

# CERTIFICATION EXAMINATION FOR NUTRITION SUPPORT CLINICIANS

## Handbook for Candidates

EXAMINATION DATES	
<b>Winter 2017 – Conference Testing</b>	
Application Deadline	Testing Window
January 15, 2017	February 19, 2017 Orlando, FL – International Candidates Only
<b>Spring 2017</b>	
Application Deadline	Testing Window
March 27, 2017	Begins: April 22, 2017 Ends: May 6, 2017
<b>Fall 2017</b>	
Application Deadline	Testing Window
September 8, 2017	Begins: October 7, 2017 Ends: October 21, 2017

[www.nutritioncertify.org](http://www.nutritioncertify.org)



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This handbook contains necessary information about the Certification Examination for Nutrition Support Clinicians (CNSC®). Please retain it for future reference. Candidates are responsible for reading these instructions carefully. This handbook is subject to change.

## CERTIFICATION

The National Board of Nutrition Support Certification, Inc. (NBNSC) endorses the concept of voluntary, periodic certification by examination for all nutrition support clinicians. Board certification for nutrition support clinicians is highly valued and provides formal recognition of nutrition support knowledge.

## OBJECTIVES OF CERTIFICATION

TO PROMOTE ENHANCED DELIVERY OF SAFE AND EFFECTIVE CARE THROUGH THE CERTIFICATION OF QUALIFIED CLINICIANS IN NUTRITION SUPPORT BY:

1. Recognizing formally those individuals who meet eligibility requirements of the National Board of Nutrition Support Certification, Inc. and pass the Certification Examination for Nutrition Support Clinicians.
2. Encouraging continued professional growth in the practice of nutrition support.
3. Establishing and measuring the level of knowledge required for certification by a nutrition support clinician.
4. Providing a standard of minimum knowledge deemed appropriate for clinicians practicing nutrition support, thereby assisting the employer, public, and health care professionals in the assessment of nutrition support clinicians.

## ELIGIBILITY REQUIREMENTS

Candidates are recommended to have at least two years of experience in nutrition support practice after obtaining professional certification and/or licensure.

1. Candidates must meet one of the following eligibility requirements:

### **Dietitians**

Currently is a Registered Dietitian (RD/RDN) with the Commission on Dietetic Registration (CDR) or the Canadian equivalent.

### **Registered Nurses/Nurse Practitioners**

Currently is licensed as a Registered Nurse (RN), including Nurse Practitioners (NP) in the United States or Canada. A copy of current license must accompany application.

### **Pharmacists**

Currently is registered/licensed as a Pharmacist in the United States or Canada. A copy of current license must accompany application.

### **Physicians**

Currently is licensed as a Doctor of Medicine (MD) or Doctor of Osteopathy (DO) in the United States or Canada. A copy of current license must accompany application.

### **Physician Assistants**

Currently is registered/licensed as a Physician Assistant in the United States or Canada. A copy of current license must accompany application.

2. Completion and filing of an Application for the Certification Examination for Nutrition Support Clinicians.
3. Payment of required fee.

## INTERNATIONAL CANDIDATES

International candidates (excluding Canada) must have their credentials evaluated by an outside agency. The evaluation must be submitted with the application and must be an original document, not a photocopy. International candidates must also provide a copy of their current license, or the equivalent to practice in their respective field, with their examination application.

The cost of the evaluation is the responsibility of the individual and is separate from any other fee listed on page 4 of this handbook. International applications will be reviewed by NBNSC Board members for approval of eligibility.

International and Canadian candidates who request a special paper-and-pencil test administration in their country must fill out and submit a Request for Special Test Center Form with the Examination Application specifying the preferred city and country. Both the Application and the Request for Special Testing Center Form must be received EIGHT weeks before the testing period begins. The Request for Special Test Center form can be found at [www.ptcny.com](http://www.ptcny.com).

International individuals who have previously sat for and successfully passed the Nutrition Support Certification Examination will be eligible to retake the examination without providing the above mentioned documentation as long as there is no lapse in certification. Should a lapse in certification occur for any reason, then that individual must adhere to the above requirements.

For more information regarding NBNSC's International Candidate Policies please go to:  
<http://www.nutritioncare.org/NBNSC/Certification>.

## ADMINISTRATION

The Certification Program is sponsored by the National Board of Nutrition Support Certification, Inc. (NBNSC). The Certification Examination for Nutrition Support Clinicians is administered for the NBNSC by the Professional Testing Corporation (PTC), 1350 Broadway - 17th Floor, New York, New York 10018, (212) 356-0660, [www.ptcny.com](http://www.ptcny.com). Questions concerning the examination should be referred to PTC.

## ATTAINMENT OF CERTIFICATION AND RECERTIFICATION

Eligible candidates who pass the Certification Examination for Nutrition Support Clinicians are entitled to use the registered designation CNSC® after their names and will receive certificates from the NBNSC. A registry of Certified Nutrition Support Clinicians will be maintained by the NBNSC and may be reported in publications.

Nutrition support clinician certification is recognized for a period of five years at which time the candidate must retake and pass the Certification Examination for Nutrition Support Clinicians in order to retain certification.

The purpose of requiring recertification renewal is to measure continued competent and knowledgeable nutrition support practice. Certification demonstrates to your patients, colleagues, and employers that you have the skills necessary to provide the best care possible.

Should an individual with a current CNSC® credential opt to take the certification examination early, all maintenance of the CNSC® credential will be based upon when the individual took the certification examination.

- Scenario 1: Certificant A is currently certified as a CNSC® from October 2011 – October 2016. Certificant A wants to become recertified and opts to take the certification examination in April 2016 instead of October 2016. Certificant A successfully passes the certification examination, then the certification period is April 2016 – April 2021.
- Scenario 2: Certificant A is currently credentialed as a CNSC® from October 2011 – October 2016. Certificant A wants to become recertified and opts to take the certification examination in April 2016 instead of October 2016. Certificant A is unsuccessful in passing the certification examination. Upon receiving the exam results Certificant A is no longer a CNSC® and cannot use the credential until the certification examination is again taken and successfully passed. In summary anytime the certification examination is taken and not passed, certification lapses.

## REVOCATION OF CERTIFICATION

Certification may be revoked for any of the following reasons:

1. Falsification of the Application.
2. Revocation of current health care credential for a reason indicative to the NBNSC of insufficient knowledge.
3. Misrepresentation of certification status.

The Appeals Committee of the NBNSC provides the appeal mechanism for challenging revocation of Board Certification. It is the responsibility of the individual to initiate this process.

## APPLICATION PROCEDURE

1. Read and follow the directions on the application and in this handbook. All applications must be completed online. The application can be found on Professional Testing Corporation’s website <https://secure.ptcny.com/apply/>.
2. The online application and appropriate fees for the examination must be received on or before the appropriate deadline listed in this handbook.

## COMPLETION OF APPLICATION

Candidates must complete the examination application in full, using your name exactly as it appears on your current government issued photo ID such as a driver’s license or a passport. The completed application, with all documentation (if required), can be submitted and paid for online at <https://secure.ptcny.com/apply/>.

## FEES

Application fees for the Certification Examination for Nutrition Support Clinicians:

A.S.P.E.N. Members .....	\$315.00
Non-A.S.P.E.N. Members .....	\$415.00

The reduced registration fee for A.S.P.E.N. members is non-transferable between individuals or within departments/institutions and is available only to those individuals whose dues are paid in full at the time of exam registration.

**MAKE CHECK OR MONEY ORDER PAYABLE TO: PROFESSIONAL TESTING CORPORATION**

Visa, MasterCard, and American Express are accepted. Please complete the credit card payment form at the end of the online application. If paying by check, follow the instructions on the online application.

### NOVA Members

Active members of the Nurses Organization of Veterans Affairs (NOVA) may sit for the Certification Examination for Nutrition Support Clinicians at a rate that is \$50 less than the non-A.S.P.E.N. member rate.

Active NOVA members, at the time of application submission should submit documentation of active NOVA membership with their application. Active NOVA members who are also A.S.P.E.N. members may not combine the discounts, only one discounted application fee may be used, either the A.S.P.E.N. member fee or the discount for NOVA members.

## RESCHEDULING & REFUNDS

There will be no refund of fees. **Please be advised: PSI does not have the authority to grant transfers or refunds. All requests must be made through PTC.**

Candidates unable to take the examination during their scheduled testing period may request a **ONE-TIME** transfer to a future testing period. **There is a transfer fee of \$225.00.** After you have transferred once by paying the \$225.00 fee, you will need to pay the full examination fee in order to transfer a second time; so, ***please plan carefully.***

**Please note:** requests to transfer to a new testing period must be received within 1 month of your originally scheduled testing period.

Candidates wishing to transfer to a new testing period need to follow the steps below.

1. Go to <http://secure.ptcny.com/apply>.
2. Click “Start New Application.”
3. Choose NBNSC in the first drop down menu; then choose the new examination period in the second drop down menu and fill out the rest of the information on the page.
4. Fill out the application making sure you answer yes to the question asking if you are rescheduling; you will also need your current PTC ID/Candidate number found on your scheduling authorization email.
5. Click “Submit Request for Rescheduling Verification” in the Examination and Certification Information section of the application.
6. PTC Support will send you an email letting you know your new application was approved and that you can log back into your application and pay the \$225.00 transfer fee.
  - **Call 212-356-0660 if you have any questions regarding the transferring process.**
  - **If candidates are unable to attend the examination on the date for which they registered and elect not to transfer to another testing period, the application will be closed and all fees will be forfeited. There will be no refund of fees.**
  - **The transfer fee is based on cost and is not punitive in nature. The transfer fee must be paid at the time the request for rescheduling is approved. The candidate is responsible for contacting PSI and canceling the original examination appointment, if one was made.**
  - **Exams may only be transferred to a new testing period once; please plan carefully.**
  - **Transferring your Examination only refers to instances when a candidate is unable to take their exam during a testing period for which they have already applied. Candidates who did not pass their examination and are retaking the examination need to pay the full Examination Fee.**
  - **If you need to reschedule within the same testing period please see “Changing Your Examination Appointment” on page 7.**

## EXAMINATION ADMINISTRATION

The Certification Examination for Nutrition Support Clinicians is administered during an established two-week testing period, at computer-based testing facilities managed by PSI. PSI has several hundred testing sites in the United States as well as Canada. **Please note: Hours and days of availability vary at different centers.** Scheduling is done on a first-come, first-serve basis. To find a testing center near you, visit [www.ptcny.com/cbt/sites.htm](http://www.ptcny.com/cbt/sites.htm) or call PSI at (800) 733-9267. You will not be able to schedule your examination appointment until you have received a Scheduling Authorization from PTC.

## TESTING SOFTWARE DEMO

A Testing Software Demo can be viewed online. Go to <http://www.ptcny.com/cbt/demo>. This online Testing Software Demo can give you an idea about the features of the testing software.

## SCHEDULING YOUR EXAMINATION APPOINTMENT

Once your application has been received and processed and your eligibility verified, you will be sent an email from PTC confirming receipt of payment and acceptance of application. Within six weeks prior to the first day of the testing period, you will be sent a Scheduling Authorization via email from [notices@ptcny.com](mailto:notices@ptcny.com). Please ensure you enter your correct email address on the application and add the 'ptcny.com' domain to your email safe list. If you do not receive a Scheduling Authorization at least three weeks before the beginning of the testing period, contact the Professional Testing Corporation at (212) 356-0660.

The Scheduling Authorization will indicate how to schedule your examination appointment as well as the dates during which testing is available. Appointment times are first-come, first-serve, so schedule your appointment as soon as you receive your Scheduling Authorization in order to maximize your chance of testing at your preferred location and on your preferred date.

**You will not be able to schedule your examination appointment until you have received a Scheduling Authorization from [notices@ptcny.com](mailto:notices@ptcny.com).**

**You MUST present your current driver's license, passport, or U.S. military ID at the test center. Temporary, paper driver's licenses are not accepted. The name on your Scheduling Authorization must exactly match the name on your photo I.D. Call PTC at 212-356-0660 if you need a duplicate Scheduling Authorization or if your name is not correct**

After you make your test appointment, PSI will send you a confirmation email with the date, time and location of your exam. Please check this confirmation carefully for the correct date, time and location. Contact PSI at (800) 733-9267 if you do not receive this email confirmation or if there is a mistake with your appointment.

- It is your responsibility as the candidate to call PSI to schedule the examination appointment.
- It is highly recommended that you become familiar with the testing site.
- Arrival at the testing site at the appointed time is the responsibility of the candidate. Please plan for weather, traffic, parking, and any security requirements that are specific to the testing location. Late arrival may prevent you from testing.

## SPECIAL NEEDS

Special testing arrangements will be made for individuals with special needs. Submit the Application, Examination Fee, and a completed and signed Request for Special Accommodations Form, available from [www.ptcny.com](http://www.ptcny.com) or by calling PTC at (212) 356-0660. Requests for special testing for individuals with special needs must be received at least EIGHT weeks before the testing period begins. **Only those requests made and received on the official Request for Special Needs Accommodations Form (found at [www.ptcny.com](http://www.ptcny.com)) will be reviewed. Letters from doctors and other healthcare professionals must be accompanied by the official Form and will not be accepted without the Form.**

Please notify PTC at least two weeks prior to your examination appointment if you need to bring a service dog, medicine, food, or beverages necessary for a medical condition with you to the test center.

## CHANGING YOUR EXAMINATION APPOINTMENT

If you need to cancel your examination appointment or reschedule to a different date within the two-week testing period, you must contact PSI at (800) 733-9267 no later than noon, Eastern Standard Time, of the second business day PRIOR to your scheduled appointment.

**If you fail to arrive for your appointment or cancel without giving the required notice, you will forfeit your testing fee.**

## RULES FOR THE EXAMINATION

1. You must present your current government issued photo ID (such as a driver's license or passport) at the time of your scheduled appointment. Candidates without their valid ID will NOT be permitted to test.
2. All Electronic devices that can be used to record, transmit, receive, or play back audio, photographic, text, or video content, including but not limited to, cell phones, laptop computers, tablets, Bluetooth devices; wearable technology such as smart watches; MP3 players such as iPods; pagers, cameras and voice recorders are not permitted to be used and cannot be taken in the examination room. The test center may have lockers or you may be asked to lock your personal items in your car. For this reason, we suggest that you do not bring personal items with you, other than what is specifically needed for your examination.
3. No papers, books, or reference materials may be taken into or removed from the testing room.
4. Simple, non-programmable calculators are permitted except for calculators included as part of cell phones, or other such devices. A calculator is also available on screen if needed.
5. No questions concerning content of the examination may be asked during the examination session. The candidate should carefully read the directions that are provided on screen at the beginning of the examination session.
6. Candidates are prohibited from leaving the testing room while their examination is in session, with the sole exception of going to the restroom.
7. Bulky clothing, such as sweatshirts (hoodies), jackets, coats and hats, except hats worn for religious reasons, may not be worn while taking the examination.

Violation of any of the rules listed above may lead to forfeiture of fees, dismissal from testing room, and cancellation of your test scores.

## REPORT OF RESULTS

Candidates will be notified in writing by PTC within four weeks of the close of the testing period whether they have passed or failed the examination. Scores on the major areas of the examination and on the total examination will be reported. Successful candidates will also receive certificates from the NBNSC.

Candidates may request a handscoring of their examination once results are received. A handscore may be performed to verify the accuracy of the computerized grading of the examination as well as confirming that any questions marked as incorrect were not the correct answer. A fee is required by PTC to handscore an exam, this fee is not refundable regardless of the results of the handscoring. All requests for a handscore of the examination should be submitted directly to PTC within 90 days of receiving the results along with the required fee for handscore. The request for handscore can be found on the PTC website – [www.ptcny.com](http://www.ptcny.com) in the "For Candidates" section.



**REEXAMINATION**

The Certification Examination for Nutrition Support Clinicians may be taken as often as desired upon filing of a new Application and fee. There is no limit to the number of times the examination may be repeated.

**CONFIDENTIALITY**

1. The NBNSC will release the individual test scores ONLY to the individual candidate.
2. Any questions concerning test results should be referred to NBNSC or the Professional Testing Corporation.

**CONTENT OF EXAMINATION**

1. The Certification Examination for Nutrition Support Clinicians is a computer-based examination composed of a maximum of 250 multiple-choice, objective questions with a total testing time of four (4) hours.
2. The content for the examination is described in the Content Outline starting on page 10.
3. The questions for the examination are obtained from individuals with expertise in specialized nutrition support and are reviewed for construction, accuracy, and appropriateness by the NBNSC.
4. The NBNSC, with the advice and assistance of the Professional Testing Corporation, prepares the examination.
5. The Certification Examination for Nutrition Support Clinicians will be weighted in approximately the following manner:

I. NUTRITION ASSESSMENT .....	19%
II. THERAPEUTIC PLAN OF CARE .....	32%
III. INITIATION, MONITORING, AND CLINICAL MANAGEMENT .....	32%
IV. MANAGEMENT OF NUTRITION SUPPORT OUTCOMES.....	8%
V. PROFESSIONAL PRACTICE.....	9%

**SCORING PROCEDURE**

Prior to administration of the examination, representatives from the NBNSC Certification Committee and the Professional Testing Corporation meet to review all test items for accuracy. At this meeting, the passing score for the examination is set using recognized psychometric methods. The passing score represents the number of test items determined necessary for the candidate to answer correctly to be considered as having minimal knowledge for safe practice in specialized nutrition support.

In order to protect the security and integrity of the certification examination, neither NBNSC nor the Professional Testing Corporation will release examination items, completed answer sheets, or keys to any candidate or agency.

## ONLINE PRACTICE TEST FOR NUTRITION SUPPORT CLINICIANS

**WHAT IS IT:** A practice test consisting of 50 questions with a testing time of 2 hours taken over the Internet

**WHEN:** Available Now

**WHY TAKE IT:** To experience taking a computerized exam, to review an example of the type of content included in the Certification Examination for Nutrition Support Clinicians and to learn more about question format, style, and level of difficulty

**SCORE REPORT:** After completing the online practice test, you will receive an instant score report showing test performance in each of the content areas. The score report does not provide correct answers or indicate which questions were answered correctly and incorrectly

**NOTE:** Performance on the online practice test may differ from actual performance on the Certification Examination. Thus, there is no guarantee that taking this practice test will help you pass the Certification Examination. Participants may, however, find it helpful to review content in any areas of weakness indicated on the score reports prior to taking the Certification Examination

**FEE:** \$70 by credit card

**APPLY:** Go to [www.ptcny.com](http://www.ptcny.com) and select Online Practice Test for Nutrition Support Clinicians

**FURTHER INFO:** Visit [www.ptcny.com](http://www.ptcny.com) or call Professional Testing Corporation at 212-356-0660

## CONTENT OUTLINE

### I. NUTRITION ASSESSMENT

- A. Nutritional Status
  - 1. Review Data
    - a. Medical and Surgical History
    - b. Current Clinical Conditions
    - c. Laboratory and Imaging Studies
  - 2. Obtain Current Status
    - a. Medical/Surgical
    - b. Nutrition
    - c. Medication
    - d. Psychosocial and Socioeconomic History
    - e. Development and Functional Status from Patient Interview
  - 3. Perform Nutrition-Focused Physical Assessment
  - 4. Identify Underlying Risk Factors for Malnutrition
  - 5. Evaluate Potential Effect on Nutrition and Metabolic Status
    - a. Medications
    - b. Diet
    - c. Herbal and Nutrition Supplements
  - 6. Evaluate Factors as Related to Food and/or Nutritional Support Therapy
    - a. Psychosocial
    - b. Economic
    - c. Developmental
    - d. Functional and Behavioral
- B. Malnutrition and Nutrition Support Interventions
  - 1. Determine Nutritional Status Based on Assessment Data
  - 2. Determine Etiology and Degree of Malnutrition
  - 3. Evaluate Need For, Timing, and Route of Nutrition Support Therapy
  - 4. Identify Potential or Existing Nutrition Support Access Sites
  - 5. Evaluate Patient for Potential Complications of Initiating Nutrition Support Therapy

### II. THERAPEUTIC PLAN OF CARE

- A. Patient Requirements
  - 1. Consider Individual Needs in Provision of Nutrition Support Therapy
    - a. Patient
    - b. Caregiver
  - 2. Determine Actual Intake From All Sources
    - a. Fluid
    - b. Nutrient
    - c. Electrolyte
  - 3. Determine Requirements For Nutrition Support Therapy
    - a. Fluid
    - b. Electrolyte
    - c. Macronutrient
    - d. Micronutrient
- B. Development of Plan
  - 1. Establish Goals of Nutrition Support Therapy
    - a. Short-term
    - b. Long-term

2. Develop Plan to Monitor Responses to Nutrition Support Therapy
  - a. Clinical
  - b. Nutritional
  - c. Metabolic
3. Develop Plan Related to Complications of Nutrition Support Therapy
  - a. Prevention
  - b. Management
4. Develop Plan to Transition Patient from One Mode of Therapy to Another
5. Develop Plan Related to Interactions between Drugs, Nutrition Supplements and Nutrients
  - a. Prevention
  - b. Management
6. Develop Plans to Educate Regarding Nutrition Support Therapy
  - a. Patient
  - b. Caregivers
  - c. Health Care Professionals
- C. Clinical Recommendations
  1. Recommend Route for Administration of Nutrition Support Therapy
  2. Establish and Confirm Access for Nutrition Support Therapy
  3. Recommend Formulation and Volume of Nutrition Support Therapy
  4. Recommend Use of Pharmacologic Adjunctive Agents
  5. Recommend Administration Method for Nutrition Support Therapy
  6. Recommend Delivery System for Feeding Formulation
  7. Recommend Regimen for Nutrition Support Therapy
    - a. Initiation
    - b. Advancement
    - c. Discontinuation
  8. Apply Safety Measures in the Provision of Nutrition Support Therapy
  9. Apply Cost-Effective Strategies in the Provision of Nutrition Support Therapy
  10. Utilize Quality of Life Factors in the Provision of Nutrition Support Therapy

### III. INITIATION, MONITORING, AND CLINICAL MANAGEMENT

- A. Response and Tolerance
  1. Assess Fluid Status During Nutrition Support Therapy
  2. Evaluate Tolerance of Enteral Nutrition Support Therapy
  3. Evaluate Tolerance of Parenteral Nutrition Support Therapy
  4. Evaluate Laboratory Parameters to Assess Adequacy of and Response to Nutrition Support Therapy
  5. Evaluate Physical Examination Parameters to Monitor Response to Nutrition Support Therapy
  6. Evaluate Clinical Responses to Nutrition Support Therapy
  7. Evaluate Nutritional and Metabolic Responses to Nutrition Support Therapy
- B. Ongoing Monitoring
  1. Monitor Compliance with Nutrition Support Therapy Plan
  2. Monitor Patient for Complications of Nutrition Support Therapy
  3. Evaluate Status of Access Device
    - a. Enteral
    - b. Vascular
  4. Manage Complications of Nutrition Support Therapy
  5. Provide for Safe Nutrition Support Therapy
    - a. Transition
    - b. Discontinuation

- C. Modification of Therapy
  - 1. Modify Nutrition Support Therapy Based on Changes in Patient's
    - a. Clinical Status
    - b. Medical Plan of Care
  - 2. Recommend Need for Additional Tests or Procedures That May Modify Nutrition Support Therapy
    - a. Diagnostic
    - b. Therapeutic
  - 3. Re-evaluate Adjunctive Drug Therapy to Increase Efficacy of Nutrition Support Therapy
  - 4. Re-evaluate Goals of Nutrition Support Therapy
    - a. Short-term
    - b. Long-term
  - 5. Evaluate Readiness for Transitions In and Discontinuation of Nutrition Support Therapy
  - 6. Evaluate Readiness for Transition from the Acute Care Setting in Patients Receiving Long-term Nutrition Support Therapy
  - 7. Provide Ongoing Education throughout Nutrition Support Therapy
    - a. Patient
    - b. Caregivers
    - c. Health Care Providers

#### **IV. MANAGEMENT OF NUTRITION SUPPORT OUTCOMES**

- A. Develop Policies and Procedures to Identify Nutritionally At-Risk Patients
- B. Implement Current Guidelines and Standards of Practice in the Delivery of Nutrition Support Therapy
- C. Collaborate with All Members of the Health Care Team to Provide Nutrition Support Therapy across the Continuum of Care
- D. Establish Nutrition Support Therapy Protocols Consistent with Current Guidelines and Standards of Practice
- E. Develop Evaluation Systems and Processes for Safe and Effective Use of Nutrition Support Therapy

#### **V. PROFESSIONAL PRACTICE**

- A. Apply Ethical Principles in Nutrition Support Therapy
  - 1. Initiation
  - 2. Withdrawal
- B. Participate in Deliberations on Ethical Issues Regarding Nutrition Support Therapy
- C. Consider Legal Issues in the Application of Nutrition Support Therapy
- D. Consider Regulatory Issues in the Application of Nutrition Support Therapy
- E. Evaluate Scientific Literature according to Evidence-Based Medicine Guidelines
- F. Apply Principles of Evidence-Based Practice in Delivery of Nutrition Support Therapy

**SAMPLE EXAMINATION QUESTIONS**

1. In a patient receiving intravenous fat emulsion, which of the following levels should be monitored?
  1. Serum glucose
  2. Serum ammonia
  3. Serum cholesterol
  4. Serum triglyceride
  
2. Increased acetate supplementation in parenteral nutrition is most likely to be required in
  1. respiratory failure.
  2. intractable diarrhea.
  3. prolonged vomiting.
  4. furosemide treatment.
  
3. Dermatitis and alopecia are symptoms of
  1. hypophosphatemia.
  2. magnesium deficiency.
  3. vitamin A deficiency.
  4. essential fatty acid deficiency.
  
4. A 58-year-old patient has acute renal failure following abdominal aortic aneurysm repair. Dialysis is planned. If the patient's BUN is 90 mg/dL and creatinine 8 mg/dL, the most appropriate enteral formula for this patient would provide
  1. 0.5 g protein/kg/day mainly as essential amino acids.
  2. 1 g protein/kg/day mainly as essential amino acids.
  3. 0.5 g protein/kg/day as both essential and nonessential amino acids.
  4. 1 g protein/kg/day with both essential and nonessential amino acids.
  
5. Complaints of altered taste and smell are common symptoms of deficiency of which trace element?
  1. Zinc
  2. Copper
  3. Selenium
  4. Chromium
  
6. Indirect calorimetry provides a measure of
  1. basal metabolic rate.
  2. past 24-hour dietary intake.
  3. energy expenditure.
  4. calorie needs for weight gain.
  
7. Which of the following is most appropriate during transition from central parenteral nutrition support to enteral nutrition support?
  1. Dextrose should be infused peripherally to avoid hypoglycemia
  2. Transition to enteral nutrition should be discontinued if diarrhea develops
  3. Some parenteral nutrition should be maintained until the patient has demonstrated tolerance to enteral nutrition
  4. Central venous access should be discontinued as soon as the patient's nutritional requirements are met by a combination of enteral and peripheral parenteral support

8. During parenteral nutrition, the infusion of large amounts of dextrose increases electrolyte requirements for
1. sodium and potassium.
  2. sodium and phosphorus.
  3. potassium and chloride.
  4. potassium and phosphorus.
9. Metabolic consequences of the refeeding syndrome include
1. hyperkalemia.
  2. hypoglycemia.
  3. hypermagnesemia.
  4. hypophosphatemia.
10. An 85-year-old man receiving tube feeding due to dysphagia develops increased stooling and has a temperature of 38.3° C. Which of the following should be done?
1. Obtain stool cultures
  2. Decrease water flushes
  3. Begin diphenoxylate/atropine
  4. Change to a fluid-restricted tube feeding formula
11. Which of the following is a metabolic adaptation to simple starvation?
1. Decrease in urinary nitrogen losses
  2. Increase in hepatic glucose production
  3. Decrease in utilization of body fat stores
  4. Increase in cerebral glucose utilization
12. The small bowel usually has an absorption capacity of approximately
1. 400 mL/day.
  2. 1 L/day.
  3. 2 L/day.
  4. 9-12 L/day.

**CORRECT ANSWERS TO SAMPLE QUESTIONS**

1. 4, 2, 2, 3, 4, 4, 4, 5, 1, 6, 3, 7, 3, 8, 4, 9, 4, 10, 1, 11, 1, 12, 4

## REFERENCES

**The following references may be of some help in preparing for the examination. The list does not attempt to include all acceptable references nor is it suggested that the Certification Examination for Nutrition Support Clinicians is necessarily based on these references. The NBNSC does not endorse any reference or resource as an official study guide for the certification exam.**

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