

- Add a dynamic balance challenge by adding movement on, over, or around the ball with one or both limbs (on the same or opposite sides of the body). Increase your volume of training (e.g., increase the resistance used, or repetitions or sets performed). Use a larger stability ball, rather than a smaller one, for added challenge.

## Using Stability Balls

Stability balls can be used in a variety of ways to achieve different aspects of fitness.

- Stretching: lying over the ball on your back to stretch abdominal muscles, on your stomach to stretch back muscles, on your side to stretch abdominal oblique muscles. Sit on the ball with legs in front and reach forward to stretch the hamstrings.
- Increase muscle strength/endurance without external weight: lie on your back on ball and perform crunches; perform push-ups with knees, shins, or feet on ball; lie on your stomach on ball and perform back extensions, or perform squats by placing the ball between your back and a wall and move up and down.
- Increase muscular strength and endurance by performing exercises with dumb bells or other external resistance: lying supine (chest presses, triceps extensions) or prone on the ball (flies), or other exercises while sitting on the ball.

## Important Points to Remember:

Stability balls have multiple applications: improving core stability, static and dynamic balance, strength, flexibility, and can enhance functional performance of Activities of Daily Living, or ADLs. Stability balls can be used to improve sports performance. They can also be incorporated as part of an injury rehabilitation program. You can do an entire workout with a stability ball or you can use one as part of a well-rounded exercise program for greater variety and effective development of core stability.

### The following are additional sources of helpful information on stability ball exercises:

- American Council on Exercise (2002). Stability Ball Training. Monterey, CA: Healthy Learning.
- Flett, Maureen (2003). Swiss Ball For Strength, Tone, and Posture. London: PRC Publishing Ltd.
- Goldenberg, Lorne, and Twist, Peter (2002). Strength Ball Training. Champaign, IL: Human Kinetics

- Lang, Annette (2003). Foundations of core Stability and Balance Training (video). Monterey, CA: Healthy Learning.
- Prouty, Joy and Gardiner, Josie (2000). Fit Over Fifty: Stability Ball Workout (video). Monterey, CA: Healthy Learning.
- Verstegen, Mark, and Williams, Pete (2004). Core Performance. Rodale Press.
- Westlake, Lisa (2002). Get on the Ball: Develop a Strong Core and a Lean, Toned Body. New York: Marlowe & Company.

### A Complete Physical Activity Program

A well rounded program of physical activity includes aerobic exercise and strength training exercise, but not necessarily in the same session. This blend helps to 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 2007, 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. Typical aerobic exercises include walking and running, stair climbing, cycling on a stationary or moving bike, rowing, cross-country skiing, and 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.

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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 in fact 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.

## Selecting and Effectively Using

# Stability Balls



ACSM... Advancing Health through  
Science, Fitness and Medicine

## Staying Active Pays Off!

Those who are physically active tend to live longer, healthier lives. Research shows that even moderate physical activity—such as 30 minutes a day of brisk walking—significantly contributes to longevity. A physically active person with such risk factors as high blood pressure, diabetes or even a smoking habit can get real benefits from regular physical activity as part of 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 your suitability for beginning 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 because of 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 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 fitness testing and training.

## About Stability Balls

Stability balls provide an inexpensive, low-tech, lightweight, colorful, and fun means of improving core stability, muscular strength and endurance, balance, flexibility, and functional fitness. Stability balls were developed in Italy in the 1960s. They were first used in rehabilitative therapy by Dr. Susanne Klein-Vogelbach, founding director of a physical therapy school in Switzerland. The balls were introduced in the United States in 1989. Stability balls (a.k.a. Swiss balls or physioballs) can help anyone improve his or her fitness, they allow a variety of exercises with or without external resistance, and can be used to overload the muscles. Stability balls also work the core muscles (abdominals, back muscles, hip flexors and extensors). Because the ball itself is unstable, these muscles are actively engaged throughout each exercise.

## Selecting a Stability Ball

Stability balls range from small to extra-extra-large. Choose a ball size that allows you to sit on it with erect posture with your hips and knees at 90 degrees based on your height and leg length:

- 30-35 cm if < 4'10" (145 cm) tall
- 45 cm for 4'8" - 5'5" (140-165 cm)
- 55 cm for 5'6" - 6'0" (165-185 cm)
- 65 cm for 6'0" - 6'5" (185-195 cm)
- 75 cm for those over 6'5" (>195 cm)
- 85 cm ball for heavier or long-legged exercisers

A smaller ball may be more useful as a handheld object for sitting or standing range of motion and balance exercises. A smaller ball can also be used to perform crunches with the ball between or behind the knees.

## Maintenance and Durability

Stability balls are durable and will last a long time with proper care:

- Follow the manufacturer's directions for proper inflation and check inflation on a regular basis.
- Use stability balls on a clean, smooth surface (floor or carpet), free of debris and sharp objects that could produce wear on the balls' surfaces or puncture them.
- Clean stability balls regularly with water or mild soapy water for comfort and sanitary reasons. Avoid using chemical cleaners that may damage the covering.

- Stability balls can be stored on racks made specifically for that purpose, on stackers, or in a net suspended from the wall or ceiling to save space.

## Safety

Using a stability ball safely starts with proper inflation and care (described earlier). To increase your safety while using a stability ball

- Maintain the natural curves in your back while exercising.
- Increase your stability by placing your feet about shoulder-width apart (or wider for better balance). Put a mat in front of the ball to act as a cushion in case of a fall.
- Use a wall behind the ball to keep the ball from rolling out backwards from underneath you, and to prevent you from falling directly to the floor should the ball slip forward.
- Place chairs on either side of the ball to provide lateral stability if needed while exercising in a seated position.
- Always use good movement technique and control.
- Remember to breathe throughout each exercise.
- Avoid ballistic movements (bouncing or fast movements of the joints) on the stability ball because they reduce your control of the movement and increase the risk of muscle strain and/or joint sprain.

In addition, it is important to follow a proper exercise progression to reduce your risk of injury and gain optimal training benefits. Begin by developing the ability to maintain your balance while sitting on the ball before adding movement of the limbs or trunk or adding external resistance with free weights, resistance bands, or a medicine ball.

## Other Considerations

As your core stability, balance, and strength improve, you can achieve a progressive overload (i.e., challenging yourself further in different ways in order to achieve additional fitness benefits) in a number of ways:

- Practice transitions from one position to another.
- Make your base of support less stable by moving feet or hands closer and farther away from the ball.
- Vary your position on the ball so it supports less of your body weight (e.g., in crunches or push-ups) so you are lifting more weight against gravity.