Clinical Science Examination

Content Outline

International Foundations of Medicine®

National Board of Medical Examiners®
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Physician Tasks/Competencies

Test Specifications

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<th>Topic</th>
<th>Range</th>
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<tbody>
<tr>
<td>Medical Knowledge/Scientific Concepts</td>
<td>13%–18%</td>
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<tr>
<td>Patient Care: Diagnosis</td>
<td>43%–48%</td>
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<tr>
<td>Patient Care: Management</td>
<td>32%–37%</td>
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<tr>
<td>Professionalism</td>
<td>1%–2%</td>
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<tr>
<td>Patient Safety</td>
<td>1%–2%</td>
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<tr>
<td>Practice-based Learning</td>
<td>2%–5%</td>
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Medical Knowledge/Scientific Concepts
Applying foundational science concepts

Patient Care: Diagnosis
History and physical examination
Laboratory and diagnostic studies
Diagnosis
Prognosis/outcome

Patient Care: Management
Health maintenance and disease prevention
Pharmacotherapy
Clinical interventions
Mixed management

Professionalism
Professionalism/legal/ethical issues in interaction with patients and families
Professionalism/legal/ethical issues in interactions with patients and families related to death and dying
Professionalism/legal/ethical issues in interactions with other health professionals

Patient Safety

Practice-based Learning
Understanding and application of principles of biostatistics, public health, and epidemiology
Understanding of the principles of research ethics and regulatory issues
## Content Categories

### Test Specifications

<table>
<thead>
<tr>
<th>Topic</th>
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<tbody>
<tr>
<td>Normal Age-related Findings</td>
<td>1%–3%</td>
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<tr>
<td>Immune System</td>
<td>2%–4%</td>
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<tr>
<td>Blood and Lymphoreticular System</td>
<td>4%–6%</td>
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<tr>
<td>Behavioral Health</td>
<td>3.5%–5.5%</td>
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<tr>
<td>Nervous System and Special Senses</td>
<td>8.5%–10.5%</td>
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<td>Skin and Subcutaneous Tissue</td>
<td>3.5%–5.5%</td>
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<tr>
<td>Musculoskeletal System</td>
<td>6%–8%</td>
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<tr>
<td>Cardiovascular System</td>
<td>8%–10%</td>
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<tr>
<td>Respiratory System</td>
<td>8.5%–10.5%</td>
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<td>Renal and Urinary Systems</td>
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<tr>
<td>Pregnancy, Childbirth, and the Puerperium</td>
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<td>Female Reproductive System &amp; Breast</td>
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<tr>
<td>Male Reproductive System</td>
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<tr>
<td>Endocrine System</td>
<td>6%–8%</td>
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<tr>
<td>Multisystem Processes &amp; Disorders</td>
<td>6%–8%</td>
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<tr>
<td>Biostatistics, Epidemiology, and Public/Population Health</td>
<td>3%–5%</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>1%–3%</td>
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</table>

### Normal Age-related Findings
- Infancy and Childhood (0 to 12 years)
- Adolescence (13-17 years)
- Adulthood (18-64 years)
- Senescence (65 years and older)

### Immune System
- Disorders associated with immunodeficiency
- HIV/AIDS
- Immunologically mediated disorders
- Adverse effects of drugs on the immune system

### Blood and Lymphoreticular System
- Infectious and immunologic
- Neoplasms
- Anemia, cytopenias, and polycythemia
Coagulation disorders (hypocoagulable and hypercoagulable conditions)
Traumatic, mechanical, and vascular disorders
Congenital disorders
Adverse effects of drugs on the hematologic and lymphoreticular systems

**Behavioral Health**
Psychotic disorders
Anxiety disorders
Mood disorders
Somatoform disorders
Factitious disorders
Eating disorders and impulse control disorders
Disorders originating in infancy/childhood
Personality disorders
Psychosocial disorders/behaviors
Substance use disorders
Adverse effects of drugs

**Nervous System and Special Senses**
Infectious, immunologic, inflammatory disorders
Neoplasms (cerebral, spinal, and peripheral)
Cerebrovascular disease
Disorders relating to the spine, spinal cord, and spinal nerve roots
Cranial and peripheral nerve disorders
Neurologic pain syndromes
Degenerative disorders/amnestic syndromes
Global cerebral dysfunction
Neuromuscular disorders
Movement disorders
Metabolic disorders
Paroxysmal disorders
Sleep disorders
Traumatic and mechanical disorders and disorders of increased intracranial pressure
Congenital disorders
Adverse effects of drugs on the nervous system
Disorders of the eye and the eyelid
Disorders of the ear

**Skin and Subcutaneous Tissue**
Infectious, immunologic, and inflammatory disorders
Neoplasms
Adnexal disorders (hair and hair follicles, nails, sweat gland, sebaceous glands, oral mucous membranes)
Oral disease
Disorders of pigmentation
Traumatic and mechanical disorders
Congenital disorders
Adverse effects of drugs on skin and subcutaneous tissue

**Musculoskeletal System**
Infectious, immunologic, and inflammatory disorders
Neoplasms
Degenerative and metabolic disorders
Traumatic and mechanical disorders
Congenital disorders
Adverse effects of drugs on the musculoskeletal system

**Cardiovascular System**
Infectious, immunologic, and inflammatory disorders
Neoplasms
Dysrhythmias
Heart failure
Ischemic heart disease
Diseases of the myocardium
Diseases of the pericardium
Valvular heart disease
Hypotension
Hypertension
Dyslipidemia
Vascular disorders
Traumatic and mechanical disorders
Congenital disorders

Adverse effects of drugs on the cardiovascular system

Respiratory System
Infectious, immunologic, and inflammatory disorders
Neoplasms
Obstructive airway disease
Pneumoconiosis/fibrosing/restrictive pulmonary disorders/interstitial lung disease
Respiratory failure/respiratory arrest and pulmonary vascular disorders
Metabolic, regulatory, and structural disorders
Disorders of the pleura, mediastinum, and chest wall
Traumatic and mechanical disorders
Congenital disorders

Adverse effects of drugs on the respiratory system

Gastrointestinal System
Infectious, immunological, and inflammatory disorders
Neoplasms
Signs, symptoms, and ill-defined disorders
Disorders of the oral cavity, salivary glands, and esophagus
Disorders of the stomach, small intestine, colon, rectum, and anus
Disorders of the liver and biliary system, noninfectious
Disorders of the pancreas
Disorders of the peritoneal cavity
Traumatic and mechanical disorders
Congenital disorders
Adverse effects of drugs on the gastrointestinal system

**Renal and Urinary Systems**
Infectious, immunologic, and inflammatory disorders
Neoplasms
Signs, symptoms, and ill-defined disorders
Metabolic and regulatory disorders
Vascular disorders
Traumatic and mechanical disorders
Congenital disorders
Adverse effects of drugs on the renal and urinary system

**Pregnancy, Childbirth, and the Puerperium**
Prenatal care
Obstetric complications
Labor and delivery
Puerperium, including complications
Newborn (birth to 4 weeks of age)
Congenital disorders, neonatal
Adverse effects of drugs on pregnancy, childbirth, and the puerperium
Systemic disorders affecting pregnancy, labor and delivery, and puerperium

**Female Reproductive System & Breast**
Infectious, immunologic, and inflammatory disorders
Neoplasms of the breast, cervix, ovary, uterus, vagina, and vulva
Fertility and infertility
Menopause
Menstrual and endocrine disorders
Sexual dysfunction
Traumatic and mechanical disorders
Congenital disorders
Adverse effects of drugs on the female reproductive system and breast

Male Reproductive System
Infectious, immunologic, and inflammatory disorders
Neoplasms
Metabolic and regulatory disorders, including sexual dysfunction
Traumatic and mechanical disorders
Congenital disorders
Adverse effects of drugs on the male reproductive system

Endocrine System
Diabetes mellitus and other disorders of the endocrine pancreas
Thyroid disorders
Parathyroid disorders
Adrenal disorders
Pituitary disorders
Hypothalamic endocrine disorders
Multiple endocrine neoplasia (MEN1, MEN2)
Congenital disorders
Adverse effects of drugs on the endocrine system

Multisystem Processes & Disorders
Infectious, immunologic, and inflammatory disorders
Neoplasms and related disorders
Signs, symptoms, and ill-defined disorders
Nutrition
Toxins and environmental extremes
Venomous bites and stings
Fluid, electrolyte, and acid-base balance disorders
Abuse
Multiple trauma (e.g., prioritization, blast injury)
Shock, cardiogenic, hypovolemic, neurogenic, septic; sepsis, bacteremia, systemic inflammatory response syndrome (SIRS), refractory, multiorgan dysfunction syndrome

Genetic metabolic and developmental disorders

Adverse effects of drugs on multisystem disorders

**Biostatistics, Epidemiology, and Public/Population Health**

**Epidemiology and public/population health**
- Measures of disease frequency: incidence/prevalence
- Measures of health status
- Population pyramids and impact of demographic changes
- Disease surveillance and outbreak investigation
- Communicable disease transmission
- Points of intervention

**Study design, types and selection of studies**

**Measures of association** (e.g., relative risk, odds ratio, other)

**Principles of testing and screening** (e.g., sensitivity and specificity, predictive value, probability)

**Study interpretation** (e.g., causation, validity, statistical vs. clinical significance)

**Research ethics** (e.g., informed consent, privacy of patient data, regulatory issues)

**Social Sciences**

**Medical ethics and jurisprudence**
- Consent to treatment/decision-making capacity
- Death and dying and palliative care
- Physician-patient relationship
- Professional conduct/integrity

**Patient safety** (including basic concepts and terminology)