

# Obesity Curriculum

## Corresponding School Enabling Competencies

PC5. Justify each diagnostic test ordered and proposed with regard to cost, effectiveness, risks and complications, and the patient’s overall goals and values.

PC6. Apply clinical reasoning and critical thinking skills in developing a differential diagnosis.

PC7. Apply the principles of pharmacology, therapeutics, and therapeutic decision-making to develop a management plan

PC8. Identify and incorporate into the care of patient’s appropriate prevention strategies for common conditions.

MK1. Describe the normal structure and function of the human body and of each of its major organ systems across the life span.

MK2. Explain various causes (genetic, developmental, metabolic, toxic, microbiologic, autoimmune, neoplastic, degenerative, behavioral, and traumatic) of major diseases and conditions and the ways in which they operate on the body (pathogenesis).

MK3. Describe how the altered structure and function (pathology and pathophysiology) of the body and its major organ systems are manifest through major diseases and conditions.

MK4. Identify the proximate and ultimate factors that contribute to the development of disease and illness, and that contribute to health status within and across populations regionally, nationally, and globally.

MK5. Demonstrate knowledge of the common medical conditions within each clinical discipline, including its pathophysiology and fundamentals of treatment.

MK7. Recognize the medical consequences of common societal problems.

SHS2. Identify disparities across populations in North Carolina and nationally and discuss physician roles in reducing these disparities.

SHS4. Identify factors that place populations at risk for disease or injury and select appropriate strategies for risk reduction.

## Foundation Phase

Course	Topics, Enabling Competencies & Learning Objectives	Assessment
Medical Science 1	<p><b>Immunology Session: Modifiers of the Immune System (large group) (MK4, MK7, SHS4)</b></p> <ul style="list-style-type: none"> <li>Identify factors including malnutrition, ageing, lack of appropriate immunizations, and presence of primary or acquired immune deficiency that place populations at increased risk of sequelae of altered immunity.</li> <li>Identify various modifiers of the immune system / immune function, with emphasis on:               <ul style="list-style-type: none"> <li>The impact of nutrition including malnutrition, select micronutrient deficiencies, and obesity.</li> </ul> </li> </ul>	Multiple choice exams (summative) Quiz (formative)

	<ul style="list-style-type: none"> <li>• Maturation of the immune system in the fetus, infant and young child.</li> <li>• Impact of aging on immune function.</li> </ul> <p><b>Cardiology Session: Hypertension, Dyslipidemia and Cardiovascular Risk (small group) (PC5, PC7, MK1, MK2, MK3, SHS4)</b></p> <ul style="list-style-type: none"> <li>• Discuss the behaviors that contribute to cardiovascular disease.</li> <li>• Recognize the clinical presentations of essential and secondary hypertension.</li> <li>• Explain the physiologic factors that regulate blood pressure.</li> <li>• Select appropriate antihypertensive therapies and explain their mechanism of action.</li> <li>• Make decisions about initiation of lipid-regulating medications based on cardiovascular risk.</li> </ul> <p><b>Cardiology Session: Nutrition in Cardiovascular Disease (large group) (MK4, MK7, SHS4)</b></p> <ul style="list-style-type: none"> <li>• Discuss the impact of nutrition on the cardiovascular system</li> <li>• Name nutrition recommendations related to cardiovascular disease risk <ul style="list-style-type: none"> <li>• Dyslipidemia</li> <li>• Hypertension</li> <li>• Co-occurring diabetes</li> </ul> </li> <li>• Be able to apply nutrient and food-based recommendations</li> </ul>	
<p>Medical Science 2</p>	<p><b>Respiratory Session: Nutrition in Lung Disease (large group) (MK4, MK7, SHS4)</b></p> <ul style="list-style-type: none"> <li>• Identify lessons learned from 30 years of nutrition and lung cancer research.</li> <li>• Identify links between asthma and nutrition (obesity, fiber, n-3 fatty acids, vitamin D.)</li> <li>• Analyze interactions between obesity, metabolic syndrome and obstructive sleep apneas</li> </ul>	<p>Multiple choice exams (summative) Quiz (formative)</p>
<p>Medical Science 3</p>	<p><b>Endocrinology Session: Pathophysiology and Diagnosis of Diabetes Types I and II (large group) (MK1, MK2, MK3, MK4, MK7, SHS4)</b></p> <ul style="list-style-type: none"> <li>• Recognize and discuss social conditions, behaviors, and genetic/hormonal factors that predispose patients to diabetes and obesity.</li> <li>• Describe and contrast the pathogenesis, clinical presentation, natural history, and treatment of type 1 and type 2 diabetes mellitus.</li> <li>• State the current screening and diagnostic criteria for diabetes mellitus and high risk states for diabetes.</li> </ul> <p><b>Endocrinology Session: Pathophysiology of Obesity (large group) (PC5, PC7, MK1, MK2, MK4, MK7)</b></p> <ul style="list-style-type: none"> <li>• Recognize and discuss social conditions, behaviors, and genetic/hormonal factors that predispose patients to diabetes and obesity.</li> <li>• Define key determinants of energy balance</li> </ul>	<p>Multiple choice exams (summative) Quiz (formative)</p>

	<ul style="list-style-type: none"> <li>• Describe hunger (orexigenic) and satiety (anorexigenic) signals in brain and gut.</li> <li>• Discuss MC4R deficiency as a rare monogenic cause of obesity, and FTO as a more common gene variant associated with obesity</li> <li>• Know general outcomes of diet trials.</li> </ul> <p><b>Endocrinology Session: Clinical Management of Obesity (large group) (PC5, PC6, PC7, MK2, MK3, MK4, MK5, MK7, SHS2, SHS4)</b></p> <ul style="list-style-type: none"> <li>• Recognize and discuss social conditions, behaviors, and genetic/hormonal factors that predispose patients to diabetes and obesity.</li> <li>• List the complications associated with obesity and the rationale for treatment</li> <li>• Discuss the medical evaluation of obesity.</li> <li>• Describe lifestyle and drug treatment for obesity.</li> <li>• List lifestyle recommendations most pertinent to MDs.</li> <li>• Identify drugs approved for treatment of obesity.</li> <li>• Describe surgical treatments for obesity.</li> </ul>	
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### Application Phase

Course	Topics, Enabling Competencies & Learning Objectives	Assessments
<p>Care of Specific Populations: OB/Gyn</p>	<p><b>Session: Medical Complications of Pregnancy (small group) (PC7, PC8, MK4, MK7, SHS4)</b>  Identify the following medical and surgical conditions in pregnancy and discuss the potential impact of the conditions on the gravid patient and the fetus/newborn, as well as the impact of pregnancy (if any) on each condition, and appropriate initial evaluation:</p> <ul style="list-style-type: none"> <li>• Anemia</li> <li>• Obesity</li> <li>• Endocrine disorders (Diabetes mellitus, Thyroid disease)</li> <li>• Cardiovascular disease</li> <li>• Hypertension</li> <li>• Pulmonary disease</li> <li>• Renal disease</li> <li>• Gastrointestinal disease</li> <li>• Neurologic disease</li> <li>• Autoimmune disorders</li> <li>• Alcohol, tobacco, and substance abuse</li> <li>• Surgical abdomen</li> <li>• Infectious disease, including:  Syphilis, TORCH, Group B Streptococcus, Hepatitis, HIV, HPV, Parvovirus, Varicella</li> </ul>	<p>OB/Gyn Shelf Exam</p>

Community Based Longitudinal Care	<p><b>Session: Hypertension, Diabetes, and Prevention (small group) (PC5, PC6, PC7, MK4, MK5, MK7, SHS4)</b></p> <ul style="list-style-type: none"> <li>• Identify diabetes diagnosis, treatment, complications, and risk modification.</li> <li>• Name the risk factors for diabetes in children.</li> <li>• Describe how to accurately measure blood pressure in a child</li> <li>• Demonstrate how to calculate risk of cardiovascular event in average and high risk individuals using the ASCVD risk calculator.</li> <li>• Identify appropriate treatment for patients based on the estimated risk of fractures or CV events.</li> </ul>	Health and Prevention Quiz

### Individualization Phase

Course	Topics, Enabling Competencies & Learning Objectives	Assessment
Advanced Clinical Selective 1 and 2	<p><b>Daily Clinical Work (clinical) (PC6, PC7, MK3, MK4)</b></p> <ul style="list-style-type: none"> <li>• Recommend, when applicable, specific medications when necessary to treat patients, taking into account the patients' co-morbid conditions and social determinants.</li> <li>• Recommend appropriate preventative care to patients throughout the life span.</li> <li>• Identify pathology and pathophysiology of the body and its major organ systems in common diseases and conditions in area or specialty of interest.</li> <li>• Identify or discuss interventions to reduce the impact of disease determinants (or improve the likelihood of health improvements) in the care of individual patients.</li> </ul>	<p>Midpoint feedback (formative)</p> <p>Common Assessment Form (summative)</p> <p>Oral Assessment (formative)</p> <p>Written Assignment (summative)</p>