

# **Strength Ball Training**

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# *Learning Objectives*

After reading *Strength Ball Training*, the participant will be able to:

1. Explain the benefits of using the stability ball and medicine ball for strength training exercises.
2. Define and understand proprioception.
3. Explain how the myotatic stretch reflex functions.
4. Explain the function of the Golgi tendon organ.
5. Explain how the muscle chain works to maintain balance.
6. Identify the muscle groups that comprise the speed center.
7. Understand how to progress the level of difficulty when using medicine ball and stability ball exercises.
8. Explain the technique of setting the abdominals before performing stability ball and medicine ball exercises.
9. Identify specific exercises and explain how to execute them in order to emphasize muscle groups in the shoulders and upper back.
10. Identify and recommend medicine ball partner drills to develop strength in the shoulders and back as well as develop core stability.
11. Identify specific exercises and explain how to execute them in order to strengthen muscle groups in the biceps, triceps and forearms.
12. Identify specific exercises and explain how to execute them in order to strengthen muscle groups in the chest.
13. Identify specific exercises and explain to execute them in order to strengthen the muscles of the core.
14. Identify specific exercises and explain how to execute them in order to strengthen muscle groups in the abdominals and lower back.
15. Identify specific exercises and explain how to execute them in order to strengthen muscle groups in the legs and hips.
16. Identify specific exercises and explain how to execute them in order to increase flexibility in the upper and lower body.
17. Determine which exercises are more suitable for advanced athletes.
18. Explain how to safely modify exercises for someone with a joint problem or a lower level of fitness.



***1-800-244-1344***



## CEC/CEU Test for *Strength Ball Training*

**Choose the best answer. Mark all answers on the answer sheet.**

1. One of the primary reasons for utilizing stability balls and medicine balls for strength training is:
  - a. Stability and medicine ball strength training develops muscle definition quickly.
  - b. Stability and medicine ball strength training uses the body as a functional unit.
  - c. Stability and medicine ball strength training isolates specific muscle groups for development.
  - d. Stability and medicine ball strength training focuses on developing strong arms and legs for sports activities.
2. Proprioception is best described as:
  - a. Sensory capabilities that allow the body to maintain balance and coordinate movement.
  - b. Muscular contraction that contributes to increases in muscle strength
  - c. Muscle imbalances that can lead to injury
  - d. The ability to balance on a stability ball.
3. \_\_\_\_\_ are receptors that, when their threshold is reached, will cause a muscle to contract.
  - a. Golgi tendon organs
  - b. Body segment stabilizers
  - c. Muscle spindles
  - d. Muscle tendons
4. The reflex concentric muscle contraction that is produced when the agonist muscle is inhibited and the stretched muscle contracts is the:
  - a. Myotatic stretch reflex
  - b. Golgi tendon organ response
  - c. Extradfusal muscle fibers
  - d. Agonist inhibition
5. The protective mechanism that causes a muscle to relax in response to very heavy loads is:
  - a. Muscle spindles
  - b. Myotatic stretch reflex
  - c. Golgi tendon organs
  - d. Extradfusal muscle fibers

6. When a perturbation occurs that challenges balance, the body will attempt to keep from falling through a \_\_\_\_\_ that begins at the \_\_\_\_\_.
  - a. Continuous muscle chain; ankle
  - b. Contraction of the lower back; hip
  - c. Continuous muscle chain; hip
  - d. Contraction of the rectus femoris; knee
  
7. The muscle groups responsible for initiating, assisting and stabilizing all movement are collectively referred to as the:
  - a. Central nervous system
  - b. Peripheral nervous system
  - c. Speed center
  - d. Center of gravity
  
8. Which of the following does not increase the level of difficulty when performing stability ball exercises?
  - a. Decrease the base of support
  - b. Add resistance
  - c. Close the eyes
  - d. Shorten the length of the lever arm
  
9. Which of the following techniques is recommended for stabilizing the core prior to performing stability ball and medicine ball exercises?
  - a. Bracing
  - b. Setting the abdominals
  - c. Both a and b
  - d. Abdominal isometric contraction
  
10. The best way to create an unstable environment for performing exercises to develop the intersegmental and stabilizing muscles is to:
  - a. Perform exercises on a stability ball
  - b. Perform exercises standing on one leg
  - c. Perform exercises standing on a cushioned mat
  - d. Perform exercises with eyes closed
  
11. Which of the following is the best recommendation for exercise progression for a client with chronic low back pain?
  - a. Have the client perform resistance exercises using weight machines for 6 – 8 weeks before doing stability ball exercises
  - b. Have the client perform exercises using stable surfaces for 3 – 8 weeks before doing stability ball exercises
  - c. Have the client perform exercises such as Static Back Extension and Single-leg Hip Lift for 3 – 8 weeks before doing stability ball exercises
  - d. Both b and c

12. The Jackknife exercise can be performed to work the:
  - a. Hip extensors
  - b. Hip flexors
  - c. Quadriceps
  - d. Hamstrings
  
13. To increase the focus on core strength when performing the Floor Push-up to Knee Pull-in exercise, the client can:
  - a. Add ankle weights to increase the load
  - b. Use two balls and do the pull-ins one leg at a time
  - c. Change the ratio of push-ups to pull-ins and perform more pull-ins
  - d. Increase the speed of both the push-ups and pull-ins
  
14. Which of the following exercises would be most appropriate to work all the muscles of the torso?
  - a. Bridge T Fall-off
  - b. Jackknife
  - c. Bridge with Medicine Ball Drop
  - d. Kneeling Roll-out
  
15. When performing the Bridge T Fall-off exercise it is important to make sure that:
  - a. The ball supports the lower back
  - b. The upper legs are at a 45 degree angle
  - c. The ball supports the head and neck
  - d. The hips are elevated so that a straight line is formed from neck
  
16. When performing the Bridge with Medicine Ball Drop exercise it is important that the spotter:
  - a. Announce which side the ball is going to be tossed to
  - b. Remind the client to keep their hips up and feet shoulder width apart
  - c. Remind the client to keep the ball centered under the lower back
  - d. Remind the client to widen their stance to prevent falling off the ball
  
17. To increase the level of difficulty of the Bridge Ball-hug exercise the ball:
  - a. Should be held at waist level
  - b. Should be held with one arm
  - c. Should be held away from the body at chest level with the arms extended
  - d. Should be held close to the body at chest level with the arms flexed
  
18. When performing the Standing Ball-hug exercise, the feet are \_\_\_\_\_ and the ball is held at \_\_\_\_\_.
  - a. Close together; waist level
  - b. Close together; torso level
  - c. Shoulder-width apart; torso level
  - d. Hip-width apart; waist level

19. To perform the Balance Push-up exercise the hands should be placed \_\_\_\_\_ and the elbows bent to a \_\_\_\_\_ angle.
- Shoulder width apart; 45 degree
  - Close together; 90 degree
  - Close together; 45 degree
  - Shoulder width apart; 90 degree
20. To increase the level of difficulty of the Reverse Balance Push-up exercise, the exercise can be done:
- With the feet on a stability ball and the hands on a balance board
  - With the feet on a stability ball and the hands on a medicine ball
  - With one foot on the stability ball and one foot elevated
  - With both the feet and the hands on stability balls
21. The primary reason for having a spotter stand in front of a person when they are initially learning the Kneeling Hold exercise is to:
- Brace the ball and make sure it does not roll forward
  - Provide support and prevent the exerciser from coming off the front
  - Coach the exerciser in proper technique
  - Hold the exerciser's hands to help them balance on the ball
22. All of the following are correct positioning for performing the Kneeling Roll-out exercise except:
- Keep the feet on the ground for stability
  - Start the exercise with a pelvic tilt
  - Keep a neutral spine
  - Keep the chest as upright as possible
23. When performing the Standing Roll-out exercise, in the middle position of the movement the back should be:
- Arched
  - Flexed
  - Flat
  - Rounded at the shoulders
24. When performing the Full-body Multi-joint Medicine Ball Pass, it is important to:
- Begin the throw with the arms
  - Maintain a good squat position
  - Throw the ball up
  - Stand about twelve paces apart
25. Which of the following is the best method to progress the Medicine Ball Balance Catch?
- Move the feet closer together
  - Increase the size of the medicine ball
  - Add a squat after catching the ball
  - Pass the ball with an overhand throw

26. As the Russian Twist is performed, it is important for the client to:
- Hold the ball over their face
  - Keep their eyes focused on their hands
  - Lower their hips so that their body is at a 45 degree angle
  - Keep their eyes focused on their feet
27. Which of the following best describes the movement pattern for the Back-to-Back Stop-and-Go?
- Quickly rotate to the right and pass the ball to the partner's left side
  - Slowly rotate to the right, stop, quickly rotate to the left and pass the ball to the partner's right side
  - Quickly rotate to the right, stop, quickly rotate to the left, stop, quickly rotate to the right and pass the ball to the partner's right side
  - Quickly rotate to the right, stop, return to the left and pass the ball to the partner's right side
28. Which of the following best describes the correct setup for the Over-the-Shoulder Throw?
- Stand with the back to the partner, about 2 paces apart, feet shoulder width apart, knees flexed and abs contracted
  - Stand with the back to the partner, about 2 paces apart, feet in a narrow stance, hips flexed and abs contracted
  - Stand facing the partner, about 2 paces apart, feet shoulder width apart, knees flexed and abs contracted
  - Stand facing the partner, about 2 paces apart, feet shoulder width apart, hips flexed and abs contracted
29. Which of the following exercises would be the best to recommend for a warm-up?
- Russian twist
  - Side-to-side rotation pass
  - V-sit and rotate
  - Back-to-back 180-degree rotation pass
30. The most advanced progression for the V-Sit and Rotate exercise is:
- Hold both feet off the floor while performing the exercise
  - Hold one foot off the floor while performing the exercise
  - Add a sit-up to the exercise
  - Hold ball to the chest, then extend the arms to touch the floor



31. In the Hip Extension Knee Flexion exercise, movement is initiated by:
- Pressing the heels into the ball and raising the hips
  - Squeezing the gluteal muscles and raising the hips
  - Pressing the arms to the ground
  - Squeezing the legs together
32. The Hip Extension Knee Flexion exercise and the Supine Leg Cable Curl exercise both work the \_\_\_\_\_ muscles from the hip and the knee
- Quadriceps
  - Abdominals
  - Hamstring
  - Gluteal
33. When performing the Split Squat exercise, the knee of the support leg:
- Is flexed to 45 degrees
  - Is extended to 90 degrees
  - Is slightly beyond the toes
  - Should not be past the toes
34. A client who wants to train his inner and outer thigh muscles should perform which of the following exercises?
- Goldy's leg blaster
  - Lateral wall squat
  - Lateral squat with ball push
  - Supine leg cable curl
35. When performing the Lunge with Medicine Ball Pass exercise, the leg that is lunged forward should be lowered to the point where:
- The back knee gently touches the floor
  - The knee of the front leg pushes out slightly past the toes
  - The knee of the front leg is extended to 90 degrees
  - The thigh of the front leg is parallel to the floor
36. If the client has any type of shoulder problem, the dumbbells should be held in a \_\_\_\_\_ when performing the Incline Dumbbell Press.
- Thumb over position
  - Neutral grip position
  - Bench press position
  - Thumb under position
37. When performing the Incline Dumbbell Press, the ball should be:
- Under the hips
  - Under the head and neck
  - Under the waist at mid-back
  - Under the head, shoulders and back
38. To increase the difficulty of the Incline Dumbbell Press, the feet should be:
- In a staggered position
  - Less than hip width apart
  - More than hip width apart
  - As far from the ball as possible

39. Which of the following exercises would be most appropriate to work the whole pectoral region?
- Incline dumbbell press
  - Dual-ball fly
  - Dumbbell press
  - Medicine ball chest pass
40. When performing the Cable Fly exercise the elbow should be:
- Fully extended
  - Bent at a 90 degree angle
  - Slightly bent
  - Parallel to the chest
41. The Dual-ball Fly exercise is a good replacement for which of the following exercises?
- Chest press
  - Bench press
  - Push-up
  - Pec Deck
42. Which of the following exercises is not recommended for a client with shoulder problems?
- Cable fly
  - Incline dumbbell press
  - Standing two-ball roll-out
  - Dual-ball fly
43. Which of the following exercises would be most appropriate to work all the shoulder girdle muscles?
- Standing two-ball roll-out
  - Ball walk-around
  - Cable fly
  - Incline dumbbell press
44. When performing the Standing Two-ball Roll-out, the load should be:
- Primarily focused in the legs
  - Distributed equally between the legs, upper body and core
  - Distributed equally between the legs and core
  - Primarily focused in the upper body
45. If, while lowering the body in the Walk-out Into Push-up exercise the client's scapular protrudes or wings, the client should:
- Roll back until the ball is under the knees
  - Stop the exercise and see a medical professional
  - Flex the lower back to keep the body parallel to the floor
  - Strengthen the subscapularis and serratus anterior muscles before doing this exercise
46. When performing the Ball Walk-Around exercise, the ball should be:
- Under the hips
  - Under the feet
  - Under the thighs
  - Under the chest

47. During both the setup and finish positions in the Medicine Ball Chest Pass, the arms should be:
- Flexed in front of the chest
  - Fully extended and level with the chest
  - Fully extended and slightly above chest level
  - Flexed in front of the face
48. When performing the Push-up Pass exercise it is important for the partners to:
- Ask if the partner is ready before returning the ball
  - Increase the speed of the returns to maximize the effort
  - Change to a lighter weight ball as they start to fatigue
  - Make eye contact before returning the ball
49. When performing a Prone Row External Rotation exercise, clients with shoulder impingement should:
- Raise the elbows until they are higher than the back
  - Never perform this exercise
  - Raise the elbows up until they are parallel to the back
  - Keep the elbows slightly below the level of the back
50. In order to extend the length of time the isometric muscle contraction can be held during the Isodynamic Rear Deltoid Raise, the client should:
- Bend their knees and roll back on the ball about 20 degrees
  - Roll back on the ball to position the ball under the chest
  - Roll forward on the ball about 20 degrees
  - Bend their knees and roll forward on the ball
51. Using an overhand grip with elbows pointing outward when performing the Supine Pull-up emphasizes which of the following muscles?
- Posterior deltoid and rhomboids
  - Latissimus dorsi and rhomboids
  - Trapezius and rhomboids
  - Posterior deltoid and biceps
52. The \_\_\_\_\_ and \_\_\_\_\_ muscles help to keep the scapular against the rib cage during arm pressing movements and can be worked by performing the \_\_\_\_\_ exercise.
- Serratus anterior, infraspinatus; supine pull-up
  - Rhomboids, serratus anterior; scapular push-up
  - Serratus anterior, subscapularis; scapular push-up
  - Serratus anterior, subscapularis; supine pull-up

53. To train the shoulder muscles to react to destabilizing movements, the client should perform which of the following exercises?
- Medicine ball shoulder-to-shoulder pass
  - Supine pull-up
  - Shoulder ball slap
  - Medicine ball soccer throw-in pass
54. In the Medicine Ball Shoulder-to-Shoulder Pass exercise, the correct preparation for receiving the ball is to:
- Contract the core, flex the knees and fully extend the arms.
  - Contract the core, flex the hips and flex the arms
  - Flex the knees and fully extend the arms
  - Contract the core, flex the hips and extend the arms
55. In order to progress the level of difficulty of the Medicine Ball Shoulder-to-Shoulder Pass, the exercise can:
- Be performed using one arm
  - Be performed using one arm and balancing on one leg
  - Be performed using a progressively heavier ball
  - Be performed with the partners moving further apart
56. Which of the following is the best recommendation to help protect the lower back when catching the ball in the Medicine Ball Soccer Throw-in Pass exercise?
- Flex the knees as the ball is caught
  - Stand with one foot behind the other as the ball is caught
  - Lunge back on one leg as the ball is caught
  - Take a step back as the ball is caught
57. When performing the Standing Bicep Curl, the ball should be placed:
- At the small of the back
  - At shoulder blade level
  - Behind the head
  - At hip level
58. Which of the following best explains why doing the Wrap Sit-up exercise on a stability ball is such an effective exercise for strengthening the abs?
- The stability ball supports the lower back through entire sit-up
  - Using the stability ball allows for a large variety of hands positions for making the sit-up harder or easier to complete
  - Using a stability ball prevents tucking in the chin as the sit-up is performed
  - The set up position on the ball pre-stretches the abdominals which increases the range of motion

59. The Abdominal Side Crunch exercise focuses on which of the following muscles?
- External and internal obliques
  - Quadratus lumborum and obliques
  - Rectus abdominis and obliques
  - Obliques and erector spinae
60. When performing the Supine Lower-Abdominal Cable Curl, the hands should be:
- On the floor parallel to the rib cage
  - Behind the head
  - Under the lower back at navel level
  - Crossed over the chest
61. Which of the following exercises is considered the most advanced lower abdominal exercise?
- Wrap Sit-up
  - Supine Lower-abdominal Cable Curl
  - Adam's Medicine Ball AB Lockout
  - Supine Lower-abdominal Curl and Crunch
62. The \_\_\_\_\_ is the muscle group used to initiate the hip extension movement in the Reverse Back Extension exercise
- Hamstrings
  - Erector spinae
  - Quadratus lumborum
  - Gluteals
63. \_\_\_\_\_ contractions, which occur when the muscle \_\_\_\_\_, are stronger than \_\_\_\_\_ contractions, which occur when the muscle \_\_\_\_\_.
- Eccentric, lengthens; concentric, shortens
  - Isometric, lengthens; concentric, shortens
  - Isometric, shortens; concentric, lengthens
  - Eccentric, shortens; concentric, shortens
64. Which of the following exercises would be the best recommendation for a client who wants to increase the lifting strength of the biceps muscles?
- Eccentric accentuated biceps curl
  - Standing biceps curl
  - Scapular push-up
  - Medicine ball walk-over
65. When performing the Incline Triceps Extension, it is important to keep the elbows pointing straight up in order to:
- Emphasize the short head of the tricep
  - Isolate the triceps muscle
  - Protect the elbow joint from injury
  - Use the biceps as well the triceps
66. Which of the following exercises would be considered the most advanced?
- Medicine ball push-up and pass
  - Medicine ball push-up
  - Triceps blaster
  - Medicine ball walk-over

67. Which of the following best describes the correct setup for the Medicine Ball Push-Up exercise?
- Body in a straight line from ankles to shoulders, hands touching
  - Body in a straight line from ankles to shoulders, hands at 3:00 and 9:00
  - Body in a prone position with hips slightly elevated, hands touching
  - Knees on the floor, hands at 3:00 and 9:00
68. One of the major differences between the Medicine Ball Push-up exercise and the Medicine Ball Walk-over exercise is:
- The medicine ball push-up is always performed with the feet together
  - The medicine ball walk-over is always performed as a plyometric exercise
  - The medicine ball walk-over is always performed with only one hand on the ball
  - The medicine ball walk-over uses more muscle groups
69. Strengthening exercises for the wrist have frequently been omitted from strength programs because it was thought:
- The muscles of the wrist get strengthened enough during other gripping exercises
  - The wrist joint is fragile and easy to injure
  - The muscles of the wrist don't need to be as strong as the other muscles of the arm
  - Exercises from the wrist take too much time
70. When power-over movement is added to the Medicine Ball Walk-over exercise, it becomes a \_\_\_\_\_ exercise.
- Static
  - Plyometric
  - Dynamic
  - Isometric
71. When performing the Medicine Ball Quick Drop and Catch exercise, the partner positioned to catch the ball should have their hands in a \_\_\_\_\_ position and their elbows at a \_\_\_\_\_.
- Pronated; 45 degree angle
  - Supinated; 90 degree angle
  - Pronated; 90 degree angle
  - Supinated; 45 degree angle

72. The Spinal Extension stretch should be held for \_\_\_ to \_\_\_ seconds because this stretch can cause \_\_\_\_\_.
- 15 to 30; hyperextension of the shoulder
  - 8 to 15; cramping in the neck
  - 15 to 30; dizziness
  - 8 to 15; dizziness
73. Which of the following statements is true regarding the Supine Hamstring stretch?
- The pelvis should remain in contact with floor as the stretch is performed
  - The hips should be as close as possible to the wall to develop flexibility faster
  - The pelvis should raise off the floor slightly to allow for a stronger stretch
  - The hamstring is only stretched at the hip joint
74. When performing the Standing Hamstring stretch, which of the following best describes how to focus the stretch on the different heads of the hamstrings?
- Press the heel into the ball with varying amounts of pressure
  - Flex and extend the knee slightly
  - Point the toes in and out
  - Rock the foot from side to side
75. To increase the stretch on the shoulder when performing the Standing Lat and Pectoral stretch, the client should:
- Press into the ball harder
  - Place their forearm on the ball
  - Lunge forward slightly
  - Lean forward into the ball