

11:709:481 Seminar in Nutrition

Childhood Obesity

Fall 2019

W 4th (2:15-3:35 PM)

Davison 216A, D/C Campus

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Human obesity is arguably *the* public health problem of the 21st Century. Current estimates place the number of obese individuals at over 600 million worldwide (World Health Organization, 2016). The goal of this course is to examine the multitude of factors that have led to this problem, with an emphasis on the precursors to adult obesity seen as early as infancy and childhood. As a seminar, we will depart from the traditional lecture-and-exam format, and instead endeavor to have all members of the class participate via informed discussion of the topics that have been selected for review. Regular attendance is therefore paramount, but to ensure “informed discussion,” assigned readings should be completed before class meetings, with questions prepared based on each reading to pose to the class.

Course requirements

1. Weekly attendance and participation: From weeks 3 through 14, each student will prepare three (3) questions for class discussion based on your assigned reading, which will be turned in after being addressed in class. Your attendance (2 points) and questions (3 points) over 12 weeks will count for 60 points.
2. Powerpoint presentation: In the latter half of the semester, each student will identify a recent empirical study of relevance to the week’s topic and prepare and deliver a 10-minute P/P presentation. The appropriateness of the article (10 points), clarity of slides (10 points), coherence of presentation (15 points), and fielding of questions (5) will count for 40 points.

Learning Objectives

After completing this course, students will be able to:

1. document the increase in child obesity rates over the last 50 years;
2. cite the myriad factors that have contributed to this epidemic;
3. identify ways in which risk for child obesity may be reduced;
4. argue for the importance of early intervention in preventing obesity; and not incidentally,
5. identify the strengths and weaknesses of studies on obesity.

Class dates and topics

Week 1

Defining the problem/Health implications

Week 2

Obesogenic environment

Kirk, S.F.L., Penney, T.L., & McHugh, T.-L.F. (2009). Characterizing the obesogenic environment: the state of the evidence with directions for future research. *Obesity Reviews*, *11*, 109-117. doi:10.1111/.1467-789X.2009.00611.x

Week 3

Microbiome

Indiani, C.M. dos S.P., Rizzardi, K.F., Castelo, P.M., Ferraz, L.F.C., Darrieux, M., & Parisotto, T.M. (2018). Childhood obesity and firmicutes/Bacteroidetes ratio in the gut microbiota: A systematic review. *Childhood Obesity*, *14*, 501-509. doi:10.1089/chi.2018.0040

Week 4

Rapid infant weight gain

Zheng, M., Lamb, K.E., Grimes, C., Laws, R., Bolton, K., Ong, K.K., & Campbell, K. (2017). Rapid weight gain during infancy and subsequent adiposity: a systematic review and meta-analysis of evidence. *Obesity Reviews*, *19*, 321-332. doi:10.1111/obr.12632

Week 5

Responsive feeding

DiSantis, K., Hodges, E.A., Johnson, S.L., & Fisher, J.O. (2011). The role of responsive feeding in overweight during infancy and toddlerhood: a systematic review. *International Journal of Obesity*, *35*, 480-492. doi:10.1038/ijo.2011.3

Week 6

Introduction of solid foods

Wang J., Wu, Y., Xiong, G., Chao, T., Jin, Q., *et al.* (2016). Introduction of complementary feeding before 4 months of age increase the risk of childhood overweight or obesity: a meta-analysis of prospective cohort studies. *Nutrition Research*, *53*, 759-770. doi.org/10.1016.03.003

Week 7

Skipping breakfast

Horikawa, C., Kodama, S., Yachi, Y., Heianza, Y., Hirasawa, R., *et al.* (2011). Skipping breakfast and prevalence of overweight and obesity in Asian and Pacific regions: a meta-analysis. *Preventive Medicine*, 53, 260-267. doi:10.1016/j.ypmed.2011.08.030

Week 8

Food insecurity

Eisenmann, J.C., Gundersen, C., Lohman, B.J., Garasky, S., & Stewart, S.D. (2011). Is food insecurity related to overweight and obesity in children and adolescents? A summary of studies, 1995-2009. *Obesity Reviews*, 12, e73-e83. doi:10.1111/j.1467-789x.2010.00820.x

Week 9

Temperament

Anzman-Frasca, S., Stifter, C.A., & Birch, L.L. (2012). Temperament and childhood obesity risk: a review of the literature. *Journal of Developmental & Behavioral Pediatrics*, 3, 732-745. doi: 10.1097/DBP.0b013e31826a119f

Week 10

Sleep

Chen, X., Beydoun, M.S., & Wang, Y. (2008). Is sleep duration associated with childhood obesity? A systematic review and meta-analysis. *Obesity*, 16, 265-274. doi:10.1038/oby.2007.63

Week 11

Parenting style

Sleddens, E.F.C., Gerards, S.M.P.L., Thijs, C., De Vries, N.K., & Kremers, S.P.J. (2011). General parenting, childhood overweight and obesity-inducing behaviors: a review. *International Journal of Pediatric Obesity*, 6, e12-3e27. doi: 10.3109/17477166.2011.566339

Week 12

Fast food

Rosenheck, R. (2008). Fast food consumption and increased caloric intake: a systematic review of a trajectory towards weight gain and obesity risk. *Obesity Reviews*, 9, 535-547. doi: 10.1111/j.1467-789X.2008.00477.x

Week 13

Sugar-sweetened beverages

Malik, V.S., Pan, A., Willett, W.C., & Hu, F. B. (2013) Sugar-sweetened beverages and weight gain in children and adults: a systematic review and meta-analysis. *American Journal of Clinical Nutrition*, 98, 1084-1102. doi.org/10.3945/ajcn.113.058362

Week 14

Sedentary behaviors

Tremblay, M.S., LeBlanc, A.G., Kho, M., Saunders, T.J., Larouche, R., *et al.* (2011). Systematic review of sedentary behavior and health indicators in school-aged children and youth. *International Journal of Behavioral Nutrition and Physical Activity*, 8, 98.
doi: 10.1186/1479-5868-8-98