Endocrinology, Diabetes, and Metabolism
Certification Examination Blueprint

**Purpose of the exam**

The exam is designed to evaluate the knowledge, diagnostic reasoning, and clinical judgment skills expected of the certified endocrinologist in the broad domain of the discipline. The ability to make appropriate diagnostic and management decisions that have important consequences for patients will be assessed. The exam may require recognition of common as well as rare clinical problems for which patients may consult a certified endocrinologist.

**Exam content**

Exam content is determined by a pre-established blueprint, or table of specifications. The blueprint is developed by ABIM and is reviewed annually and updated as needed for currency. Trainees, training program directors, and certified practitioners in the discipline are surveyed periodically to provide feedback and inform the blueprinting process.

The primary medical content categories of the blueprint are shown below, with the percentage assigned to each for a typical exam:

<table>
<thead>
<tr>
<th>Medical Content Category</th>
<th>% of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adrenal Disorders</td>
<td>10%</td>
</tr>
<tr>
<td>Pituitary Disorders</td>
<td>10%</td>
</tr>
<tr>
<td>Lipids, Obesity, and Nutrition</td>
<td>12%</td>
</tr>
<tr>
<td>Female Reproduction</td>
<td>7%</td>
</tr>
<tr>
<td>Male Reproduction</td>
<td>7%</td>
</tr>
<tr>
<td>Diabetes Mellitus and Hypoglycemia</td>
<td>24%</td>
</tr>
<tr>
<td>Calcium and Bone Disorders</td>
<td>15%</td>
</tr>
<tr>
<td>Thyroid Disorders</td>
<td>15%</td>
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<tr>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

Exam questions in the content areas above may also address clinical topics in internal medicine, including some general pediatrics with an emphasis on adolescent medicine, that are important to the practice of endocrinology.
Exam format

The exam is composed of up to 240 single-best-answer multiple-choice questions, of which approximately 40 are new questions that do not count in the examinee’s score. Most questions describe patient scenarios and ask about the work done (that is, tasks performed) by physicians in the course of practice:

- Making a diagnosis
- Ordering and interpreting results of tests
- Recommending treatment or other patient care
- Assessing risk, determining prognosis, and applying principles from epidemiologic studies
- Understanding the underlying pathophysiology of disease and basic science knowledge applicable to patient care

Clinical information presented may include various media illustrating relevant findings, such as diagnostic imaging studies, continuous glucose monitoring tracings, radiographic studies, or patient photographs. The certification exam may include the following adrenal imaging studies and procedures:

- Differentiate among imaging techniques for adrenal disease, including computed tomography, magnetic resonance imaging, meta-iodobenzylguanidine scintigraphy, indium-labeled pentetreotide scintigraphy, fludeoxyglucose positron emission tomography, and 68-Ga-DOTATATE positron emission tomography.
- Interpret imaging phenotype to predict the histologic type of adrenal disease—including: benign adenoma, pheochromocytoma, adrenocortical carcinoma, and adrenal metastases.
- Identify indications for computed tomography–guided adrenal fine-needle aspiration biopsy.
- Identify indications for adrenal venous sampling for aldosterone.
- Interpret results from adrenal venous sampling (with or without cosyntropin stimulation).

The following pituitary imaging studies and procedures may be included on the exam:

- Interpret typical imaging phenotypes on magnetic resonance imaging for primary pituitary tumors, pituitary cysts, pituitary hyperplasia, metastatic lesions to the pituitary, pituitary stalk lesions, and hypothalamic masses.
- Identify indications for inferior petrosal sinus sampling for corticotropin.
- Interpret results from inferior petrosal sinus sampling.

Learn more information on how exams are developed. A tutorial including examples of ABIM exam question format can be found at http://www.abim.org/certification/exam-information/endocrinology-diabetes-metabolism/exam-tutorial.aspx.
The blueprint can be expanded for additional detail as shown below. Each of the medical content categories is listed there, and below each major category are the content subsections and specific topics that may appear in the exam. Please note: actual exam content may vary.

### Adrenal Disorders 10% of Exam

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Glucocorticoids</strong></td>
<td>4%</td>
</tr>
<tr>
<td>Cushing syndrome</td>
<td></td>
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<tr>
<td>Management of glucocorticoid therapy</td>
<td></td>
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<tr>
<td>Adrenal insufficiency</td>
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<tr>
<td>Glucocorticoid resistance</td>
<td></td>
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<tr>
<td><strong>Mineralocorticoids</strong></td>
<td>2%</td>
</tr>
<tr>
<td>Hyperaldosteronism</td>
<td></td>
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<tr>
<td>Hypoaldosteronism</td>
<td></td>
</tr>
<tr>
<td><strong>Adrenal androgens</strong></td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Congenital adrenal hyperplasia</td>
<td></td>
</tr>
<tr>
<td><strong>Adrenal incidentaloma</strong></td>
<td>&lt;2%</td>
</tr>
<tr>
<td><strong>Adrenal medulla</strong></td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Pheochromocytoma and paraganglioma</td>
<td></td>
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<tr>
<td>Neurofibromatosis type 1</td>
<td></td>
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<tr>
<td>von Hippel-Lindau syndrome</td>
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</tr>
<tr>
<td>Multiple endocrine neoplasia (MEN) types 2A and 2B</td>
<td></td>
</tr>
<tr>
<td>Familial paraganglioma syndromes</td>
<td></td>
</tr>
<tr>
<td>Familial paraganglioma-pheochromocytoma syndromes</td>
<td></td>
</tr>
<tr>
<td><strong>Adrenal cancer</strong></td>
<td>&lt;2%</td>
</tr>
</tbody>
</table>

### Pituitary Disorders 10% of Exam

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Prolactin</strong></td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Hyperprolactinemia</td>
<td></td>
</tr>
<tr>
<td>Normoprolactinemic galactorrhea</td>
<td></td>
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<tr>
<td><strong>Growth hormone</strong></td>
<td>2%</td>
</tr>
<tr>
<td>Acromegaly</td>
<td></td>
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<tr>
<td>Deficiency</td>
<td></td>
</tr>
<tr>
<td><strong>Thyroid-stimulating hormone (TSH)</strong></td>
<td>&lt;2%</td>
</tr>
<tr>
<td>TSH-secreting adenoma</td>
<td></td>
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<tr>
<td>Hyperplasia secondary to longstanding primary hypothyroidism</td>
<td></td>
</tr>
<tr>
<td>TSH deficiency</td>
<td></td>
</tr>
<tr>
<td><strong>Gonadotropins</strong></td>
<td>&lt;2%</td>
</tr>
<tr>
<td>Gonadotroph pituitary tumors</td>
<td></td>
</tr>
<tr>
<td>Hypogonadotropic hypogonadism</td>
<td></td>
</tr>
</tbody>
</table>
Nonsecreting pituitary tumors <2%
Adrenocorticotropic hormone (ACTH) <2%
  Cushing disease
  ACTH deficiency
Hypopituitarism <2%
  Clinical presentation
  Causes
    Tumors
    Pituitary apoplexy
    Sheehan syndrome
    Hemochromatosis
    Lymphocytic hypophysitis
    Sarcoidosis
    Traumatic brain injury
    Iatrogenic (radiation, surgery)
  Diagnosis
  Treatment
    Adjustment of growth hormone according to insulin-like growth factor-1 (IGF-1) levels
    Monitoring of thyroid with free thyroxine (T4)
    Clinical adjustment of glucocorticoids
Empty sella syndrome <2%
Antidiuretic hormone (ADH) <2%
  Diabetes insipidus
  Syndrome of inappropriate antidiuretic hormone secretion (SIADH)
Craniopharyngioma <2%
Pituitary incidentaloma <2%

Lipids, Obesity, and Nutrition 12% of Exam

Hypercholesterolemia <2%
  Primary disorders
    Familial hypercholesterolemia
    Familial defective apolipoprotein B-100
    Lipoprotein(a)
    Elevated high-density lipoprotein cholesterol
    Hypobetalipoproteinemia (Low LDL-c)
  Secondary disorders
Hypertriglyceridemia <2%
  Primary disorders
    Monogenic hypertriglyceridemia
    Polygenic disorders
Secondary disorders
Chylomicronemia syndrome

Elevated triglycerides and low-density lipoprotein cholesterol 2.5%
  Primary disorders
    Familial combined hyperlipidemia
    Familial dysbetalipoproteinemia (type III)
  Secondary disorders

Hypolipidemia <2%
  Primary disorders
  Secondary disorders

Treatment of lipid disorders 2.5%
  Diet
  Drugs
  Lifestyle
  Indications for treatment

Obesity and nutrition 3%
  Genetic disorders
  Secondary disorders
  Comorbidities
  Treatment of obesity
    Diet
    Drugs
    Lifestyle
    Surgery and endoscopic treatments
    Indications for treatment

General nutrition <2%
  Energy requirements
  Vitamin deficiency
  Enteral nutrition

Strategies for counseling <2%

Female Reproduction 7% of Exam

Amenorrhea <2%
  Primary
    Androgen insensitivity syndrome
    Turner syndrome
    Congenital gonadotropin-releasing hormone (GnRH) deficiency
  Secondary
Hyperandrogenism <2%
  Polycystic ovary syndrome
  Non-polycystic ovary syndromes
    Hyperthecosis
    Ovarian tumors
    Adrenal tumors
    Nonclassic congenital adrenal hyperplasia
    Pregnancy-associated
    Anabolic steroids

Premenstrual syndrome and premenstrual dysphoric disorder <2%

Endocrine causes of infertility <2%
  Anovulation
  Age-associated infertility (diminished ovarian reserve)

Hormonal contraception <2%
  Combined estrogen–progestin contraceptives
  Progestin-only contraception

Perimenopause and menopause <2%
  Perimenopause
  Menopause
  Estrogen–progestin therapy

Sexual differentiation <2%
  Gender dysphoria
  Female-to-male transition management

Male Reproduction 7% of Exam

Hypogonadism 2%
  Testosterone in hypogonadism
  Sex hormone binding globulin (SHBG)–dependent changes in testosterone
  Primary hypogonadism
  Secondary hypogonadism
  Genetic disorders of androgen production and action
  Testosterone therapy
  Gonadotropins

Infertility <2%
  Causes
    Cryptorchidism
    Klinefelter syndrome
    Cystic fibrosis and cystic fibrosis gene mutations
    Drug-induced infertility
    Obstructive azoospermia
Idiopathic oligozoospermia
Y-chromosome microdeletions

Treatment
Gonadotropins
Testicular sperm extraction
Intracytoplasmic sperm injection

Gynecomastia <2%

Causes
Drug-induced gynecomastia
Testicular tumors (Sertoli and Leydig cell tumors)
Extratesticular tumors
Androgen deprivation therapy for prostate cancer
Hyperthyroidism
Pubertal gynecomastia
Idiopathic and other rare causes of gynecomastia

Treatment
Tamoxifen
Aromatase inhibitors
Mammooplasty and mastectomy

Erectile dysfunction <2%

Causes
Smoking
Diabetes mellitus
Hypertension
Hyperlipidemia
Peyronie disease
Pelvic and prostate surgery
Obesity

Diagnostic tests

Treatment
Phosphodiesterase-5 and nonspecific phosphodiesterase inhibitors
Prostaglandin E1, intraurethral and intracavernosal
Alpha-adrenergic blockers
Penis pump (penile vacuum device)
Penile implant

Testosterone in aging men <2%

Abuse of androgens and anabolic steroids <2%

Sexual differentiation <2%

Gender dysphoria
Male-to-female transition management

Ejaculatory dysfunctions <2%

Premature ejaculation
## Diabetes Mellitus and Hypoglycemia

### Prediabetes
- Impaired fasting glucose
- Impaired glucose tolerance
- Screening
- Diabetes prevention

### Monitoring glycemic control
- Hemoglobin A\textsubscript{1C}
- Fructosamine and 1,5-anhydroglucitol
- Conventional glucose monitoring
- Ketone testing
- Continuous glucose monitoring (CGM)

### Type 1 diabetes mellitus
- Ketoacidosis
- Recent-onset type 1 diabetes
- Latent autoimmune diabetes of the adult (LADA)
- Hyperglycemia in type 1 diabetes
- Hypoglycemia due to insulin management
- Hypoglycemia unawareness
- Pathogenesis of type 1 diabetes

### Type 2 diabetes mellitus
- Hyperosmolar nonketotic state
- Hyperglycemia in type 2 diabetes
- Hypoglycemia due to oral agents and insulin management
- Pathogenesis of type 2 diabetes

### Additional types of diabetes
- Monogenic diabetes
- Ketosis-prone diabetes (KPD)
- New-onset diabetes after transplant (NODAT)
  - [post-transplant diabetes mellitus (PTDM)]
- Pancreatic diabetes
- Cystic fibrosis–related diabetes
- Drug-induced diabetes

### Recognition and management of associated conditions
- Hypertension
- Dyslipidemia
- Obesity
- Sleep apnea
- Fatty liver
- Thyroid disease

24% of Exam
Celiac disease
Polycystic ovary syndrome
Eating disorders

Pregnancy
- Gestational diabetes <2%
- Pre-gestational diabetes

Diabetes mellitus complications 4.5%
- Microvascular
  - Retinopathy
  - Nephropathy
  - Neuropathy
- Macular edema
- Mononeuropathies
- Macular edema

Diabetic foot
Skin disorders
- Lipohypertrophy
- Lipoatrophy
- Necrobiosis lipoidica
- Acanthosis nigricans

Neuropsychiatric
Pancreas transplantation <2%

Hypoglycemia independent of diabetes mellitus 2%
- Insulinoma
- Noninsulinoma

Inpatient diabetes mellitus management <2%
- Intensive care unit
- Non–intensive care unit

Calcium and Bone Disorders 15% of Exam

Hypercalcemia 3%
- Parathyroid hormone–mediated
  - Primary hyperparathyroidism
  - Familial hypocalciuric hypercalcemia
- Lithium-induced
Non–parathyroid hormone–mediated
Hypercalcemia of malignancy
Milk-alkali syndrome
Sarcoidosis, tuberculosis, and other granulomatous diseases
Vitamin D intoxication
Post-rhabdomyolysis
Adynamic bone disease
Myeloma
Acute adrenal insufficiency
Vitamin A

**Hypocalcemia** 2.5%
Hypoparathyroidism
Parathyroid hormone (PTH) resistance
Hypomagnesemia
Hyperphosphatemia
Celiac disease
Hypocalcemia (general)

**Osteoporosis** 4%
In female
In male
Post-transplantation and glucocorticoid-induced
Renal, hepatic, and gastrointestinal disease–related

**Paget disease of bone** <2%

**Hypovitaminosis D** <2%
Dietary deficiency
Limited sun exposure
Malabsorption
Liver failure
Renal insufficiency
Vitamin D–dependent rickets types I and II
Vitamin D–resistant rickets
Drug-induced
Bone disease
Nonskeletal disorders

**Osteomalacia and rickets** <2%
Chronic hypophosphatemia
Inhibitors of mineralization

**Renal osteodystrophy** <2%

**Nephrolithiasis** <2%

**Osteogenesis imperfecta and bone dysplasias** <2%

**Fibrous dysplasia and other dysplastic syndromes** <2%
Calciphylaxis  <2%
Hypophosphatemia  <2%
Renal losses
Gastrointestinal malabsorption
Internal redistribution
Rare bone diseases  <2%
Hypophosphatasia
Fibrodysplasia ossificans progressiva
Osteopetrosis

<table>
<thead>
<tr>
<th>Thyroid Disorders</th>
<th>15% of Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperthyroidism</td>
<td>3.5%</td>
</tr>
<tr>
<td>Graves disease</td>
<td></td>
</tr>
<tr>
<td>Toxic adenoma and multinodular goiter</td>
<td></td>
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<tr>
<td>Inappropriate thyroid-stimulating hormone (TSH) syndromes</td>
<td></td>
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<tr>
<td>TSH-secreting tumor</td>
<td></td>
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<tr>
<td>Resistance to thyroid hormone and thyroid hormone action</td>
<td></td>
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<tr>
<td>Artifactual TSH “derangements”</td>
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<tr>
<td>Thyrotoxicosis with low radioactive iodine uptake</td>
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<tr>
<td>Thyroiditis</td>
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<tr>
<td>Factitious, accidental, and iatrogenic thyrotoxicosis</td>
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<tr>
<td>Iodine-induced</td>
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<tr>
<td>Struma ovarii</td>
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<tr>
<td>Complicated thyrotoxicosis</td>
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<tr>
<td>Subclinical hyperthyroidism</td>
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</tbody>
</table>

Hypothyroidism  2.5%
Primary
Secondary
Subclinical hypothyroidism
Complicated hypothyroidism
TSH resistance
Therapy

Nontoxic solitary nodules and multinodular goiter  3%
Fine-needle aspiration/cytology and genetic test interpretation
Roles of ultrasonography and radionuclide scanning
Treatment
Surgery
Radioactive iodine
Minimally invasive and noninvasive treatments
Thyroid cancer 3.5%
Well-differentiated epithelial cancers
Hürthle cell cancer
Anaplastic cancer
Lymphoma
Medullary cancer

Thyroid test abnormalities without thyroid disease <2%
Euthyroid hypothyroxinemia
Euthyroid hyperthyroxinemia
Effect of drugs on thyroid function tests
Euthyroid sick syndrome
Thyroid hormone antibodies
Antibody interferences with TSH measurement

Thyroid diseases in pregnancy <2%
Hypothyroidism
Hyperthyroidism
Thyroid nodule and cancer

January 2022