



ACGME International

**Advanced Specialty Program Requirements for
Graduate Medical Education in
Endocrinology, Diabetes, and Metabolism
(Internal Medicine)**

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Graduate Medical Education in
Endocrinology, Diabetes, and Metabolism (Internal Medicine)**

I. Introduction

I.A. Definition and Scope of Specialty

The medical specialty of endocrinology, diabetes, and metabolism focuses on the endocrine system, its diseases, and hormones; the integration of developmental events, such as proliferation, growth, and differentiation, including histogenesis and organogenesis; and the coordination of metabolism, respiration, excretion, movement, reproduction, and sensory perception, which depend on chemical cues, and substances synthesized and secreted by specialized cells.

I.B. Duration of Education

I.B.1. The education program in endocrinology, diabetes, and metabolism must be 24 or 36 months in length.

II. Institutions

II.A. Sponsoring Institutions

II.A.1. An endocrinology, diabetes, and metabolism fellowship must function as an integral part of an ACGME-I-accredited residency in internal medicine.

II.B. Participating Sites

See International Subspecialty Foundational Requirements, Section I.B.

III. Program Personnel and Resources

III.A. Program Director

See International Subspecialty Foundational Requirements, Section II.A.

III.B. Faculty

III.B.1. Faculty members must teach and supervise the fellows in the performance and interpretation of procedures, and this must be documented in each fellow's record, including indications, outcomes, diagnoses, and supervisor(s).

III.C. Other Program Personnel

III.C.1. There must be a close working relationship with dietary and/or nutrition services, as well as with specialists in general surgery, nephrology, neurological surgery, neurology, obstetrics and gynecology, ophthalmology, pediatrics, podiatry, and urology.

III.D. Resources

- III.D.1. Laboratory and imaging services must be available, including:
- III.D.1.a) a complete biochemistry laboratory and facilities for hormone immunoassays;
 - III.D.1.b) access to karyotyping and immunohistologic studies; and,
 - III.D.1.c) nuclear, ultrasound, and radiologic facilities, to include bone density.

IV. Fellow Appointment

IV.A. Eligibility Criteria

- IV.A.1. Prior to appointment in the program, fellows should have completed an ACGME International (ACGME-I)-accredited core specialty program in internal medicine.

IV.B. Number of fellows

See International Subspecialty Foundational Requirements, Section III.B.

V. Specialty-Specific Educational Program

V.A. Regularly Scheduled Didactic Sessions

See International Subspecialty Foundational Requirements, Section IV.A.

V.B. Clinical Experiences

- V.B.1. At least 12 months must be devoted to clinical experience.
- V.B.2. Fellows must participate in training using simulation.
- V.B.3. Fellows must have experience in the role of an endocrinology consultant in both the inpatient and ambulatory settings.
- V.B.4. Fellows should have a structured continuity ambulatory clinic experience that exposes them to the breadth and depth of endocrinology, diabetes, and metabolism.
 - V.B.4.a) This experience should include an appropriate distribution of patients of each gender and a diversity of ages.
 - V.B.4.b) This experience should average two half-days each week throughout the educational program.
 - V.B.4.c) Each fellow should, on average, be responsible for four to eight patients during each half-day session.

V.B.4.c).(1) Each fellow should, on average, be responsible for no more than eight to 12 patients during each half-day ambulatory session.

V.B.4.d) The continuing patient care experience should not be interrupted by more than one month, excluding a fellow's vacation.

V.C. Fellows' Scholarly Activities

See International Subspecialty Foundational Requirements, Section IV.C.

V.D. Duty Hour and Work Limitations

V.D.1. Direct supervision of procedures performed by each fellow must occur until competence has been acquired and documented by the program director.

VI. ACGME-I Competencies

VI.A. Patient Care

Fellows must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. Fellows must demonstrate proficiency in:

VI.A.1. the practice of health promotion, disease prevention, diagnosis, care, and treatment programs of patients of each gender, from adolescence to old age, during health and all stages of illness;

VI.A.2. the evaluation and management of hormonal problems, including diseases, infections, neoplasms, and other causes of dysfunction of the following endocrine organs:

VI.A.2.a) adrenal cortex and medulla;

VI.A.2.b) hypothalamus and pituitary;

VI.A.2.c) ovaries and testes;

VI.A.2.d) pancreatic islets;

VI.A.2.e) parathyroid; and,

VI.A.2.f) thyroid.

VI.A.3. the care of patients with type-1 and type-2 diabetes, including:

VI.A.3.a) diabetes detection and management during pregnancy;

- VI.A.3.b) evaluation and management of acute, life-threatening complications of hyper- and hypoglycemia;
- VI.A.3.c) evaluation and management of intensive insulin therapy in critical care and surgical patients;
- VI.A.3.d) intensive management of glycemic control in the ambulatory setting;
- VI.A.3.e) long-term goals, counseling, education, and monitoring;
- VI.A.3.f) multidisciplinary diabetes education and treatment programs; and,
- VI.A.3.g) prevention and surveillance of microvascular and macrovascular complications.
- VI.A.4. the care of patients with:
 - VI.A.4.a) calcium, phosphorus, and magnesium imbalances;
 - VI.A.4.b) disorders of bone and mineral metabolism, with particular emphasis on the diagnosis and management of osteoporosis;
 - VI.A.4.c) disorders of fluid, electrolyte, and acid-base metabolism;
 - VI.A.4.d) gonadal disorders; and,
 - VI.A.4.e) nutritional disorders of obesity, anorexia nervosa, and bulimia.
- VI.A.5. performing:
 - VI.A.5.a) diagnosis and management of ectopic hormone production;
 - VI.A.5.b) diagnosis and management of lipid and lipoprotein disorders;
 - VI.A.5.c) genetic screening and counseling for endocrine and metabolic disorders;
 - VI.A.5.d) interpretation of hormone assays;
 - VI.A.5.e) interpretation of laboratory studies, including the effects of non-endocrine disorders on these studies;
 - VI.A.5.f) interpretation of radiologic studies for diagnosis and treatment of endocrine and metabolic diseases, including:
 - VI.A.5.f).(1) computed tomography (CT);
 - VI.A.5.f).(2) magnetic resonance imaging (MRI);
 - VI.A.5.f).(3) quantification of bone density;

- VI.A.5.f).(4) radionuclide localization of endocrine tissue; and,
- VI.A.5.f).(5) ultrasonography of the soft tissues of the neck.
- VI.A.5.g) performance and interpretation of stimulation and suppression tests; and,
- VI.A.5.h) thyroid fine needle biopsy.

VI.B. Medical Knowledge

Fellows must demonstrate knowledge of established and evolving biomedical, clinical, epidemiological, and social-behavioral sciences, as well as the application of this knowledge to patient care. Fellows must demonstrate proficiency in knowledge of:

- VI.B.1. the scientific method of problem solving, and evidence-based decision making;
- VI.B.2. indications, contraindications, and techniques for, and limitations, complications, and interpretation of results of those diagnostic and therapeutic procedures integral to the discipline, including the appropriate indications for and use of screening tests and procedures;
- VI.B.3. basic laboratory techniques, including quality control, quality assurance, and proficiency standards;
- VI.B.4. biochemistry and physiology, including cell and molecular biology, as they relate to endocrinology, diabetes, and metabolism;
- VI.B.5. developmental endocrinology, including growth and endocrinology, diabetes, growth and development, sexual differentiation, and pubertal maturation;
- VI.B.6. endocrine adaptations and maladaptations to systemic diseases;
- VI.B.7. endocrine aspects of psychiatric diseases;
- VI.B.8. endocrine physiology and pathophysiology in systemic diseases and principles of hormone action;
- VI.B.9. genetics as it relates to endocrine diseases;
- VI.B.10. parenteral nutrition support;
- VI.B.11. pathogenesis and epidemiology of diabetes mellitus;
- VI.B.12. signal transduction pathways and biology of hormone receptors; and,
- VI.B.13. whole organ and islet cell pancreatic transplantation.

VI.C. Practice-based Learning and Improvement

Fellows must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life-long learning.

VI.D. Interpersonal and Communication Skills

Fellows must demonstrate interpersonal and communication skills that result in the effective exchange of information and collaboration with patients, their families, and health professionals. Fellows must:

- VI.D.1. demonstrate competence in educating patients about the rationale and technique for, and complications of, thyroid biopsy.

VI.E. Professionalism

Fellows must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles.

VI.F. Systems-based Practice

Fellows must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care.