

# Quiz Policies

## **Eligibility**

The NCSF online quizzes are open to any currently certified fitness professional, 18 years or older.

## **Deadlines**

Course completion deadlines correspond with the NCSF Certified Professionals certification expiration date. Students can obtain their expiration dates by reviewing either their certification diploma or certification ID card.

## **Cancellation/Refund**

All NCSF continued education course studies are non-refundable.

## **General Quiz Rules**

- You may not have your quiz back after sending it in.
- Individuals can only take a specific quiz once for continued education units.
- Impersonation of another candidate will result in disqualification from the program without refund.

## **Disqualification**

If disqualified for any of the above-mentioned reasons you may appeal the decision in writing within two weeks of the disqualification date.

## **Reporting Policy**

You will receive your scores within 4 weeks following the quiz. If you do not receive the results after 4 weeks please contact the NCSF Certifying Agency.

## **Re-testing Procedure**

Students who do not successfully pass an online quiz have the option of re-taking. The fees associated with this procedure total \$15 (U.S) per request. There are no limits as to the number of times a student may re-test.

## **Special Needs**

If special needs are required to take the quiz please contact the NCSF so that appropriate measures can be taken for your consideration.

# Quiz Rules

## **What Do I Mail Back to the NCSF?**

Students are required to submit the quiz answer form.

## **What do I Need to Score on the Quiz?**

In order to gain the .5 NCSF continued education units students need to score 80% (8 out of 10) or greater on the CEU quiz.

## **Where Do I Mail My Quiz Answer Form?**

You will mail your completed answer form to:

**NCSF**

**Attn: Dept. of Continuing Education**

**5915 Ponce de Leon Blvd., Suite 60**

**Coral Gables, FL 33146**

## **How Many CEUs Will I Gain?**

Professionals who successfully complete the any continuing education quiz will gain .5 NCSF CEUs per quiz.

## **How Much does each quiz cost?**

Each quiz costs the student \$15.00.

## **What Will I Receive When The Course Is Completed?**

Students who successfully pass any of the NCSF online quizzes will receive their exam scores, and a confirmation letter.

## **How Many Times Can I Take The Quizzes For CEUs?**

Individuals can take each NCSF quiz once for continuing education credits.

# Plyometric Training

Working as a qualified personal trainer requires the ability to devise exercise programming specific to the wants and needs of your individual clients. Oftentimes personal trainers, like some of their clients, can get stuck in a rut with their programming and neglect to draw from the plethora of training techniques they have available. Due to the fact that many exercise systems and techniques can be employed for the same outcome, personal trainers have many options to keep exercise physiologically challenging and psychologically stimulating. Traditional resistance training programs (2-3 sets with 8-12 repetitions of the prime movers) interspersed with aerobic training is a very typical exercise program used in the gym. This type of programming, while offering some health benefits, does not necessarily maximize strength gains, lean mass, or caloric expenditure. Plyometric training, done safely and effectively, can enhance these outcomes and inject some variety to what may be a very traditional, somewhat monotonous workout routine.

Plyometric training by definition refers to the specialized method of conditioning designed to enable a muscle to reach maximal force in the shortest possible time. Characterized by quick, powerful, explosive type movements, plyometric training is often a staple of sport-specific strength and conditioning programs. The movements traditionally employed in a plyometric training program will involve a pre-stretch and stretch-shortening cycle. Over time, a plyometric training program will result in increased force production due to mechanical factors such as increased stored elastic energy and neurophysiological factors such as changes in the muscle's force/velocity characteristics. Plyometric programming usually involves jumping or bounding activities for the lower body and medicine ball throws or elastic rebound cords for the upper body. The intensity used will vary depending on the experience of the client and their levels of strength, coordination, and balance, as well as their primary goals for the program.

One of the reasons plyometric training is so effective at increasing force production capabilities is because of the increased amount of stress placed on the muscles, connective tissues, and joints involved with the movement. These increased stresses are important to note as they may also be cause for increased risk of injury. Due to the fact that plyometric training is based in performance training and not necessary to attain overall health, this type of training should be limited to those individuals who have adequate levels of muscular strength and power, as well as balance, coordination, and agility. Individuals looking to improve these health and performance related components of physical fitness should begin plyometric training at a low intensity and progress at a rate their skills and abilities allow.

As mentioned above, prior to beginning a plyometric training program, it is important to ensure your client has adequate levels of muscular strength to manage the deceleration and stability requirements. Resistance training coupled with plyometric training has been

shown to increase performance more than either program alone. A resistance training program should be completed prior to the initiation of plyometric training so the tissues are prepared for the explosive, powerful type of movements involved with plyometrics. A good rule of thumb for a strength training program is the use of repetition ranges of 6 to 10 at an intensity of 75%-85% of 1RM. Strength training programs completed before the introduction of plyometric activities should last between 8-12 weeks to ensure an adequate level of muscular strength has been achieved.

The exercise selection within the strength training program should mimic phases of the movements to be performed in the plyometric program. If box jumps, depth jumps, and squat jumps are some of the exercise that are to be included in your program, then squats, lunges, and deadlifts should be used in the strength program to prepare the leg muscles and lower back for the plyometrics. If your plyometric program is designed for the upper body and includes clap push-ups, medicine ball chest pass, and depth jump with chest pass, the strength training program should include chest pressing, rowing, and shoulder presses. These examples should clearly illustrate the importance of focusing the strength training program on the function between the primer movers and stabilizers. The best way to train these areas is through closed chain, multi-joint exercises. Although exercises such as leg extensions and leg curls target the prime movers (quadriceps, hamstrings, and glutes) the stabilizers are not entirely engaged with these open-chain activities.

A couple commonly accepted tests of muscular strength should be administered prior to engaging in a plyometric exercise program. Traditionally, athletes in conditioning programs are required to do a 1 RM back squat to parallel position. They are classified as ready for plyometric training if their 1 RM is 1.5 to 2 times their body weight. In many cases 1RM back squats are not appropriate for personal training clientele. This test can be replaced by an alternative test which estimates 1 RM based upon five to ten repetitions of the exercise. The estimation uses the 3% formula  $\{(repetitions\ performed \times .03) + 1\} \times$  resistance used). A third test option often used as a assessment of readiness is to have the client attempt 5 repetitions of the back squat with 60% of their body weight in 5 seconds. In addition to demonstrating adequate levels of muscular strength through these tests, clients should also be able to achieve depth drops equal to the height of their vertical jump. If the client fails any of these tests, additional strength training should be completed prior to plyometric training.

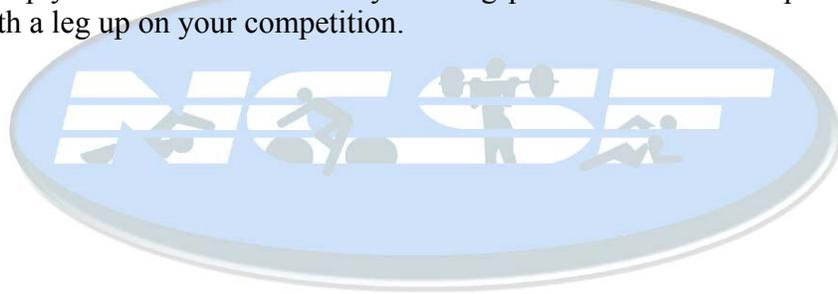
When beginning a plyometric program, the volume and intensity should be low. Ample rest time will be required between sets to allow for adequate recovery. For higher end movements typical rest periods mirror those used in heavy strength training, with the actual duration based upon the intensity of the exercise and the experience of the client. As progress is made, the volume can be increased. Once the volume peaks, the intensity will need to be increased to ensure consistent progressive overload is applied. However, with increased intensity, the volume will need to decrease. During a training session, after a specific warm-up, the plyometric program should be completed early in the program to decrease risk of injury due to muscular fatigue and incorrect technique.

## PLYOMETRIC TRAINING

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Plyometrics can also be used to complement other strength training activities as is the case with contrast training. This technique uses loaded, controlled movements coupled with the same movement, unloaded and performed as a plyometric. Some common examples include super-setting bar squats with jump squats or chest press with clap push-ups. These techniques are advanced but very effective to enhance performance and expend calories. Other methods of integrating plyometrics into a program may use certain movements in circuits or as a complement to a strength program. The circuit may use low level step jumps, jump rope, jumping jacks, or low-knee tuck jumps mixed with other exercise techniques. For clients who need or want to perform some power activities the plyometrics may include box jumps, tuck jump rebounds and depth jumps, performed before the slower compound lifts like squats, deadlifts, or push press. Two or three plyometrics are traditionally programmed in this example.

Personal trainers have a variety of training options at their disposal for use with clients looking to achieve certain goals. Plyometric training can be an effective training technique to work through a plateau, increase strength, and add an alternative to traditional weight lifting programs. Exercise selection should always be specific to the goals and abilities of the client. It is important for trainers to be comfortable with a variety of training techniques to make certain they offer the best services they can to their clients, and plyometrics is one of many training protocols which can provide you, as a trainer, with a leg up on your competition.



# Quiz

1. Plyometric training is defined as a specialized method of conditioning designed to:
  - A. decrease the amount of stress placed on tissues, muscles, and bones
  - B. enable muscle to reach maximal force production in the shortest possible time
  - C. utilize slow, controlled movements
  - D. replace traditional strength training programs in athletes
  
2. Plyometrics result in force production increases due to:
  - A. increased stored elastic energy
  - B. decreased stored elastic energy
  - C. changes in the muscle's force/velocity characteristics
  - D. Both A and C are correct
  
3. The risk of injury is increased with plyometric training due to:
  - A. a decrease in the stress on the muscles and bones
  - B. a decreased difficulty of the exercises
  - C. an increase in the stress on the muscles and bones
  - D. the similarity between the plyometric movements and traditional strength training movements
  
4. Plyometric training should begin at a \_\_\_\_\_ intensity and progress \_\_\_\_\_.
  - A. moderate; slowly
  - B. low; rapidly
  - C. high; at the rate the client's skills and abilities allow
  - D. low; at the rate the client's skills and abilities allow
  
5. Before beginning a plyometric training program, the personal trainer must ensure their client has adequate levels of \_\_\_\_\_ to manage the deceleration and stability requirements.
  - A. muscular endurance
  - B. flexibility
  - C. muscular strength
  - D. body composition

## PLYOMETRIC TRAINING

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6. Participation in a strength training program prior to the initiation of a plyometric program should utilize \_\_\_\_\_ exercise and focus on \_\_\_\_\_.

- A. closed-chain, multi-joint; prime movers and stabilizers
- B. open-chain, multi-joint; prime movers and stabilizers
- C. open-chain, single-joint; prime movers alone
- D. closed chain, single-joint; stabilizers alone

7. When analyzing the baseline strength threshold of a client prior to plyometric training, an estimated 1 RM should be greater than or equal to \_\_\_\_\_ the client's body weight.

- A. 1 times
- B. 1.5 times
- C. 2.5 times
- D. 3 times

8. In order to prevent injury due to muscular fatigue and incorrect technique, plyometric training should be completed at what point in a training session?

- A. At the beginning
- B. After a specific warm-up
- C. In the middle
- D. Toward the end

9. Adhering to the exercise principle of training specificity, if a plyometric program is going to include box jumps and squat jumps, the strength training program completed prior to the plyometric training should include what group of exercises?

- A. Leg extensions and leg curls
- B. Seated calf raises and abdominal exercises
- C. Squats and lunges
- D. Chest press and seated row

10. Using the 3% formula to calculate estimated 1RM, what would the 1RM be for an individual who completes 6 repetitions of with 150 lbs?

- A. 115 lbs.
- B. 145 lbs.
- C. 177 lbs.
- D. 192 lbs.

# Quiz Answer Form

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_ M.I. \_\_\_\_\_

TITLE \_\_\_\_\_

ADDRESS \_\_\_\_\_ APT. \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

COUNTRY \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

CERTIFICATION NO. \_\_\_\_\_ CERTIFICATION EXP. \_\_\_\_/\_\_\_\_/\_\_\_\_

MEMBERSHIP NO. \_\_\_\_\_ MEMBERSHIP EXP. \_\_\_\_/\_\_\_\_/\_\_\_\_

Quiz Name	Member Price	Total
	\$15	



Discover



Visa



Mastercard



Amex



Check/Money Order

Account No. \_\_\_\_\_

Exp. Date \_\_\_\_\_

Security Code \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

## Quiz Answers

- |          |           |
|----------|-----------|
| 1. _____ | 6. _____  |
| 2. _____ | 7. _____  |
| 3. _____ | 8. _____  |
| 4. _____ | 9. _____  |
| 5. _____ | 10. _____ |

Fill in each blank with the correct choice on the answer sheet. To receive 0.5 CEUs, you must answer 8 of the 10 questions correctly.

Please mail this Quiz answer form along with the proper enclosed payment to:

NCSF  
5915 Ponce de Leon Blvd., Suite 60  
Coral Gables, FL 33146

Questions? 800-772-NCSF