



APHERESIS TECHNICIAN, AT(ASCP)

Examination Content Guideline

This document should serve as a useful guide for examination preparation. The Board of Registry criterion-referenced examinations are constructed to measure the knowledge and competencies pertinent to certification.

SKILLS RELATED TO APHERESIS TECHNICIAN

Knowledge

The Apheresis Technician has knowledge of scientific principles, as well as the technical and procedural skills, clinical data and laboratory tests which relates to the field of Donor Apheresis. The Apheresis Technician maintains awareness of and compliance with safety procedures and ethical standards of practice. The Apheresis Technician understands the criteria for recognizing donor eligibility.

Technical Skills

The Apheresis Technician comprehends and follows apheresis procedural guidelines to include: (1) specimen collection and processing; (2) instrument operation and troubleshooting; (3) result reporting and record documentation; (4) quality control monitoring; (5) computer applications and (6) safety requirements.

Problem Solving and Decision Making

The Apheresis Technician identifies procedural and/or technical problems and takes corrective action according to predetermined criteria or refers the problem to the appropriate supervisor.

Communication

The Apheresis Technician is able to effectively communicate with other health care personnel, patients and donors concerning the policies and operation of the Donor Apheresis Service.

Teaching and Training Responsibilities

The Apheresis Technician is able to participate in the training of new technicians and students in the donor apheresis setting.

THE EXAMINATION MODEL

The Board of Registry criterion-referenced examination model consists of three interrelated components:

Competency Statements describe the requisite skills and tasks performed and measured on the examination.

Content Outline delineates general categories or subtest areas of the examination.

Taxonomy Levels describe the cognitive skills required to answer the question.

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|---------------------------------------|--|
| Level 1 - Recall: | Ability to recall or recognize previously learned (memorized) knowledge ranging from specific facts to complete theories. |
| Level 2 - Interpretive Skills: | Ability to utilize recalled knowledge to interpret or apply verbal, numeric or visual data. |
| Level 3 - Problem Solving: | Ability to utilize recalled knowledge and interpretation/application of distinct criteria to resolve a problem or situation and/or make an appropriate decision. |

EXAMINATION REPORTING MECHANISMS

After the examination has been administered and scored, a report is sent to the examinee. The Examinee Performance Report provides the scaled score on the total examination and pass/fail status for all candidates.

In addition, failing candidates receive scaled scores for each subtest (see content outline for subtests). This information may help the examinee identify areas of strengths and weaknesses in order to develop a study plan for future examinations. A total scaled score of 400 is required to pass the examination.

COMPETENCY STATEMENTS APHERESIS TECHNICIAN

In regards to Basic Science, Donor Care and Blood Collection, Blood Processing and Handling, Donor Center Operations, and Instrumentation, the Apheresis Technician:

APPLIES KNOWLEDGE OF

- fundamental biological characteristics as they pertain to donor apheresis procedures
- fundamental anatomy and physiology
- management of donors
- regulatory requirements and technical guidelines
- possible sources of complications
- theory and practice related to donor apheresis operations
- standard operating procedures

SELECTS APPROPRIATE

- course of action
- methods/solutions/donors
- quality control procedures
- instrumentation for donor apheresis

PREPARES

- instruments for donor apheresis
- donors for procedures

CALCULATES

- extracorporeal blood volume
- fluid balance
- appropriate physiological data
- procedural efficiencies
- product yields
- anticoagulant to whole blood ratios

EVALUATES

- laboratory and clinical data to recognize donor suitability
- results of donor medical history
- donor response to the procedure
- source of error
- quality assurance data to verify collection results

CONTENT OUTLINE

APHERESIS TECHNICIAN

Refer to the Apheresis Competency Statements for the competencies tested in each subtest.

I. Basic Science (10 - 20%)

- A. Basic Structure and Function of the Circulatory System
 - 1. Heart
 - 2. Arteries
 - 3. Veins
- B. Basic Composition/Function of Blood
 - 1. Types of blood (venous, capillary, arterial)
 - 2. Plasma
 - 3. Serum
 - 4. Cellular elements (RBC, WBC, Platelets)
- C. Basic Blood Typing/Compatibility
 - 1. ABO
 - 2. Rh

II. Donor Care and Blood Collection (30 - 50%)

- A. Donor Identification/Verification
- B. Donor Selection
 - 1. Interview
 - 2. Physical assessment
 - 3. Hgb/Hct evaluation
- C. Phlebotomy Process
 - 1. Site selection
 - 2. Site preparation
 - 3. Venipuncture
- D. Donor Care
 - 1. Assessment/Monitoring
 - 2. Extracorporeal Blood Volume
 - 3. Anticoagulation
 - 4. Fluid Balance
- E. Special Donor Considerations (e.g. petechiae, edema, occluded veins)
 - 1. Allogeneic
 - 2. Autologous
- F. Adverse Events
 - 1. Low Volume
 - 2. Arterial puncture
 - 3. Incomplete collection
 - 4. Donor reactions (e.g. hematoma, fainting)
- G. Supplies (e.g. additives, needles, scales)

III. Blood Processing and Handling (5 - 10%)

- A. Labeling
- B. Transport
- C. Storage
- D. Equipment (e.g. centrifuge)

IV. Instrumentation (10 - 25%)

- A. Theories and Techniques of Separation
 - 1. Centrifugation (e.g. intermittent and continuous flow)
 - 2. Membrane
 - 3. Manual
- B. General Principles of Automated Instruments in the Application of Donor Apheresis*
 - 1. Instrument types
 - a) GAMBRO BCT (COBE) (e.g., Spectra, Spectra LRS, Trima, Trima Accel)
 - b) Baxter (Fenwal) (e.g., CS3000, CS3000 Plus, Amicus, Autopheresis-C, Alyx)
 - c) Haemonetics (e.g., PCS2, MCS models)
 - 2. Efficiency Calculations

** The majority of instrument questions will address general processes and procedures applicable to most instruments (e.g. alarm codes for specific instrument will NOT be tested). The troubleshooting questions will address day-to-day problems encountered on any instrument, they will not be instrument specific.*

V. Donor Center Operations (10 - 15%)

- A. Quality Control
 - 1. Techniques
 - 2. Equipment
- B. Safety
 - 1. Personal (e.g. OSHA Guidelines)
 - 2. Equipment
 - 3. Donor center (e.g. fire, chemical)
 - 4. Infection control
- C. Communication
 - 1. Donor
 - 2. Other healthcare professionals
- D. Basic Donor Related Regulatory Requirements

All Board of Registry examinations use conventional units for results and reference ranges.

END OF CONTENT GUIDELINE