

# 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.



## Tweaking Your Workout

The body's ability to learn and improve explains why progressive stress must be applied for continued training improvements. When a training stress is placed upon the body, the body responds via a unified reaction of systems in varying proportions that attempt to manage the stress as efficiently as possible. Initial actions by the body are often distressed due to the lack of experience with internal management of the exercise. The metabolic systems try to deliver the appropriate amount of energy, while cardiopulmonary actions work to increase oxygen to active tissue. The nerves direct muscle actions in attempts to coordinate the effort as efficiently as possible and the endocrine system assists by releasing hormones to aid this entire process. Early attempts at a new exercise are somewhat awkward, but after repeated exposure to the stress the body gains experience. This experience allows for better internal management and therefore the physiological perception of the stress diminishes due to the tissues' adjustments to accommodate the situation. This is called the adaptation process. Once this process takes place, if the same stress is applied, the body can adequately handle the stress and transitions to a maintenance phase; as long as the stress remains the same no further adaptations take place. Some adaptations are even lost as the nervous system becomes so familiar with the situation that it can handle the effort using less tissue due to improved muscle recruitment. Simply going to the gym and working out does not guarantee any new physiological enhancement, only caloric expenditure. And, as the body becomes more efficient at managing the same activities, the perceived, as well as actual stress, decreases. This can actually result in less caloric expenditure over time even with the same exercise routine.

To overcome the maintenance status, the tissue must experience something new and challenging so that the body is forced into a new management strategy. This encompasses the exercise principle of overload. Without it, workouts are destined for physiological complacency. Most people believe changing the stress can be accomplished by simply spending more time doing the same thing, but this is not necessarily correct depending on the goal of the training. For instance, a walking program that goes from two miles, to two and a half miles, increases duration but not the intensity. Walking two and a half miles burns more calories than walking two miles, but cardiovascularly speaking the new activity will have restricted return because system stress is limited. Adding weight may not always be the answer either. Adding ten pounds to a chest press is certainly a new challenge, but increasing the rest interval with it changes the perception of stress and the physiological response for adaptation. The overall stress experienced by the body often comes from several areas and therefore each should be considered when changing the demand in hopes of eliciting new adaptations.

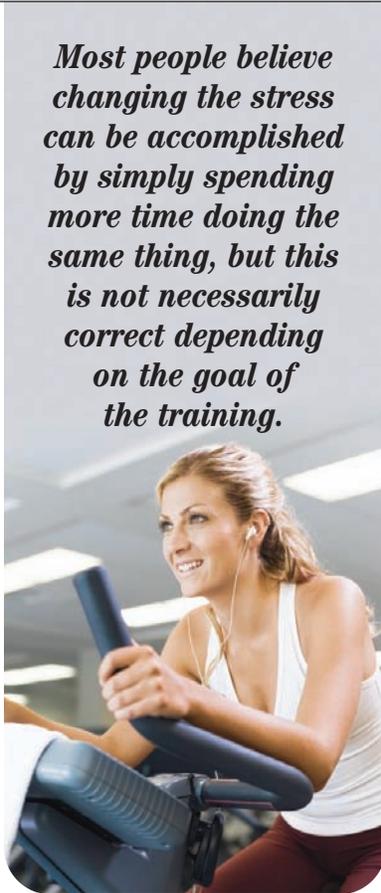
The first step to creating new and progressive overload is to identify the desired outcome of the exercise and then match the stress with the specific capabilities of the client. Consider the chest press example. If weight is added, the tissue will become stronger, true, but that does not insure hypertrophy or greater caloric expenditure if a longer rest interval is used. In some cases adding weight may change the exercise performance technique which may result in a negative outcome, such as an injury. Additionally, when weight is the only new applied stress the outcomes become limited. Is one to continue loading an exercise until they reach genetic potential for absolute strength in that

movement? This doesn't make much sense unless your goal is to excel at the lift in some competitive environment. Therefore, forethought is necessary for proper decision making when overload is applied to the exercise routine. To select the best modification, consider the factors that create the adaptations.

The nerves are an extension of the brain, functioning to communicate data, which in turn develop synchronized movement patterns. The nervous system represents the control mechanism and therefore neuromuscular adaptations are the first to occur and most pronounced. Neuromuscular adaptations contribute to force production, energy-sparing through economy, and better use of energy for high velocity actions through improved stabilization and preferential fiber recruitment. Nervous system improvements in economy help both the aerobic and anaerobic systems. In fact, endurance athletes benefit significantly from improved movement economy as they conserve energy during the sports performance. Motor pattern stress is the key to improving these variables.

The metabolic system is the second system to adjust to increasing stress. The change in the metabolic system is specific to exposure. Since training adaptations are stress-specific, each energy system must be challenged for maximal benefit in the respective system. If a person wants to improve performance and specifically tolerance to lactic acid, the glycolytic pathways that produce lactic acid must be utilized at intensities that are unfamiliar. This means pushing repetitions with more intensity (greater % of 1RM) and shortening rest intervals when completing sets of 6 or more repetitions. If the goal is anaerobic endurance or repeated performance with minimal time for lactate clearance then these variables must occur during the training. Consider the following parameters when making program decisions for goal-oriented training.

<b>Hypertrophy</b>	<b>Strength</b>	<b>Power/Performance</b>
70-85% 1RM	75-95% 1RM	70-90% 1RM
8-12 repetitions	3-10 repetitions	4-12 repetitions
30-60 second rest interval	90-120 second rest interval	30-90 seconds rest interval
High volume	Moderate volume	Moderate-high volume
Isolation, Muscle fatigue	Compound movements	Integrated actions



***Most people believe changing the stress can be accomplished by simply spending more time doing the same thing, but this is not necessarily correct depending on the goal of the training.***

There are numerous ways to challenge the body once skill acquisition and mastery of technique have occurred. A unified approach that collectively progresses exercises from hypertrophy to strength to power follows a sequential order of stress application.

- Step 1.** Master technique
- Step 2.** Load technique
- Step 3.** Challenge technique
- Step 4.** Add dynamics (multi-planer)
- Step 5.** Add velocity

This model allows for continued adaptations working on a building block approach. The mastery of technique phase allows for motor patterning, endurance, and hypertrophy. It is characterized by higher repetitions and low, progressing to moderate, loading. Much like a sports practice, specific skills are rehearsed for improved efficiency in movement. Once the movements are performed to perfection they

can be loaded. The amount of resistance used is a factor of desired results. In some cases it makes sense to load the exercises in the 5RM-8RM range, other times those loads are not conducive to the overall goals of the program or add too much stress for compromised individuals.

The next progression actually steps back away from the load and challenges the technique of the exercise. Decreasing the load is met by an increasing neural stress which enhances stability and coordination by challenging technique. It becomes a matter of load placement rather than total resistance. This step allows for significant diversity as the weight can be raised, elevating the center of gravity, moved laterally to create asymmetrical loading, performed unilaterally rather than bilaterally or with less stable surface conditions such as occurs when using a physioball. The training variations allow the body's proprioceptors to become more efficient at managing the stress.

***Sample Sequence***

**Static lunge**

**Static lunge with dumbbells**

**Medicine ball overhead static lunge**

The body's ability to perform tasks under varying loaded conditions is requisite preparation for adding dynamics to the exercise. Dynamics can come in the form of additional movement, movement planes, or decreased stability. Moving

in two movement planes at the same time increases the coordination requirements. Similar to the previous step, the load should reflect the movement difficulty. This step can be further influenced by adding asymmetry and other factors that reduce stability once proficiency is attained.

Increasing the velocity of the movement adds a power component to the adaptation continuum. When the speed is increased, all aspects of physiological challenge also increase. The body not only must stabilize dynamic actions but also now experiences heavy deceleration requirements. When actions speed up, control is reduced, so special consideration must be paid to safety. Loss of stability and control mechanisms increase risk for injury so prudent exercise selection is warranted when programming in this phase. Following the stress continuum allows for program adjustments that can be accommodated with appropriate preparation. When the movement speeds up the resistance, movement dynamics, and stability requirements should be proportionally reduced. Eventually additional challenges can be added, but again they have to make sense based on the goals of the training.

### Sample Sequence

**Forward lunge**

**Forward lunge with overhead press**

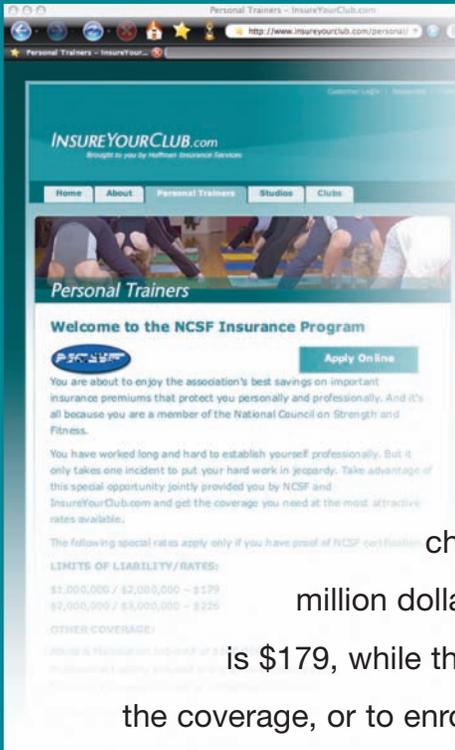
**Forward lunge with trunk rotation**

**Lunge rebounds**

**Jump lunges**



Following the building block approach that has been laid out across the adaptation continuum allows a single exercise to take on many new and different stresses which perpetuate physiological change. The additions and removal of load, complexity and speed change the internal conditions of the body and allow for a fairly limitless array of exercise movements. The exercises can be ordered in the program to reflect the specific goals of the training at the time of use. In some cases, the exercise may find itself in the beginning of the order due to heavier loads or rapid velocities, whereas in other cases, the same exercise may be placed at later stages of the workout to challenge the nervous system while being less taxing on muscles stressed during previously completed movements. Regardless of the new stress the whole process starts with mastery of the skill. This mastery of the movement should be the foundation of each additional challenge. The movement must remain efficient and biomechanically correct throughout its progressive life in the program. If every exercise is completed with perfect technique the body can continue to progress without limitation. If the exercise movement becomes sloppy due to excessive overload or some other new stress, regress back a step by reducing the level of challenge. Quality instruction mandates proper execution every time a movement is performed which translates to improvements and reduces risk for injury. ●



# Professional Liability Insurance

The National Council on Strength and Fitness (NCSF), in partnership with InsureYourClub.com, is pleased to announce a new liability insurance coverage option for NCSF Certified Professionals. Under the new program trainers can now choose from either the current two million dollar plan or a new three million dollar coverage option. The annual rate for the two million dollar policy is \$179, while the three million dollar policy is priced at \$226. To learn more about the coverage, or to enroll, please visit the **Membership Benefit section** [www.NCSF.org](http://www.NCSF.org)

# CEU Quiz

## Tweaking your Workouts

- When first attempting a new exercise, the perceived stress may be high due to \_\_\_\_\_.
  - Metabolic system contributions to deliver energy
  - Cardiopulmonary contributions to increase available oxygen to muscle
  - Neuromuscular contributions related to movement efficiency
  - All of the above play a role in learning a new movement
- When an exerciser “learns” how to perform a movement and improves their internal management thereby decreasing the physiological perception of stress, they are said to have progressed through the \_\_\_\_\_ process.
  - Adaptation
  - Hypertrophy
  - Endurance
  - Training
- The exercise principle of \_\_\_\_\_ states that the body must experience something new and challenging in order to overcome the \_\_\_\_\_ status.
  - Specificity; adaptation
  - Overload; maintenance
  - Progression; adaptation
  - Specificity; maintenance
- Where are the first adaptations to any new strength training exercise experienced?
  - In the mitochondria
  - Within the neuromuscular system
  - In the heart
  - Within the cardiovascular system
- Which of the following is an example of a neuromuscular adaptation?
  - Energy sparing through improved movement economy
  - Better use of energy for high speed actions due to improved stabilization
  - Improved energy utilization due to preferential fiber recruitment
  - All three of the above are neuromuscular adaptations
- If the training goal includes improved lactic acid tolerance, the training should utilize the \_\_\_\_\_ pathway with increased intensity (% of 1RM) and \_\_\_\_\_ rest intervals.
  - Glycolytic; increased
  - Glycolytic; decreased
  - Aerobic; decreased
  - Aerobic; increased
- Select the proper training program that the following information describes: 90% 1RM, 5 repetitions, 120 second rest intervals, and moderate volume.
  - Hypertrophy
  - Strength
  - Power
  - Performance
- Choose the correct order of sequential progressions for proper exercise programming from hypertrophy to strength to power.
  - Challenge technique, load technique, add velocity, add dynamics, master technique
  - Load technique, add dynamics, add velocity, master technique, challenge technique
  - Master technique, load technique, challenge technique, add dynamics, add velocity
  - Challenge technique, add velocity, master technique, add dynamics, load technique
- Adding dynamics to a movement can be accomplished by:
  - Adding movement planes
  - Decreasing stability
  - Performing the movement unilaterally
  - Each of the above is a correct method to add dynamics
- If the speed of a movement is to be increased, \_\_\_\_\_.
  - the resistance used should decrease
  - the movement dynamics should decrease
  - the stability requirements should decrease
  - All of the above are correct

# 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