

# Obesity education: A needs assessment of the medical school curriculum



Amber Olson<sup>1</sup>, W. Scott Butsch<sup>2</sup>, Katherine Lyons<sup>3</sup>,  
Eileen Seeholzer<sup>3</sup>, Rosanna Watowicz<sup>4</sup>, Colleen Croniger<sup>4</sup>

1. Department of Population and Quantitative Health Sciences, CWRU School of Medicine
2. Bariatric and Metabolic Institute, Cleveland Clinic
3. Adult Weight Loss Surgery & Weight Management Center, MetroHealth
4. Department of Nutrition, CWRU School of Medicine



[Click here to watch presentation](#)

## Background

- Obesity is a multifactorial chronic disease that affects at least 41.9% of the US adult population, with higher rates seen in minority groups.<sup>1</sup> The prevalence of obesity continues to rise, with the medical cost for obesity in the United States estimated at \$173 billion in 2019.<sup>2</sup> Obesity has adverse health effects on every organ of the body and is one of the largest contributors to the burden of preventable, noncommunicable diseases like heart disease, stroke, and cancer.<sup>1</sup>

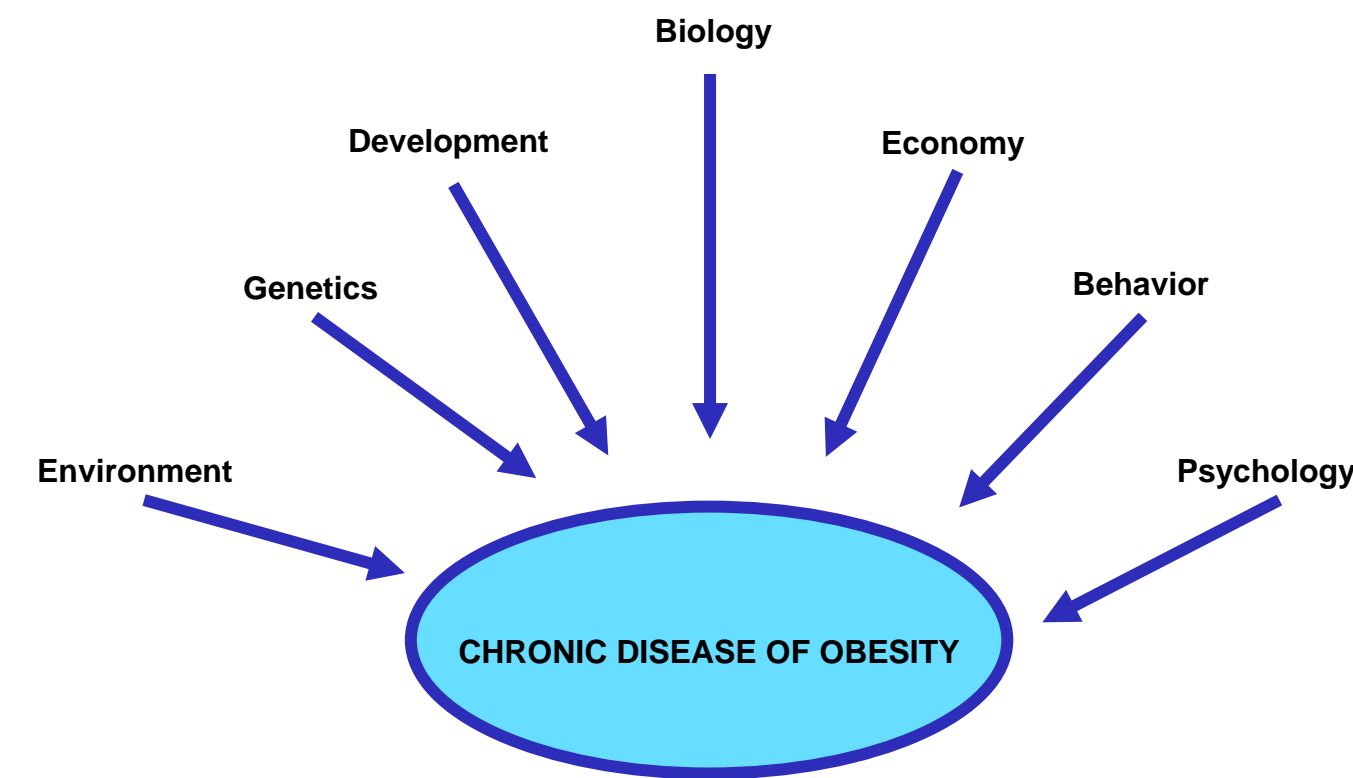


Figure 1: Causes of obesity

- Despite obesity's prevalence, cost, and adverse health effects, medical students lack training in obesity and obesity management.<sup>3,4</sup>
- An obesity education focus group was formed with faculty from CWRU School of Medicine, Cleveland Clinic, and MetroHealth (1) to assess the current state of obesity education at CWRU School of Medicine and (2) to improve obesity education at CWRU School of Medicine.

## Population

- This practicum was done in conjunction with the CWRU School of Medicine, Cleveland Clinic, and MetroHealth with a focus on the preclinical medical school curriculum at CWRU School of Medicine.

## Learning Objectives

1. Assess the current CWRU School of Medicine preclinical curriculum for obesity content and compare with the accepted standards for obesity medical education, the Obesity Medicine Education Collaborative (OMEC) competencies.
2. Make evidence-based recommendations for the revision of current curricular content and the addition of new curricular content to better adhere to the OMEC competencies.
3. Communicate recommendations with stakeholders in the medical school curriculum and justify their inclusion in the curriculum.

## Activities

- An audit of the current CWRU School of Medicine preclinical curriculum was completed for comparison with OMEC competencies. The school's current preclinical curriculum was studied to determine the prevalence of OMEC competencies, using a Likert scale (from 1 to 5) to rate the degree of implementation of each competency (Figure 2).
- Based on the audit, evidence-based recommendations were made for the revision of current curricular content and the addition of new curricular content to better adhere to the OMEC competencies. Recommendation sheets were emailed to all block leaders in the CWRU School of Medicine curriculum (Figure 3).
- Meetings were held with all block leaders to discuss the recommendation sheets in detail.
- New curricular materials were developed and introduced into the curriculum (Figure 4).
- Two, two-hour team-based learning sessions were held on November 17, 2021 (Obesity Pathogenesis) and January 19, 2022 (Obesity Treatment) for all first-year medical students (Figure 5). The sessions were facilitated by two obesity medicine physicians, a dietitian, a professor in nutrition, and a second-year medical student.
- A standardized patient was incorporated into a communication workshop for students to practice counseling patients with obesity.

## Deliverables

1. Audit of the CWRU School of Medicine curriculum with comparison to OMEC competencies (Figure 2).
2. Recommendation sheets for each of the 8 blocks in the CWRU School of Medicine preclinical curriculum (Figure 3).
3. New curricular materials for first-year medical students: (1) two team-based learning sessions (Figure 4), (2) two exam questions on obesity, and (3) a standardized patient to practice counseling patients with obesity.

OMEC Competency (Domain)	CWRU Curriculum Component	How well does current curriculum meet competency?
Demonstrates knowledge of obesity epidemiology (Medical Knowledge)	Lecture on cancer as a public health concern	3
Demonstrates knowledge of obesity-related comorbidities and the corresponding benefits of body mass index (BMI) reduction (Medical Knowledge)	PCOS, diabetes (DM2), fetal malformations, contraception, cancer, metabolic syndrome	3
Demonstrates knowledge of the etiologies, mechanisms, and biology of obesity (Medical Knowledge)	PWS, genetics, epigenetics, intergenerational etiologies (GDM, maternal obesity)	3
Applies knowledge of using pharmacological treatments of obesity as part of a comprehensive, personalized obesity management care plan (Medical Knowledge)	Treatment of DM2 with GLP-1 analogs	1
Uses appropriate language in verbal, nonverbal, and written communication that is non-biased, non-judgmental, respectful, and empathetic when communicating about patients with obesity with colleagues within one's profession and other members of the healthcare team (Interpersonal and Communication Skills)	Slides	4 (15 instances of appropriate language, 3 instances of inappropriate language/bias)

Figure 2: Example of curriculum audit (excerpt from Block 2 audit)

Block 2 Recommendations	
<b>Endocrine</b>	
<b>Lectures</b>	<ul style="list-style-type: none"> <li>"Fundamental Principles of Endocrinology":                             <ul style="list-style-type: none"> <li>Add: adipose tissue is an active endocrine organ</li> </ul> </li> </ul>
<b>Genitourinary</b>	
<b>Lectures</b>	<ul style="list-style-type: none"> <li>"Hormonal Control of Pregnancy and Parturition":                             <ul style="list-style-type: none"> <li>Add: pregnant women with obesity are more likely to develop gestational diabetes (slide 21)                                     <ul style="list-style-type: none"> <li>Resource: Chu, S. Y., Callaghan, W. M., Kim, S. Y., Schmid, C. H., Lau, J., England, L. J., &amp; Dietz, P. M. (2007). Maternal obesity and risk of gestational diabetes mellitus. <i>Diabetes care</i>, 30(8), 2070-2076.</li> <li>American College of Obstetricians and Gynecologists. (2013). ACOG Committee opinion no. 549: obesity in pregnancy. <i>Obstetrics and gynecology</i>, 121(1), 213-217.</li> </ul> </li> </ul> </li> </ul>

Figure 3: Example of recommendation sheet (excerpt from Block 2 Recommendations)

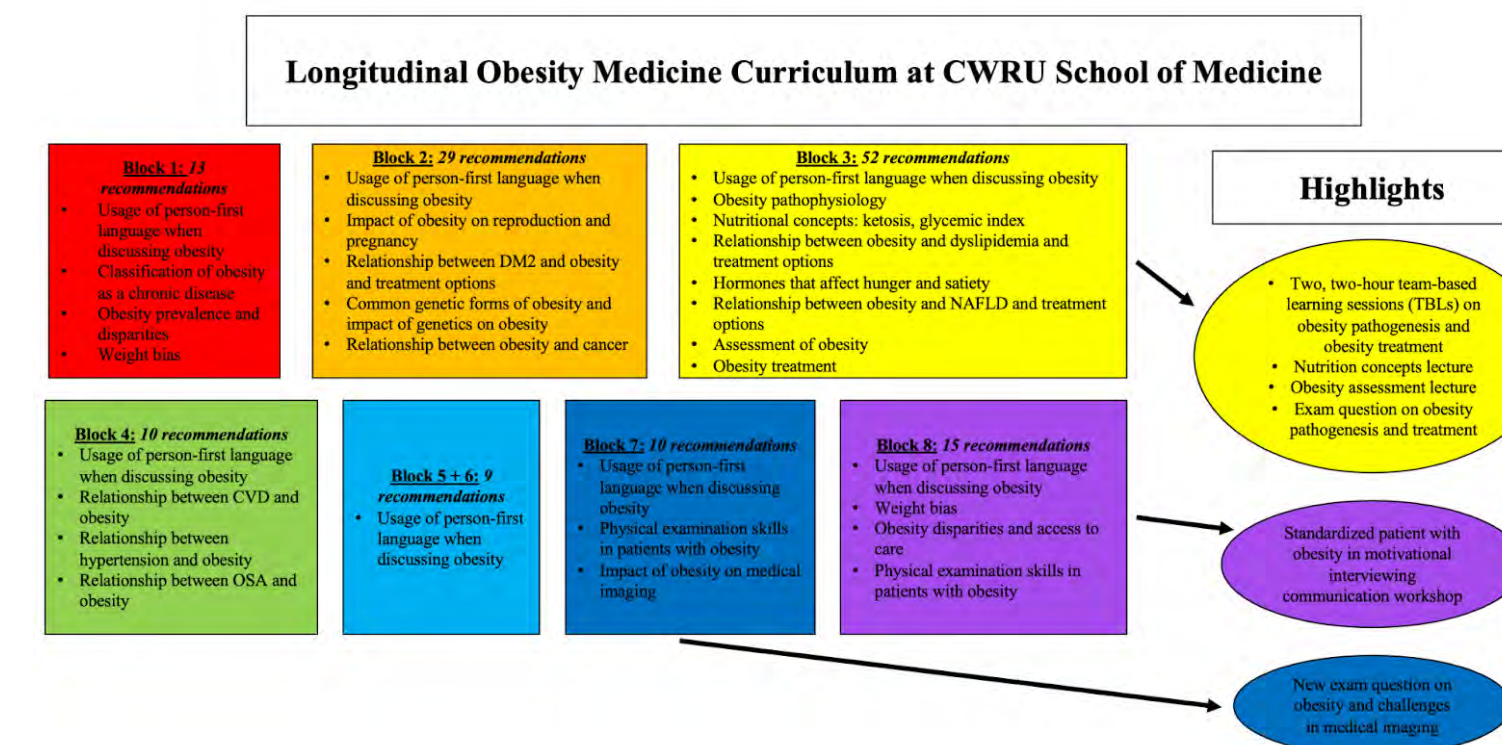


Figure 4: longitudinal obesity medicine curriculum



Figure 5: Team-based learning session on obesity pathogenesis held on November 17, 2021

## Lessons Learned

- How to lead a multidisciplinary group to accomplish a common goal.
- How to communicate with important stakeholders and advocate for curricular change.
- How to develop evidence-based, obesity-related educational materials for future healthcare professionals.

## Public Health Implications

- Despite the fact that obesity is one of the most pressing US public health concerns, there remains a lack of obesity education in medical training.
- There are few studies that create novel curricular components for obesity education in medical curricula.
- This study introduced both longitudinal improvements in obesity education, as well as a two-part seminar on obesity pathogenesis and treatment.
- This study provides a framework for other medical schools to adopt in order to improve obesity education nationally.
- Future studies will work to quantify the effect of these educational interventions on medical student obesity knowledge and attitudes.
- Improved obesity education at the medical school level will serve to create a generation of healthcare professionals that are more confident and competent in addressing the obesity epidemic.

## References

1. CDC. Obesity is a Common, Serious, and Costly Disease. Centers for Disease Control and Prevention. Published May 17, 2022. Accessed July 27, 2022. <https://www.cdc.gov/obesity/data/adult.html>
2. Ward ZJ, Bleich SN, Long MW, Gortmaker SL. Association of body mass index with health care expenditures in the United States by age and sex. *PLOS ONE*. 2021;16(3):e0247307. doi:10.1371/journal.pone.0247307
3. Vitolins MZ, Crandall S, Miller D, Ip E, Marion G, Spangler JG. Obesity Educational Interventions in U.S. Medical Schools: A Systematic Review and Identified Gaps. *Teach Learn Med*. 2012;24(3):10.1080/10401334.2012.692286. doi:10.1080/10401334.2012.692286
4. Metcalf M, Rossie K, Stokes K, Tanner B. The Perceptions of Medical School Students and Faculty Toward Obesity Medicine Education: Survey and Needs Analysis. *JMIR Med Educ*. 2017;3(2):e22. doi:10.2196/mededu.7361

## Acknowledgements

I would like to acknowledge the members of the focus group for their work in improving obesity medical education: Drs. Scott Butsch, Eileen Seeholzer, Katherine Lyons, Rosanna Watowicz, and Colleen Croniger. I would also like to acknowledge all of the block leaders in the CWRU School of Medicine curriculum for their cooperation and dedication in improving obesity medical education.