

Obesity Medicine Curriculum for Subspecialty Fellowship Programs

Introduction: This curriculum is intended to provide a guide for program directors in Obesity Medicine fellowships to see what is necessary to expose a trainee to during their training, not what is necessary to have inside a program or what is nice to have. This curriculum provides the scope of complete training for a fellow in Obesity Medicine.

The curricular framework applies to the care of children, adolescents, and adults. The pediatric obesity section is included specifically to ensure that adult training programs cover pediatrics. A pediatric clinical experience is ideal; however, programs may not have access to this type of clinical experience, therefore, it should be covered through didactics.

Core clinical experiences:

- Comprehensive adult obesity medicine outpatient practice
- Bariatric surgery practice

Core didactic education experiences:

- Core obesity lecture series
- Obesity-focused journal club
- Obesity-focused seminars and/or grand rounds

Elective Clinical Experiences:

- Comprehensive pediatric obesity medicine outpatient practice
- Inpatient obesity medicine service
- Inpatient bariatric surgery service
- Diabetes, cardiology, lipid management, liver diseases, mental health service, sleep medicine outpatient practices
- Bariatric endoscopy service
- Outpatient exercise therapy service
- Outpatient nutrition service
- Behavioral health service
- Obesity prevention program

Elective research opportunities:

- Obesity basic research program
- Obesity clinical research program
- Obesity public health / obesity prevention research

Curricular Framework:

1. Obesity epidemiology
 - a. Prevalence and changes over time
 - b. Geographic distribution
 - c. Effect on mortality, longevity and quality of life
 - d. Economic impact

2. Biology of obesity
 - a. Physiological regulation of fat mass, energy balance and body weight
 - b. Gut-brain interactions in the control of body fat
 - c. Signaling systems in metabolic regulation: neural, humoral, immune and microbial
 - d. Contributions and regulation of appetitive drives, physical activity and thermogenesis
 - e. Metabolic adaptation and its management in obesity
 - f. Obesity pathophysiology
 - g. Obesity etiology
 - h. Genetic contributors to obesity
 - i. Environment contributors to obesity
 - j. CNS causes of obesity
 - k. Medication-induced obesity
 - l. Metabolic effects of obesity
 - m. Inflammatory and immunological effects of obesity
 - n. Implications of obesity heterogeneity: pathophysiology, clinical presentation and response to treatment

3. Social context of obesity
 - a. Historical views of obesity
 - b. Weight-related bias, stigma and discrimination
 - c. Psychosocial and economic effects of obesity
 - d. Social and cultural contributors to obesity and its care
 - e. The impact of the cultural desire for thinness – obesity understanding on access to care
 - f. Inequities in obesity-related care
 - g. Impact of language on obesity care

4. Obesity assessment
 - a. Patient communication around weight and obesity
 - b. Efficient, obesity-focused patient history
 - c. Social determinants of health
 - d. Previous obesity treatments and outcomes
 - e. Obesity-focused physical examination

- f. Anthropometric assessment of obesity
 - g. Effect of obesity and obesity treatment on muscle function
 - h. Measurement tools and definitions
 - i. Physiological assessment in clinical practice
 - j. Comprehensive assessment of obesity severity
 - k. Establishing treatment goals
 - l. Principles of shared decision-making
5. Medical complications of obesity
- a. Metabolic and cardiovascular complications
 - b. Immunological and inflammatory complications
 - c. Neoplastic complications
 - d. Structural and mechanical complications
 - e. Mental health complications
 - f. Eating disorders
 - g. Nutritional complications
 - h. Impact of obesity on health screening, diagnostic testing, treatment and treatment assessment
 - i. Impact of obesity treatment on obesity complications
6. Strategies for obesity treatment
- a. Implications of obesity as a chronic disease
 - b. Differences and overlap between treating obesity and promoting wellness
 - c. Treating obesity to treat its complications
 - d. Variability of treatment response
 - e. Opportunities for precision obesity care
7. Lifestyle-based treatment of obesity
- a. Benefits, limitations and risks of calorie restriction
 - b. Diet- and food-based treatments of obesity
 - c. Benefits, limitations and risks of exercise treatment
 - d. Benefits, limitations and risks of psychological treatment
 - e. Setting goals for behavioral therapy
 - f. Strategies for behavioral modification
 - g. Management of stress-, sleep-, and circadian rhythm-related obesity
 - h. Clinical identification of lifestyle treatment opportunities
8. Pharmacological treatment of obesity
- a. History of obesity pharmacotherapy
 - b. Principles and clinical strategies for obesity pharmacotherapy
 - c. Roles and responsibilities of regulatory agencies
 - d. Nutrient-stimulated hormone-targeted therapy
 - e. Other metabolic agents: metformin, SGLT-2 inhibitors

- f. Adrenergic agents
 - g. Other CNS agents: topiramate, Zonisamide, bupropion, naltrexone
 - h. Orlistat
 - i. Expandable gel therapy
 - j. Emerging pharmacotherapeutic opportunities
9. Endoscopic and medical device-based treatment of obesity
- a. Endoscopic management of metabolic surgery
 - b. Endoscopic obesity treatment procedures
 - c. Implantable obesity treatment devices
 - d. Device-based treatment of diabetes mellitus
10. Surgical treatment of obesity
- a. Physical characteristics of metabolic surgery
 - b. Mechanisms of action of metabolic surgery
 - c. Clinical outcomes of metabolic surgery
 - d. Preoperative management of the metabolic surgical patient
 - e. Postoperative management of the metabolic surgical patient
 - f. Long-term management of surgical complications and sequelae
 - g. Regulation of metabolic surgical care
 - h. Emerging metabolic surgical options
11. Combination therapy of obesity
- a. Combination pharmacotherapy
 - b. Combination medical and procedural treatment of obesity
12. Health management during obesity treatment
- a. Evaluation and management of obesity complications and comorbidities
 - b. Evaluation and management of patient expectations
 - c. Evaluation and management of nutritional health
 - d. Evaluation and management of physical and muscle health
 - e. Evaluation and management of mental health
13. Pediatric obesity
- a. Effects of obesity unique to children and adolescents
 - b. Clinical evaluation of obesity in children and adolescents
 - c. Genetic evaluation in pediatric obesity
 - d. Lifestyle and family-based treatment of pediatric obesity
 - e. Pharmacological treatment of obesity in children and adolescents
 - f. Surgical treatment of obesity in children and adolescents
 - g. Transition of care

14. Assessment and management of syndromic and monogenic obesity

- a. Clinical presentation of syndromic and monogenic obesity
- b. Genetic evaluation in clinical practice
- c. Management options for genetic and syndromic obesity

15. Management of obesity in special populations

- a. Individuals who have specific social needs
- b. Individuals who have specific biological needs
- c. Obesity care globally across diverse populations

16. Other diseases of adipose tissue

- a. Lipidema
- b. Lipodystrophy
- c. Lipomatosis

17. Obesity prevention

- a. Emergence of the obesity epidemic
- b. Primary and secondary obesity prevention strategies and outcomes
- c. Implications of obesity heterogeneity for effective prevention strategies

18. Clinical data interpretation skills

- a. Basics of statistical evaluation
- b. Basics of study design and data analysis
- c. Assessing evidence of causation
- d. Challenges in obesity research
- e. Clinical and policy implications of research findings
- f. Ethical considerations in clinical research

19. Roles and responsibilities of the medical subspecialist

- a. Specialized practice
- b. Generalist education
- c. Establishment of specialty referral criteria
- d. Patient and specialty advocacy with the healthcare system
- e. Contribution to research and scholarship

20. Teaching and communication skills around obesity

21. Clinical practice of obesity medicine

- a. Obesity Medicine certification and credentialing
- b. Continuing education and maintenance of certification
- c. Practice organization and staffing
- d. Certification of non-physician providers
- e. Physical facilities
- f. Organization and operation of an effective comprehensive care team
- g. Efficient use of the electronic health record
- h. Establishing quality assessment and improvement mechanisms
- i. Financial management
- j. Career development strategies
- k. Conflict of interest principles and interaction with corporate partners
- l. Systems approach to quality improvement

22. Obesity-related public policy

- a. Implications of recognizing obesity as a disease
- b. Clinical practice guidelines
- c. Standards of obesity care
- d. Patient and societal financial expectations
- e. Health care insurance coverage of obesity care
- f. Optimizing the clinical benefit of available resources