



## ACSM Information On...

# Selecting and Effectively Using a Medicine Ball

Medicine balls provide an effective means of improving muscular power, endurance and functional fitness. Anyone can use medicine balls to help improve their fitness. Medicine balls are used in a variety of settings – in health clubs to accommodate the health and fitness goals of novice exercisers and by advanced athletes to achieve sports-specific conditioning goals.

### 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.

### WHY USE A MEDICINE BALL?

Medicine ball training can be effective in improving muscular power, and movement velocity is a critical factor in power development. Plyometrics increase the power of the movement by harnessing the natural elastic components of the muscles and tendons as well as the stretch reflex. These quick movements develop explosive power through muscular actions.

Medicine ball training is one of the many components in an individual's routine. Medicine ball exercises promote variety by introducing a novel stimulus for physiological adaptation. Training with a medicine ball helps to develop total body power, muscular endurance and flexibility. Exercises involving tossing and catching the ball are typically classified as a plyometric exercise (a specific type of exercise utilizing the stretch-shortening cycle of the muscle to produce power).

Although used as part of strength and conditioning programs, medicine balls typically do not provide a sufficient load to produce the overload needed to create strength gains in certain exercises. However, they do provide a more comfortable and feasible means of safely increasing the load for certain exercises, and improvement in muscular power have

been demonstrated, especially for upper body movements.

### SELECTING A MEDICINE BALL

Medicine balls can be found in a variety of sizes and weights, typically ranging from a few inches in diameter (baseball-sized) to larger than a basketball and from one to 50 pounds and even heavier for athletes training for power. Most medicine balls are round, but they are also available with built-in handles to offer improved grip and in shapes such as footballs for sport-specific training. In addition, some medicine balls have been designed with single or double handles or ropes in order to increase specificity to training. Usually, medicine balls are constructed of either leather, nylon or some rubberized material. Size does not always determine the weight of the medicine ball. In general, smaller and lighter balls should be used for training speed, while heavier medicine balls would be utilized for strength-speed and/or power training. Consider the following questions when selecting a medicine ball:

- Determine whether the ball will be used for throwing, catching or added resistance. This will help establish whether or not you should select a standard ball or a specialty ball with handles or ropes.

- People tend to choose a heavier ball than required. The general rule when selecting a medicine ball is that it must be heavy enough to visibly slow the motion, but not so heavy that control, accuracy or range of motion are lessened. Fatigue at the end of a workout will diminish motor skills; therefore, if you lose control, then the ball is too heavy. For power training, it is recommended that the medicine ball's weight corresponds to about 30-50 percent of the one-repetition maximum of a similar weight training exercise.
- Following the principle of progressive overload, as you become stronger and more economical in your movement, then you will need to progress to the next size of ball.
- If the exercises require bouncing the ball, a rubber ball should be selected. If the ball will be used for throwing and catching, a leather or nylon ball may be preferred.
- It is better to start with a light ball and gradually work up to greater resistance. This will ensure that proper movement technique and form is not compromised.
- The size and shape of the medicine ball will vary depending on the exercise being performed. It is important to remember that power and multi-joint exercises, such as the backward overhead medicine ball throw or the overhead medicine ball squat, might require a larger size ball in order to work muscles sufficiently. However, exercises done with the ball at arms' length that seem manageable when held close to the body may be too heavy when held away from the body.

## USING A MEDICINE BALL

Ensure there is adequate workout space. Many medicine ball exercises involve throwing and catching; therefore, individuals must have spacious and clutter-free area. The minimum recommended area is about 20 square yards, especially when performing throwing exercises. When utilizing an indoor facility such as a gymnasium, ensure the ceilings are high enough for all overhead throws. Medicine ball throws against the wall should only be done against concrete or reinforced walls. If the weather allows, training outdoors in a field or grassy area is also recommended.

## MEDICINE BALL EXERCISES

- **Backward Overhead Medicine Ball Throw** – Begin in a squat position

holding the medicine ball in both hands between the legs. In a quick movement, bring the arms upward and over the head releasing the ball at chest level and following through. Repeat for the desired number of repetitions.

- **Chest Pass** – With a partner, position your feet shoulder-width apart, in a power stance. Make sure your knees are slightly flexed and abdominals tight. Pass the ball to your partner at chest level. Receive the ball with a strong core and legs while retaining your balance. Repeat for the desired number of repetitions.
- **Depth Push-Up** – Lie in the push-up position with both hands on the medicine ball and elbows extended. Quickly remove the hands from the medicine ball and drop down. Contact the ground with hands slightly farther than shoulder width apart and elbows slightly flexed allowing chest to almost touch the medicine ball. Immediately and explosively push up by fully extending the elbows and putting your palms back onto the medicine ball. Repeat for the desired number of repetitions.
- **Medicine Ball V-Ups** – Lie supine, on your back with legs straight and arms extended straight overhead holding the medicine ball. Simultaneously raise your legs and trunk into a seated V position, bringing the medicine ball and legs upright overhead. Return to start position and repeat for the desired number of repetitions.

## TRAINING PARTNERS

Although not necessary for every exercise, a number of medicine ball exercises require a partner. Training partners should match in approximate size and strength, and you should remember to practice each exercise before attempting a more intense pace or rhythm. It will provide partners a chance to learn proper execution of the movement while ensuring accuracy and coordination. Establish a smooth rhythm of motion to reduce surprises and accidents. When throwing the medicine ball, determine whether your partner is ready to receive the ball. When receiving, ensure that you keep your eyes on the ball. Catch the ball with extended and open hands kept close together, and at contact, let the arms flex to absorb the impact.

## SAFETY PRECAUTIONS

As with any exercise, injuries may occur if performed incorrectly. It is important to

always use good movement technique and control during medicine ball exercises.

### 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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