

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.

Postural Distortion and Back Pain

The vast majority of American adults have experienced acute low back pain at some point in time, and a notable percentage of them suffer from varied levels of chronic pain. In fact, nearly 90% of adults acknowledge spine pain to their primary physician – most commonly radiating through the lumbar spine area. In response, many visit the local chiropractor for relief but an adjustment may not be what the doctor ordered. Low back pain can be caused by numerous factors ranging from significant pathologies like spinal impingement, to a cancerous tumor, to mechanical issues including congenitally-derived scoliosis. More commonly though low back pain is associated with mechanical issues derived from both hypo and hyperkinetic induced postural deviations. Hypokinetic disease is a fancy way of saying sedentary; individuals that do not move enough will likely be fat and have seated posture issues including weak and shortened hip extensors. Watching television promotes a posterior pelvic tilt and flexed knees, which creates pelvic instability. To the contrary, the chronic exercise enthusiast that has run 10 marathons may stand at the starting line with arched hips, denoting the tight hip flexors (psoas major, iliacus and rectus femoris) common of lower cross syndrome.

One may expect that exercise is the superhero of the story, and yes that certainly is the theme here; but before running to the gym to perform back extensions one must realize that there are some complications to the story. Firstly, the vast majority of people have weak fronts not weak backs; second, the issue may not be as sagittal as one may think. Even if the issue is in fact a hip flexor-extensor situation the back extension machine is not a good choice; it actually

disconnects the posterior sling system that unites the latissimus dorsi to the contralateral gluteus maximus via the thoracolumbar fascia. While sounding scientific it simply suggests that the cross joint system of posterior stability is compromised. We do not function in a forward-backward machine-like manner, rather we swing opposite limbs for locomotion in a coordinated flexion/extension of the shoulder and hip. A quick check-up will tell the story. Evaluate the following:

Hip extensors – Straight leg hip flexion and bilateral hip knee flexion

Hip flexors – Both flexed knee and straight leg Thomas test

Rectus femoris – Closed-stance overhead Bulgarian squat

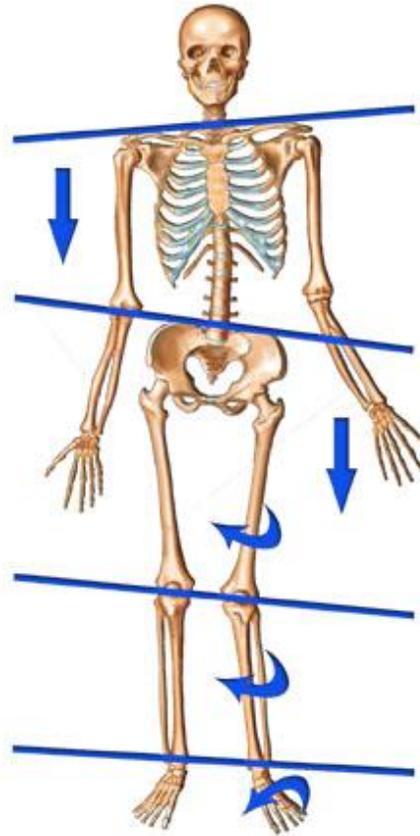
If these areas present issues the problem is tightness in the hips which is often accompanied by weakness in rectus abdominis. Strive to attain a 1:1 strength ratio between abdominal flexion and trunk extension while correcting the specific hip ROM problems. Commonly, overhead lunges and Bulgarian squats can be incorporated in programs along with specific static stretches.

For clients that do not seem to fit in one of these categories the story may be more frontal plane oriented. Many trainers fail to realize the muscles that act on the lateral aspects of the body can create equal complications in the lumbopelvic hip complex. In cases such as these, tightness may exist in the lateral sling affecting the quadratus lumborum (QL), and hip ab and adductors. The hip naturally tilts for the purpose of locomotion but when fixed in tilted position it

causes kinetic disturbances. The muscles adjust to the structural misalignment which is observationally discernible as a lateral pelvic tilt, or more commonly referred to as a limb-length disparity. Imbalance is created when one side of the pelvis goes up, the other goes down and the hip hike shortens an abductor while lengthening an adductor. Another often forgotten location associated with low back pain is the foot. Pronation of the foot causes negative outcomes up the kinetic chain which often manifests in low back stress.

According to the literature, reviewed studies have linked flat feet, ankle instability, sagittal plane blockage and excessive pronation to low back pain. Excessive pronation, in particular, has been shown to cause limb-length discrepancies. As with a suprapelvic abnormality, the shortening of the limb associated with significant pronation has been associated with lateral pelvic tilting and low back pain stemming from kinetic disturbances inferior to the knee. Personal trainers should recognize ankle and foot deviations as a potential cause for low back pain due to the disruption of the kinetic chain from the foot to the back. Clinicians should consider the foot and ankle when addressing low back pain, especially if traditional rehabilitative and corrective exercises fail to alleviate the condition. Even though squatting tends to expose the abnormal tracking of the ankle and knee joints, a simple observational assessment of straight line walking gait can be used to identify the condition.

Pronation is more easily identifiable from an anterior view with no shoes on to interfere with the ankle action. During the squat assessment, observations should focus on knee alignment and ankle changes over several slow controlled



repetitions. Deviations may be more prominent under axial load or an overhead bar position, depending on the movement competency of the client. The lateral distortions on the other hand are more observable from the posterior view. Two things to look for during an observational assessment are lateral translation and lumbar scoliosis. In a lateral translation the hip drifts to one side in a fairly linear fashion. At the bottom position key in on the glute-to-ankle relationship of both sides to discern bilateral disparities. A lumbar scoliosis actually presents as a point specific “hook” to one side and may exist with or without lateral translation. Lumbar scoliosis is not necessarily congenital as force vector changes can cause localized (angular) tightness. It is most often visible at the bottom third of the squat movement.

Lateral disorders can often be rectified, like most other musculoskeletal complications, by stretching and strengthening. Commonly foam rolling and stretching are used to help ready the body for more dynamic applications; in particular the abductors on the downside and the adductors on the upside of the pelvis. Stretching the QL can be accomplished using specific static stretches, counter arm-leg reaches, and dynamically with the overhead lunge to lean exercise. In the latter a full lunge is attained before the client leans away from the downward knee. The overhead arm position requires both humerus to remain behind the ear to optimize the QL and hip abductor ROM.

When pronated feet are the issue one might consider a bottom-up (heel to hip), top-down (lower back to hip) approach as the problem may lie in the ankle or the hip. In the anterior view, when the feet are pronated and the knees move in the probable overactive muscles are the vastus lateralis, short head of the biceps femoris, TFL, and adductor complex. The distortion may occur in response to weak hip muscles and

inefficiency within the vastus medialis. Other muscles worth evaluating when faulty movements occur in the lower limb segments are the calves, peroneals, iliopsoas, and rectus femoris. In addition to issues in the low back, feet properties can also create increased risk for plantar fasciitis, shin splints, IT band syndrome, and patellar tendonitis (jumper's knee).

Low back pain presents with many contributing factors and it sometimes takes a more rigorous approach to identify the underlying cause. All too often we rely on “cookie-cutter” solutions to resolve thoraco-lumbar pelvic issues. The sagittal plane certainly can lead to issues of lower cross syndrome but it is important for trainers to also assess the muscles in the frontal plane for possible issues. Sometimes it is a little bit of everything that contributes to the pain and discomfort. Taking a systematic approach will help aid in identifying problems and the appropriate solutions.

Postural Distortion and Back Pain CEU Quiz

1. According to the article, nearly _____ of American adults acknowledge spine pain to their primary physician.
 - a. 50%
 - b. 70%
 - c. 80%
 - d. 90%
2. *True or False?* Watching television while seated for extended periods of time can contribute to pelvic instability as it commonly promotes anterior pelvic tilting.
 - a. True
 - b. False
3. The Thomas test will assess mobility in which of the following muscle groups?
 - a. Gluteus medius
 - b. Hamstrings
 - c. VMO
 - d. Psoas major
4. What is the appropriate strength ratio between the trunk flexors and trunk extensors?
 - a. 1:1 (flexors:extensors)
 - b. 1:3 (flexors:extensors)
 - c. 2:1 (flexors:extensors)
 - d. 3:2 (flexors:extensors)
5. Tightness in which of the following muscles would be most likely to cause issues within the lateral sling as well as hip hiking?
 - a. Vastus intermedius
 - b. Gluteus minimus
 - c. Quadratus lumborum
 - d. Iliacus
6. *True or False?* Literature has linked flat feet, ankle stability and excessive ankle pronation to lower back pain.
 - a. True
 - b. False

7. Excessive pronation at the ankle can cause:
- Posterior pelvic tilting
 - Hamstring laxity
 - Lateral pelvic tilting
 - Glute dominance
8. Movement deviations consequential of lumbar scoliosis are most evident in a squat assessment during:
- The first 15° of hip flexion
 - The bottom third of the squat descent
 - The bottom of the squat
 - The upward drive back to the starting position
9. If a client's feet are excessively pronated and the knees move inward during basic locomotion, which of the following muscles is most likely overactive?
- Vastus medialis
 - Quadratus lumborum
 - Iliopsoas
 - Adductor complex
10. The structure of a client's feet (flat, over-arched, etc.) can increase the individual's inherent risk for which of the following issues?
- Plantar fasciitis
 - Shin splints
 - Patellar tendonitis
 - All of the above

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	



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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