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.

Teaching Techniques for Overhead Ballistics

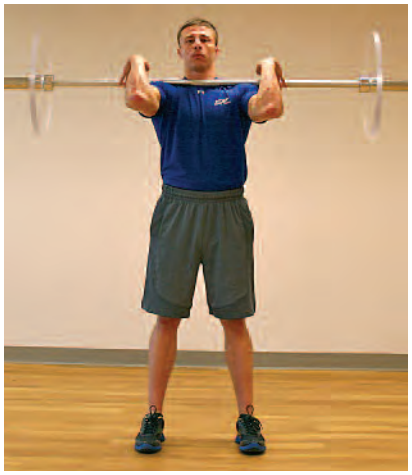
Overhead lifts place the shoulder joints in relatively compromised positions that increase the risk for injury. An open glenohumeral joint combined with the intention to resist a significant load in a vertical direction against gravity can spell disaster if proper technique and biomechanics are practiced. The risk escalates even further when this action is performed with a velocity emphasis as seen with overhead ballistics such as the push press or various types of jerks. For these reasons and others, personal trainers must be competent as it relates to training instruction if they wish to use overhead ballistics within the exercise prescription. This discussion will focus on the push and hitch presses as well as the power, push, and split jerks. Special considerations for each action as well as basic teaching techniques will be addressed. Personal trainers who wish to employ these lifts must first understand that jerks and the push and hitch presses differ significantly for a biomechanical standpoint. While watching the activities it may be difficult to discern the movement advantage between each; but when proper technique it used it becomes remarkably clear.

Examining the presses, the hitch press (just like a basic military press) is fundamentally a shoulder-strengthening exercise; whereas the push press is actually a hip/torso action. Even though the term "press" implies peripheral musculature, loading of the shoulders and arms in the push press is not the primary purpose. Obviously, before performing any of these advanced ballistics, the client should have proficiency in the military press. The objective of the military press is to apply ground reaction force at the hands via acceleration force through the shoulders. Energy is partially captured in the trunk to provide central stability for stable shoulder complex function, and is further supported by local stability of the glenohumeral joints. Tension is placed on the deltoids over the full duration of the lift; therefore, the military press is for strength and hypertrophy training. The hitch press is simply a "cheating military press" engaged with proper mechanics. Rather than attaining a rigid trunk and hips initial momentum is used for positional gain. The bar starts on the chest with mild hip and thoracic spine flexion and is accelerated to the chin with the use of hip and thoracic spine extension. The limited ROM of the momentum component allows the spine to remain properly aligned. The hitch press pops the bar to the chin so the shoulders can facilitate greater movement speeds at the mechanically-disadvantaged position, where shoulder flexion-abduction transfers. This can allow for use of 10-20% greater loads compared to the military press. The push press is a completely different exercise as it employs the hip and torso as the primary accelerating segments. The arms and legs undoubtedly contribute, but to a lesser extent.

The torso has two roles during jerks: (1) it must function as a rigid platform during the concentric component for phasic energy transfer, and (2) it must respond during the receive phase with appropriate reactive stiffening to prevent trunk flexion. Ground reaction force is accelerated from the hips directly into the bar located on the upper torso. For this reason, the bar must be properly racked on the chest and shoulders, or upward forces will be absorbed by the deltoids. This would cause some energy to be lost, while placing undue stress on glenohumeral support structures. Personal trainers must be cognizant of the demands of the push press from a trunk fatigue perspective; particularly the lower back. Any client who lifts notable weight during the push press will quickly recognize the eccentric phase can be more taxing than the concentric. An increased risk for low back strain is present when this exercise is over-zealously included with other lower back stressors (e.g., RDL).

As mentioned previously, the jerks are often confused with presses because the actions appear similar – but they differ greatly as it relates to muscle activity. Push presses use hip extension power to drive the weight up from the torso, whereas the jerks use initial extension to "pop" the weight into (very temporary) neutral gravity. Jerks should be used by personal trainers to promote rapid hip flexion and trunk stability. The hip drive of the push press is used to push the bar up (extension); during jerks this action is engaged against the bar to push the body down (flexion). The hips are flexed eccentrically to gain energy from the stretch shortening cycle (SSC), extended, and then rapidly flexed again for the receive position; often referred to as the "double-dip". Considering the mechanical stresses and employment of the SSC, these lifts can clearly provide improvements in athletic performance. They can help increase a client's vertical jump capacity as well as their sprinting speed; with additional benefits derived from enhanced trunk stability and force couple connectivity. The following teaching techniques can be used by the personal trainer for effective employment of these functional, yet challenging activities.

Starting Position ALL

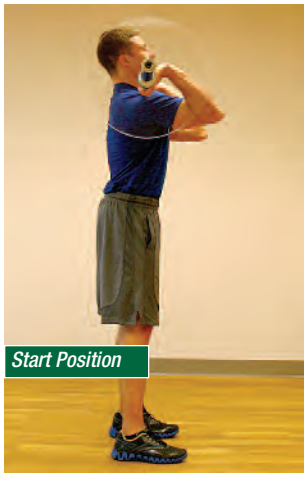


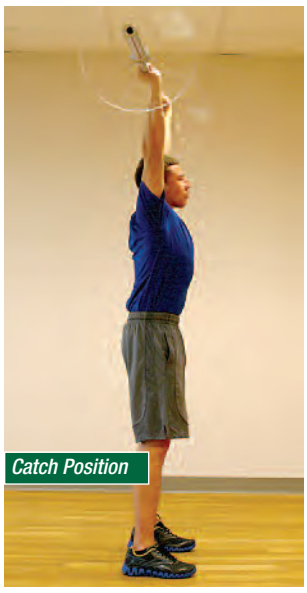
- The starting position is relatively similar to the full recovery stance for the power clean:
  - The bar is held with a closed, pronated grip slightly wider than shoulder-width and racked across the anterior deltoids and clavicles (without pressing against the neck).
  - The feet should be positioned shoulder-width apart, flat on the ground, and the toes can be pointed forward or slightly outward.
  - The scapulae will be somewhat protracted and the elbows will be elevated so that the racked position can be properly maintained.
  - The head should be in a neutral position, with the gaze directed slightly upward.

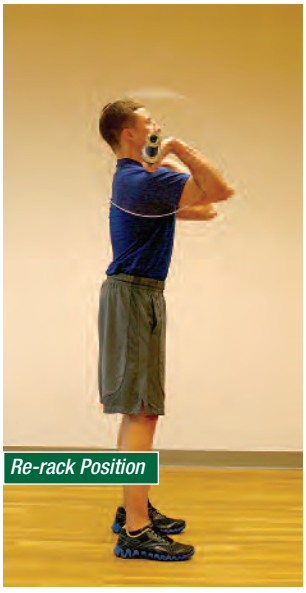
Preload Dip ALL

- With balance directed towards the center of the feet, the athlete must quickly dip about four to six inches by simultaneously flexing the hips and knees and dorsiflexing the ankles.
  - The depth of the dip is recommended to not exceed the catch position of the power clean, or about 10% of the athlete's height.
- The barbell must be kept in its cradled position across the shoulders during this action; moving in a straight downward path.
- The torso must be maintained in an upright position, perpendicular to the ground.
- After the rapid dip, the decent is halted ("braking phase"), so that the eccentric muscle work can transferred into the explosive concentric work during the drive and catch; the dip and subsequent drive are plyometric in nature (if performed quickly enough), taking advantage of the SSC.

Push Press







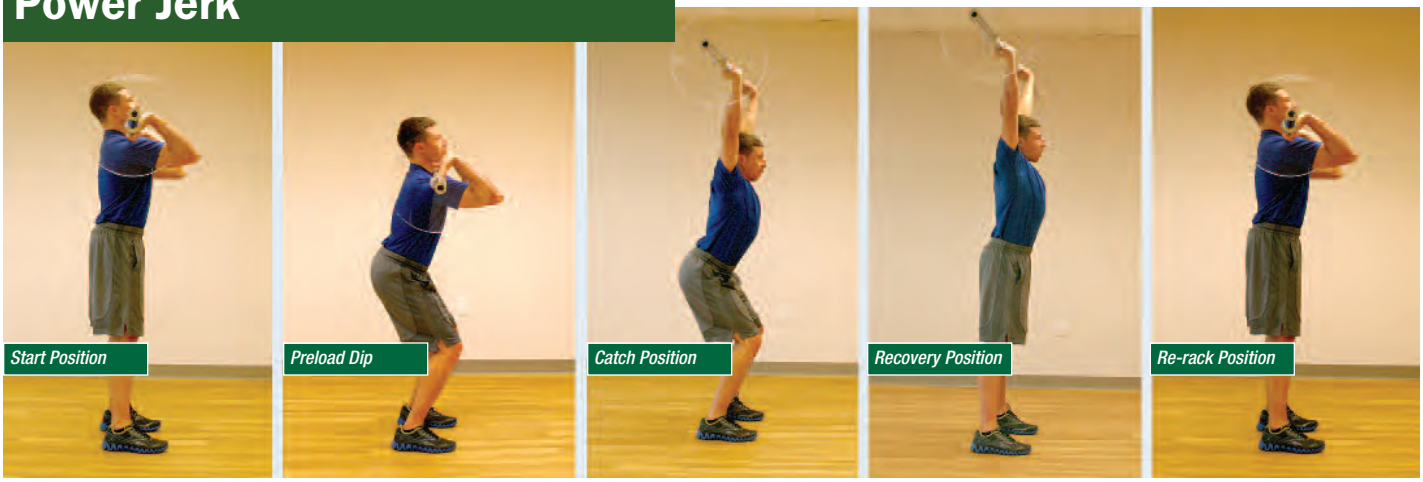
Drive and Receive 1 (Catch)

- At the bottom point of the dip, the athlete must engage in explosive triple extension of the hips, knees, and ankles to drive the barbell in a vertical fashion as high as possible.
- As the lifter rises up onto the toes, the bar is also driven upwards by extending the elbows and driving the shoulders overhead.
- When the barbell reaches the highest point due to vertical momentum the athlete then presses it the rest of the way up, with the shoulder and arm musculature, until the elbows are fully extended (upward muscle drive).

Recovery and Receive 2 (Re-Rack)

- As the full, ballistic overhead pressing action is finalized the athlete should already be standing with the torso erect, the head in a neutral position, the feet flat on the floor and the barbell in line with the shoulders and hips.
- The barbell is lowered under control by reducing muscular tension in the arms so that the bar begins to descend back to the shoulders.
- The athlete must simultaneously flex the hips and knees to cushion the impact of the bar as it lands back in the racked position.

Power Jerk



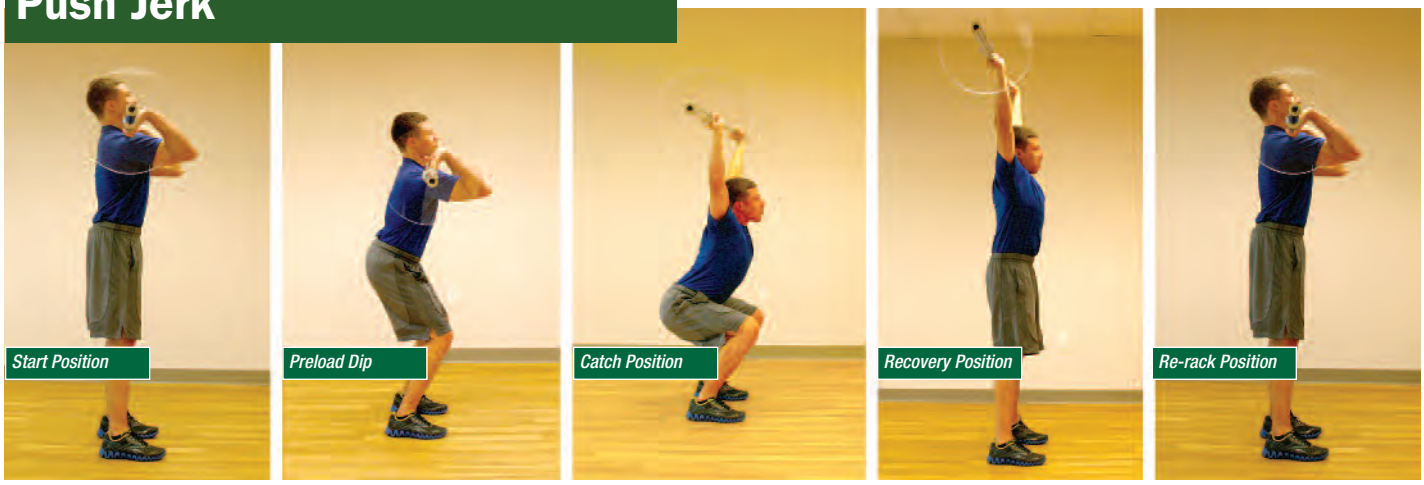
Drive and Receive 1 (Catch)

- At the bottom point of the dip, the athlete must engage in explosive triple extension of the hips, knees, and ankles to drive the barbell in a vertical fashion as high as possible.
- As the lifter rises up onto the toes, the bar is also driven upwards by extending the elbows and driving the shoulders overhead.
- Instead of pressing upward as seen during the push press the athlete must now quickly re-flex the hips and knees into a quarter-squat position while simultaneously extending the elbows to catch the bar overhead the moment it reaches the highest point based on momentum (hip flexion speed coupled with a upward drive).

Recovery and Receive 2 (Re-Rack)

- After the quarter-squat catch position has been stabilized, the athlete simply extends the hips and knees to attain a standing position.
- The standing posture of the recovery position as well as the technique for decelerating the barbell back to the rack position will mimic that seen with the push press.

Push Jerk



Drive and Receive 1 (Catch)

- At the bottom point of the dip, the lifter must engage in explosive triple extension of the hips, knees, and ankles to drive the barbell in a vertical fashion as high as possible.
- As the lifter rises up onto the toes, the bar is also driven upwards by extending the elbows and driving the shoulders overhead (this is minimal with the push jerk as the loads used are heavier).
- While the bar is a few inches off of the chest (still moving upward) and the upper body is driving up against the barbell to get the body under it, the athlete must very rapidly flex the hips while jumping the feet outward, to a width slight wider than shoulder-width, to attain a stable, deep full squat position (push under, or downward drive, with hip abduction to stabilize the squat catch position).
- While dropping into this deep squat position, the athlete must forcefully push upwards against the bar to maintain stability in this position (the body is pushed down, the bar is not muscled up).
- The hips and shoulders remain in the same vertical alignment and under the bar.
- In the squat catch position, the elbows should be fully extended overhead ("lockout" position) at the same moment the barbell reaches its highest point due to momentum produced by the drive.

Recovery and Receive 2 (Re-Rack)

- From the full squat position the athlete drives upward through the bar while extending the hips and knees.
- The bar should remain in alignment with the shoulders and hips during this extension action until an upright, standing position is attained.
- The full standing recovery position is identical to the split jerk.

Split Jerk

Drive and Receive 1 (Catch)

- At the bottom point of the dip, the athlete must engage in explosive triple extension of the hips, knees, and ankles to drive the barbell in a vertical fashion as high as possible.
- As the lifter rises up onto the toes, the bar is also driven upwards by extending the elbows and driving the shoulders overhead.
- While the bar is a few inches off of the chest (still moving upward) and the upper body is driving up against the bar to get the body under it - the athlete must simultaneously perform an extremely fast split drop by shifting one foot forward and the other backward while flexing at the hips (push under, or downward drive with split stance to get under the barbell quickly).
- Choosing which foot to split forward is determined by individual preference and comfort.
- During the split:
  - The feet are split about 24-30 inches apart (the front foot is driven forward about 1.5x the length of the lifter's shoe).
  - The front lower leg should be nearly perpendicular to the floor with the knee flexed to about 90° when the full split has been attained (this can vary based on athlete anthropometrics)
  - The rear foot will move a slightly greater distance than the front foot to a fully extended position (no knee flexion); but both feet should land nearly at the same time.
  - The hips and shoulders remain in the same vertical alignment and under the bar.
  - As the feet hit the split stance, the arms and shoulders are used to rapidly push the body fully under the bar (the body is pushed down, the bar is not "muscled up")
  - The body is lowered to a catch position that allows successful extension of the elbows overhead (sometimes referred to as a solid "lock-out") at the same moment the barbell reaches its highest point due to momentum produced by the drive

Recovery and Receive 2 (Re-Rack)

- The front knee and hip should be partly straightened while pushing upward on the barbell and pulling the back leg around half the distance it traveled during the split
  - The bar remains directly overhead rising in a straight line with the hips and shoulders
- The front leg then finishes its extension phase as the rear foot is pulled parallel with the front foot
- The load used and the depth of the split may force modifications to the recovery technique above (e.g., necessary drawing of the front foot back)
- In the full standing recovery position:
  - The bar will be slightly behind the head, which is held in a neutral position
  - The torso should be fully erect
  - The feet are flat on the floor

CEU Quiz

Overhead Ballistics

1. ***Which of the following is a primary function of the hitch press?***
   a. Kinetic chain connectivity
   b. Local stability of the shoulder
   c. Improved central stability
   d. Shoulder strengthening

2. ***True or False? The push press involves the use of rapid initial hip extension to "pop" the bar into temporary neutral gravity so the lifter can get under the load.***
   a. True
   b. False

3. ***When overhead ballistics such as the power or push jerks are performed correctly, they can provide which of the following performance improvements?***
   a. Increased sprinting speed
   b. Increased vertical jump capacity
   c. Increased force couple connectivity
   d. All of the above

4. ***The depth of the preload dip is recommended to not exceed:***
   a. The catch position of a power snatch
   b. A position where the thighs are parallel to the floor
   c. 10% of the athlete's height
   d. None of the above are correct

5. ***True or False? The use of significant loads during the push press will place notable stress upon the lower back during the eccentric phase.***
   a. True
   b. False

6. ***Which of the following lifts is the most taxing from a hip flexion speed and flexibility standpoint?***
   a. Push jerk
   b. Power jerk
   c. Hitch press
   d. Split jerk

7. ***Which of the following joints is not included in "triple extension?"***
   a. Hip
   b. Elbow
   c. Ankle
   d. Knee

8. ***During the first receive while performing a split jerk the front knee should be:***
   a. Almost fully extended
   b. Flexed to about 90°
   c. Slightly flexed at about 15-20°
   d. Outwardly rotated to maximize stability

9. ***What is the action called when the the hips are flexed eccentrically, extended and then rapidly flexed again to attain a receive position during performance of jerk activities?***
   a. Triple extension
   b. Force coupling
   c. Double dip
   d. Plyometric potentiation

10. ***True or False? The power jerk is received in a quarter-squat position.***
    a. True
    b. False

CEU Quiz Answer Sheet

Overhead Ballistics

Directions: 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. Mail a copy of the completed quiz with a check or money order for $15 to NCSF, Attn: CEU department, 5915 Ponce de Leon Blvd, Suite 60, Coral Gables, FL 33146

1. ____ **2.** ____ **3.** ____ **4.** ____

5. ____ **6.** ____ **7.** ____ **8.** ____

9. ____ **10.** ____

Name _____

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Member# _____

Questions? 800-772-NCSF

Quiz Answer Form

FIRST NAME_____ **LAST NAME**_____ **M.I.**_____

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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