

ENDOCRINOLOGY DIETETICS, DIABETES AND METABOLIC NUTRITION SPECIALIZATION COURSE

6 Month Advanced Specialization Course

A structured specialization for nutrition and dietetics students, graduates and practicing dietitians who want to build advanced competence in diabetes, metabolic disease, obesity, thyroid disorders, bone and mineral metabolism, adrenal disorders, pituitary conditions and reproductive endocrine overlap.

Who This Course Is For

Nutrition and dietetics students, graduates and practicing dietitians who want focused training in endocrine and metabolic nutrition across outpatient, hospital and multidisciplinary clinical settings.

Specialization Approach

The course begins with endocrine physiology and specialized assessment, then progresses into diabetes, obesity and metabolic disease, thyroid and bone health, adrenal and pituitary disorders, reproductive endocrine overlap and advanced case management.

Clinical Focus

Participants learn to distinguish medical endocrine diagnosis from nutrition diagnosis and to integrate dietary intake, body composition, glucose patterns, medications, laboratory information, lifestyle and patient goals into individualized nutrition care.

Overall Aim

To develop dietitians who can reason through endocrine nutrition problems systematically, support medical treatment appropriately, recognize professional boundaries and defend nutrition decisions using objective assessment rather than hormone balancing claims.

COURSE ROADMAP

Month

Primary Development Area

What the Participant Should Gain

Month 1

Endocrine Physiology, Hormones and Specialized Nutrition Assessment

Understand how endocrine organs regulate metabolism and how dietitians interpret endocrine information within professional scope.

Month 2

Diabetes, Prediabetes and Glycemic Management

Develop competence in type 1 diabetes, type 2 diabetes, prediabetes, hypoglycemia, glucose pattern interpretation, medications, insulin and diabetes technology.

Month 3

Obesity, Insulin Resistance and Metabolic Disease

Understand obesity physiology, metabolic syndrome, body composition, weight management medications and preservation of nutritional and functional health.

Month 4

Thyroid, Parathyroid, Bone and Mineral Metabolism

Develop evidence informed nutrition care for thyroid disorders, calcium and parathyroid disorders, osteoporosis and metabolic bone health.

Month 5

Adrenal, Pituitary and Reproductive Endocrine Disorders

Understand nutrition implications of adrenal insufficiency, hypercortisolism, pituitary disorders and PMOS related endocrine metabolic care.

Month 6

Advanced Endocrine Dietetic Practice and Complex Case Management

Integrate assessment, nutrition diagnosis, medication awareness, intervention, monitoring, documentation and multidisciplinary endocrine care.

MONTH 1: ENDOCRINE PHYSIOLOGY, HORMONES AND SPECIALIZED NUTRITION ASSESSMENT

Theme: Understand the hormonal system before trying to influence it through nutrition.

Purpose: To establish the physiological and clinical foundation required for endocrine dietetic practice.

Week

Focus

Learning Content

Practical Application

1

Foundations of Endocrinology for Dietitians

Endocrine glands. Hormones. Receptors. Feedback systems. Hypothalamic and pituitary regulation. Relationship between hormones, metabolism, appetite, growth, reproduction, bone, fluid balance and stress response.

Participants construct an endocrine system map showing which organs and hormones influence major metabolic functions.

2

Glucose, Insulin and Energy Metabolism

Insulin and glucagon physiology. Fed and fasting metabolism. Glycogen storage. Gluconeogenesis. Lipolysis. Insulin sensitivity. Glucose utilization and metabolic adaptation.

Participants trace what happens metabolically after a meal, during fasting and during insulin resistance.

3

Comprehensive Endocrine Nutrition Assessment

Medical diagnosis. Endocrine history. Anthropometry. Weight trajectory. Body composition. Dietary intake. Physical activity. Sleep. Stress. Medications. Supplements. Gastrointestinal symptoms. Reproductive history where relevant. Biochemical findings and patient priorities.

Complete a specialized endocrine nutrition assessment using a simulated case.

4

Understanding Endocrine Laboratory Information

Glucose. HbA1c. Lipids. Thyroid tests. Cortisol related results as medical context. Calcium. Phosphorus. Vitamin D. PTH. Reproductive hormones and other investigations supplied by the medical team.

Participants separate findings relevant to nutrition care from findings requiring endocrinologist interpretation.

Development Outcome: Participants should move from vague hormone imbalance language toward objective assessment of

diagnosed endocrine disease and nutrition problems.

MONTH 2: DIABETES, PREDIABETES AND GLYCEMIC MANAGEMENT

Theme: Diabetes nutrition is glucose management within whole person care, not simply avoiding sugar.

Purpose: To develop advanced diabetes nutrition reasoning across different diabetes types, treatments, glucose patterns and technologies.

Week

Focus

Learning Content

Practical Application

5

Prediabetes, Insulin Resistance and Type 2 Diabetes

Risk and progression concepts. Insulin resistance. Carbohydrate quality. Meal pattern. Fiber. Dietary fats. Protein. Beverages. Energy intake. Physical activity. Sleep. Weight trajectory and cardiometabolic risk.

Develop individualized nutrition priorities for two patients with type 2 diabetes who have different metabolic profiles.

6

Type 1 Diabetes and Carbohydrate Management

Insulin deficiency as medical context. Carbohydrate counting. Portion estimation. Insulin to carbohydrate relationships as prescribed. Exercise considerations. Hypoglycemia prevention and treatment education within diabetes protocols.

Analyze food, insulin and glucose records and identify nutrition patterns affecting glycemic control.

7

Glucose Monitoring, CGM and Pattern Interpretation

Capillary glucose information. Continuous glucose monitoring. Time in range concepts. Trends. Variability. Meal timing. Food response. Exercise and sleep influences.

Review simulated CGM data alongside a food record and identify appropriate nutrition questions.

8

Diabetes Medications, Hypoglycemia and Acute Complications

Metformin. Insulin. Sulfonylureas. Incretin based therapies. SGLT related therapies and other major classes as clinical context. Appetite and GI effects. Hypoglycemia risk. DKA and HHS as medical emergencies. Sick day nutrition concepts.

Identify nutrition implications across several diabetes medication scenarios.

Development Outcome: Participants should individualize diabetes care according to diabetes type, treatment, glucose pattern, dietary intake, lifestyle and cardiometabolic risk.

MONTH 3: OBESITY, INSULIN RESISTANCE AND METABOLIC DISEASE

Theme: Obesity treatment is not simply calorie restriction.

Purpose: To understand biological, behavioral, environmental and treatment related contributors to obesity and metabolic disease.

Week

Focus

Learning Content

Practical Application

9

Obesity Physiology and Comprehensive Assessment

Adipose tissue as an endocrine organ. Appetite and satiety. Energy expenditure. Metabolic adaptation. Genetics. Environment. Medications. Sleep. Psychological factors. Body composition. Weight history and treatment response.

Build an obesity assessment that goes beyond BMI and calorie intake.

10

Evidence Informed Weight Management

Individualized energy management. Dietary patterns. Protein adequacy. Lean tissue preservation. Fiber. Food quality. Behavioral nutrition. Self monitoring. Environmental modification. Realistic goals.

Compare two patients with the same BMI but very different health and treatment priorities.

11

Anti Obesity Medication and Nutrition Care

Major pharmacotherapy concepts within physician led treatment. Appetite reduction. Inadequate intake risk. Nausea. Vomiting. Constipation. Early satiety. Protein and micronutrient adequacy. Lean tissue preservation.

Develop nutrition monitoring for a patient receiving pharmacological obesity treatment.

Metabolic Syndrome and Endocrine Related Metabolic Risk

Central adiposity. Dyslipidemia. Hypertension. Prediabetes. Fatty liver overlap. PMOS as an endocrine metabolic condition with reproductive dimensions.

Prioritize nutrition care in a patient with multiple metabolic abnormalities.

Development Outcome: Participants should understand obesity and metabolic disease as multifactorial conditions requiring individualized nutrition care rather than one diet formula.

MONTH 4: THYROID, PARATHYROID, BONE AND MINERAL METABOLISM

Theme: Endocrine nutrition should support medical treatment, not replace hormone or endocrine therapy.

Purpose: To develop evidence informed nutrition care for thyroid, calcium, parathyroid and bone related endocrine conditions.

Week

Focus

Learning Content

Practical Application

Hypothyroidism and Autoimmune Thyroid Related Nutrition

Hypothyroidism as medical diagnosis. Weight related considerations. Iodine adequacy versus excess. Selenium adequacy. Medication timing with food and supplements. Constipation. Lipids. Thyroid detox and unnecessary gluten restriction myths.

Develop nutrition care without presenting diet as thyroid replacement therapy.

14

Hyperthyroidism and Graves Related Nutrition

Hypermetabolism. Weight loss. Muscle loss. Bone health. Energy and protein adequacy. Calcium and vitamin D according to need. Iodine caution. Nutrition during treatment and recovery.

Develop a recovery focused plan for a patient being medically treated for hyperthyroidism.

15

Parathyroid, Calcium and Vitamin D Disorders

PTH and calcium homeostasis. Hyperparathyroidism and hypoparathyroidism as medical conditions. Dietary calcium assessment. Vitamin D. Kidney stone overlap and referral considerations.

Review calcium, vitamin D and PTH related information and identify dietetic versus medical priorities.

16

Osteoporosis and Metabolic Bone Health

Bone remodeling. Calcium. Vitamin D. Protein. Weight bearing and resistance activity collaboration. Secondary causes. Medication related bone loss.

Develop nutrition support for an endocrine patient at elevated fracture risk.

Development Outcome: Participants should understand how nutrition supports endocrine treatment while avoiding unproven thyroid, calcium or hormone correcting diets.

MONTH 5: ADRENAL, PITUITARY AND REPRODUCTIVE ENDOCRINE DISORDERS

Theme: Not every cortisol, testosterone or hormone complaint is a nutrition diagnosis.

Purpose: To understand nutrition implications of less common but clinically important endocrine disorders and reproductive endocrine overlap.

Week

Focus

Learning Content

Practical Application

17

Adrenal Insufficiency

Cortisol and aldosterone physiology. Primary and secondary adrenal insufficiency as medical context. Sodium and potassium information. Appetite and weight changes. Glucocorticoid therapy. Adrenal crisis as an emergency.

Develop supportive nutrition care for medically diagnosed adrenal insufficiency.

18

Cushing Syndrome and Hypercortisolism

Metabolic effects of cortisol excess. Central adiposity. Muscle loss. Diabetes and insulin resistance risk. Hypertension. Bone health. Protein adequacy and cardiometabolic nutrition priorities.

Build nutrition priorities around medically diagnosed Cushing syndrome while endocrine treatment addresses cortisol excess.

19

Pituitary and Neuroendocrine Disorders

Pituitary function. ACTH. TSH. Growth hormone. Gonadotropins. Prolactin concepts. Pituitary tumors. Acromegaly. Hypopituitarism. Water balance disorders as medical context.

Determine dietetic priorities in a patient with a pituitary disorder and multiple metabolic complications.

20

Reproductive Endocrine and Metabolic Overlap

PMOS. Male hypogonadism. Menopause. Fertility and metabolic health. Appropriate referral to reproductive, gynecological and andrological specialists.

Decide which aspects of a reproductive endocrine case belong in endocrine dietetics and which require a reproductive specialization.

Development Outcome: Participants should recognize the nutrition implications of adrenal, pituitary and reproductive endocrine disorders without attempting to diagnose or treat hormone disease independently.

MONTH 6: ADVANCED ENDOCRINE DIETETIC PRACTICE AND COMPLEX CASE MANAGEMENT

Theme: Treat the nutrition problem within the endocrine condition, not the hormone result alone.

Purpose: To integrate assessment, diagnosis, medications, intervention, monitoring, documentation and multidisciplinary endocrine care.

Week

Focus

Learning Content

Practical Application

21

Endocrine Nutrition Diagnosis and Clinical Prioritization

Intake, clinical and behavioral environmental nutrition diagnoses. PES statements. Prioritizing glycemia, malnutrition, obesity, body composition, nutrient deficiency, cardiovascular risk and patient goals.

Develop PES statements for diabetes, obesity, thyroid and adrenal cases.

22

Endocrine Nutrition Intervention and Medication Integration

Energy, carbohydrate, protein, fat, fiber and micronutrient individualization. Medication awareness. Supplements. Physical activity collaboration. Counseling and long term self management.

Build a complete intervention around medical therapy rather than separately from it.

23

Monitoring, ADIME and Multidisciplinary Practice

Monitoring dietary intake, anthropometry, glucose, lipids, symptoms and nutritional status. Endocrine ADIME. Referral to endocrinology, diabetes education, pharmacy, gynecology, nephrology, cardiology and other specialties.

Prepare an endocrine ADIME note and multidisciplinary referral communication.

24

Advanced Endocrine Case Defense

Integration of endocrine diagnosis, hormonal and biochemical

information, medications, glucose patterns, body composition, diet, deficiencies, cardiometabolic risk, symptoms, lifestyle, psychosocial factors, nutrition diagnosis, intervention and monitoring.

Present and defend one advanced diabetes case, one thyroid or metabolic bone case and one complex multi endocrine case.

Development Outcome: Participants should finish able to document and defend individualized endocrine medical nutrition therapy while maintaining clear professional boundaries.

ENDOCRINOLOGY SPECIALIZATION CASE PORTFOLIO

Case Area

Practical Competency

Prediabetes

Develop prevention focused nutrition intervention.

Type 1 Diabetes

Integrate carbohydrate management with prescribed insulin therapy.

Type 2 Diabetes

Individualize glycemic and cardiometabolic nutrition care.

CGM Case

Interpret food related glucose patterns responsibly.

Hypoglycemia

Identify nutrition contributors and prevention strategies.

Diabetes With CKD

Balance endocrine and renal nutrition priorities.

Diabetes With Cardiovascular Disease

Integrate glucose and cardiovascular goals.

Obesity

Complete multifactorial nutrition assessment.

Obesity Medication Case

Protect protein, micronutrients and lean tissue during appetite suppression.

Metabolic Syndrome

Prioritize overlapping metabolic risk factors.

Hypothyroidism

Support nutrition without hormone replacement claims.

Hyperthyroidism

Support increased requirements and recovery.

Hyperparathyroidism

Interpret nutrition implications within endocrine care.

Osteoporosis

Develop bone and muscle nutrition support.

Adrenal Insufficiency

Provide supportive nutrition within hormone replacement care.

Cushing Syndrome

Address metabolic and nutritional consequences.

Pituitary Disorder

Identify dietetic priorities across complex hormonal changes.

PMOS Overlap

Address metabolic nutrition concerns while coordinating reproductive care.

Complex Multimorbidity

Prioritize when several endocrine and metabolic disorders coexist.

Final Case Defense

Defend the complete endocrine nutrition care process.

PROFESSIONAL SCOPE INTEGRATION

Situation

Endocrine Dietitian Role

Diabetes

Provide individualized medical nutrition therapy within multidisciplinary diabetes care.

Insulin

Understand food and insulin relationships without independently prescribing or changing insulin.

Hypoglycemia

Provide prevention and treatment education within established medical protocols.

DKA or HHS

Recognize emergency situations and defer acute medical treatment to the appropriate team.

Obesity

Provide comprehensive nutrition intervention alongside medical, behavioral or surgical treatment where indicated.

Thyroid Disease

Support nutritional adequacy and medication use without claiming food replaces thyroid treatment.

Abnormal Thyroid Tests

Use medically interpreted results as clinical context rather than independently diagnosing thyroid disease.

Adrenal Disease

Support nutrition while hormone diagnosis and replacement remain endocrinologist led.

Cushing Syndrome

Address metabolic consequences rather than attempting dietary cortisol suppression.

Pituitary Disease

Manage nutritional consequences within multidisciplinary endocrine care.

Osteoporosis

Support bone and muscle nutrition while medical fracture prevention treatment remains clinician led.

PMOS

Address metabolic nutrition concerns while reproductive and endocrine management remains multidisciplinary.

Supplements

Assess indication, evidence, dose, safety and interactions.

Complex Endocrine Disease

Collaborate with endocrinology, diabetes, pharmacy and other relevant specialties.

EXPECTED SPECIALIZATION TRANSFORMATION

At Entry

At Completion

Hormonal problems need hormone balancing foods.

I understand endocrine physiology and base nutrition care on diagnosed conditions and objective assessment.

Diabetes means avoiding carbohydrates.

I individualize carbohydrate amount, quality and distribution within complete diabetes management.

Insulin resistance needs a low carbohydrate diet.

I assess overall metabolic health, intake, activity, sleep and individual treatment goals.

Obesity is mainly excess calorie intake.

I understand biological, behavioral, medical and environmental contributors and work within comprehensive treatment.

Obesity medication means the patient will naturally eat less and lose weight.

I actively monitor nutritional adequacy, protein intake, symptoms and preservation of lean tissue during pharmacotherapy.

Hypothyroidism can be fixed through thyroid foods.

I support nutritional adequacy while recognizing thyroid hormone replacement as medical treatment.

High cortisol means stress and needs a cortisol lowering diet.

I understand that pathological hypercortisolism requires endocrine diagnosis and medical treatment.

Bone health is just calcium.

I integrate calcium, vitamin D, protein, muscle, activity and medical fracture risk.

Endocrinology nutrition is mostly diabetes and thyroid diets.

I can reason across diabetes, metabolic disease, thyroid, bone, adrenal, pituitary and reproductive endocrine conditions.

I know endocrine meal plans.

I can conduct, document and defend a complete endocrine medical nutrition therapy process.

FINAL LEARNING PATHWAY

Stage

Learning Progression

Stage 1

Understand endocrine physiology and hormonal feedback systems.

Stage 2

Conduct specialized endocrine nutrition assessment.

Stage 3

Interpret nutrition relevant endocrine information within professional scope.

Stage 4

Manage prediabetes, insulin resistance and type 2 diabetes.

Stage 5

Manage type 1 diabetes and carbohydrate relationships.

Stage 6

Use glucose data and CGM patterns responsibly.

Stage 7

Understand diabetes medications and nutrition implications.

Stage 8

Manage obesity and metabolic risk.

Stage 9

Support nutrition during obesity pharmacotherapy.

Stage 10

Manage thyroid nutrition.

Stage 11

Support bone and mineral health.

Stage 12

Understand adrenal disorders.

Stage 13

Understand pituitary disorders.

Stage 14

Integrate reproductive endocrine health.

Stage 15

Develop nutrition diagnosis and individualized intervention.

Stage 16

Monitor outcomes, document care and collaborate with endocrine teams.

Stage 17

Defend advanced endocrine cases.

COURSE PHILOSOPHY

This specialization is designed to develop endocrine dietetic thinking rather than provide a collection of hormone related meal plans. Participants learn to connect endocrine diagnosis, metabolic physiology, medications, dietary intake, body composition, biochemical information, lifestyle and patient goals so that nutrition care is individualized, evidence informed and professionally defensible.