

# **Beginning a strength training program**

Benefits of a good resistance training program include: increased muscular strength and endurance; increased bone density; the connective tissue, ligaments, and tendons are strengthened; and an improved overall sense of “well being”.

## **1. Medical Evaluation**

- a. Especially for woman over 40, men over 50, and any individuals w/ preexisting conditioning.

## **2. Establishing goals:**

- a. General fitness
- b. Weight loss or gain
- c. Sport specific
- d. Post injury rehabilitation

## **3. Warm up**

- a. 5-10 minutes of light jogging or stationary cycling.

## **4. Exercise selection**

- a. Core and assistance exercises are used.
- b. Core exercises are multi-joint movements; whereas assistance exercises are single joint movements.

## **5. Core exercises involve movement at two or more primary joints**

(multijoint exercise) and they should recruit one or more large muscle groups or areas (i.e. chest, shoulders, upper back, hips/thighs) with the synergistic help of one or smaller muscle groups or areas (i.e. biceps, triceps, abs, calves, forearms, or lower back).

For example, the bench press is a core exercise because it involves movement at the shoulder and elbow joints and recruits the large chest muscles with the synergistic help of the anterior deltoids and triceps muscles.

**Assistance exercises** involve movement at only one primary joint (a single-joint exercise) and must recruit a smaller muscle group or only one large muscle group or area.

For example, the barbell biceps curl involves only movement at the elbow joints and recruits a small muscle group (i.e. the biceps brachii).

Define concentric, eccentric, and isometric contractions.

## 6. Exercise order

- a. **Core and then assistance exercises.** Since muscular hypertrophy is desired, non specific (core) exercises that emphasize the major muscle groups are employed. Squats, dead lifts, and bench press are examples. Isolation (assistance) movements are secondary during this phase. Examples include biceps curls, triceps extensions, and leg curls. Large muscle groups are generally trained first.
- b. **Alternate upper body and lower body** movements can be performed to allow one muscle group to rest while the other is exercising. This type of training is very typical of “circuit type” training. Relatively short rest periods are used in this type of training.
- c. The **“Push/Pull”** method also allows for the necessary rest between exercises to maintain effort and technique. This sequence guarantees that the same muscle group won’t be used for two exercises in a row, thus diminishing fatigue in the involved muscles.

- d. Combination of Arrangement methods i.e. *core and then assistance exercises and alternate “push” and “pull” exercises.* Often the lower body exercises are performed first and then the upper body exercises within the context of the combined arrangement methods. This is one of the best strategies for minimizing the effects of fatigue for trainees of all levels.

**7. Supersets and compound sets:** These methods involve combining two different exercises in succession with little or no rest between them.

**Supersets** involve combining two exercises from opposing muscle groups i.e. barbell curls followed immediately by a set of triceps pushdowns.

**Compound sets** entail sequentially performing two different exercises for the same muscle group i.e. barbell bench press followed immediately by dumbbell flyes.

These methods of training are purposely more demanding and may NOT be suitable for beginning trainees.

**8. Training frequency:** commonly refers to the number of training sessions an individual performs in one week. It is determined by the individual’s ability to “recover” from resistance training exercise.

<u>Resistance training status</u>	<u>Sessions per week</u>
Beginner	2-3
Intermediate	3-4
Advanced	4+

**Split routines** schedule 3-6 workouts evenly spread out over the course of a week with each workout training only part of the body (i.e. upper or lower body) or certain muscle areas (i.e. chest, shoulders, and biceps).

The result is an increased training frequency with sufficient recovery between workouts that involve the same exercises.

**9. Load and repetitions:** determining the load (or proper amount of weight) is arguably the most important program design variable. **Repetitions** refer to the number of times a specific load can be lifted or performed. The assigned load and repetitions are determined by the trainee's primary resistance training goals (i.e. muscular endurance, hypertrophy, or strength).

<b>Training Goal</b>	<b>Load(%1RM)</b>	<b>Goal Repetitions</b>
Muscular endurance	≤67	≥12
Muscular hypertrophy	67-85	6-12
Muscular strength	≥85	≤6

**Examples of Load increases:**

<b>Resistance training status</b>	<b>Body area</b>	<b>Type of exercise</b>	<b>Absolute increase</b>	<b>Relative increase (add a percent of previous load)</b>
<b>Beginner</b>	<b>Upper body</b>	<b>Core</b>	<b>2.5-5 lbs</b>	<b>2.5%</b>
	<b>Upper body</b>	<b>Assistance</b>	<b>1.25-2.5 lbs</b>	<b>1-2%</b>
	<b>Lower body</b>	<b>Core</b>	<b>10-15 lbs</b>	<b>5%</b>
	<b>Lower body</b>	<b>Assistance</b>	<b>5-10 lbs</b>	<b>2.5-5%</b>
<b>Intermediate or Advanced</b>	<b>Upper body</b>	<b>Core</b>	<b>5-10+ lbs</b>	<b>2.5-5+ %</b>
	<b>Upper body</b>	<b>Assistance</b>	<b>5-10 lbs</b>	<b>2.5-5 %</b>
	<b>Lower body</b>	<b>Core</b>	<b>15-20+ lbs</b>	<b>5-10+ %</b>
	<b>Lower body</b>	<b>Assistance</b>	<b>10-15 lbs</b>	<b>5-10 %</b>

**10. Volume: (repetitions and sets)** there are two definitions of volume as it relates to resistance training: the total amount of weight lifted in a training session (i.e. the total number of repetitions times the weight lifted per repetition) or the total number of repetitions completed in a training session (i.e., the number of reps performed in each set times the number of sets).

A **set** is a group of repetitions performed consecutively

<b>Training goal</b>	<b>Goal repetitions</b>	<b>Sets</b>
Muscular endurance	$\geq 12$	2-3
Hypertrophy	6-12	3-6
Muscular strength	$\leq 6$	2-6

Total sets should not exceed 25 per workout to allow for recovery and to avoid **DOMS** (Delayed Onset Muscle Soreness)

**11. Rest periods:** are the time intervals between multiple sets of the same exercise. Rest periods, like load assignments, are determined by the trainee's resistance training goals.

<b>Training goal</b>	<b>Rest period length</b>
Muscular endurance	$\leq 30$ seconds
Hypertrophy	30-90 seconds
Muscular strength	2-5 minutes

**12. “2-for-2” Rule:** If a trainee can complete *two more* repetitions than the repetition goal in the *final set* of an exercise for *two consecutive* training sessions, than the trainer/trainee should increase the load in all of the sets for that exercise for the next training session.

**13. Miscellaneous terms:**

Pyramid training

Pre-exhaustion

Drop sets

**14. Why hire a personal trainer?**

The personal trainer can assess, motivate, educate, and train clients to help them reach their fitness and health goals in a safe and effective manner.

- a. Screening
- b. Testing
- c. Evaluation
- d. Programming
- e. Supervision