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.
Implementing Superset Training

The implementation of a new training system is an excellent way to rejuvenate a workout or add more volume and intensity to a training program that must be completed in a specified period of time. A training system employs a technique that allows an exercise or group of exercises to better serve a defined purpose. One of the most popular of the anaerobic training systems is the superset. Supersets combine two or three exercises (tri-sets) in sequence with only transitional rest between the sets. Transitional rest refers to the amount of time it takes to switch from one exercise to the next with no additional rest. In a superset, the exercises are not combined to form one movement, something referred to as a combination or compounded exercise, but rather are separated to individual actions that remain consistent with the workout parameters. The diversity between the sets is what makes the superset such a viable option in any training program.

Example: Combination Exercise
Front Squat to Overhead Press  6 repetitions

Superset
Front Squat 8 repetitions (superset)
Military Press 6 Repetitions

The goal of the training as with any program defines how the superset is implemented. The role of the superset is to exploit a physiological component to maximize the results or to accomplish more work in a shorter period of time. Deciding on the correct superset should always be based on the goal of the training. If the ultimate goal of the training or exercise is to elicit a hypertrophic response from the tissue, the exercise should stress the body in a way that maximizes muscle fiber recruitment while stimulating the appropriate hormone response. This suggests that the exercises used in the hypertrophy superset should tax the same muscle group. In doing so, more muscle fibers fatigue due to longer time under tension and the tissue is forced to recruit additional muscle fibers. The resistance must be at a level that is moderately heavy (70%-85% of 1RM) to stimulate testosterone and growth hormone release, while the lack of rest between sets causes the accumulation of lactate to stimulate mediator and permissive hormones causing the liver to release insulin-like growth factor. Examples of a superset for hypertrophy in the chest musculature are a bench press superset with dumbbell flies or body dips superset with seated chest press.

If the goal of the training program is to condition the body for better anaerobic endurance, the body must experience adequate stress in the glycolytic pathway. In this case the muscle groups can differ between sets but the repetitions must occur in the appropriate range with an intensity of 65%-70% 1RM. A set of squat to overhead dumbbell press superset with seated medicine ball rotation or modified pull-ups superset with push-ups both can tax the system appropriately and still be completed in close enough proximity to each other to maintain limited transition time between the exercises. When the superset uses equipment that requires travel between the exercise sets, transitional rest is increased and the benefits of the superset are reduced.

Strength training is more challenging for superset programming because the intensity required of appropriate strength training places heavy demand on stabilizers and assistive muscle groups. When the system becomes fatigued, overload is diminished and the reduction in stability often compromises the movement’s performance, thereby increasing the risk of injury. For instance, supersetting squats with Romanian deadlifts would cause significant stress on the muscles of the
low back. Therefore strength supersets often use different body segments to attain the best results from greater loads being lifted.

When combining exercises in supersets aimed at strength improvements, connecting factors between the lifts, such as the low back with the squat and Romanian deadlift, should be identified to ensure the stress will not result in that connecting factor becoming a limiting factor. Military press and incline bench press for instance use similar stabilizers and therefore maximal force output would be compromised in the latter exercise during the first set and total output would be reduced on subsequent sets. Push/Pull combinations and body segment variations are useful tactics in supersetting for strength. A key area to pay attention to is the spinal segments due to the stability requirements of several joints. In a push/pull superset for strength, alternating dumbbell press would superset better with machine row than pull-ups due to the taxation on joint stabilizers. Similarly, when using upperbody/lowerbody supersets front squats would go better with lat pulldown than bent-over row due to the spinal segment requirements of both the squat and bent-over row. Generally speaking, high force output with high stability requirements should be combined with high force output with reduced stability requirements when the goal is strength-based.

When supersets are designed to address power, two thought processes often exist. Combining the ATP/CP system with the glycolytic system or combining strength with power which is referred to as contrast supersets. An example of combining anaerobic systems would be supersetting power cleans with medicine ball chest pass for a well trained individual or box jumps with lunge rebounds for a moderately conditioned person. For an older adult, the combination may be chair stands superset with speed band pulls. The key to power is the velocity of the movement. The intensity is relative to the individual so although higher intensities are used they reflect capability. For instance, 85% of 1RM may sound intimidating for some populations but remember 85% of a low number is an even lower number. If the maximum is 20 lbs. of force, 85% reflects only 17 lbs. Contrast supersets are a little different because a slow heavy set is combined with a lighter set performed at a much faster rate. Normally 85% 1RM is used for 5 or 6 controlled repetitions while 45-60% 1RM is used for 8-15 repetitions. A back squat superset with tuck jumps or bench press superset with medicine ball chest pass are common examples. Regardless of the combination, the exercise pairings have to make sense for the program goals and for the individual.

Supersets can also be used as time savers in lower frequency programs or for general conditioning. Modified circuits can use supersets to increase the intensity while still accomplishing higher amounts of work. Consider the following training program.

- Back squat 12 repetitions superset with leg curl on the ball 15 repetitions
  30 seconds rest
- Military press 8 repetitions superset with lat pulldown 10 repetitions
  30 seconds rest
- Physioball DB chest press 10 repetitions superset with band row on the ball 15 repetitions
  30 seconds rest
- Romanian deadlift 8 repetitions superset with calf raise 15 repetitions
  30 second rest
- Tricep dips 15 repetitions superset with bicep curls 10 repetitions

Combination exercises or compound supersets can be added to further drive the adaptation response as exercisers become more physically fit. Supersets that utilize greater amounts of tissue
to produce larger quantities of accelerated force or that decelerate higher products of mass-velocity require additional consideration due to the physiological demand. Generally grouped in two or three sets, the compound exercises segment force-couples to engage the major muscle groups of the body. Commonly this is accomplished by mixing upper and lower body movements or trunk and limb combinations.

COMPOUND SUPERSET EXAMPLES

- Front squat to press superset with lunge with trunk rotation
- DB deadlift to upright row superset with step-up with bicep curls

Compound supersets may warrant longer rest intervals between sets depending on the intensity used to perform the movements. Light weight compound supersets are an excellent supplement to a weight management program and can also be used for improved conditioning to enhance cardiovascular based workouts as is typically seen in group exercise classes.

Regardless of the defined application, supersets offer numerous options and have a place in any type of exercise program. Due to the fact that they can benefit strength, power, and overall fitness, different types of supersets can even be used within the same program. Supersets will result in increased volume and subsequent adaptations in programs where frequency is a challenge. Supersets also are a viable solution for workout bouts that must be completed in a short period of time. It is not hard to add diversity and difficulty to any available time segment by simply combining exercises in a logical sequence. The keys to successful implementation of supersets are respecting fatigue, the stability requirements, and the client’s capabilities.
CEU Quiz

1. A superset is a training system that combines two or three exercises in sequence with ________ between the sets.
   a. Stretching
   b. Extended rest
   c. Transitional rest
   d. Abdominal work

2. Which of the following reasons would justify superset inclusion in a workout bout?
   a. Limited amount of time
   b. An attempt to maximize physiological response
   c. Increase muscle fiber recruitment
   d. All of the above are correct

3. True or False. Supersets can be used to elicit a hypertrophic response.
   a. True
   b. False

4. The benefits of a superset ________ as the amount of time between exercises ________.
   a. Increase; increases
   b. Decrease; increases
   c. Decrease; decreases
   d. None of the above are correct

5. ________ training is often difficult for superset programming due to the large physiological demand placed on, and possible fatigue of, the ________.
   a. Power; prime movers
   b. Strength; stabilizers
   c. Endurance; prime movers
   d. General fitness; stabilizers

6. The connecting factor with lifts such as the Romanian Deadlift and the Squat, is the ________, and special attention should be paid to avoid fatigue when supersetting for strength due to possible injury.
   a. Low back
   b. Shoulders
   c. Arms
   d. Latissimus Dorsi

7. When an upper body and lower body exercise are integrated into a superset for strength, if the first involves high force and a high degree of stability, the second exercise should involve ________ and a ______ degree of stability.
   a. High force; high
   b. High force; low
   c. Low force; low
   d. Never combine upper and lower body exercises in a superset
8. Traditionally, a contrast superset combines a(n) ______ exercise with a(n) ______ exercise with only transitional rest between movements.
   a. Endurance; power
   b. Power; flexibility
   c. Strength; power
   d. Strength; endurance

9. Back squat superset with tuck jumps or bench press superset with medicine ball chest pass are examples of ____________
   a. Contrast supersets
   b. Pyramid training
   c. Strip sets
   d. Aerobic interval training

10. When working with physically fit clients, ____________ can be used, which place a larger stress on the major muscle groups of the body by segmenting force couples.
    a. Contrast supersets
    b. Power supersets
    c. Endurance supersets
    d. Compound supersets
Quiz Answer Form

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TITLE ______________________________

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Quiz Answers

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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