

LUCOM Nutrition Content and the Health and Human Services Medical Education Nutrition Competency Framework

The HHS guide lists 71 competencies across 10 domains, totaling 191.5 hours of content. HHS asks medical schools to choose from these suggested competencies to create 40 hours of content across the four years of medical school.

Domain 1: Foundational Nutrition Knowledge

Competency #	Competency Description	LUCOM Hours	LUCOM Course	Learning Activity Title
1	Nutritional content of foods, macronutrients and micronutrients	1	Human Function Human Function Human Function	Regulation of Body Mass Vitamins and Minerals Carbohydrates and Lipids
2	Pathological states affecting nutrient absorption	0.1 0.2	DI4 DI4	Nonmalignant Diseases of the Small bowel and Colon Acquired Pediatric Disorders
3	Identifies nutrient deficiencies, recommends foods/supplements	0.5	MHDI	Environmental-Nutritional and ID Pathology
4	Difference between food allergies and intolerance including gluten	1	DI4	Food Allergies
5	Energy and nutrient requirements across lifespan	0.2	DI5	Preconception Health and Prenatal Care
9	Clinically assisted nutrition (enteral/parenteral) – recommended at the GME level for appropriate specialties only		DI4	Nutritional Assessment and Therapy
10	Functions of essential nutrients		Human Function Human Function	Vitamins and Minerals Amino Acids and the Urea Cycle
11	Principles of healthy balanced diet per national guidelines	0.4	DI4	Lifestyle Management of Obesity

Competency #	Competency Description	LUCOM Hours	LUCOM Course	Learning Activity Title
12	Evidence-based guidance on healthy beverage consumption		Human Function	A Dietician's Perspective on Nutrition
13	Mitochondrial metabolism and energy regulation: understand nutrient-driven ATP synthesis and how overnutrition leads to insulin resistance	1 1 1	Human Function Human Function Human Function	The Krebs Cycle Electron Transport and Oxidative Phosphorylation Metabolic Regulation
14	Structural components from food: recognize how dietary amino acids, essential fatty acids, and cholesterol build proteins, membranes, and hormones	1 1 1 1 1 1	Human Function Human Function Human Function Human Function Human Function Human Function	Carbohydrates and Lipids Amino Acids and the Urea Cycle Cholesterol Metabolism Membrane Lipids Protein Dynamics I – Translation Protein Dynamics II - Protein Regulation and Post-translational modifications
15	Micronutrient cofactors in enzymatic function: master how vitamins and minerals drive reactions and how deficiencies undermine function	3 0.3	Human Function Human Function Human Function	Vitamins and Minerals The Krebs Cycle Enzyme Kinetics and Enzyme Thermodynamics
16	Hormonal regulation through food composition: understand how meal composition affects GLP-1, CCK, PYY, leptin, and insulin signaling	1 0.5 0.5	Human Function Human Function Human Function	Hormonal Regulation of Gastrointestinal Function Gastrointestinal Secretions I Neural Regulation of Gastrointestinal Function
17	Epigenetic modulation through nutrition: comprehend how methyl donors, phytochemicals, and feeding rhythms influence gene expression	0.1	Human Function	Genes, Chromosomes, and the Genome
18	Microbiome-immune crosstalk: understand fiber fermentation producing butyrate for gut integrity and how ultra-processed diets cause dysbiosis	1	MHDI	Microbiome
19	Cognitive and behavioral nutrition: apply mindful eating practices that enhance hormonal signaling and reduce reward-driven eating	1 1	DI2 DI4 Human Function	Eating Disorders Nutritional Management of Eating Disorders A Dietician's Perspective on Nutrition

Domain 2: Nutrition Assessment and Diagnosis

Competency #	Competency Description	LUCOM Hours	LUCOM Course	Learning Activity Title
21		0.1 0.2	DI2 OMM 101	Sleep Disorders The Metabolic Model
22	Assesses nutritional status by integrating dietary history, clinical measurements (height, weight, BMI, skeletal muscle mass, visceral fat), and laboratory findings	3 1	Human Function DI4	A Dietician's Perspective on Nutrition Nutritional Assessment and Therapy
24	Interprets exam data and biomarkers for malnutrition risk		DI4 MHDI	Nutritional Assessment and Therapy Environmental-Nutritional and ID Pathology
25	Personalized metabolic biomarker interpretation: using fasting insulin levels, oral glucose tolerance testing (OGGT), HOMA-IR, TG:HDL ratio, advanced lipid panels, omega-3 index, and vitamin D to guide interventions	1 1 1	DI3 DI5 DI5	Dyslipidemia Diabetes Type I Diabetes Type 2
28	Network biology disease assessment: evaluate organ symptoms as downstream manifestations of upstream cellular dysfunction	5	Human Function, MHDI, and all OMS2 courses	This is covered throughout the preclinical Curriculum

Domain 3: Food and Nutrition-Related Communication Skills

Competency #	Competency Description	LUCOM Hours	LUCOM Course	Learning Activity Title
30	Integrates evidence-based nutrition information into patient care	0.1 1	MHDI DI4	Applying Information from Primary Clinical Literature Nutritional Assessment and Therapy
31	Uses behavior change models to counsel patients	0.5 0.5	DI4 PCM 202 DI2	Lifestyle Management of Obesity Motivational Interviewing Learning Theory
34	Motivational interviewing for nutrition change: apply structured interviewing techniques to enhance autonomy and sustainable behavior change	0.5	PCM 202	Motivational Interviewing
37	Patient empowerment and dietary autonomy: foster long-term self-efficacy through education, biomarker monitoring, and collaborative goal-setting		DI4 PCM 202	Lifestyle Management of Obesity Motivational Interviewing

Domain 5: Public Health Nutrition

Competency #	Competency Description	LUCOM Hours	LUCOM Course	Learning Activity Title
44	Screens for food/nutrition needs and patients' ability to obtain sufficient nutrition, makes appropriate referrals	1	DI4 DI5	Nutritional Assessment and Therapy Social Determinants of Health

Domain 7: Medical Interventions in Combination with Lifestyle Practices

Competency #	Competency Description	LUCOM Hours	LUCOM Course	Learning Activity Title
57	Disease-specific nutritional reversal protocols: implement evidence-based dietary strategies as first-line interventions for metabolic syndrome, prediabetes, type 2 diabetes, metabolic dysfunction-associated fatty liver disease, and polycystic ovarian syndrome; identify patients benefiting from low carbohydrate approaches through metabolic biomarkers, insulin resistance indicators, and response patterns	0.5	DI4 DI4 DI4	NAFLD-NASH Lifestyle Management of Obesity Diabetes Type 2
59	Medication-nutrition synergy: guide patients combining medications, surgery, CGM, wearables with lifestyle practices		DI4 DI5	Lifestyle Management of Obesity Diabetes Type I
60	Prioritize food-based medicine as the primary approach to chronic disease prevention and treatment, integrating both clinical interventions and patient self-management strategies	0.5	DI5 DI4	Prevention of Infectious and Chronic Disease Lifestyle Management of Obesity

Domain 8: Personal Food & Lifestyle Behaviors for Health Care Professionals

Competency #	Competency Description	LUCOM Hours	LUCOM Course	Learning Activity Title
62	Identifies factors affecting personal health and nutrition status		OMM 101 Human Function	The Metabolic Model A Dietician's Perspective on Nutrition

Domain 9: Food Systems and Environmental Impacts

Competency #	Competency Description	LUCOM Hours	LUCOM Course	Learning Activity Title
65	Recognizes and promotes healthy food environments in healthcare delivery settings		DI5 DI4	Social Determinants of Health Lifestyle Management of Obesity
68	Toxicology in the food supply: understand the impacts of potential toxicants in all parts of the food supply chain	0.2	MHDI	Environmental and Nutritional Pathology

