



ACSM Information On...

## Selecting and Effectively Using Home Weight Machines

There are many well-documented health and fitness benefits associated with building and maintaining muscle mass. Finding a convenient, affordable fitness facility can present barriers that may prevent a person from participating in weightlifting exercises. Some people prefer to set up a home gym, and this brochure will explain what to look for in home weight machines.

### A COMPLETE PHYSICAL ACTIVITY PROGRAM

A well-rounded physical activity program includes aerobic exercise and strength training exercise, but not necessarily in the same session. This blend helps maintain or improve cardiorespiratory and muscular fitness and overall health and function. Regular physical activity will provide more health benefits than sporadic, high intensity workouts, so choose exercises you are likely to enjoy and that you can incorporate into your schedule.

ACSM's physical activity recommendations for healthy adults, updated in 2011, recommend at least 30 minutes of moderate-intensity physical activity (working hard enough to break a sweat, but still able to carry on a conversation) five days per week, or 20 minutes of more vigorous activity three days per week. Combinations of moderate- and vigorous-intensity activity can be performed to meet this recommendation.

Examples of typical aerobic exercises are:

- Walking
- Running
- Stair climbing
- Cycling
- Rowing
- Cross country skiing
- Swimming.

In addition, strength training should be performed a minimum of two days each week, with 8-12 repetitions of 8-10 different exercises that target all major muscle groups. This type of training can be accomplished using body weight, resistance bands, free weights, medicine balls or weight machines.

Using home weight or resistance training equipment is an excellent way to tone and strengthen the body's muscles. These machines allow an individual to perform many exercises at home without requiring much space. A home weight machine – one large machine with multiple stations – takes up considerably less space than specialized costly machines and is more cost-efficient.

Home weight machines come in different styles and sizes. They use forms of resistance, including:

- **Weight Stacks:** A number of plates stacked upon one another, using 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:** Similar to a shock absorber. As you move through a range of motion, the fluid moves from one compartment to another. Resistance is increased or decreased by changing the lever arm and 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 weight straps, 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.
- **Individual 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 CONSIDERATIONS

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 your body size.
- Inhale when you lower a weight, and

exhale 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.
- If available, fasten seatbelt securely.
- Stay away from moving parts and weight plates.
- Perform exercises through a full range of motion.

Small children should be kept away from home weight machines. Children and adolescents can safely perform some strength training exercises, provided that they have adult supervision and are taught the proper techniques.

### MAINTENANCE AND DURABILITY CONSIDERATIONS

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

### PERFORMANCE AND OPERATION CONSIDERATIONS

- 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.
- Consider storage and time to assemble and disassemble the unit.

### 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:** Lightweight; easy to move
- **Disadvantages:** Resistance varies with pace and effort; difficult to chart progress

#### FLEXIBLE RODS AND BANDS

- **Advantages:** Lightweight, 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

### INDIVIDUAL'S BODY WEIGHT

- **Advantages:** Easy to assemble; easy to move; easy to store; can vary muscle groups trained by changing body position
- **Disadvantages:** Resistance is limited to about 50 percent of user's body weight; awkward to get into starting position

### USING HOME WEIGHT MACHINES

Remember to maintain proper body position and mechanics, ensuring that you are isolating the muscles specific to each exercise. 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 — approximately one to two minutes.

Do not 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. The first set should be a weight you can move easily for at least ten repetitions. Perform only one set of each exercise during the first workout. Muscle soreness a few days after your workout is common, but excessive and persistent soreness indicates you've trained too hard.

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, add more resistance. If, after adding more weight, you are only able to do 8-9 repetitions, stay with that weight until you can again complete ten or more repetitions per set. If, after adding the weight, you can only do 4-6 repetitions, you have added too much weight.

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

### STAYING ACTIVE PAYS OFF!

Those who are physically active tend to live longer, healthier lives. Research shows that moderate physical activity — such as 30 minutes a day of brisk walking — significantly contributes to longevity. Even a person with risk factors like high blood pressure, diabetes or even a smoking habit can gain real benefits from incorporating regular physical activity into their daily life.

As many dieters have found, exercise can help you stay on a diet and lose weight. What's more — regular exercise can help lower blood pressure, control blood sugar, improve cholesterol levels and build stronger, denser bones.

### THE FIRST STEP

Before you begin an exercise program, take a fitness test, or substantially increase your level of activity, make sure to answer the following questions. This physical activity readiness questionnaire (PAR-Q) will help determine if you're ready to begin an exercise routine or program.

- Has your doctor ever said that you have a heart condition or that you should participate in physical activity only as 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 from dizziness? 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 a 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 recently 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, then it's likely that you can safely begin exercising.

### PRIOR TO EXERCISE

Prior to beginning any exercise program, including the activities depicted in this brochure, individuals should seek medical evaluation and clearance to engage in activity. Not all exercise programs are suitable for everyone, and some programs may result in injury. Activities should be carried out at a pace that is comfortable for the user. Users should discontinue participation in any exercise activity that causes pain or discomfort. In such event, medical consultation should be immediately obtained.



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