



ACSM Information On...

Selecting and Effectively Using an Elliptical Trainer or Stair Climber

Elliptical trainers and stair climbers offer many similar features for individuals considering a fitness machine for their home. Both machines provide the ability to exercise and target the thigh and gluteus muscles. Quality machines of both types provide an excellent alternative workout to running without the high impact on joints and muscles.

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.

ELLIPTICAL MACHINES

The elliptical trainer combines the motion of stair-stepping with cross-country skiing, providing a low-impact aerobic workout. Many elliptical trainers use alternating push/pull resistance bars to add an upper-body workout as you stride. The pedals can also be reversed (backward stride), which not only works the muscles in a slightly different manner but allows some variation in your workout.

There are two main types of elliptical machines available: rear-drive and front-drive. Rear-drive units enable a true elliptical movement of the pedals and include an adjustable incline ramp at the front of the machine. A front-drive elliptical machine, on the other hand, needs to use articulating pedals in order to match a natural stride and lacks the adjustable ramp of a rear-drive unit. Most users tend to prefer rear-drive elliptical machines. The primary advantage of a front-drive unit is the cost; no matter how much of a bargain it seems, front-drive units without articulating pedals will result in motion that is unnatural and uncomfortable for most consumers.

Make sure that stride length is comfortable – some units accommodate a stride length of only 14 inches, which is too small for a tall person, while others are as long as 21 inches. A stride that is too short will make for an awkward, jerky elliptical ride.

STAIR CLIMBERS

Similar to elliptical machines, many stair climbers offer levels of manual resistance. Others have programming for intervals, hills and endurance training.

There are two types of stair steppers: electronic and manual. Electronic stair steppers have a motor that regulates the movement of the steps. Manual stair steppers are less expensive than their electronic counterparts and range from mini-steppers to full-size models; air pressure pistons (rather than a motor) regulate the stepping motion. Some stair-steppers feature revolving steps that rotate like a treadmill track and require you to keep pace. Most steppers, however, have independent pedals; you push down on one pedal as the other lifts up.

Independent, self-leveling pedals will allow the user to keep the step flat throughout the workout. Check that the pedal motion

is smooth, natural and comfortable; although mini-steppers come at a mini-price, the mini-construct results in an unnatural restriction in motion that few consumers can tolerate.

SELECTING A MACHINE

Ask lots of questions. Take a ten-minute “test drive” on several different machines. You will quickly develop a preference for console options, set-up and frame construction. Basic consoles should display time, distance, rate of speed and intensity level. Intensity may be controlled manually or pre-set from a menu of programmed workout choices when you start exercise. If your ten-minute “test drive” is even remotely uncomfortable, do not buy the machine.

PRICE CONSIDERATIONS

Elliptical and stair climber machines range in price from a few hundred to a few thousand dollars. If you cannot afford a quality machine, your money may be better spent on a health club membership.

SAFETY CONSIDERATIONS

It is essential that your machine have solid construction and a stable frame, in order to give you a safe and effective workout. The handrails should be positioned so that your workout posture is upright with the knees behind the toes. Bending forward places a great amount of stress on the back and wrists. Using the handrails to support part of your body weight reduces the effectiveness of your workout and puts you at risk for injury. Handrails should be used for balance and/or resistance training. Read all of the manufacturer’s instructions to get the most out of your machine!

OTHER CONSIDERATIONS

Weight/Space

- Do you have appropriate floor support for the weight of the machine?
- What is the maximum weight allowance of the machine? Most will have a maximum user weight of 350 lbs.
- Determine your space considerations:
 - Is the space large enough?
 - Is the floor level?
 - Is the ceiling height sufficient?
 - Will the machine need to be stored periodically? Are there wheels that make the machine moveable?

Maintenance and Durability

- Is the manufacturing company reliable and reputable? Is the machine durable,

easily assembled and easily maintained?

- Look for a product that is maintenance-free. A well-designed unit takes normal wear and tear into account.
- Does the machine come with a warranty? Are local technicians available for service?
- Look for a warranty that provides for a minimum of one year service and one to three years’ coverage on parts.
- Be sure your warranty includes electronics and other key components, such as the resistance/braking system.

Power and Performance and Operation

- Check the difficulty levels available on manual mode as well as the range of programs available.
- Are you able to increase the difficulty of your workout as you increase your fitness?
- Check the control panel features:
 - Is it accessible and easy to read?
 - Is it user-friendly?
 - Does it offer the information important for your needs (time, distance, resistance, calories, etc.)?
- Is the noise level acceptable?

USING AN ELLIPTICAL TRAINER OR STAIR STEPPER

When exercising, maintain the correct posture by keeping your shoulders back, head up, chin straight, abdominals tight, and arms relaxed. Your hands should rest lightly on the hand rails to assist with balance (or use the work-out bars if available). Do not lean forward or grip the bars tightly. Posture should be upright. If you have a tendency to lean on the hand rails on a stair stepper, adjust the step rate. Increasing the pedal resistance will cause you to slow the stepping rate. This should allow you to take your weight off the hand rails.

IMPORTANT POINTS TO REMEMBER

- Wear supportive athletic shoes.
- Avoid restrictive clothing.
- Relax and maintain a steady stride, going through a comfortable range of motion.
- A good machine should allow you to move comfortably and smoothly, without the chance of your knees bumping into the console.
- Avoid machines with pedals that limit your range of motion.
- Any fitness machine is only as good for

your health as the frequency with which you use it. ACSM recommends exercising for at least 150 minutes per week, consistent with the federal physical activity guidelines.

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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