Search Plan and Results

Question

What is the relationship between eating out and body weight? (DGAC 2010)

Date Searched

1/4/2010

Inclusion Criteria

- January 2000 to present
- Systematic reviews and meta-analysis, randomized controlled trials or clinical controlled studies, large nonrandomized observational studies, cohort, case-control studies
- Human subjects
- The sample size must equal 10 adults for each study group. For example, this would include 10 patients in the intervention group and 10 patients in the control or comparison group
- Less than 20%; preference for smaller dropout rates
- English language
- International
- *Ages:* Children under age 18 years; adults 19 years and older
- *Populations:* Healthy and those with elevated chronic disease risk and p

Exclusion Criteria

- Medical treatment or therapy
- Cross-sectional studies
- Narrative reviews, cross-sectional studies
- Diseased subjects (already diagnosed with disease related to study purpose)
- Hospitalized patients
- Malnourished and third-world populations or disease incidence not relative to US population (e.g., malaria)
- Animal studies
- In vitro studies
- Articles not peer reviewed (websites, magazine articles, Federal reports, etc.).

Search Terms: Search Vocabulary

("eating"[MeSH Terms] OR "eating out"[All Fields] OR dining OR eating outdoor*[All Fields] OR eating outlet*[All Fields]) AND ((away[All Fields] AND home) OR out OR restaurant* OR fast food*) AND ("Body Fat Distribution"[Mesh] OR "body

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

weight"[mh] OR "Body Mass Index"[mh] OR "Overweight"[mh] OR "Obesity"[mh] OR "Waist-Hip Ratio"[Mesh]).

(Eating OR food) AND ((away[All Fields] AND home) OR restaurant* OR fast food*) AND ("Body Fat Distribution"[Mesh] OR "body weight"[mh] OR "Body Mass Index"[mh] OR "Overweight"[mh] OR "Obesity"[mh] OR "Waist-Hip Ratio"[Mesh]).

Electronic Databases

PubMed.

Total hits from all electronic database searches: 477

Total articles identified to review from electronic databases: 111

Articles Identified Via Handsearch or Other Means

Articles included via hand search: Two

Summary of Articles Identified to Review

Number of Primary Articles Identified: 9

Number of Review Articles Identified: 1

Total Number of Articles Identified: 10

Number of Articles Reviewed but Excluded: 103

List of Articles Included for Evidence Analysis

CHILDREN (6)

Systematic Reviews / Meta-Analyses (1)

Rosenheck R. Fast food consumption and increased caloric intake: A systematic review of a trajectory towards weight gain and obesity risk. *Obes Rev.* 2008 Nov; 9 (6): 535-547. Epub 2008 Mar 14. Review. PMID: 18346099. (Children/Adults)

Prospective Cohort Studies (5)

Bisset S, Gauvin L, Potvin L, Paradis G. Association of body mass index and dietary restraint

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

with changes in eating behaviour throughout late childhood and early adolescence: A five-year study. *Public Health Nutr.* 2007 Aug; 10 (8): 780-789. Epub 2007 Mar 7. PMID: 17381909.

Haines J, Neumark-Sztainer D, Wall M, Story M. Personal, behavioral and environmental risk and protective factors for adolescent overweight. *Obesity* (Silver Spring). 2007 Nov; 15 (11): 2, 748-2, 760. PMID: 18070766.

Niemeier HM, Raynor HA, Lloyd-Richardson EE, Rogers ML, Wing RR. Fast food consumption and breakfast skipping: Predictors of weight gain from adolescence to adulthood in a nationally representative sample. *J Adolesc Health*. 2006 Dec; 39 (6): 842-849. Epub 2006 Sep 27. PMID: 17116514. (Children/Adults)

Taveras EM, Berkey CS, Rifas-Shiman SL, Ludwig DS, Rockett HR, Field AE, Colditz GA, Gillman MW. Association of consumption of fried food away from home with body mass index and diet quality in older children and adolescents. *Pediatrics.* 2005 Oct; 116 (4): e518-24. PMID: 16199680.

Thompson OM, Ballew C, Resnicow K, Must A, Bandini LG, Cyr H, Dietz WH. Food purchased away from home as a predictor of change in BMI z-score among girls. *Int J Obes Relat Metab Disord.* 2004 Feb; 28 (2): 282-289. PMID: 14647177.

ADULTS (6)

Systematic Reviews / Meta-Analyses (1)

Rosenheck R. Fast food consumption and increased caloric intake: A systematic review of a trajectory towards weight gain and obesity risk. *Obes Rev.* 2008 Nov; 9 (6): 535-547. Epub 2008 Mar 14. Review. PMID: 18346099. (Children/Adults)

Prospective Cohort Studies (5)

Duffey KJ, Gordon-Larsen P, Jacobs DR Jr, Williams OD, Popkin BM. Differential associations of fast food and restaurant food consumption with three-year change in body mass index: The Coronary Artery Risk Development in Young Adults Study. *Am J Clin Nutr.* 2007 Jan; 85(1): 201-208. PMID: 17209197.

French SA et al. Fast food restaurant use among women in the Pound of Prevention study: Dietary, behavioral and demographic correlates. *Int J Obes Relat Metab Disord.* 2000 Oct; 24 (10): 1, 353-1, 359. PMID: 11093299.

Li F, Harmer P, Cardinal BJ, Bosworth M, Johnson-Shelton D, Moore JM, Acock A, Vongjaturapat N. Built environment and one-year change in weight and waist circumference in middle-aged and older adults: Portland Neighborhood Environment and Health Study. *Am J Epidemiol.* 2009 Feb 15; 169 (4): 401-408. Epub 2009 Jan 19. PMID: 19153214.

Niemeier HM, Raynor HA, Lloyd-Richardson EE, Rogers ML, Wing RR. Fast food consumption and breakfast skipping: Predictors of weight gain from adolescence to adulthood in a nationally representative sample. *J Adolesc Health.* 2006 Dec; 39 (6): 842-849. Epub 2006 Sep 27. PMID: 17116514. (Children/Adults)

Pereira MA, Kartashov AI, Ebbeling CB, Van Horn L, Slattery ML, Jacobs DR Jr, Ludwig DS. Fast-food habits, weight gain and insulin resistance (the CARDIA study): 15-year prospective analysis. *Lancet.* 2005 Jan 1-7; 365 (9453): 36-42. Erratum in: *Lancet.* 2005 Mar 16; 365 (9464): 1, 030. PMID: 15639678.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

List of Excluded Articles with Reason

Article (A-K)	Reason for Exclusion
Agarwal SK, Misra A, Aggarwal P, Bardia A, Goel R, Vikram NK, Wasir JS, Hussain N, Ramachandran K, Pandey RM. Waist circumference measurement by site, posture, respiratory phase and meal time: Implications for methodology. *Obesity (Silver Spring).* 2009 May; 17 (5): 1, 056-1, 061. Epub 2009 Jan 22. PMID: 19165166.	Study design is cross-sectional; did not answer question; did not examine relationship between eating out and weight.
Allen KN, Taylor JS, Kuiper R. Effectiveness of nutrition education on fast food choices in adolescents. *J Sch Nurs.* 2007 Dec; 23 (6): 337-341. PMID: 18052519.	Did not answer question; did not examine relationship between eating out and weight.
Astrup A. Super-sized and diabetic by frequent fast-food consumption? *Lancet.* 2005 Jan 1-7; 365 (9453): 4-5. No abstract available. PMID: 15639659.	Study is a commentary.
Ayala GX, Rogers M, Arredondo EM, Campbell NR, Baquero B, Duerksen SC, Elder JP. Away-from-home food intake and risk for obesity: Examining the influence of context. *Obesity (Silver Spring).* 2008 May; 16 (5): 1, 002-1, 008. Epub 2008 Feb 28. PMID: 18309297.	Study design is cross-sectional.
Beydoun MA, Powell LM, Wang Y. Reduced away-from-home food expenditure and better nutrition knowledge and belief can improve quality of dietary intake among US adults. *Public Health Nutr.* 2009 Mar; 12(3): 369-381. Epub 2008 Apr 22. PMID: 18426638.	Did not include weight in analyses; study design is cross-sectional.
Bilyk MC, Sontrop JM, Chapman GE, Barr SI, Mamer L. Food experiences and eating patterns of visually impaired and blind people. *Can J Diet Pract Res.* 2009 Spring; 70 (1): 13-18. PMID: 19261202.	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Binkley JK, Eales J, Jekanowski M. The relation between dietary change and rising US obesity. *Int J Obes Relat Metab Disord.* 2000 Aug; 24 (8): 1, 032-1, 039. PMID: 10951543.	Study design is cross-sectional.
Birch LL, Davison KK. Family environmental factors influencing the developing behavioral controls of food intake and childhood overweight. *Pediatr Clin North Am.* 2001 Aug; 48 (4): 893-907. Review. PMID: 11494642.	Study is a narrative review; did not answer question; did not examine relationship between eating out and weight.
Boutelle KN, Fulkerson JA, Neumark-Sztainer D, Story M, French SA. Fast food for family meals: relationships with parent and adolescent food intake, home food availability and weight status. *Public Health Nutr.* 2007 Jan; 10 (1): 16-23. PMID: 17212838.	Study design is cross-sectional.
Bray GA, Most M, Rood J, Redmann S, Smith SR. Hormonal responses to a fast-food meal compared with nutritionally comparable meals of different composition. *Ann Nutr Metab.* 2007; 51 (2): 163-171. Epub 2007 May 29. PMID: 17536194.	Did not answer question; did not examine relationship between eating out and weight.
Briefel RR, Wilson A, Gleason PM. Consumption of low-nutrient, energy-dense foods and beverages at school, home and other locations among school lunch participants and non-participants. *J Am Diet Assoc.* 2009 Feb; 109 (2 Suppl): S79-S90. PMID: 19166676.	Does not include weight in analyses; study design is cross-sectional.
Burdette HL, Whitaker RC. Neighborhood playgrounds, fast food restaurants, and crime: Relationships to overweight in low-income preschool children. *Prev Med.* 2004 Jan; 38 (1): 57-63. PMID: 14672642.	Does not include eating out in analyses.
Burns C, Jackson M, Gibbons C, Stoney RM. Foods prepared outside the home: Association with selected nutrients and body mass index in adult Australians. *Public Health Nutr.* 2002 Jun; 5 (3): 441-448. PMID: 12003656.	Study design is cross-sectional.
Burton P, Smit HJ, Lightowler HJ. The influence of restrained and external eating patterns on overeating. *Appetite.* 2007 Jul; 49 (1): 191-197. Epub 2007 Feb 11. PMID: 17349717.	Does not include eating out in analyses; study design is cross-sectional.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Casey AA, Elliott M, Glanz K, Haire-Joshu D, Lovegreen SL, Saelens BE, Sallis JF, Brownson RC. Impact of the food environment and physical activity environment on behaviors and weight status in rural U.S. communities. *Prev Med.* 2008 Dec; 47 (6): 600-604. Epub 2008 Oct 11. PMID: 18976684.	Study design is cross-sectional.
Cheng TO. Compensation for energy intake from fast food among overweight and lean adolescents. *JAMA.* 2004 Sep 15; 292 (11): 1, 304; author reply 1, 304. No abstract available. PMID: 15367549.	Study is a letter to the editor.
Chung S, Popkin BM, Domino ME, Stearns SC. Effect of retirement on eating out and weight change: An analysis of gender differences. *Obesity (Silver Spring).* 2007 Apr; 15 (4): 1, 053-1, 060. PMID: 17426342.	Did not include weight in analyses.
Cohen DA, Sturm R. Body mass index is increasing faster among taller persons. *Am J Clin Nutr.* 2008 Feb; 87 (2): 445-448. PMID: 18258637.	Did not include eating out in analyses.
Colapinto CK, Fitzgerald A, Taper LJ, Veugelers PJ. Children's preference for large portions: Prevalence, determinants and consequences. *J Am Diet Assoc.* 2007 Jul; 107 (7): 1, 183-1, 190. PMID: 17604749.	Does not include eating out in analyses; study design is cross-sectional.
Cornelisse-Vermaat JR, van den Brink HM. Ethnic differences in lifestyle and overweight in the Netherlands. Obe*sity (Silver Spring).* 2007 Feb; 15 (2): 483-493. PMID: 17299122.	Study design is cross-sectional.
Cottone E, Byrd-Bredbenner C. Knowledge and psychosocial effects of the film super size me on young adults. *J Am Diet Assoc.* 2007 Jul; 107 (7): 1, 197-1, 203.PMID: 17604751.	Did not answer question; did not examine relationship between eating out and weight.
Crawford DA, Timperio AF, Salmon JA, Baur L, Giles-Corti B, Roberts RJ, Jackson ML, Andrianopoulos N, Ball K. Neighbourhood fast food outlets and obesity in children and adults: The CLAN Study. *Int J Pediatr Obes.* 2008; 3 (4): 249-256. PMID: 18608630.	Did not include weight in analyses; study design is cross-sectional.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Creel JS, Sharkey JR, McIntosh A, Anding J, Huber JC Jr. Availability of healthier options in traditional and non-traditional rural fast-food outlets. *BMCPublic Health.* 2008 Nov 28; 8: 395. PMID: 19040722.	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional.
Dave JM, An LC, Jeffery RW, Ahluwalia JS. Relationship of attitudes toward fast food and frequency of fast-food intake in adults. *Obesity (Silver Spring).* 2009 Jun; 17 (6): 1, 164-1, 170. Epub 2009 Feb 26. PMID: 19247277.	Did not include weight in analyses; study design is cross-sectional.
Davis B, Carpenter C. Proximity of fast-food restaurants to schools and adolescent obesity. *Am J Public Health.* 2009 Mar; 99 (3): 505-510. Epub 2008 Dec 23. PMID: 19106421.	Did not include eating out in analyses; study design is cross-sectional.
Downs SM, Arnold A, Marshall D, McCargar LJ, Raine KD, Willows ND. Associations among the food environment, diet quality and weight status in Cree children in Québec. *Public Health Nutr.* 2009 Sep;12(9): 1, 504-1, 111. Epub 2009 Jan 15. PMID: 19144239.	Study design is cross-sectional.
Duerksen SC, Elder JP, Arredondo EM, Ayala GX, Slymen DJ, Campbell NR, Baquero B. Family restaurant choices are associated with child and adult overweight status in Mexican-American families. *J Am Diet Assoc.* 2007 May; 107 (5): 849-853. PMID: 17467384.	Study design is cross-sectional.
Ebbeling CB, Sinclair KB, PereiraMA, Garcia-Lago E, Feldman HA, Ludwig DS. Compensation for energy intake from fast food among overweight and lean adolescents. *JAMA.* 2004 Jun 16; 291 (23): 2, 828-2, 833. PMID: 15199032.	Did not answer question; did not examine relationship between eating out and weight.
Elinder LS, Jansson M. Obesogenic environments--aspects on measurement and indicators. *Public Health Nutr.* 2009 Mar; 12 (3): 307-315. Epub 2008 May 23. PMID: 18498677.	Did not answer question; did not examine relationship between eating out and weight.
Farghaly NF, Ghazali BM, Al-Wabel HM, Sadek AA, Abbag FI. Life style and nutrition and their impact on health of Saudi school students in Abha, Southwestern region of Saudi Arabia. *Saudi Med J.* 2007 Mar; 28 (3): 415-421. PMID: 17334472.	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Francis DK, Van den Broeck J, Younger N, McFarlane S, Rudder K, Gordon-Strachan G, Grant A, Johnson A, Tulloch-Reid M, Wilks R. Fast-food and sweetened beverage consumption: Association with overweight and high waist circumference in adolescents. *Public Health Nutr.* 2009 Aug; 12 (8): 1, 106-1, 114. Epub 2009 Feb 26. PMID: 19243675.	Study design is cross-sectional.
Frank L, Kerr J, Saelens B, Sallis J, Glanz K, Chapman J. Food outlet visits, physical activity and body weight: Variations by gender and race-ethnicity. *Br J Sports Med.* 2009 Feb; 43 (2): 124-131. Epub 2008 Nov 28. PMID: 19042921.	Study design is cross-sectional.
Frazier DA. The link between fast food and the obesity epidemic. *Health Matrix Clevel.* 2007 Spring; 17 (2): 291-317. PMID: 18326394.	Did not answer question; did not examine relationship between eating out and weight.
French SA, Story M, Jeffery RW. Environmental influences on eating and physical activity. *Annu Rev Public Health.* 2001; 22: 309-335. Review. PMID: 11274524.	Study is a chapter/narrative review; did not answer question; did not examine relationship between eating out and weight.
Gillis LJ, Bar-Or O. Food away from home, sugar-sweetened drink consumption and juvenile obesity. *J Am Coll Nutr.* 2003 Dec; 22 (6): 539-545. PMID: 14684760.	Study design is cross-sectional.
Gonzales EN, MarshallJA, Heimendinger J, Crane LA, Neal WA. Home and eating environments are associated with saturated fat intake in children in rural West Virginia. J *Am Diet Assoc.* 2002 May; 102 (5): 657-663. PMID: 12008990.	Did not include weight in analyses; study design is cross-sectional.
GreenwoodJL, Stanford JB. Preventing or improving obesity by addressing specific eating patterns. *J Am Board Fam Med.* 2008 Mar-Apr; 21 (2): 135-140. Review. PMID: 18343861.	Study is a narrative review.
Guerrieri R, Nederkoorn C, Stankiewicz K, Alberts H, Geschwind N, Martijn C, Jansen A. The influence of trait and induced state impulsivity on food intake in normal-weight healthy women. *Appetite.* 2007 Jul; 49 (1): 66-73. Epub 2006 Dec 23. PMID: 17261343.	Did not answer question; did not examine relationship between eating out and weight.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Hassapidou M, Papadopoulou SK, Frossinis A, Kaklamanos I, Tzotzas T. Sociodemographic, ethnic and dietary factors associated with childhood obesity in Thessaloniki, Northern Greece. Hormones (Athens). 2009 Jan-Mar; 8 (1): 53-59. PMID: 19269921.	Did not include eating out in analyses; study design is cross-sectional.
Hejazi N, Mazloom Z. Socioeconomic status, youth's eating patterns and meals consumed away from home. *Pak J Biol Sci.* 2009 May 1;12 (9): 730-733. PMID: 19634480.	Did not include weight in analyses; study design is cross-sectional; study population not from a developed country as defined by the Human Development Index (2010).
Hemphill E, Raine K, Spence JC, Smoyer-Tomic KE. Exploring obesogenic food environments in Edmonton, Canada: The association between socioeconomic factors and fast-food outlet access. *Am J Health Promot.* 2008 Jul-Aug; 22 (6): 426-432. PMID: 18677883.	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional.
Holsten JE. Obesity and the community food environment: A systematic review. *Public Health Nutr.* 2009 Mar; 12 (3): 397-405. Epub 2008 May 14. Review. PMID: 18477414.	Did not answer question; did not examine relationship between eating out and weight.
Humenikova Shriver L, Gates G. A cross-cultural comparison of dietary intakes and physical activity between American and Czech school-aged children. *Public Health Nutr.* 2009 Jul; 12 (7): 986-990. Epub 2008 Aug 15. PMID: 18702842	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional.
Inagami S, Cohen DA, Brown AF, Asch SM. Body mass index, neighborhood fast food and restaurant concentration and car ownership. *J Urban Health.* 2009 Sep; 86 (5): 683-695. Epub 2009 Jun 16. PMID: 19533365.	Did not include eating out in analyses; study design is cross-sectional.
Kant AK, Graubard BI. Eating out in America, 1987-2000: Trends and nutritional correlates. *Prev Med.* 2004 Feb; 38 (2): 243-249. PMID: 14715218.	Study design is cross-sectional.
Ko GT, Chan JC, Tong SD, Chan AW, Wong PT, Hui SS, Kwok R, Chan CL. Associations between dietary habits and risk factors for cardiovascular diseases in a Hong Kong Chinese working population: The "Better Health for Better Hong Kong" (BHBHK) health promotion campaign. *AsiaPac J Clin Nutr.* 2007; 16 (4): 757-765. PMID: 18042539.	Study design is cross-sectional.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Kremmyda LS, Papadaki A, Hondros G, Kapsokefalou M, Scott JA. Differentiating between the effect of rapid dietary acculturation and the effect of living away from home for the first time, on the diets of Greek students studying in Glasgow.*Appetite.* 2008 Mar-May; 50 (2-3): 455-463. Epub 2007 Oct 9. PMID: 17997195.	Did not answer question; did not examine relationship between eating out and weight.
Kruger J, Blanck HM, Gillespie C. Dietary practices, dining out behavior and physical activity correlates of weight loss maintenance. *Prev Chronic Dis.* 2008 Jan; 5 (1): A11. Epub 2007 Dec 15. PMID: 18082000.	Study design is cross-sectional.

Article (L-S)	**Reason for Exclusion**
Larson NI, Neumark-Sztainer DR, Story MT, Wall MM, Harnack LJ, Eisenberg ME. Fast food intake: Longitudinal trends during the transition to young adulthood and correlates of intake. *J Adolesc Health.* 2008 Jul; 43 (1): 79-86. Epub 2008 Mar 10. PMID: 18565441.	Did not answer question; did not examine relationship between eating out and weight.
Li F, Harmer PA, Cardinal BJ, Bosworth M, Acock A, Johnson-Shelton D, Moore JM. Built environment, adiposity and physical activity in adults aged 50-75. *Am J Prev Med.* 2008 Jul; 35 (1): 38-46. PMID: 18541175.	Did not include eating out in analyses; study design is cross-sectional.
Li F, Harmer P, Cardinal BJ, Bosworth M, Johnson-Shelton D. Obesity and the built environment: Does the density of neighborhood fast-food outlets matter?*Am J Health Promot.* 2009 Jan-Feb; 23 (3): 203-209. PMID: 19149426.	Study design is cross-sectional.
Li M, Dibley MJ, Sibbritt D, Yan H. Factors associated with adolescents' overweight and obesity at community, school and household levels in Xi'an City, China: Results of hierarchical analysis.*Eur J Clin Nutr.* 2008 May; 62 (5): 635-643. Epub 2007 Apr 18. PMID: 17440524.	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional; study population not from a developed country as defined by the Human Development Index (2010).

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Lieberman LS. Evolutionary and anthropological perspectives on optimal foraging in obesogenic environments. *Appetite.* 2006 Jul; 47 (1): 3-9. Epub 2006 Jun 27. Review. PMID: 16806580.	Did not answer question; did not examine relationship between eating out and weight.
Liu GC, Wilson JS, Qi R, Ying J. Green neighborhoods, food retail and childhood overweight: Differences by population density. *Am J Health Promot.* 2007 Mar-Apr; 21 (4 Suppl): 317-325. PMID: 17465177.	Did not include eating out in analyses; study design is cross-sectional.
Lopez RP. Neighborhood risk factors for obesity. *Obesity (Silver Spring).* 2007 Aug;15 (8): 2, 111-2, 119. PMID: 17712130.	Did not include eating out in analyses; study design is cross-sectional.
Louis-Sylvestre J, Lluch A, Neant F, Blundell JE. Highlighting the positive impact of increasing feeding frequency on metabolism and weight management. *Forum Nutr.* 2003; 56: 126-128. Review. PMID: 15806828.	Study is a narrative review; did not answer question; did not examine relationship between eating out and weight.
Ma Y, Bertone ER, Stanek EJ 3rd, Reed GW, Hebert JR, Cohen NL, Merriam PA, Ockene IS. Association between eating patterns and obesity in a free-living US adult population. *Am J Epidemiol.* 2003 Jul 1; 158 (1): 85-92. PMID: 12835290.	Study design is cross-sectional.
Maddock J. The relationship between obesity and the prevalence of fast food restaurants: State-level analysis. *Am J Health Promot.* 2004 Nov-Dec;19 (2): 137-143. PMID: 15559714.	Did not include eating out in analyses; study design is cross-sectional.
Marín-Guerrero AC, Gutiérrez-Fisac JL, Guallar-Castillón P, Banegas JR, Rodríguez-Artalejo F. Eating behaviours and obesity in the adult population of Spain. *Br J Nutr.* 2008 Nov; 100 (5): 1, 142-1, 148. Epub 2008 Apr 1. PMID: 18377684.	Study design is cross-sectional.
Martin CK, O'Neil PM, Tollefson G, Greenway FL, White MA. The association between food cravings and consumption of specific foods in a laboratory taste test. *Appetite.* 2008 Sep; 51 (2): 324-326. Epub 2008 Mar 18. PMID: 18417253.	Did not answer question; did not examine relationship between eating out and weight.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Matheson DM, Killen JD, Wang Y, Varady A, Robinson TN. Children's food consumption during television viewing. *Am J Clin Nutr.* 2004 Jun; 79 (6): 1, 088-1, 094. PMID: 15159240.	Did not include eating out in analyses; study design is cross-sectional.
Mau MK, Wong KN, Efird J, West M, Saito EP, Maddock J. Environmental factors of obesity in communities with native Hawaiians. *Hawaii Med J.* 2008 Sep; 67 (9): 233-236. PMID: 18853897.	Did not include eating out in analyses; study design is cross-sectional.
McCrory MA, Suen VM, Roberts SB. Biobehavioral influences on energy intake and adult weight gain. *J Nutr.* 2002 Dec; 132 (12): 3, 830S-3, 834S. PMID: 12468634.	Study is a narrative review.
Mehta NK, Chang VW. Weight status and restaurant availability a multilevel analysis. *Am J Prev Med.* 2008 Feb; 34 (2): 127-133. PMID: 18201642.	Did not include eating out in analyses; study design is cross-sectional
Mohr P, Wilson C, Dunn K, Brindal E, Wittert G. Personal and lifestyle characteristics predictive of the consumption of fast foods in Australia. *Public Health Nutr.* 2007 Dec; 10 (12): 1, 456-1, 463. Epub 2007 Jun 13. PMID: 17565763.	Study did not examine the relationship between eating out and weight; study design is cross-sectional.
Morland KB, Evenson KR. Obesity prevalence and the local food environment. *Health Place.* 2009 Jun; 15 (2): 491-495. Epub 2008 Oct 7. PMID: 19022700.	Did not include eating out in analyses; study design is cross-sectional.
Nelson MC, Gordon-Larsen P, North KE, Adair LS. Body mass index gain, fast food and physical activity: Effects of shared environments over time. *Obesity (Silver Spring).* 2006 Apr; 14 (4): 701-709. PMID: 16741273.	Did not answer question; did not examine relationship between eating out and weight.
Newby PK, Muller D, Hallfrisch J, Qiao N, Andres R, Tucker KL. Dietary patterns and changes in body mass index and waist circumference in adults. *Am J Clin Nutr.* 2003 Jun; 77 (6): 1, 417-1, 425.	Did not answer question; did not examine relationship between eating out and weight.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Nicklas TA, Morales M, Linares A, Yang SJ, Baranowski T, De Moor C, Berenson G. Children's meal patterns have changed over a 21-year period: The Bogalusa Heart Study. *J Am Diet Assoc.* 2004 May; 104 (5): 753-761. PMID: 15127060.	Study design is cross-sectional.
Patrick H, Nicklas TA. A review of family and social determinants of children's eating patterns and diet quality. *J Am Coll Nutr.* 2005 Apr; 24 (2): 83-92. Review. PMID: 15798074.	Study is a narrative review.
Pearce J, Hiscock R, Blakely T, Witten K. A national study of the association between neighbourhood access to fast-food outlets and the diet and weight of local residents. *Health Place.* 2009 Mar; 15 (1): 193-197. Epub 2008 Apr 10. PMID: 18499502.	Did not include eating out in analyses; study design is cross-sectional.
Pisarik P. Compensation for energy intake from fast food among overweight and lean adolescents. *JAMA.* 2004 Sep 15; 292 (11): 1, 304; author reply 1304. No abstract available. PMID: 15367550.	Study is a letter to the editor.
Powell LM, Auld MC, Chaloupka FJ, O'Malley PM, Johnston LD. Access to fast food and food prices: Relationship with fruit and vegetable consumption and overweight among adolescents. *Adv Health Econ Health Serv Res.* 2007; 17 : 23-48. PMID: 19548547.	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional.
Prentice AM, Jebb SA. Fast foods, energy density and obesity: A possible mechanistic link. *Obes Rev.* 2003 Nov; 4 (4): 187-194. Review. PMID: 14649369.	Study is a narrative review; did not answer question; did not examine relationship between eating out and weight.
Risica PM, Burkholder G, Gans KM, Lasater TM, Acharyya S, Davis C, Kirtania U. Assessing fat-related dietary behaviors among black women: Reliability and validity of a new Food Habits Questionnaire. *J Nutr Educ Behav.* 2007 Jul-Aug; 39 (4): 197-204. PMID: 17606245.	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional.
Ruidavets JB, Bongard V, Bataille V, Gourdy P, Ferrières J. Eating frequency and body fatness in middle-aged men. *Int J Obes Relat Metab Disord.* 2002 Nov; 26 (11): 1, 476-1, 483. PMID: 12439650.	Did not include eating out in analyses; study design is cross-sectional.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Sanigorski AM, Bell AC, Swinburn BA. Association of key foods and beverages with obesity in Australian schoolchildren. *Public Health Nutr.* 2007 Feb; 10 (2): 152-157. PMID: 17261224.	Study design is cross-sectional.
Satia JA, Galanko JA, Siega-Riz AM. Eating at fast-food restaurants is associated with dietary intake, demographic, psychosocial and behavioural factors among African Americans in North Carolina. *Public Health Nutr.* 2004 Dec; 7 (8): 1, 089-1, 096. PMID: 15548348.	Did not include weight in analyses; study design is cross-sectional.
Scherwitz L, Kesten D. Seven eating styles linked to overeating, overweight and obesity. *Explore (NY).* 2005 Sep;1 (5) : 342-359. PMID: 16781565.	Did not include eating out in analyses; study design is cross-sectional.
Schröder H, Fïto M, Covas MI; REGICOR investigators. Association of fast food consumption with energy intake, diet quality, body mass index and the risk of obesity in a representative Mediterranean population. *Br J Nutr.* 2007 Dec; 98 (6): 1, 274-1, 280. Epub 2007 Jul 12. PMID: 17625027.	Study design is cross-sectional.
Schwartz J, Byrd-Bredbenner C. Portion distortion: Typical portion sizes selected by young adults. *J Am Diet Assoc.* 2006 Sep; 106 (9): 1, 412-1, 418. PMID: 16963346.	Did not answer question; did not examine relationship between eating out and weight.
Seliske LM, Pickett W, Boyce WF, JanssenI. Association between the food retail environment surrounding schools and overweight in Canadian youth. *Public Health Nutr.* 2009 Sep; 12 (9): 1, 384-1, 391. Epub 2008 Dec 17. PMID: 19087383.	Did not include eating out in analyses; study design is cross-sectional.
Simmons D, McKenzie A, Eaton S, Cox N, Khan MA, Shaw J, Zimmet P. Choice and availability of takeaway and restaurant food is not related to the prevalence of adult obesity in rural communities in Australia. *Int J Obes (Lond).* 2005 Jun; 29 (6):703-710. PMID: 15809667.	Study design is cross-sectional.
Simmons SF, Levy-Storms L. The effect of dining location on nutritional care quality in nursing homes. *J Nutr Health Aging.* 2005 Nov-Dec; 9 (6): 434-439. PMID: 16395515.	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Siwik VP, Senf JH. Food cravings, ethnicity and other factors related to eating out. *J Am Coll Nutr.* 2006 Oct; 25 (5): 382-388. PMID: 17031006.	Did not include weight in analyses; study design is cross-sectional.
Stang J, Kong A, Story M, Eisenberg ME, Neumark-Sztainer D. Food and weight-related patterns and behaviors of Hmong adolescents. *J Am Diet Assoc.* 2007 Jun; 107 (6): 936-941. PMID: 17524713.	Study design is cross-sectional.
Stender S, Dyerberg J, Astrup A. Fast food: unfriendly and unhealthy. *Int J Obes (Lond).* 2007 Jun; 31 (6): 887-890. Epub 2007 Apr 24. PMID: 17452996.	Study is a narrative review; did not answer question; did not examine relationship between eating out and weight.
Storey KE, Hanning RM, LambrakiIA, Driezen P, Fraser SN, McCargar LJ. Determinants of diet quality among Canadian adolescents. *Can J Diet Pract Res.* 2009 Summer; 70 (2): 58-65. PMID: 19515268.	Did not include weight in analyses; study design is cross-sectional.
Sturm R, Datar A. Body mass index in elementary school children, metropolitan area food prices and food outlet density. *Public Health.* 2005 Dec; 119 (12): 1, 059-1, 068. Epub 2005 Sep 6. PMID: 16140349.	Did not include eating out in analyses.
Sudo N, Degeneffe D, Vue H, Ghosh K, Reicks M. Relationship between needs driving eating occasions and eating behavior in midlife women. *Appetite.* 2009 Feb; 52 (1): 137-146. Epub 2008 Sep 13. PMID: 18835412.	Did not include weight in analyses; study design is cross-sectional.

Article (T-Z)	**Reason for Exclusion**
Taveras EM, Sandora TJ, Shih MC, Ross-Degnan D, Goldmann DA, Gillman MW. The association of television and video viewing with fast food intake by preschool-age children. *Obesity (Silver Spring).* 2006 Nov; 14 (11): 2, 034-2, 041. PMID: 17135621.	Did not include weight in analyses; study design is cross-sectional.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Tsukinoki R, Morimoto K, Nakayama K. Association between lifestyle factors and plasma adiponectin levels in Japanese men. *Lipids Health Dis.* 2005 Nov 2; 4: 27. PMID: 16262911.	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional.
Utter J, Scragg R, Schaaf D. Associations between television viewing and consumption of commonly advertised foods among New Zealand children and young adolescents. *Public Health Nutr.* 2006 Aug; 9 (5): 606-612. PMID: 16923292.	Study design is cross-sectional.
Utter J, Scragg R, Schaaf D, Fitzgerald E, Wilson N. Correlates of body mass index among a nationally representative sample of New Zealand children. *Int J Pediatr Obes.* 2007; 2 (2): 104-113. PMID: 17763017.	Study design is cross-sectional.
van der Horst K, Oenema A, Ferreira I, Wendel-Vos W, Giskes K, van Lenthe F, Brug J. A systematic review of environmental correlates of obesity-related dietary behaviors in youth. *Health Educ Res.* 2007 Apr; 22 (2): 203-226. Epub 2006 Jul 21. Review. PMID: 16861362.	Did not answer question; did not examine relationship between eating out and weight.
van Strien T, Bazelier FG. Perceived parental control of food intake is related to external, restrained and emotional eating in Seven to 12-year-old boys and girls. *Appetite.* 2007 Nov; 49 (3): 618-625. Epub 2007 Apr 11. PMID: 17512089.	Did not include eating out in analyses; study design is cross-sectional.
Wang MC, Cubbin C, Ahn D, Winkleby MA. Changes in neighbourhood food store environment, food behaviour and body mass index, 1981-1990. *Public Health Nutr.* 2008 Sep; 11 (9): 963-970. Epub 2007 Sep 26. PMID: 17894915.	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional.
Wang YC, Ludwig DS, Sonneville K, Gortmaker SL. Impact of change in sweetened caloric beverage consumption on energy intake among children and adolescents. *Arch Pediatr Adolesc Med.* 2009 Apr; 163 (4): 336-343. PMID: 19349562.	Did not answer question; did not examine relationship between eating out and weight; study design is cross-sectional.
Wansink B, Payne CR. Eating behavior and obesity at Chinese buffets. *Obesity (Silver Spring).* 2008 Aug; 16 (8): 1, 957-1, 960. Epub 2008 Jun 5. PMID: 18670421.	Did not include eating out in analyses; study did not examine the relationship between eating out and weight.
Whitfield Jacobson PJ, Prawitz AD, Lukaszuk JM. Long-haul truck drivers want healthful meal options at truck-stop restaurants. *J Am Diet Assoc.* 2007 Dec; 107 (12): 2, 125-2, 129. PMID: 18060899.	Study design is cross-sectional.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12

Yahia N, Achkar A, Abdallah A, Rizk S. Eating habits and obesity among Lebanese university students. *Nutr J.* 2008 Oct 30; 7: 32. PMID: 18973661.	Did not include eating out in analyses; study design is cross-sectional.
Yannakoulia M, Panagiotakos D, Pitsavos C, Skoumas Y, Stafanadis C. Eating patterns may mediate the association between marital status, body mass index and blood cholesterol levels in apparently healthy men and women from the ATTICA study. *Soc Sci Med.* 2008 Jun; 66 (11): 2, 230-2, 239. Epub 2008 Mar 10. PMID: 18329772.	Study did not examine the relationship between eating out and weight; study design is cross-sectional.
You W, Zhang G, Davy BM, Carlson A, Lin BH. Food consumed away from home can be a part of a healthy and affordable diet. *J Nutr.* 2009 Oct;139 (10): 1, 994-1, 999. Epub 2009 Aug 19.	Study did not examine the relationship between eating out and weight.

© 2012 USDA Evidence Analysis Library. Printed on: 08/25/12