

The Importance and Benefits of Physical Activity

It has been firmly established that individuals who engage in some form of physical activity, either by lifestyle or occupation, are likely to live longer and healthier lives. Research shows that even moderate caloric expenditure from physical activity has a significant impact on longevity. A physically active person who possesses such risk factors as hypertension, diabetes, and even a smoking habit can derive significant gains from incorporating regular physical activity into his/her daily activities. Regular physical activity is also likely to help modify a number of risk factors. As an adjunct to weight loss, exercise is likely to help you stay on a diet and lose weight. Additionally, regular exercise is associated with reduction in blood pressure, improved glucose regulation, promotion of better lipid profiles, and stronger/denser bones.

The First Step!

Before you begin an exercise program, take a fitness test, or substantially increase your level of activity, answer the questions below. This physical activity readiness questionnaire (PAR-Q) will help determine your suitability for beginning an exercise routine or program.

- Has your doctor ever said that you have a heart condition and that you should only participate in physical activity recommended by a doctor?
- Do you feel pain in your chest during physical activity?
- In the past month, have you had chest pain when you were not doing physical activity?
- Do you lose your balance because of dizziness, or do you ever lose consciousness?
- Do you have a bone or joint problem that could be made worse by a change in your physical activity?
- Is your doctor currently prescribing drugs for your blood pressure or heart condition?
- Do you know of any reason you should not participate in physical activity?

If you answered yes to one or more questions, if you are over 40 years of age and have been inactive, or if you are concerned about your health, consult a physician before taking a fitness test or substantially increasing your physical activity. If you answered no to each question, you have reasonable assurance of your suitability for fitness testing and training.

Selecting Home Weight Machines

Using home weight/resistance training equipment is an excellent way to tone and strengthen the body's muscles. They allow an individual to perform many exercises without taking up much space in the home.

There are many types of home weight/resistance machines available for consumers, and one must be aware of the pros and cons of each product as well as the individual needs of the user. For instance, many weight/resistance machines are designed to work the same muscle groups, only in a slightly different manner than others. Equipment can be purchased to accommodate each specific muscle group, which can take up a tremendous amount of space and is quite costly. On the other hand, a home weight machine, which is one large machine with multiple stations, takes up considerably less space and is more cost efficient. However, only 1-2 persons can use this machine at one time.

Home weight machines come in different styles and sizes and use different forms of resistance, including weight stacks, hydraulic pistons, flexible rods, and rubber bands, as well as the user's own body weight. Each has its own advantages and disadvantages, which should be considered when purchasing home weight/resistance training equipment.

- **Weight Stacks:** Have a number of plates atop one another and use a system of cables and pulleys to move the weight. Resistance can be increased or decreased by simply moving a pin up or down to change the amount of weight lifted.
- **Hydraulic Pistons:** Work in much the same manner as a shock absorber. As you move throughout a range of motion, the fluid moves from one compartment to another. Resistance is increased or decreased by changing the lever arm and by adjusting the valves, which controls the amount of force required to push fluid out.
- **Flexible Rods:** Attached by cables to a lever, which allows one to push or pull and bend the rod. Resistance is modified by attaching or detaching rods.
- **Flexible Bands:** Also called weightstraps, these are much like flexible rods. The bands are attached to the lever by cables and stretch as the user pushes or pulls the lever arm. Band thickness and the number of bands applied determine resistance.
- **User's Own Body Weight:** A platform on which the user sits or lies is mounted on tracks. Pushing or pulling on cables moves the platform, along with a percentage of the user's body weight. Resistance is altered by increasing or decreasing the angle of the platform to the floor.

Safety

Weight training can be hazardous if safety guidelines are not followed. Some basic guidelines to follow are:

- Don't use defective equipment; beware of broken bolts, frayed cables, broken chains or loose cushions.
- Observe proper lifting techniques.
- Make sure weight machines are properly adjusted to accommodate your body size.

- Don't hold your breath, rather breathe in when you lower a weight, and breathe out when you lift a weight.
- Always warm-up properly prior to any weight training activities.
- Protect your back from dangerous positions.
- Lift weights from a stabilized position on seats or rollers.
- Fasten seatbelts securely if your machine has one.
- Stay away from moving parts and weight plates.
- Perform exercises through a full range of motion.

Also, small children should be kept away from weight/resistance machines as they could pose a danger. Children and adolescents can safely perform some strength training exercises, provided that they are supervised and taught the proper techniques.

Maintenance and Durability

- Follow the manufacturer's recommended maintenance schedule.
- Complete and return the warranty to ensure adequate coverage of the machine.

Power, Performance, and Operation

- Home machines should have adequate weight to provide enough resistance to meet the demands of the user.
- Machines should adequately adjust to the proper body position.
- Check for comfortable seat and hand grips.
- Consider size of the assembled unit or units. Your home should have enough free space to accommodate the machine. Be sure to determine your available space before purchase.
- Consider mobility of the assembled unit, if this is a desire.
- Storage and time to assemble/disassemble the unit may need to be considered.

Other Considerations:

Advantages and Disadvantages

- **Weight Stacks**
Advantages: Resistance feels natural and constant throughout a range of motion, easy to chart progress
Disadvantages: Heavy and bulky, hard to get home, difficult to assemble, difficult to move after assembled
- **Hydraulic Pistons**
Advantages: Light weight, easy to move
Disadvantages: Resistance varies with pace and effort, difficult to chart progress
- **Flexible Rods and Bands**
Advantages: Light weight, easy to move, resistance is lower at beginning of movement
Disadvantages: May feel unnatural, resistance is different throughout entire range of motion, extremely difficult toward end, may be difficult to control at the end of the range of motion

- **User's Body Weight**

Advantages: Easy to assemble, easy to move, easy to store, can vary muscle groups trained by simply changing body position

Disadvantages: Resistance is limited to about 50% of user's body weight, awkward to get into starting position

Using Home Weight Machines

To get maximum benefit from your workout, maintain proper body position and mechanics when performing any exercise. This will ensure that you are isolating the muscles specific to each exercise.

In order to reduce strain on your lower back, avoid movements which cause the back to twist. Follow proper exercise technique and machine instructions.

Allow for adequate rest periods between sets, or repetitions performed in succession — approximately 1-2 minutes.

Lift within your capacity; don't lift beyond the limits of your individual strength.

Pronated grips (palms away from you) are appropriate for presses and pulls. Supinated grips (palms toward you) are used for exercises such as biceps curls.

Don't use too much weight when you begin your program. The first set should be a weight you can move easily for at least 10 repetitions. Do only one set of each exercise during the first workout. Some muscle soreness 1-2 days after your workout is expected, but excessive soreness indicates you've trained too hard. Devote your first weeks of training to learning the exercises. Then, gradually add more sets and/or repetitions to your program. People who are beginning an exercise program will get maximum benefit from performing one set of 8-10 repetitions on each exercise. When you reach a point that you are able to do 11-12 repetitions easily, it is time to add more resistance. If, after adding the weight, you are only able to do 8 or 9 repetitions, stay with that weight until you can again complete 10 or more repetitions per set. If, after adding the weight, you can only do 4 to 6 repetitions, you have added too much weight. More information on how to properly progress in a strength training program can be found in ACSM's Position Stand, "Progression Models in Resistance Training for Healthy Adults." © 2002. ACSM Position Stands can be found on the Web at www.acsm-msse.org.

If you lay off of weight training for an extended period of time, get back into your program at an easy pace. Returning to the last weight lifted will only cause injury and delay progress.

Important Points to Remember:

- Make sure the unit is right for you! Consider the maximum amount of weight that can be lifted.
- Consider the space available for the unit and ease of use.
- Stay with it and set realistic goals.

A Complete Physical Activity Program

There are three principal components to a rounded program of physical activity: aerobic exercise, strength training exercise, and flexibility training. It is not essential that all three components be performed during the same workout session. Try to create a pattern that fits into your schedule and one to which you can adhere. Commitment to a regular physical activity program is more important than intensity of the workouts. Therefore, choose exercises you believe you are likely to pursue and enjoy. ACSM's Position Stand, "The Recommended Quantity and Quality of Exercise for Developing and Maintaining Cardiorespiratory and Muscular Fitness, and Flexibility in Healthy Adults" ©1998 states that aerobic training should be performed three to five days per week with a minimum of 20 minutes per day. ACSM Position Stands can be found on the Web at www.acsm-msse.org. Remember, if your schedule is tight, it is better to exercise for a shorter period of time than not at all. Typical forms of aerobic exercise are walking and running (treadmills), stair climbing, bicycling (bicycle ergometers), rowing, cross-country skiing, and swimming. Many devices offer a combination of these motions. For general purposes, strength training should be done two to three times per week. Strength training is performed with free weights or weight machines. For the purposes of general training, two to three upper body and lower body exercises should be done. Additionally, abdominal exercises are an important part of strength training. Flexibility training is important and frequently neglected, resulting in increased tightness as we age and become less active. Stretching is most safely done with sustained gradual movements lasting a minimum of 15 seconds per stretch. At a minimum, strive to stretch every day.

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Selecting and Effectively Using Home Weights



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