle fiber size.
6. Slow-twitch muscle fibers are characterized by use in endurance exercises, fatigue resistance, and oxidative energy.
7. Fast-twitch muscle fibers are characterized by rapid contraction, anaerobic energy system, and use in sprinting.
8. Activities that would predominantly use slow-twitch muscle fibers are walking and jogging.
9. Activities that would predominantly use fast-twitch muscle fibers are sprinting.
10. A motor unit contains a motor nerve connected to muscle fibers.
11. Increased muscular strength and endurance lead to increased physical performance, reduced chance of injury, and enhanced self-image.
12. Injuries such as low-back pain are reduced if the spine is properly aligned by strong muscles in the abdomen and hips.
13. 85% of all Americans will be afflicted with low-back pain at some point in their life.
14. Strength training improves body composition primarily by increasing muscle mass.
15. Metabolic rate increases if muscle mass is increased.
16. An essential hormone that men have in higher amounts than women and that allows men to build more muscle mass than women is testosterone.
17. With inactivity and aging muscles contract more slowly, nerves disconnect from muscles they control and loss of bone tissue.
18. People typically begin to lose muscle mass after age 30.
19. A decrease in muscle strength associated with aging is due to the disconnection of nerves from muscles, inactivity and lack of a strength training program.
20. Strength training helps in the prevention and management of chronic disease by improving glucose metabolism.
21. Women tend to lose inches and increase strength as a result of resistance training.
22. Compared with men, women have the same capacity for increases in strength.
23. Isometric exercise is best described as applying force without movement.
24. Isometric or static exercises require no equipment, can be performed almost anywhere and can overcome weak points in a joint's range of motion.

25. Muscular force exerted as a muscle shortens is concentric.
26. A muscle lengthens as it contracts during an eccentric contraction.
27. The best weight training technique for developing explosive strength is plyometrics.
28. A type of isotonic exercise used by athletes during training to simulate movement during sprinting or throwing is speed loading.
29. An exercise in which the individual jumps from a platform to the ground and then back up on the platform is an example of plyometrics.
30. Isokinetic exercise is applying force at a constant speed.
31. Compared to free weights, weight machines are safer, easier to use, and more convenient.
32. Free-weights are more widely available, allow more dynamic movements and allow a greater variety of exercises.
33. The minimum number of training days per week for gaining strength is 2-3.
34. The number of different exercises in a complete weight training program for general fitness is usually 8-10.
35. Training intensity for weight training is determined by the amount of weight lifted.
36. A recommended amount of resistance and the number of repetitions for improving muscular endurance is 40-60% RM and 15-20 repetitions.
37. A recommended amount of resistance and number of repetitions for improving muscular strength is 70-80% RM and 1-5 repetitions.
38. To build individual muscle strength and muscle size, it is best to use heavy resistance with few repetitions.
39. To improve muscular endurance, it is best to use light resistance with many repetitions.
40. A set is a group of repetitions.
41. To gain muscular strength and endurance for general fitness, the rest interval between sets should last 1-3 mins.
42. For general fitness, 1 set, 8-12 repetitions, 70% of 1 RM.
43. For intensive weight training program for muscular strength, 3 sets, 4-6 repetitions 90% of 1 RM.
44. An antagonist muscle is one that is stretched when an agonist muscle contracts.
45. A cool-down period after a weight training workout should include 5-10 minutes of relaxation and stretching.
46. The rate of strength gains depends on motivation, age and heredity.
47. Increase resistance for a particular exercise when you can complete 12 or more repetitions of an exercise.
48. If you are currently lifting 100 pounds and are ready to increase your resistance add only 5 pounds.
49. In addition to heavier resistance, an advanced weight training program focusing on strength development would use more sets and fewer reps than a program focusing on general fitness.
50. With free weights use a spotter for exercises in which the bar crosses the face or head, lift most of the weight with your legs, and keep the weight close to your body.

51. Safety for weight training includes rest between sets, wrapping your thumbs around the bar when gripping a barbell or straight bar, use an alternate grip when acting as the sole spotter and remember to breathe.
52. Anabolic Steroids may cause liver damage, high blood pressure, and psychological disturbances.
53. Tetrahydrogestrinone (THG) is a synthetic derivative of testosterone.
54. Anabolic steroids may cause acne, testicular shrinkage, and liver disease.
55. All performance-enhancement substances have some type of side effect.
56. Dehydroepiandrosterone (DHEA) is still available over the counter.
57. A consistency program of weight training is the most effective way to improve muscle size and strength.
58. Actual change in muscle size usually begins after 6-8 weeks of strength training.
59. Muscle soreness is caused by a breakdown of muscle tissue by chemicals.
60. When you reach a plateau with your weight training program change the type of exercises, vary the number of sets and reps, and vary the load and number of repetitions. Do not increase your frequency.
61. The development of large muscle fibers is referred to as hypertrophy.
62. Muscle bundles are made up of groups of muscle fibers.
63. Slow-twitch fibers do not fatigue as rapidly as fast-twitch muscle fibers and are used primarily during endurance activities.
64. Power activities such as sprinting use predominantly fast-twitch muscle fibers.
65. A person uses more motor units when picking up a large weight than when picking up a small weight
66. Everyday activities such as walking down stairs and carrying books or groceries are made easier by increasing one's muscular strength and endurance.
67. Increased muscular strength and endurance decreased one's risk of injury.
68. Weight training improves body composition by increasing fat-free mass and raising metabolism.
69. Strength training can lessen bone loss in postmenopausal women.
70. Strength training can improve glucose metabolism and reduce the risk of type 2 diabetes.
71. Women do not have a larger proportion of muscle tissue in the upper body compared to men.
72. Muscular strength can be assessed by measuring the maximum amount of weight a person can lift during one repetition.
73. Muscular endurance can be assessed by repetition over time.
74. Dynamic weight training involves applying a force with a change in the length of the working muscle.
75. To build strength using isometric exercises, it is best to sustain a sub maximal contraction for 5-10 sec for 30 repetitions.
76. When a muscle lengthens as it contracts, the movement is referred to as and eccentric contraction.
77. Training with free weights is a form of isotonic resistance.
78. Plyometric exercises build explosive strength through bound rebound exercises.
79. Muscular strength will increase more rapidly if you rest a day between workouts than if you train everyday.