

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?

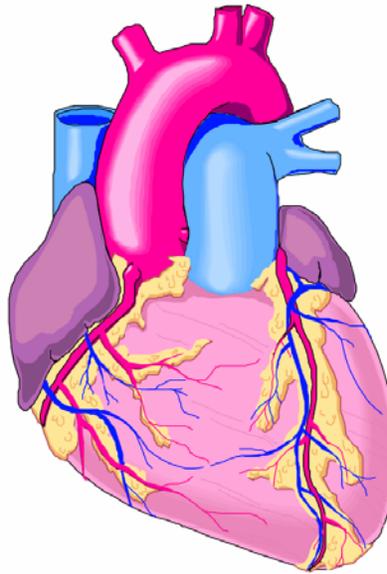
Individuals can take each NCSF quiz once for continuing education credits.

Obesity and Cardiomyopathy

The link between obesity and insulin resistance and atherosclerosis has been well established in modern literature. Researchers have recognized the relationship between obesity driven low-grade inflammation and cytokine (cellular secretions) dysfunction and alteration. These pathophysiological changes explain why metabolic and heart disease manifest rapidly in obese persons, particularly when the level of visceral fat dominates or heavily contributes to adiposity. Obesity related changes in cytokine concentration are known to increase risk for diabetes and atherosclerosis. Interestingly, further connections between the pro-inflammatory secretion of cellular chemicals and premature disease and death have been made related to heart dysfunction. Clinical trials analyzing the relationship between obesity and cardiomyopathy have demonstrated direct association between visceral fat levels and changes in heart function in otherwise healthy normotensive obese persons.

Obesity-related low-grade inflammation is identifiable by changes in chemical indicators associated with the inflammatory process including C-reactive protein (CRP), interleukin-6 (IL-6), and tumor necrosis factor-alpha (TNF). These measurable inflammatory chemicals are elevated in obese individuals with the most dramatic increases in persons with central girth

measures above 40 inches. When normotensive obese subjects were placed on echocardiograms (ECG) these same pro-inflammatory chemicals correlated with both echocardiographic abnormalities and the level of central adiposity. Elevated levels of visceral fat predispose obese persons to premature cardiac dysfunction by increasing circulating cytokines and their soluble receptors. In study, subject exposure to these chemicals, void of blood pressure instigation, experienced morphological and functional alterations to the heart tissue, including end-diastolic septum thickness, end diastolic wall thickness, absolute and indexed left ventricular mass, and decreased heart performance indexes.



Complementary studies have duplicated these outcomes with and without the presence of metabolic disease. In all cases obese individuals show cytokine dysfunction leading to changes in echocardiographic parameters with the negative impact proportional to the level of visceral fat storage. Interestingly, although some of the normotensive, obese subjects had type II diabetes and impaired glucose tolerance, it was the level of central adiposity that predicted the most important morphological and functional echocardiographic alterations. End-diastolic septum and posterior wall thickness and the left ventricular mass were significantly greater in subjects with a waist circumference >40 inches.

With or without the presence of metabolic disease, waist circumference, waist-to-hip ratio, and gender were statistically associated with echocardiographic alterations whereas other disease characteristics were not.

Further evidence links these same cytokine disturbances with ventricular dyssynchrony and changes in heart contraction velocities. Likewise, an association between insulin resistance and left ventricular overload and consequent increases in ventricular mass has been established. Both may help explain the fact that obesity is a well-established risk factor for congestive heart failure. Congestive heart failure occurs when the heart tissue is modified and heart valve function is compromised, dramatically reducing the efficiency of the heart. Independently, dyssynchronous ventricular contraction and volume overload associate with increased susceptibility to congestive heart failure. Together the effects may increase the probability of developing life-threatening heart dysfunction. In both cases cytokine variations were identified consistent with the low-grade inflammation caused by obesity.

It seems apparent that obesity, particularly associated with high visceral fat content, has deleterious effects on

cardiac tissue and function. This further supports the importance of reducing levels of body fat in obese individuals with and without the presence of metabolic disease and hypertension. Weight loss of at least 10% of body weight has shown to yield positive effects upon both cytokine secretion and ventricular function including ventricular dyssynchrony. Following 1 year of multidisciplinary intervention women who lost at least 10% of body weight experienced a reduction in pro-inflammatory cytokine concentrations and improvements in echocardiographic parameters.



Physical activity has also demonstrated a positive effect on cytokine and receptor activity. Following four weeks of physical activity improvements in cytokine expression were evident. Even a single bout of exercise showed positive enhancement to muscle cell receptor and enzyme activity. These findings support diet and exercise strategies both for weight loss and improved tissue function to reduce or prevent the consequences of obesity related inflammation. Preventing obesity before it occurs is still the best method for avoiding the onset of disease and physiological changes that lead to premature disease and death.

Quiz

Obesity and Cardiomyopathy

1. The increased rate of development of metabolic and heart disease in obese individuals can be linked to a high level of _____.
 - a. Subcutaneous fat
 - b. Visceral fat
 - c. Lean mass
 - d. Bone density

2. Which of the following is a chemical indicator that signals low-grade inflammation?
 - a. C-reactive protein
 - b. Interleukin-6
 - c. Tumor necrosis factor-alpha
 - d. All of the above

3. The most notable inflammatory responses are observed in obese individuals with _____.
 - a. Central girth measurements above 40 inches
 - b. Central girth measurements below 36 inches
 - c. Overall body fat of greater than 20%
 - d. Low levels of C-reactive protein

4. Obese individuals with high levels of visceral fat are predisposed to premature cardiac dysfunction by _____.
 - a. Reduced levels of tumor necrosis factor-alpha
 - b. Decreased blood pressure
 - c. Decreased cytokine circulation
 - d. Increased circulating cytokines and their receptors

5. Which of the following is NOT a morphological or functional alteration of the heart resulting from an increase in circulating cytokines?
 - a. End-diastolic septum thickness
 - b. Increased heart performance indexes
 - c. Indexed left ventricular mass
 - d. End diastolic wall thickness

6. Research studies have shown that the negative impact of echocardiographic changes in obese individuals is proportional to the _____.
- Bodyweight
 - Subcutaneous fat storage
 - Visceral fat storage
 - Blood pressure
7. The level of _____ was the most important predictor of morphological and functional echocardiographic alterations.
- Impaired glucose tolerance
 - Type II diabetes
 - Central adiposity
 - C-reactive protein
8. Left ventricular overload as a result of insulin resistance has been shown to lead to _____.
- Increase in ventricular mass
 - Decrease in ventricular mass
 - Decreased likelihood of congestive heart failure development
 - None of the above are correct
9. When the heart tissue is modified and heart valve function is compromised leading to reduced heart efficiency, an individual will likely develop _____.
- Low-grade inflammation
 - Hypertension
 - Congestive heart failure
 - A heart murmur
10. The most positive effects on cytokine secretion and ventricular function results from a weight loss of _____.
- 10 lbs.
 - 10% of body weight
 - 20 lbs.
 - 5% of body weight

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