

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.

The Back Squat

The back squat is one of the most functional exercises among the repertoire of compound lifts. The high axial position of the resistance places significant demands on key spinal stabilizers as the center of gravity is elevated while the muscles of the hip and knee act to coordinate acceleration and deceleration. The squat yields significant benefits for several applications, including strength, power, and muscle hypertrophy. When performed with correct form, the action at the acetabulum (hip) and the knee create force couples that strengthen hip and knee extensors while stabilizer contribution secures the axial and upper appendicular skeleton. When this system functions efficiently, ground reaction force is effectively transferred into the bar and the skeleton moves in proper alignment.

Proper squatting technique allows the body segments to correctly coordinate the force generated from movement segments and allows for significant collective force development. Weakness or dysfunction (poor stabilization and flexibility) prevents the muscles from working together properly and therefore any strong single segment may be ineffective at transferring the energy through the next aspect of the kinetic chain. This is commonly seen at the trunk. Stronger hip and knee muscles often become imbalanced with the trunk, which becomes clearly evident when a posterior pelvic tilt occurs at full range of motion. Although lack of flexibility is a common contributor to poor technique, weak spinal stabilizers are a more common contributor to loss of pelvic stability. Additionally, leg presses, leg extensions, and other exercises may strengthen the quadriceps to a point of imbalance when compared with the hip extensors (evidenced by inward knee movement and excess back extension).

The squat can be used to connect the movement segments with muscle balance and improve force couple management but only when all systems are functional. When the action is properly coordinated progressive resistance can lead to notable strength gains throughout the body particularly at the hip/trunk relationship. Bodybuilders should emphasize proper squat technique to take advantage of the heavy anabolic response associated with >75% 1RM loads. This also holds true for power athletes as the action of the knee, hip, and trunk are vital to generating power for running, jumping, and swinging. A common error is to assume just squatting heavy means improved power. Actually an over-emphasis on loading can promote slower recruitment patterns and compromised technique. The actual benefit of the squat for sports and function stems from the connecting factors of the closed chain, axial loaded position which makes the muscle groups function more synergistically.

Although a seemingly rudimentary movement, most exercisers and non-exercisers perform the lift incorrectly. The potential strength of the muscle segments are not optimally utilized when any part of the chain is weak and/or the action is performed with improper biomechanics. An interesting aspect of human movement is that the simple combination of simultaneous hip and knee flexion for

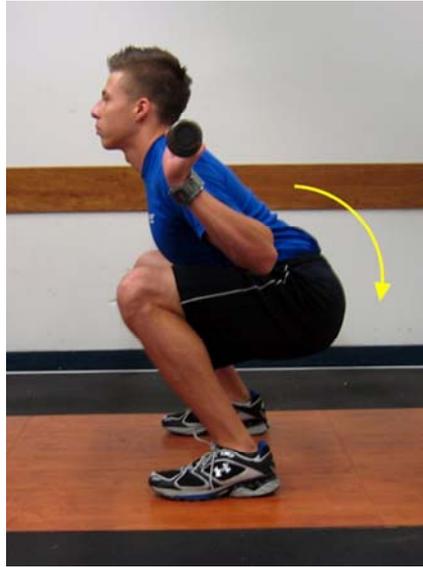
most people often leads to tibial translation (knee crosses toe). This occurs because the natural tendency of human movement is to flex the hips and knees moving the pelvis directly downward over the base of support. Since the pelvis moves downward, the femur in turn must move forward creating an undesirable knee position as energy is directed into the balls of the feet, this may be to improper technique or inadequate hip extensor activation. This action explains why most people perform incomplete movements and perpetuate tibial translation. The proper technique requires initial hip flexion with the eccentric action of the hip extensors driving the hips and glutes posteriorly while the knees flex in a coordinated fashion. The goal is to maintain the tibia over the heels with limited dorsi flexion so the resistance is perpendicular to the ground similarly to a building's weight directed straight down into its foundation. Some exercisers make the error of placing plates or lifts under the heels of the feet, presumably (and incorrectly) to direct the resistance into the heels. The heel lift actual forces energy forward and places increased stress on the knees and greater need for (biomechanical compromised) compensation.

The first step to teaching the back squat is to ensure proper movement technique is accomplished without resistance. Exercisers must learn to center the gravity over the base of support with proper tibial position. A good teaching cue is to have new exercisers (or old ones who perform the exercise incorrectly) to place their heels against a box and push the hips backward to keep the knees from moving beyond the upper shoe laces. The goal is to decelerate to 90 degrees of knee flexion or functional range (neutral/anterior pelvic tilt maintained) without falling back. A knee translation check is to ask the exerciser to tap their toes at any phase of the movement. If they cannot tap their toes have them move the hips back as the pelvis is too far forward. Counter balance can be used initially but should be removed. When a person can perform the exercise with arms overhead without falling they can be progressed forward.

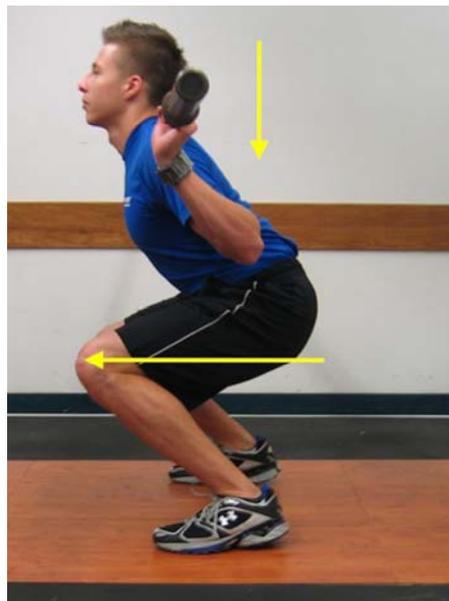
When resistance is added to the upper back it should be located across the shelf formed by the posterior deltoids and the superior border of the scapula while retracted – not on the neck. During the descent, the hips should move back and downward so that the spinal position is roughly parallel to the tibial position. The back should not be rounded nor should the action be compensated with extra hip flexion due to limited knee flexion (forward lean). Spotting the technique should occur at the lateral anterior aspect of the rib cage so that the spine is properly managed. Spotting from the hips is incorrect because it does not properly protect spinal position.

Common Errors: Potential Causes

Posterior Pelvic Tilt – weakness in trunk stabilizers/ tightness in hip extensors



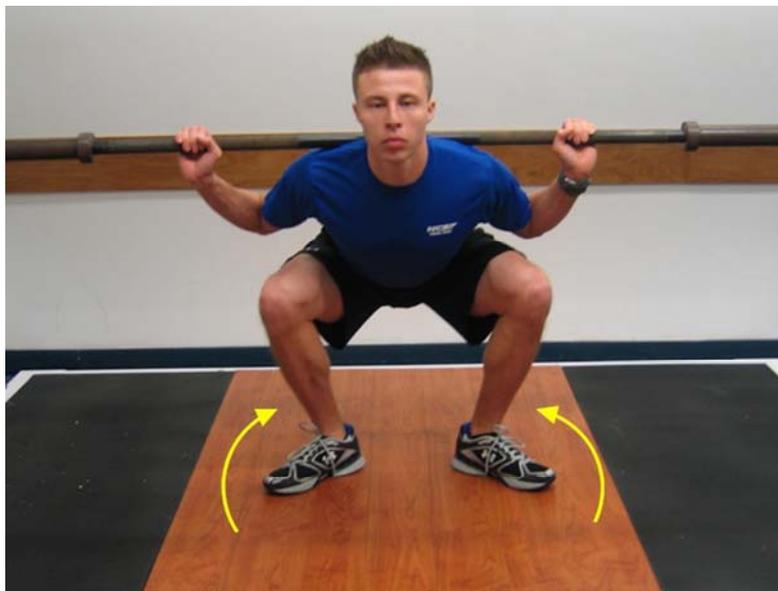
Knees Cross Toe – pelvis is not moved posteriorly/weight is shifted anteriorly



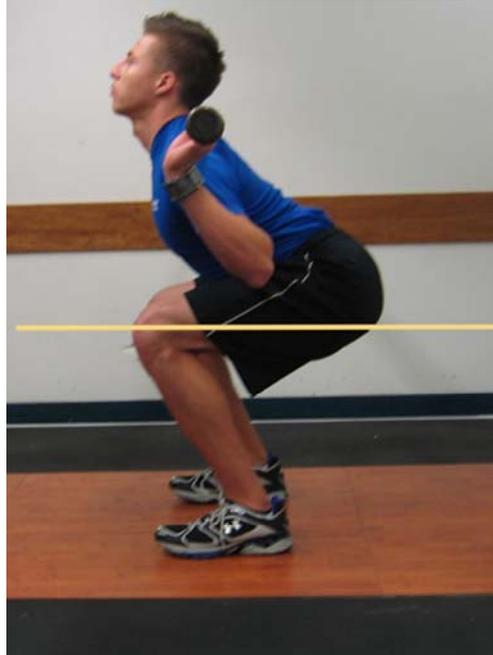
Knees Move Inward – weakness in hip extensors/tightness in adductors



Heels Move Inward – tightness in plantar flexor



Incomplete Range of Motion – resistance too heavy/improper instruction/localized tightness



Excess Hip Flexion – weakness in trunk/tightness in hips



Back Squat Quiz

1. The _____ position of the resistance during the back squat places a high demand on spinal stabilizers.
 - a. Low lateral
 - b. High axial
 - c. Variable
 - d. Internal

2. The back squat can be used in exercise programs designed to improve which of the following?
 - a. Strength
 - b. Power
 - c. Hypertrophy
 - d. All of the above

3. Weakness in the trunk coupled with strong muscles acting on the hip and knee joints will result in a _____ at the end range of motion.
 - a. Neutral pelvic tilt
 - b. Anterior pelvic tilt
 - c. Posterior pelvic tilt
 - d. Lateral pelvic tilt

4. Weak stabilizers are of the most common causes of incorrect pelvic position when performing the back squat. Another common cause is _____.
 - a. Lack of flexibility in hip extensors
 - b. Lack of strength of the quadriceps
 - c. Weakness in the hamstrings
 - d. Strong abdominals

5. Over-emphasis of the _____ during the back squat can lead to slower recruitment patterns, thereby limiting increase in power development.
 - a. Repetitions
 - b. Sets
 - c. Load
 - d. Rest intervals

 6. Most individuals experience _____ when they simultaneously flex the knee and hip.
 - a. Tibial translation
 - b. Fibular translation
 - c. Tibial stability
 - d. Femur translation

 7. Proper technique of the back squat should focus on moving the hips and glutes _____ while _____ the knee on the downward phase.
 - a. Downward; extending
 - b. Forward; flexing
 - c. Upward; extending
 - d. Backward; flexing

 8. If an individual's heels come off the ground while performing the back squat exercise, weight plates or lifts should be placed under the heels.
 - a. True
 - b. False

 9. A good check to see if the weight of the individual performing the back squat is centered over the heels and not on the balls of the feet is to see if they can _____ at the end range of motion.
 - a. Tap their toes
 - b. Flex their knees
 - c. Breathe
 - d. Tap their heels
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10. The weight should be placed on the shelf created by the _____ during the performance of the back squat.
- a. Biceps
 - b. Triceps
 - c. Latissimus dorsi
 - d. Posterior deltoids

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