

# **Athletic Strength** **for Women**

**CORRESPONDENCE EDUCATION PROGRAM # 2011-96**

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## **Learning Objectives: Athletic Strength for Women**

After completing the *Athletic Strength for Women* course the participant will be able to:

1. Explain why female athletes have a higher injury rate than male athletes.
2. Discuss the limitations in strength and conditioning programs for the female athlete.
3. Understand the components of a periodized conditioning program.
4. List the goal for each phase of a periodized conditioning program.
5. Discuss the advantages and disadvantages of single joint isolation vs. multijoint multidirectional exercises for athletic conditioning.
6. List the joints and structures most commonly injured in female athletes.
7. Describe effective conditioning exercises and programs based on the athlete's current age and level of physical maturity.
8. Explain the best time and sequence for athletic testing, evaluation and reevaluation.
9. Select appropriate fitness tests based on the needs of a specific sport or activity.
10. Break down a sport to determine what athletic skills are needed for improved performance.
11. Select appropriate conditioning exercises that will improve performance for a given sport or activity.
12. Understand the importance of joint flexibility and stability in sport performance.
13. Recognize what components the athlete needs to focus on first: flexibility, stability, strength or power.

14. Construct a conditioning program that improves the function of identified weak links, then effectively progresses to improve performance.
15. Describe the importance of core strength and stability for the female athlete.
16. Describe exercises and drills to develop speed, improved stopping and cutting while still reducing the incidence of injury.
17. List the best exercises and drills for improving explosiveness for jumping, running, throwing and striking



## ***CE Test for:***

# ***Athletic Strength For Women***

**Multiple Choice:** For each of the following questions, circle the letter of the answer that best answers the question.

1. Which of the following is mentioned as a reason why there are more female athletes now than in the past?
  - A. Title IX Legislation
  - B. The Women's Movement
  - C. Increase in the number of sports available for young female athletes
  - D. Advances in medical science that have allowed women to participate more
  
2. What is one of the issues that seems to be contributing to the increase number of injuries to female athletes?
  - A. Coaches' lack of knowledge related to treating injuries
  - B. Lack of effective strength and conditioning programs for females
  - C. Lack of availability of female Athletic Trainers
  - D. State of the art equipment is not available to female athletes
  
3. Which injury seems to be happening at epidemic levels in female athletes?
  - A. Knee injuries, particularly ACL
  - B. Hip Dislocations
  - C. Shoulder injuries, particularly rotator cuff
  - D. Lower leg trauma
  
4. Which of the following statements is true of today's female athlete?
  - A. Female swimmers today are swimming faster than male swimmers were 10 years ago.
  - B. Female wrestlers still have to practice with the men's teams to gain a competitive edge.
  - C. Female track athletes are running stride for stride with the men
  - D. Female softball players are competing with men for professional baseball contracts
  
5. Progressive training periods means that the earlier training phase prepares the body for the subsequent training phase. This is called:
  - A. Periodized Training
  - B. Successive Progressive Training
  - C. Sequential Training
  - D. Phase Potentiation

6. Which of the following is NOT a variable for a periodized training program?
  - A. Rest and Recovery
  - B. Power Training
  - C. Intensity
  - D. Volume
  
7. What is the purpose of the Transition phase of a periodized training program?
  - A. Provides a transition from one phase to the next
  - B. Is positioned just before the competition phase to allow recovery before competition
  - C. Provides a week or two of active rest and recovery after the competitive season
  - D. Transitions athletes out of the General Preparation Phase
  
8. The purpose of the Off-Season or General Conditioning Phase is to prepare the athlete's body for the more intense training in the ensuing phases. Which of the following statements is appropriate for this phase?
  - A. Only use machines to ensure proper body positioning and adequate support for the joints
  - B. Focus mostly on high intensity, strength building exercises with multiple sets and a low rep range
  - C. Focus mostly on high intensity cardio activities with numerous agility and skill related drills
  - D. Focus on strength and stability building free weight exercises that also train proprioception and balance
  
9. During the Pre-Season or Specific Preparation Phase the intensity and volume of training changes from what was practiced during the General Conditioning Phase. Which of the following is an appropriate progressive change?
  - A. Continue with same exercises at the same intensity and volume as in the General Conditioning Phase to allow for continued refinement of form and technique.
  - B. Use some of the same exercises from the General Conditioning Phase and start including more sports specific movements while increasing the intensity of the strength and conditioning exercises
  - C. Reduce the number of exercises to only include exercises directly related to the athlete's current sports and reduce the intensity to 60-75% 1RM.
  - D. Discontinue the conditioning exercises in favor of skill practice and sport performance while reducing the overall volume of the training program.
  
10. What is the overall focus of the Specific Preparation Phase?
  - A. Muscular strength and endurance
  - B. Muscular strength
  - C. Neuromuscular Power
  - D. Connective tissue integrity and joint ROM
  
11. Volume and intensity are manipulated during each phase of a periodized training program. Volume and intensity are inversely related during which two phases?
  - A. General Preparation and Competition Phases
  - B. General Preparation and Pre-Season Phases
  - C. General Preparation and Off-Season Phases
  - D. Pre-Season and Competition Phases
  
12. Formal strength training can be introduced to girls at what age/stage of development?
  - A. As young as possible to start laying the framework for a strong body and to teach proper form and technique.
  - B. Elementary school age when they are able to follow specific directions
  - C. After puberty is the best time to start girls on a formal strength training program
  - D. Girls will benefit most if they do strength training after they have been competing for at least 5 years

13. Studies have shown that a well supervised strength program increases strength but have NOT proven which of the following?
  - A. That girls who do strength training have fewer injuries.
  - B. That girls who do strength training stay involved in sports later in life
  - C. That girls who do strength training perform better at sports
  - D. That girls who do strength training have an easier time managing their weight later in life
14. Which of the following are reasons why a young female athlete should not train in a home gym that the parents have set up?
  - A. The parents may put too much pressure on the young athlete to perform to a specific level
  - B. Too many distractions in the home environment
  - C. Adequate supervision is lacking, even if the parents are home at the time of the workouts
  - D. Too much peer pressure if their friends are allowed to also participate in the workouts
15. When is the best time to do the initial fitness and performance assessments for a female athlete?
  - A. Before beginning any type of training or conditioning program
  - B. About 2 weeks into the General Conditioning phase during the off-season training.
  - C. After the General Conditioning phase is completed
  - D. After the Pre-Season phase is completed
16. Which of the following is the BEST reason for follow up testing?
  - A. To determine if your training and conditioning program is effective
  - B. To match your female athlete to the sport that best suits her strengths
  - C. To compare your athletes to those on other teams in your league
  - D. To rank your athletes against other team members
17. Which of the following sports would NOT require a test for Power performance?
  - A. Gymnastics
  - B. Diving
  - C. Swimming
  - D. Middle and Long distance runners
18. Which of the following statements is true regarding the data you collect during the testing process?
  - A. It is best used to help qualify or disqualify potential team members
  - B. It is best used to rank athletes who will be competing against each other for starting positions on the team
  - C. It is best kept confidential among the coaches and trainers and not shared with the athletes
  - D. It is best used to help quantify team and individual athlete performance improvement
19. What is the purpose of the tables listed with each of the tests described in Chapter 2?
  - A. To assign a point value to the raw scores for each of the tests
  - B. To demonstrate the expected performance for each of the tests
  - C. To give the athlete a specific performance goal for each of the tests
  - D. To give a point of comparison for future testing
20. What is the Athleticism Profile Score?
  - A. How the full team of athletes compares to other teams at the same competitive level
  - B. How the individual athlete's overall performance compares to other team members and the average level of performance for the same competitive level
  - C. Determines how successful a particular athlete will be at this or any other chosen sport
  - D. Determines the individual athlete's potential for athletic performance

21. When recording the raw score for the no-step vertical leap measured on a wall, which of the following procedures is correct?
- A. The raw score is the highest point that the fingers can reach up the wall after an explosive standing jump (total jump height)
  - B. The raw score is the highest point the fingers can reach up the wall while standing flat footed next to the wall
  - C. The raw score is the difference between the highest point reached after an explosive standing jump and that measured while standing flat footed next to the wall
  - D. The raw score is the sum of the highest point reached after an explosive standing jump and that measured while standing flat footed next to the wall
22. How many cones are used and how far apart are the cones placed in the 20-yd Shuttle Run Test?
- A. 3, 5 yards
  - B. 2, 10 yards
  - C. 1, 20 yards
  - D. 2, 20 yards
23. Which of the following tests includes “backpedaling”?
- A. 20 yard shuttle
  - B. T-Test
  - C. Leger Beep Test
  - D. 300 yard shuttle
24. The T-Test would be appropriate for which of the following sports?
- A. Gymnastics
  - B. Sprint Events in Track
  - C. Swimming
  - D. Volleyball
25. The purpose of the 300 yard Shuttle is to measure lactate threshold. You have an athlete that ran the test in 70 seconds on the first trial and 75 seconds on the second trial. What does this tell you?
- A. The athlete is performing at the level of the average collegiate athlete
  - B. The athlete is performing at an above average level
  - C. The athlete is in “game condition” for a sport that stresses the lactate threshold
  - D. The athlete is not clearing lactate efficiently and is not in “game condition”
26. Why is it important for female athletes to have adequate shoulder strength?
- A. Because almost all sports use the upper body muscles at some point as part of the sport performance
  - B. Because the shoulder tends to be the last major link in the kinetic chain and it needs to be just as strong as the rest of the chain for superior performance
  - C. Because females typically have weaker upper bodies than males, so they need to focus their strength training on upper body exercises that strengthen the shoulder joint and girdle muscles
  - D. Shoulder strength is directly correlated with athlete’s ability to perform speed & power movements
27. Which rotator cuff muscle is typically responsible for deceleration in many overhead movements?
- A. Infraspinatus
  - B. Subscapularus
  - C. Teres Minor
  - D. Supraspinatus



28. Which of those Rotator Cuff muscles seems to get injured more frequently in athletes that throw and strike?
- A. Infraspinatus
  - B. Subscapularus
  - C. Teres Minor
  - D. Supraspinatus
29. Why is it important to include Rotator Cuff exercises in all sports conditioning programs?
- A. The Rotator Cuff muscles are prime movers for many sport skills
  - B. The Rotator Cuff works to stabilize the shoulder joint so that the more powerful chest and back muscles can contract efficiently
  - C. The Rotator Cuff muscles must be extremely flexible to allow the shoulder to have full range of motion
  - D. The only athletes that really need Rotator Cuff exercises are those that are rehabbing previous shoulder injuries
30. How does one select which Rotator Cuff dumbbell exercises to include in an athlete's conditioning program?
- A. All athletes should do all of the exercises listed in the book
  - B. Athletes need to only do the exercises that target the Rotator Cuff muscle(s) that they will use for their specific sport
  - C. All athletes should do all of the exercises listed in the book, but not every workout. They should rotate the exercises to avoid overuse of the Rotator Cuff
  - D. Athletes should only do the exercises prescribed by the Athletic Trainer or Sports Medicine MD for the team
31. The Body-Weight Shoulder Stabilization Routine is appropriate for athletes of most sports because
- A. It focuses on functional throwing muscles that are used in most sports
  - B. It incorporates the abdominal and low back muscles of the core that are important for all athletes
  - C. It consists of open chain exercises that are always better than closed chain exercises for athletes and sports performance
  - D. It simulates many sports specific movement patterns
32. What position is the athlete in when performing the Back Raise exercise?
- A. Supine
  - B. Prone
  - C. All Fours
  - D. Standing
33. How high are the boxes that are used for the Box Walk exercise?
- A. 2-4 inches
  - B. 4-6 inches
  - C. 6-8 inches
  - D. 8-10 inches
34. What is the sequence of movement for the Box Walk exercise?
- A. Start on top of the highest box and then move to the lower boxes without touching the floor in between the boxes
  - B. Start on the lowest box and move to the highest box without touching the floor in between the boxes
  - C. Start on the floor and then move from the highest to the lowest box touching the floor in between each box
  - D. Start on the floor and then move from the lowest to the highest box touching the floor in between each box

35. Which of the following statements is true regarding the Shoulder Press?
- Performing the exercise seated will provide better stability and is the preferred position
  - Performing the exercise with dumbbells challenges the athlete to use more stabilizers and balance muscles making the exercise more functional for sports performance
  - Athletes can use more weight with a barbell which will in turn produce better gains in overall strength
  - Using the Shoulder Press machine is safer and allows the athlete to move more weight and produce better gains in overall strength
36. What is Kinetic Linking?
- Using only closed chain exercises that work the full kinetic chain from the feet through the torso to the arms.
  - Multijoint exercises that make the muscles work together to improve posture and stability
  - A unique training system that links one compound exercise with next much like a superset system
  - Using elastic bands to perform exercises that encourage the body to work as a solid kinetic unit
37. Which sport would most benefit from the Rice: Three Way exercise?
- Triathlon
  - Track throwing events
  - Field Hockey
  - Swimming
38. What is the rate of knee injury for female athletes compared to male athletes?
- Females tend to have the same rate of knee injury as males in athletic competition
  - Female athletes injure their knees 10 times more than male athletes
  - Female athletes tend to have 3 to 5 times fewer knee injuries than male athletes
  - Female athletes tend to have 3 to 5 times more knee injuries than male athletes
39. At what point do most of the knee injuries occur?
- Most injuries occur at the beginning of a game or practice when the athlete is still cold and not properly warmed up
  - Most injuries occur due to contact with an external force (opponent or surface)
  - Most injuries occur during and explosive take off or jump
  - Most injuries occur during deceleration (stopping, cutting or landing)
40. Which of the following is NOT true with regard to knee injuries, particularly ACL tears, in women?
- A wider Q Angle may lead to poor patellofemoral tracking and allowing the ACL to get caught and torn in the patellar notch
  - Women tend to have smaller ACLs than men which may not be able to withstand the force place on them during athletics
  - Because women tend to be more flexible than men this allows for more laxity in the knee joint which the ACL cannot control and thus ends up tearing
  - Women to be "quad dominate" and do not have sufficient hamstring strength to balance the strength of the quadriceps which then places undue stress on the ACL during jump landings, cutting maneuvers, and forceful stops
41. What age is the best time for children to learn motor learning skills?
- Age 3-5 years
  - Age 5-10 years
  - Age 8-12 years
  - After puberty

42. Besides the benefits of a basic squat exercise what additional benefits are gained from doing a front squat?
- A. More emphasis is placed on the hamstrings allowing females to achieve greater hamstring strength
  - B. Learning proper front squat form will aid in performing Olympic lifts
  - C. Placing the bar on the front of the shoulders takes stress off the knees
  - D. With the weight more to the front of the body it forces the athlete to shift her weight back into her heels bringing more emphasis into the gluteals
43. What is the purpose of holding a medicine ball between the legs while doing a leg press?
- A. Activates the adductors which then stabilize the hips during the range of motion
  - B. Aids in proper foot placement and maintaining alignment of the knees over the toes through the range of motion
  - C. Adds additional weight to the exercise
  - D. Requires the athlete to divide her attention while performing the exercise which simulates a game situation
44. What value do the single joint knee extension and hamstring curl machine exercises have to the female athlete?
- A. The simplistic nature of the exercise allows the athlete to complete the exercise even when they are otherwise fatigued
  - B. These both provide strength for the muscles that help stabilize and support the knee joint and the ACL thus reducing the chance for injury
  - C. These exercises have no value and are considered by many to be a waste of time
  - D. These exercises have no value, but the athletes like doing them so they are usually included because of their familiarity
45. Which of the following functional lower body exercise improves the athlete's ability to decelerate?
- A. Forward Box Step-Up
  - B. Side Box Step-Up
  - C. Side Lunge
  - D. Shuffle Squat
46. Which of the following statements is true with regard to training and conditioning the muscles of the core (abdominals and low back)?
- A. Because the core muscles are used for almost every other functional and sports specific exercise, it is not necessary to include additional exercises specific to this muscle group.
  - B. Because the core muscles are primarily postural slow twitch muscles, they should be trained for endurance with light loads and high repetitions
  - C. Because the core muscles are integrated into all sports movement patterns they should be trained in a periodized manner just as the other muscles of the body
  - D. Because most athletes are already very fit, they really do not need to spend extra time training the abdominals or low back muscles
47. What is considered proper form for the Reverse Crunch exercise?
- A. The goal is to lift the legs and hips off the floor and roll up the spine until the weight of the body is resting on the cervical vertebrae
  - B. The body should roll up and down along the spine to get the hips to lift off the floor
  - C. The legs should move quickly from the floor into the torso and back to the floor so that the abdominals have to work to decelerate the legs
  - D. The legs should be lifted in toward the torso as the hips raise off the floor in a controlled manner stopping when the weight of the body is resting at the level of the shoulder blades

48. Proper positioning for the Medicine Ball Twist Pass is:
- A. Partners are face to face about 2-3 feet apart
  - B. Partners are back to back about 2-3 feet apart
  - C. Partners are back to back as close as possible
  - D. Partners are back to back as far apart as they can feasibly throw the ball
49. The seated Medicine Ball Twist Pass would be appropriate for athletes in which of the following sports?
- A. Basketball
  - B. Volleyball
  - C. Soccer
  - D. Rowing
50. In order for an athlete to develop and train for power they must first have sufficient \_\_\_\_\_.
- A. Mobility and Flexibility
  - B. Top End Speed
  - C. Acceleration
  - D. Strength
51. What will your training focus be when you want to improve starting, stopping, and cutting?
- A. Increased Agility
  - B. Increased Speed
  - C. Faster Acceleration
  - D. Better Rhythm
52. The two components that will help a female athlete increase running speed are stride \_\_\_\_\_ and \_\_\_\_\_.
- A. Length and Frequency
  - B. Speed and Tempo
  - C. Form and Tempo
  - D. Speed and Rhythm
53. If you are using the Star Drill for a group of soccer players how far apart should the cones be from the center cone?
- A. 1 yard
  - B. 3 yards
  - C. 5 yards
  - D. 10 yards
54. Improving one's \_\_\_\_\_ will help to improve explosiveness for jumping, running, throwing and striking.
- A. Muscular endurance
  - B. Body composition
  - C. Muscular power
  - D. General flexibility
55. What is one of the best exercises for improving power and explosiveness?
- A. Bounding
  - B. Heavy squats
  - C. Skating
  - D. Jumping Rope

56. Besides the exercise listed above what other general class of exercises will improve power and explosiveness?
- Machine based exercises
  - Free weight Multijoint exercises
  - Plyometric exercises
  - Callisthenic exercises
57. While learning the High Pull exercise what structures tend to do most of the pulling until proper technique is mastered?
- Shoulders
  - Arms
  - Legs
  - Hips
58. When working to build explosive power, what is the suggested order of the Olympic movements?
- Power Clean, High Pull, Push Press, Power Shrug, Hang Clean
  - Power Shrug, High Pull, Hang Clean, Power Clean, Push Press
  - Push Press, Power Clean, Hang Clean, High Pull, Power Shrug
  - Power Shrug, Push Press, High Pull, Hang Clean, Power Clean
59. The reflexive muscle contraction that occurs during plyometrics is due to:
- The Stretch Reflex
  - The elastic properties of the muscle
  - Connective Tissue rebound
  - The Golgi Tendon Organ
60. High intensity plyometric drills are best included in what phase of a periodized program?
- General Conditioning
  - Off-Season
  - Pre-Season
  - In-Season
61. How much general strength training should an athlete have before beginning a plyometric training program?
- No general strength training is required, plyometric exercises can be included at the beginning of any sports specific training program
  - At least 2 weeks of general strength training is required
  - Athletes should have completed the full General Conditioning phase of 12 weeks before beginning plyometric exercises
  - Athletes should have at least 6 weeks of general conditioning and strength training completed before including plyometric exercises in their training program
62. Which of the following illustrates a proper sports specific warm-up
- General cardio movements; static stretching; dynamic range of motion for all joints and muscles; speed and movement skill drills
  - Speed and movement drills; eye-hand coordination drills; general cardio warm up; static stretching
  - Static stretching; dynamic stretching; general cardio warm-up; sports specific skills and agility drills
  - General cardio warm-up; plyometric sports skill rehearsal; dynamic stretching; static stretching

63. Which of the following statements is true with regard to the fast feet drills used during the warm up?
- A. These drills should be done at the beginning of the warm up when the body and mind are fresh.
  - B. These drills help develop running technique and properly prepare the body for the more intense workout to follow
  - C. These drills are only necessary for athletes that will be running as part of their workout that day
  - D. These drills are considered full range of motion movement patterns
64. Which of the periodization training phases is the most important for reducing the incidence of injury to a female athlete?
- A. Off Season
  - B. In-Season
  - C. Pre-Season
  - D. Post Season
65. Although the Speed Agility Preseason 6-week Program is not listed as part of the training for any of the sports listed in Chapter 9, which of the following sports would NOT need to include this segment of training into the overall training program?
- A. Field Hockey
  - B. Diving
  - C. Gymnastics
  - D. Softball