



Resistance Training: A Mandatory Exercise Regime!

Darshna Parmar*

Consultant Physiotherapist and Fitness Coach, B.P.T, M.P.T, Specialized in Cardio-Respiratory Disorders) MIAP, Certified Aerobics Instructor (IAFT), India

***Corresponding Author:** Darshna Parmar, Consultant Physiotherapist and Fitness Coach, B.P.T, M.P.T, Specialized in Cardio-Respiratory Disorders) MIAP, Certified Aerobics Instructor (IAFT), India.

Received: May 17, 2024

Published: July 10, 2024

© All rights are reserved by **Darshna Parmar.**

We all know that cardio exercise is important for getting fit and losing some weight, but what we may not know is just how important Resistance training is when it comes to getting lean and burning fat. And yes of course to strengthen muscles!

Do you know strong muscles burn more calories than your fat!

The fact is that, when your body uses more resistance than it normally handles, your muscles get stronger, along with your bones and connective tissue, all while building lean muscle mass. The lean muscle mass is known to be more metabolically active than fat, which means you burn more calories all day long, even when you're not exercising!

In this Blog, I am going to talk all about Resistance Training which also known as Strength training, weight training or weightlifting!

Resistance can be provided by many ways such as by moving your body against gravity or by adding weighted dumbbells or weighted cuffs in the movement. You can also use weight machines available in the gym or equipment such as barbells, Resistance bands, or kettlebells or just use household items like water bottle. Aqua Therapy is another form of resistance training [1-4].

What is Muscular Fitness?

Muscular fitness is an important component of Health-related physical fitness, along with cardio-respiratory fitness, body composition and flexibility.

Muscular fitness is a "linked" term that integrates muscular strength and muscular endurance.

Thus, the term muscular fitness has been derived to infer this inter-dependence.

Defining the Components of Muscular Fitness

- **Muscle Strength:** The ability to generate a maximal amount of force for a short period of time. For example, lifting something very heavy. In the gym, doing bench-press with a heavy barbell for 5-8 repetitions. In your real life, this is similar to moving a heavy piece of furniture-that requires strength!
- **Muscle Endurance:** The ability to do something repeatedly for an extended period of time without getting tired/fatigue. For example, in the gym, doing 50 bodyweight squats in one set rhythmically. In your real life, this is similar to carrying boxes back and forth when you are helping someone move!

Resistance training improves all the components of muscular fitness, makes you more efficient in Athletic events as well as in Household chores!

Measuring Muscular Strength

The one-repetition maximum (1RM) test is the standard test used to measure muscle strength. During a 1RM test, an exerciser performs one repetition of a single exercise to identify highest weight

the person can lift using correct lifting technique. This test is usually carried out via the bench press for measuring the upper body strength and the leg press for measuring the lower body strength.

Example: You do 10 bicep arm curls with a dumbbell of 15 pounds (about 7 kg) and you cannot bend the arm to lift the weight for the next repetition.

That is written like this: Bicep curl - 10RM - 15 pounds

1 RM is also used for monitoring your exercise intensity.

Example: Suppose 60% to 80% of your 1 RM intensity is recommended.

Then if your 1RM in shoulder press is 100 lb (45.5 kg), then you should choose a resistance between 60 and 80 lb (27-36kg). This is how you can have your eyes on your resistance and progression!

In Physical Therapy practice, a therapist usually measures a client's muscle strength in two ways. First one is manual muscle testing in which the client resists the pressure provided by the therapist in the particular movement (such as during overhead arm movement) in a specific direction. This is graded on a five-point scale. Second method is using dynamometer device, in which the client presses on it to exert a force that is then measured in pounds or kilograms.

Benefits of Resistance Training

- **Elevates your metabolism:** Muscle burns more calories than fat, so the more lean muscle mass, the more calories you'll burn all day long.
- **Strengthen bones,** especially important for women.
- **Strengthen connective tissue:** Strength training helps to strengthen and protect our tendons and ligaments.
- **Make you stronger and increase muscular endurance:** This makes everyday activities much easier.
- **Help you avoid injuries:** Strong muscles give you strong, supported bones and connective tissue. All of that contributes to a strong body that can withstand more stress than the weak body which is seen in people who don't do strength exercises hence they are more prone to injuries!

- **Makes you young and healthy:** Evidence has shown that resistance training can enhance heart function, bone health, reduce blood pressure, reduce cholesterol, increase bone density, reduce low back pain, improve sleep, and helps to reduce symptoms of arthritis and fibromyalgia.
- **Improves mood:** Strength training can release feel-good hormones; endorphins that ultimately reduce anxiety and depression.
- Increases your confidence and self-esteem.

Improves coordination and balance

NOTE: Many women worry about building muscle and looking bulky, which is a myth spreading since ages. Women should not worry while opting for strength training, because women don't have enough testosterone to build muscle mass like a man!

Getting started with Resistance training can be confusing. What exercises should you do? How many sets and reps? How much weight should you lift? Here are some guidelines for commencing Resistance Training.

Frequency of Resistance Training

The American College of Sports Medicine (ACSM) recommends training each muscle group two to three times a week. Take 48 hours of rest between workout sessions which is necessary for muscle repair. High intensity training requires a longer rest.

Choose Types of Resistance Training

- **Beginner Strength Training:** Do a simple strength training program at home with basic exercises that require little to no equipment. (Bodyweight exercises are simple and easy way to start!) You can also do your own modified version of weightlifting with household items if you're not ready to invest in a set of dumbbells: cans, milk jugs. Re-fillable plastic containers with handles are especially useful; you can fill them to your desired weight with water or sand.
- **Intermediate Strength Training:** Use some weight equipment like dumbbell, kettlebell or resistance band at home or at gym.
- **Advanced Strength Training:** Use weight machines in the gym with correct techniques and follow the recommendation.

NOTE: DON'T PANIC If your weight scale shows weight gain after training! Weight training may increase your weight slightly. But muscle mass is more dense than fat mass and takes up less space. So even if you find that your body weight may increase, your body size may shrink. So always look at your body fat percentage or inch loss!

Choose Reps, Sets and Rest

- **To lose body fat and build muscle:** Use enough weight that it's challenging to complete 8 to 12 repetitions for one exercise, 1 to 3 sets-1 set for beginners, 2 to 3 sets for intermediate and advanced exercisers are recommended. Rest about 30 seconds to 1 minute between sets and at least one day between workout sessions.
- **For muscle gain:** Use maximum weight that you can only complete 4 to 8 repetitions without fatigue for 3 or more sets. Take rest for 1 to 2 minutes between each sets and 2 to 3 days between sessions.
- **For general health and muscle endurance:** lift a weight that you can only complete 12 to 16 repetitions without fatigue for 1 to 3 sets, resting 20 to 30seconds between sets and at least one day between workout sessions.

NOTE: For Beginners, working to fatigue isn't necessary, and starting out too strong can lead to too much post-exercise soreness. Always remember to start slowly!

Principle of progression/Maintenance

When you're just getting started with weight training, it's important that you know the basic strength training principles. These are pretty straightforward and can be helpful in figuring out how to set up your workouts so that you're always progressing and avoiding weight loss plateaus.

- **Overload:** The first thing you need to do to build lean muscle mass is lift more resistance than your muscles are used to. So the overload principle focuses on increasing your workload to avoid plateaus. In simple words, you should be able to lift enough weight that you can only complete the desired number of reps. The last rep may feel difficult, but ensuring good form is necessary.

- **Progression:** This means increase your intensity regularly to avoid plateaus or adaptation. You can progress in training by increasing the amount of weight lifted, or your sets/reps. Also you can change the exercises, and/or change the type of resistance. You can make these changes on a weekly or monthly basis.
- **Specificity:** This principle targets your goal. If you want weight loss, weight gain or to improve your muscle strength and endurance, then follow the specific recommendation that I have explained earlier. Specificity, in the other term can be called as "Individuality" that helps to achieve your goals rather than getting stuck into undesired exercise program for your body!

Once you have attained your desired level of muscular fitness, it is imperative to maintain it. And surprisingly, you can maintain it by training as little as 1 day/week as long as training intensity/resistance lifted is held constant!

Tips/Consideration

- **Always warm up** before you start lifting weights. This helps to prepare your body for exercise and prevent injury. Warm up can be done with light cardioaerobics or by doing free body movements.
- **Lift and lower your weights slowly.** Don't use momentum to lift the weight. If your body swings to lift the weight up, means you're using too much weight.
- **Breath.** The most important is don't hold your breath during movement, and make sure you're using full range of motion throughout the movement. Follow the simple rule "Exhale while making effort (lifting/pushing) and Inhale while relaxing / returning back!"
- **Stand up straight.** Keep your eyes on your posture. Tighten your core in every movement which helps to maintain your balance and protect your spine.
- **Rest** is mandatory to prevent muscle injuries. Follow rest rules between sets and take a day rest before next workout.
- **Prepare for soreness.** Post -training soreness is very normal when you try a new activity. So, don't be panic! Apply Ice pack to reduce soreness and take adequate rest.

- **Modify or skip** any exercise that causes pain or discomfort during movement.
- **Make a note of your movement**, how it feels and the weight you've chosen so you can keep track of your progress.
- **Make sure** that you are lifting heavy weight during advanced training under supervision or have a spotter with you.

NOTE: Most exercisers don't need protein powders or supplements for resistance training program. The fact is that you may not be aware of the side effects they carry. Instead of that, get the healthy protein and nutrients you need from eating a healthy, nutritious diet.

Weightlifting encourages weight loss quicker than aerobic exercise alone. Resistance training increases excess post-exercise oxygen consumption (when compared to cardio), meaning you burn more calories after finishing your workout!

So Make Sure You Spare 2-3 Days For Resistance Training!

Bibliography

1. American College of Sports Medicine. "Health Related Physical Fitness Assessment Manual". Wolters Kluwer, Lippincott Williams and Wilkins (2nd Edition) (2008).
2. American College of Sports Medicine. "Guidelines For Exercise Testing and Prescription". Baltimore, MD: Lippincott, Williams and Wilkins. (8th edition) (2009).
3. Jennifer R Scott. "Very well fit: Understanding Muscular Strength" (2020).
4. Ihalainen JK, *et al.* "Strength training improves metabolic health markers in older individuals regardless of training frequency". *Frontiers in Physiology* 10 (2019): 32.