

DIET AND CANCER – NUTR /EPID 815

FALL 2006

Tuesdays and Thursdays 2:00-3:15
2304 McGavran-Greenberg Hall

Course Overview

The goals of this course are to explore concepts in diet and cancer research and their applications and to provide skills for understanding and critically evaluating the epidemiologic literature in this area. Course participants will also acquire knowledge regarding what is currently known about the relationships between various dietary factors and cancer risk. However, we will not discuss dietary risk factors for every cancer type, nor will students be expected to know all the dietary constituents associated with every cancer. Rather, the emphasis is on conceptual knowledge, critical thinking, and the practical application of diet and cancer theory.

Learning Objectives

Upon completion of the course, participants will:

1. Acquire knowledge regarding what is currently known about relationships between dietary factors and cancer risk (incidence, mortality, and survival)
2. Be able to review and critically evaluate the diet and cancer literature with regards to dietary assessment methodology, epidemiologic study designs, statistical approaches, and strengths and limitations
3. Be able to critically think through and practically apply diet and cancer theory.
4. Be able to debate unresolved and/or controversial topics on diet and cancer, and synthesize their findings and conclusions.

Course Description

The course will incorporate both lectures and discussions. Grades will be based on two in-class quizzes, a debate, a take-home final exam, and class participation. The two quizzes will cover material presented in class and the assigned readings. Students will be also called upon to critically evaluate, present, and debate “controversial” topics in diet and cancer and to synthesize their analyses into executive summaries. The final exam will reflect how well students have incorporated the concepts covered throughout the course. Preparation through reading the required material for each session will be expected and student involvement in discussions, which are part of each session, are considered an essential part of the class. The classroom learning environment will be interactive.

Course Instructors: Jessie Satia PhD, MPH
2209 McGavran-Greenberg
843-3641
jsatia@unc.edu

Teaching Assistant: Patrick Bradshaw
patrickb@email.unc.edu

Office Hours: By appointment

Prerequisites: NUTR/EPID 259, EPID 234 or equivalents, or by permission of the course instructor.

Credits: Three, graded.

Required text:

There is no assigned textbook for this course. There are assigned required readings for each class session.

Course Requirements/Grading:

Class participation	10%
Quiz I:	15%
Quiz II:	15%
Debates (presentation and executive summary)	25%
Final Exam	35%

DIET AND CANCER – NUTR/EPID 815

FALL 2006
Tuesdays and Thursdays 2:00-3:15
2304 McGavran-Greenberg Hall

DATE	LECTURE TOPIC	LECTURER	COMMENTS
Thursday August 24	Introduction/Overview of diet and cancer	J. Satia	
Tuesday August 29	Cancer epidemiology	A. Olshan	
Thursday August 31	Review: Dietary assessment and study designs in cancer research <i>Present overview of debates</i>	J. Satia	
Tuesday September 5	Molecular/genetic epidemiology of cancer	T. Keku	JESSIE OUT
Thursday September 7	Worldwide cancer trends and patterns (incidence, mortality, survival)	J. Watters	JESSIE OUT
Tuesday September 12	Racial/ethnic disparities in diet and cancer	J. Satia	
Thursday September 14	Cohort studies of diet and cancer	J. Satia	
Tuesday September 19	Colorectal cancer	R. Sandler	JESSIE OUT
Thursday September 21	Prostate cancer	P. Spain	
Tuesday September 26	Breast cancer	J. Peppercorn	
Thursday September 28	QUIZ I		
Tuesday October 3	Diet and colorectal cancer	J. Satia	
Thursday October 5	Diet and prostate cancer	J. Satia	
Tuesday October 10	Diet and breast and lung cancers	J. Satia	
Thursday October 12	Diet and Cancer Survivorship <i>Finalize debate topics</i>	J. Satia	
Tuesday October 17	Statistical issues in diet and cancer research	P. Bradshaw	
Thursday October 19	N/A	N/A	NO CLASS (FALL RECESS)
Tuesday October 24	Diet/gene interactions in cancer	T. Keku	
Thursday October 26	Clinical trials in diet and cancer	J. Satia	
Tuesday October 31	Case-studies in diet and cancer research <i>Present Overview of Final Exam</i>	P. Bradshaw/J. Satia	
Thursday November 2	Obesity/adiposity and cancer	M. Gammon	
Tuesday November 7	Physical activity and cancer	P. Bradshaw	JESSIE OUT
Thursday November 9	QUIZ II		JESSIE OUT
Tuesday November 14	Intervention studies of diet and cancer	M. Campbell	
Thursday November 16	Controversies in Diet and Cancer: Debate 1		
Tuesday November 21	Controversies in Diet and Cancer: Debate 2 <i>Hand in Abstract for Final Exam</i>		
Thursday November 23	N/A	N/A	NO CLASS (THANKSGIVING)
Tuesday November 28	Case studies in diet and cancer <i>Final Exam handed out</i>	J. Satia/P. Bradshaw	
Thursday November 30	Summary/Feedback and Course Evaluations	J. Satia	
Tuesday December 5	<i>Final Exam (Report) due at 1pm</i>		LAST DAY OF CLASS

DIET AND CANCER – NUTR/EPID 815

FALL 2006
Tuesdays and Thursdays 2:00-3:15
2304 McGavran-Greenberg Hall

Thursday August 24	<p>Introduction/Overview of diet and cancer</p> <p>Williams MT, Hord NG. The role of dietary factors in cancer prevention: beyond fruits and vegetables. <i>Nutr Clin Pract.</i> 2005 Aug;20(4):451-9.</p> <p>Key TJ, Schatzkin A, Willett WC, et al. Diet, nutrition and the prevention of cancer. <i>Public Health Nutr.</i> 2004 Feb;7(1A):187-200.</p>	J. Satia
Tuesday August 29	<p>Cancer epidemiology</p> <p>No readings</p>	A. Olshan
Thursday August 31	<p>Review: Dietary assessment and study designs in cancer research</p> <p>Barrett-Connor E. Nutritional epidemiology: How do we know what they ate? <i>Am J Clin Nutr</i> 1991; 54:182S-7S</p> <p>Temple NJ. Nutrition and disease: challenges of research design. <i>Nutrition.</i> 2002 Apr;18(4):343-7.</p> <p>Prentice RL, Sugar E, Wang CY, et al. Research strategies and the use of nutrient biomarkers in studies of diet and chronic disease. <i>Public Health Nutr.</i> 2002 Dec;5(6A):977-84.</p> <p><i>Optional</i></p> <p>Bingham SA. Limitations of the various methods for collecting dietary intake data. <i>Ann Nutr Metab</i> 1991;35(3):117-27.</p> <p>Ernst E. The role of complementary and alternative medicine in cancer. <i>Lancet Oncol</i> 2000 Nov;1:176-80.</p> <p><i>Present overview of debates</i></p>	J. Satia
Tuesday September 5	<p>Molecular/genetic epidemiology of cancer (including carcinogenesis)</p> <p>Hanahan D and Weinberg RA. The hallmarks of cancer. <i>Cell.</i> 2000 Jan; 100:57-70</p>	T. Keku

	Peto J. Cancer epidemiology in the last century and the next decade. <i>Nature</i> . 2001 May; 411: 390-395.	
Thursday September 7	<p>Cancer trends and patterns (incidence, mortality, survival)</p> <p>Jones JA, Hajek RA, Iammarino NK, and Laufman L. Between and Within: International Perspectives on Cancer and Health Disparities Lovell A. <i>JCO</i> May 10 2006: 2204--2208.</p> <p>Cancer Trends Progress Report-2005 Update, National Cancer Institute. NIH, DHHS, Bethesda, MD. December 2005, http://progressreport.cancer.gov.</p>	J. Watters
Tuesday September 12	<p>Racial/ethnic disparities in diet and cancer</p> <p>Kolonel LN, Altshuler D, Henderson BE. The multiethnic cohort study: exploring genes, lifestyle and cancer risk. <i>Nat Rev Cancer</i>. 2004 Jul;4(7):519-27.</p> <p>Huang MH, Schocken M, Block G, et al. Variation in nutrient intakes by ethnicity: results from the Study of Women's Health Across the Nation (SWAN). <i>Menopause</i>. 2002 Sep-Oct;9(5):309-19.</p> <p>Hsiao AF, Wong MD, Goldstein MS, et al. Variation in complementary and alternative medicine (CAM) use across racial/ethnic groups and the development of ethnic-specific measures of CAM use. <i>J Altern Complement Med</i>. 2006 Apr;12(3):281-90.</p>	J. Satia
Thursday September 14	<p>Cohort studies of diet and cancer</p> <p>Riboli E and Kaaks R. The EPIC Project: rationale and study design. <i>European Prospective Investigation into Cancer and Nutrition</i>. <i>Int J Epidemiol</i> 1997;26(suppl 1):S6–14.</p> <p>Smith-Warner SA, Spiegelman D, Ritz J, et al. Methods for pooling results of epidemiologic studies: the Pooling Project of Prospective Studies of Diet and Cancer. <i>Am J Epidemiol</i>. 2006 Jun 1;163(11):1053-64.</p> <p>White E, Patterson RE, Kristal AR, et al. VITamins And Lifestyle cohort study: study design and characteristics of supplement users. <i>Am J Epidemiol</i>. 2004 Jan 1;159(1):83-93.</p>	J. Satia
Tuesday September 19	<p>Colorectal cancer</p> <p>Handout: Colorectal Cancer prepared by Dr. Sandler (see</p>	R. Sandler

	Blackboard website entry for this lecture)	
Thursday September 21	<p>Prostate cancer</p> <p>Carson CC. Carcinoma of the prostate: overview of the most common malignancy in men. <i>NC Med J.</i> 2006; 67(2): 122-127.</p> <p>Gosselaar C, Roobol MJ, Roemeling S, et al. Screening for prostate cancer without digital rectal examination and transrectal ultrasound: results after four years in the European Randomized Study of Screening for Prostate Cancer (ERSPC), Rotterdam. <i>The Prostate</i> 2006; 66: 625-631.</p> <p>Andriole GL, Levin DL, Crawford LE, et al. Prostate cancer screening in the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial: findings from the initial screening round of a randomized trial. <i>Journal of the National Cancer Institute</i> 2005; 97(6): 433-438.</p> <p>ESRPC Frequently Asked Questions.</p>	P. Spain
Tuesday September 26	<p>Breast cancer</p> <p>Veronesi U, Boyle P, Goldhirsch A et al. <i>Breast Cancer. Lancet</i> 2005; 365: 1727-41.</p>	J. Peppercorn
Thursday September 28	QUIZ I	J. Satia
Tuesday October 3	<p>Studies of diet and colorectal cancer</p> <p>Bruce WR, Giacca A, Medline A. Possible mechanisms relating diet to colorectal cancer risk. <i>IARC Sci Publ.</i> 2002;156:277-81.</p> <p>van den Brandt PA, Goldbohm RA. Nutrition in the prevention of gastrointestinal cancer. <i>Best Pract Res Clin Gastroenterol.</i> 2006 Jun;20(3):589-603.</p> <p>Satia-Abouta J, Galanko JA, Potter JD, et al. Associations of total energy and macronutrients with colon cancer risk in African Americans and Whites: results from the North Carolina colon cancer study. <i>Am J Epidemiol.</i> 2003 Nov 15;158(10):951-62.</p>	J. Satia
Thursday October 5	<p>Studies of diet and prostate cancer</p> <p>Chan JM, Gann PH, Giovannucci EL. Role of diet in prostate cancer development and progression. <i>J Clin Oncol.</i> 2005 Nov 10;23(32):8152-60.</p> <p>Wilkinson S, Chodak GW. Critical review of complementary therapies for prostate cancer. <i>J Clin Oncol.</i> 2003 Jun</p>	J. Satia

	<p>1;21(11):2199-210.</p> <p>Willis MS, Wians FH. The role of nutrition in preventing prostate cancer: a review of the proposed mechanism of action of various dietary substances. Clin Chim Acta. 2003 Apr;330(1-2):57-83.</p>	
Tuesday October 10	<p>Studies of diet and breast and lung cancers</p> <p>Holmes MD, Willett WC. Does diet affect breast cancer risk? Breast Cancer Res. 2004;6(4):170-8.</p> <p>Nahleh Z, Tabbara IA. Complementary and alternative medicine in breast cancer patients. Palliat Support Care. 2003 Sep;1(3):267-73.</p> <p>Hanf V, Gonder U. Nutrition and primary prevention of breast cancer: foods, nutrients and breast cancer risk. Eur J Obstet Gynecol Reprod Biol. 2005 Dec 1;123(2):139-49.</p> <p>Cho E, Hunter DJ, Spiegelman D, et al. Intakes of vitamins A, C and E and folate and multivitamins and lung cancer: a pooled analysis of 8 prospective studies. Int J Cancer. 2006 Feb 15;118(4):970-8.</p> <p>Miller AB, Altenburg HP, Bueno-de-Mesquita B, et al. Fruits and vegetables and lung cancer: Findings from the European Prospective Investigation into Cancer and Nutrition. Int J Cancer. 2004 Jan 10;108(2):269-76.</p>	J. Satia
Thursday October 12	<p>Diet and cancer survivorship</p> <p>Satia JA, Campbell MK, Galanko JA, et al. Longitudinal changes in lifestyle behaviors and health status in colon cancer survivors. Cancer Epidemiol Biomarkers Prev. 2004 Jun;13(6):1022-31.</p> <p>Greenlee H, White E, Patterson RE, et al. Supplement use among cancer survivors in the Vitamins and Lifestyle (VITAL) study cohort. J Altern Complement Med. 2004 Aug;10(4):660-6.</p> <p>Pinto BM, Trunzo JJ. Health behaviors during and after a cancer diagnosis. Cancer. 2005 Dec 1;104(11 Suppl):2614-23.</p> <p><i>Finalize debate topics</i></p>	J. Satia/ P. Bradshaw
Tuesday October 17	<p>Statistical issues in diet and cancer research</p> <p>Spiegelman D, McDermott A, and Rosner B, Regression calibration method for correcting measurement-error bias in nutritional epidemiology. Am J Clin Nutr, 1997. 65(4 Suppl): p. 1179S-1186S.</p>	P. Bradshaw

	<p>Prentice RL, Measurement error and results from analytic epidemiology: dietary fat and breast cancer. J Natl Cancer Inst, 1996. 88(23): p. 1738-47.</p> <p>Rosner B and Gore R, Measurement error correction in nutritional epidemiology based on individual foods, with application to the relation of diet to breast cancer. Am J Epidemiol, 2001. 154(9): p. 827-35.</p> <p><i>Optional</i></p> <p>Chapter 12 in Willett WC. Nutritional Epidemiology, 2nd Ed. 1998. New York: Oxford University Press, pp302-320.</p>	
Thursday October 19	NO CLASS (FALL RECESS)	N/A
Tuesday October 24	<p>Diet/gene interactions in cancer</p> <p>Heavey PM, McKenna D, and Rowland IR. Colorectal cancer and the relationship between genes and the environment. Nutr Cancer, 2004. 48(2): p. 124-41.</p>	T. Keku
Thursday October 26	<p>Clinical trials in diet and cancer</p> <p>GS Omenn, Goodman GE, Thornquist MD, et al. Risk factors for lung cancer and for intervention effects in CARET, the beta-carotene and retinol efficacy trial. JNCI 1996;88:1550-9.</p> <p>Klein EA, Lippman SM, Thompson IM, et al. The selenium and vitamin E cancer prevention trial. World J Urol. 2003 May;21(1):21-7.</p> <p><i>Optional</i></p> <p>Greenwald P. Clinical trials in cancer prevention: current results and perspectives for the future. J Nutr. 2004 Dec;134(12 Suppl):3507S-3512S.</p> <p>Baron J, Beach M, Mandel J, et al. Calcium supplements for the prevention of colorectal adenomas. N Engl J Med 1999; 340: 101-7.</p>	J. Satia
Tuesday October 31	<p>Case-studies in diet and cancer research</p> <p>Larsson SC, Hakansson N, Naslund I, et al. Fruit and vegetable consumption in relation to pancreatic cancer risk: a prospective study. Cancer Epidemiol Biomarkers Prev. 2006 Feb;15(2):301-5.</p>	P. Bradshaw/ J. Satia

	McCann SE, Ambrosone CB, Moysich KB, et al. Intakes of selected nutrients, foods, and phytochemicals and prostate cancer risk in western New York. <i>Nutr Cancer</i> . 2005;53(1):33-41. <i>Present Overview of Final Exam</i>	
Thursday November 2	Obesity/Adiposity and cancer <i>READINGS TBA</i>	M. Gammon
Tuesday November 7	Physical activity and cancer McTiernan A, Ulrich C, Slate S, et al., Physical activity and cancer etiology: associations and mechanisms. <i>Cancer Causes Control</i> , 1998. 9(5): p. 487-509. Thune I and Furberg AS, Physical activity and cancer risk: dose-response and cancer, all sites and site-specific. <i>Med Sci Sports Exerc</i> , 2001. 33(6 Suppl): p. S530-50; discussion S609-10. Friedenreich CM and Orenstein MR, Physical activity and cancer prevention: etiologic evidence and biological mechanisms. <i>J Nutr</i> , 2002. 132(11 Suppl): p. 3456S-3464S.	P. Bradshaw
Thursday November 9	QUIZ II	
Tuesday November 14	Intervention studies of diet and cancer Campbell MK, Guerisch J, Sutherland L. Interventions to Modify Dietary Behaviors for Cancer Prevention and Control. In <i>Handbook of Behavioral Oncology</i> (Chapter 10). In press.	M. Campbell
Thursday November 16	Controversies in Diet and Cancer: Debate 1	
Tuesday November 21	Controversies in Diet and Cancer: Debate 2 Adolescent dietary patterns and future breast cancer risk <i>Hand in Abstract for Final Exam</i>	Amy Paxton, Rachel Tabak, Greg Wheat, Daniel Canos and Sarah Cohen
Thursday November 23	NO CLASS	N/A
Tuesday November 28	Case-studies in diet and cancer research Zhang M, Xie X, Lee AH, et al. Soy and isoflavone intake are associated with reduced risk of ovarian cancer in southeast china. <i>Nutr Cancer</i> . 2004;49(2):125-30. Beresford SA, Johnson KC, Ritenbaugh C, et al. Low-fat dietary pattern and risk of colorectal cancer: the Women's Health Initiative Randomized Controlled Dietary Modification Trial.	J. Satia/ P. Bradshaw

	JAMA. 2006 Feb 8;295(6):643-54. <i>Final Exam handed out</i>	
Thursday November 30	Summary/Feedback and Course Evaluations	J. Satia
Tuesday December 5	<i>FINAL EXAM (REPORT) DUE AT 1:00pm</i>	N/A