

Child Care & Early Education RESEARCH CONNECTIONS

A partnership of the National Center for Children in Poverty, the Inter-university Consortium for Political and Social Research, the Office of Child Care, and the Office of Planning, Research, and Evaluation

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Child Care and Obesity Prevention A Key Topic Resource List

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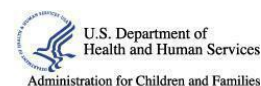
Research Connections conducted a comprehensive search of its collection for resources focused on obesity and obesity prevention in early childhood. This Key Topic Resource List includes an overview and listing of selected resources from the literature.

Resources of various types- including reports and papers, fact sheets and briefs, summaries, and reviews are included. Selection criteria included policy relevance and relatively recent publication (from the years 2000 - 2010).

Based on the search results, resources were grouped into the following categories:

- Food and Nutrition
- Exercise and Physical Activity
- Prevention Programs and Interventions
- Policies, Regulations, and Monitoring

Within each category, resources are organized according to publisher type and publication date. *Research Connections'* one-sentence descriptions are included for each resource.



Overview:

A growing number of young children in the U.S. are overweight or obese. Approximately 1 of every 4 children ages 2 to 5 years in the United States has a high (>85th percentile) body mass index (Ogden, 2008). Obesity as a young child is associated with poor health and emotional well-being in childhood and may lead to an array of health problems later in life including a higher risk of being an obese adult. Given this trend, child care and early education programs have begun to recognize the role they play in fostering healthy nutrition and physical activity for young children, and some programs, such as Head Start, have implemented obesity prevention initiatives to help reduce the rate of obesity in young children.

Researchers are now examining health and nutrition practices in early childhood and how health can best be supported at a young age. The newly emerging body of research on obesity in young children, which to date has mostly been smaller studies, focuses on: the short and long term physical and psychological ramifications of obesity in early childhood; the prevalence of federal and state level regulations to support healthy nutrition and physical activity; the role of child care in young children's nutrition and physical activity; and the effectiveness of obesity prevention interventions in child care and early education settings.

Research Questions Include:

- How have the nutrition practices in child care settings impacted child health and obesity?
- How much physical activity are children receiving in child care settings, and how is this associated with their overall health?
- What policies and regulations are being enacted at the federal and state levels to support obesity prevention efforts?
- What are the impacts of obesity prevention programs and interventions?

Acknowledgements:

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Food and Nutrition

Government

United States. Public Health Service. Office of the Surgeon General, 2011 [The Surgeon General's call to action to support breastfeeding](#) Washington, DC: U.S. Department of Health and Human Services.

An overview of the importance of, rates of, and barriers to breastfeeding, with recommendations to support breastfeeding practices

Journals

Benjamin, Sara E., Taveras, Elsie M.; Cradock, Angie; Walker, Elizabeth M.; Slining, Meghan; Gillman, Matthew (2011). [State and regional variation in regulations related to feeding infants in child care](#). *Pediatrics*, 124(1),104-111

A comparison of state and regional variation of infant feeding regulations for child care facilities for all 50 US states and the District of Columbia

Ramsay, Samantha A.; Branen, Laurel J.; Fletcher, Janice; Price, Elizabeth; Johnson, Susan L.; Sigman-Grant, Madeleine. (2010). ["Are you done?" Child care providers' verbal communication at mealtimes that reinforce or hinder children's internal cues of hunger and satiation](#). *Journal of Nutrition Education and Behavior*, 42(4), 265-270

A study of verbal communication between child care providers and preschool children about internal and non-internal hunger and satiation cues at mealtime based on video observation transcripts of 29 Head Start staff and 127 children at 26 licensed centers

Spill, Maureen K.; Birch, Leann L.; Roe, Liane S.; Rolls, Barbara J. (2010). [Eating vegetables first: The use of portion size to increase vegetable intake in preschool children](#). *American Journal of Clinical Nutrition*, 91(5), 1237-1243

A study of the relationship between portion size of vegetable servings at the start of lunch and both meal consumption and meal energy intake based on data collected from 51 3- through 5-year-olds in a child care center once a week for 4 weeks

Pearce, Anna; Li, Leah; Abbas, Jake; Ferguson, Brian; Graham, Hillary; Law, Catherine (Catherine Mary); Millennium Cohort Study Child Health Group. (2010). [Is childcare associated with the risk of overweight and obesity in the early years?: Findings from the UK Millennium Cohort Study](#). *International Journal of Obesity*, 34(7), 1160-1168

A study of the relationship between child care participation, the risk of being overweight or obese, and socioeconomic background, and a study of the relationship of infant feeding as a mediator between child care in infancy and overweight status at age 3 years, based on data from a cohort of 12,354 British 3-year-old children

Freedman, Marjorie R.; Alvarez, Karina P. (2010). [Early childhood feeding: Assessing knowledge, attitude, and practices of multi-ethnic child-care providers](#). *Journal of the American Dietetic Association*, 110(3), 447-451

A study of the child feeding knowledge, attitudes, and practices of a multi-ethnic convenience sample of home- and center-based child care providers, based on the 2008 questionnaire responses of 72 providers, 50 of whom completed a pre- and post-test surveys and attended a 90-minute class

Gubbels, Jessica; Kremers, Stef; Stafleu, Annette; Dagnelie, Pieter; de Vries, N. K.; Thijs, Carel. (2010). [Child-care environment and dietary intake of 2- and 3-year-old children](#). *Journal of Human Nutrition and Dietetics*, 23(1), 97-101

An exploration of the relationship between social and physical child care environment and the dietary intake of 135 2 and 3-year-old children in Dutch child care centers assessed by random observation at morning snack, lunch and afternoon snack over a period of 2 months in 2008

Hughes, Sheryl O.; Patrick, Heather; Power, Thomas G.; Fisher, Jennifer O.; Anderson, Cheryl B.; Nicklas, Theresa. (2007). [The impact of child care providers' feeding on children's food consumption](#). *Journal of Developmental and Behavioral Pediatrics*, 28(2), 100-107

An observational study of feeding behaviors of child care providers in Head Start programs and an assessment of food intake to determine the effect of feeding among low income preschool children

Demory-Luce, Debby K.; Morales, Miriam; Nicklas, Theresa. (2005). [Acculturation, weight status, and eating habits among Chinese-American preschool children and their primary caregivers: A pilot study](#). *Nutrition Research*, 25(3), 213-224

An examination of the association between acculturation and health outcomes of Chinese-American students and their primary caregivers, based on a sample of 53 children and their caregivers selected from two child care centers in Houston, Texas

Universities & Research Organizations

New York State Afterschool Network. (2010). [Expanding the role of afterschool programs in promoting health and wellness](#). New York: New York State Afterschool Network

An exploration of the use of after school and out of school time programs to promote the healthy physical development of children and youth

Wandner, Laura; Hair, Elizabeth C. (2009). [Research-based recommendations to improve child nutrition in schools and out-of-school time programs](#). (Publication No. 2009-27). Washington, DC: Child Trends

A discussion of healthy children's dietary requirements, with recommendations for schools and out-of-school time programs to improve child nutrition

Whaley, Shannon; Gomez, Judy; Mallo, Nelly; James, Paula; Fredericks, Doris; Abascal, Pilar; Sharp, Matthew; Chandran, Kumar; Hecht, Kenneth. (2008). [It's 12 o'clock...what are our preschoolers eating for lunch?: An assessment of nutrition and the nutrition environment in licensed child care in Los Angeles County](#). Irwindale, CA: Public Health Foundation Enterprises WIC Program

A study of the nutrition and nutritional environment in licensed child care settings in Los Angeles County, including the relationship of nutrition quality to setting type and Child and Adult Care Food Program participation, based on observations of lunch service, the feeding environment, and food service practices at 54 child care sites

Exercise and Physical Activity

Journals

Copeland, Kristen A., Kendeigh, Cassandra A.; Saelens, Brian E.; Kalkwarf, Heidi J.; Sherman, Susan N. (2012). [Physical activity in child-care centers: Do teachers hold the key to the playground?](#) Health Education Research, 27(1), 81-100

A study of child care providers' perceptions of benefits and barriers to children's physical activity in child care centers, based on data from 9 focus groups and 13 individual interviews with 49 child care providers in Cincinnati

Tandon, Pooja S., Zhou, Chuan; Lozano, Paula; Christakis, Dimitri Alexander; (2011) [Preschoolers' total daily screen time at home and by type of child care](#) Journal of Pediatrics, 158(2),297-300

An assessment of preschoolers' cumulative daily screen time, both at home and at child care, based on a secondary analysis of data from a sample of 8,950 that represents approximately 4 million preschool children

Pate, Russell R.; O'Neill, Jennifer R.; Mitchell, Johnathan. (2010). [Physical activity in young children: The role of child care](#). Medicine & Science in Sports & Exercise, 42(3), 499-501

An introduction to a special section of the journal Medicine & Science in Sports & Exercise, focusing on the role of child care in children's physical activity

Pate, Russell R.; O'Neill, Jennifer R.; Mitchell, Johnathan. (2010). [Measurement of physical activity in preschool children](#). Medicine & Science in Sports & Exercise, 42(3), 508-512

An overview of the methods for measurement of physical activity in children of preschool age from articles detailing the measurement properties of direct observational systems, accelerometry, pedometry, heart rate monitoring, and proxy reporting

Reilly, John J. (2010). [Low levels of objectively measured physical activity in preschoolers in child care](#). *Medicine & Science in Sports & Exercise*, 42(3), 502-507

A review of evidence on volume of physical activity and amount of moderate- to vigorous-intensity physical activity in preschool children within child care centers, from a literature search for studies published from 2000 through 2008

Obeng, Cecilia Sem. (2010). [Physical activity lessons in preschools](#). *Journal of Research in Childhood Education*, 24(1), 50-59

A survey of health-related physical activity in preschools from questionnaire responses of 112 teachers in 40 preschool classrooms in south-central Indiana

Trost, Stewart G., [Ward, Dianne S.](#); [Senso, Meghan](#). (2010) [Effects of child care policy and environment on physical activity](#) *Medicine & Science in Sports & Exercise*, 42(3),520-525

A review of 7 studies on the influences of center-level policies, practices, and physical environments on the moderate-to-vigorous physical activity (MVPA) of children

Copeland, Kristen A., Sherman, Susan N.; Kendeigh, Cassandra A.; Saelens, Brian E.; Kalkwarf, Heidi J. (2009) [Flip flops, dress clothes, and no coat: Clothing barriers to children's physical activity in child-care centers identified from a qualitative study](#) *International Journal of Behavioral Nutrition and Physical Activity*, 74(6),

A qualitative study of problems related to the clothing and jewelry worn by young children that hinders the outdoor vigorous physical activity in child care centers, and an examination of the tensions between parents and child care staff that arise from the inappropriate dress of their children, based on focus groups or interviews with 53 workers at urban Cincinnati child care centers

McWilliams, Christina; Ball, Sarah C.; Benjamin, Sara E.; Hales, Derek; Vaughn, Amber; Ward, Dianne S. (2009). [Best-practice guidelines for physical activity at child care](#). *Pediatrics*, 124(6), 1650-1659

A presentation of Nutrition and Physical Activity Self-assessment for Child Care (NAPSACC) best-practice guidelines and an assessment of the physical activity environment in a convenience sample of 96 child care centers from 33 counties across North Carolina

Fees, Bronwyn S.; Trost, Stewart G.; Bopp, Melissa; Dzewaltowski, David A. (2009). [Physical activity programming in family child care homes: Providers' perceptions of practices and barriers](#). *Journal of Nutrition Education*, 41(4), 268-273

An examination of family child care home (FCCH) providers' perceptions of appropriate physical activity (PA), current practices, and perceived barriers to inclusion of PA within their programs from coded transcriptions of focus group interviews with 32 female FCCH providers caring for children 6 weeks through 5-years-old in predominantly mixed-age programs

Dowda, Marsha; Brown, William H.; McIver, Kerry L.; Pfeiffer, Karin A.; O'Neill, Jennifer R.; Addy, Cheryl L.; Pate, Russell R. (2009). [Policies and characteristics of the preschool environment and physical activity of young children](#). *Pediatrics*, 123(2), e261-e266

An exploration of the association between the amount of time children spend in nonsedentary activities per day and both preschool administrative policies towards children's activities and available playtime equipment, based on data from a subsample of 3 to 5 year old children from 20 preschools that participated in the Children's Activity and Movement in Preschool Study

Brown, William H.; Pfeiffer, Karin A.; McIver, Kerry L.; Dowda, Marsha; Addy, Cheryl L.; Pate, Russell R. (2009). [Social and environmental factors associated with preschoolers' nonsedentary physical activity](#). *Child Development*, 80(1), 45-58

An investigation into the influence of several indoor and outdoor preschool settings on children's engagement in sedentary and nonsedentary physical activities, based on observations of 476 children from 32 child care centers, Head Start centers, faith-based programs in a metropolitan area of South Carolina

Tucker, Patricia. (2008). [The physical activity levels of preschool-aged children: A systematic review](#). *Early Childhood Research Quarterly*, 23(4), 547-558

A review of research from seven countries on the physical activity of children ages 2-6, including a discussion of the role of child care in the promotion of recommended levels of physical activity

Bower, Julie K.; Hales, Derek; Tate, Deborah F.; Rubin, Daniela A.; Benjamin, Sara E.; Ward, Dianne S. (2008). [The childcare environment and children's physical activity](#). *American Journal of Preventive Medicine*, 34(1)

A study of the relationship between child care environment and children's physical activities from direct observations in 20 child care centers over 2 days

Trost, Stewart G.; Sirard, John R.; Dowda, Marsha; Pfeiffer, Karin A.; Pate, Russell R. (2003). [Physical activity in overweight and nonoverweight preschool children](#). *International Journal of Obesity*, 27(7), 834-839

A comparison of the physical activity of overweight and nonoverweight 3- through 5-year-old children while at preschool and a study of the relationship between children's weight and hypothesized parental influences on child physical activity, based on data from 245 children and their parents recruited from 9 preschools in Columbia, South Carolina

Universities & Research Organizations

Beard, Beth. (2007). [Movement matters: Promoting health and well-being afterschool](#). Boston: Massachusetts, Special Commission on After School and Out of School Time

An overview of the importance of physical activity to children's health and the role after school programs can play in increasing children's opportunities for physical activity

Prevention Programs and Interventions

Government

United States. Administration for Children and Families. Office of Planning, Research and Evaluation. (2010). [Efforts to meet children's physical activity and nutritional needs: Findings from the I Am Moving, I Am Learning implementation evaluation: Final Report.](#) Washington, DC: U.S. Administration for Children and Families, Office of Planning, Research and Evaluation.

Findings from the implementation of I Am Moving, I Am Learning (IM/IL), a Head Start program enhancement intended to increase the amount of time devoted to moderate to vigorous physical activity, improve the quality of structured movement activities, and promote healthy food choices, based on interviews with program administrators of 56 Head Start programs that implemented IM/IL to supplement their curricula

United States. Administration for Children and Families. Office of Planning, Research and Evaluation. (2007). [Results from the "I Am Moving, I Am Learning" stage 1 survey: Final interim report.](#) Washington, DC: U.S. Administration for Children and Families, Office of Planning, Research and Evaluation.

A study of the implementation of I Am Moving, I Am Learning (IM/IL), a Head Start program enhancement intended to increase the amount of time devoted to moderate to vigorous physical activity, improve the quality of structured movement activities, and promote healthy food choices, based on a survey of staff members who had been trained to implement IM/IL in their Head Start program

Journals

Fitzgibbon, Marian L., Stolley, Melinda R.; Schiffer, Linda A.; Braunschweig, Carol L.; Gomez, Sandra L.; Van Horn, Linda; Dyer, Alan R. (2011). [Hip-Hop to Health Jr. obesity prevention effectiveness trial: Postintervention results.](#) *Obesity*, 19(5), 994-1003

A group-randomized controlled trial of the feasibility and effectiveness of a teacher-delivered weight control intervention for African American preschool children on children's height, weight, physical activity, television viewing screen time, diet inside and outside of preschool, and teacher's lesson completion, based on data from 618 children enrolled in 18 schools administered by the Chicago Public Schools

Monasta, Lorenzo; Batty, G. David; Macaluso, Anna; Ronfani, L.; Lutje, Victoria; Bavcar, A.; van Lenthe, Frank J. ; Brug, Johannes; Cattaneo, Adriano. (2011). [Interventions for the prevention of overweight and obesity in preschool children: A systematic review of randomized controlled trials.](#) *Obesity Reviews*, 12(5), e107-e118

A review of research on randomized controlled interventions for the prevention of overweight and obesity in children under 5-years-old

Sweitzer, Sara J. (2010). [Lunch Is In The Bag: Increasing fruits, vegetables, and whole grains in sack lunches of preschool-aged children](#). *Journal of the American Dietetic Association*, 110(7), 1058-1064

A study of the effect of participation in Lunch Is In The Bag, a five week parent and teacher intervention, on the number of servings of fruits, vegetables, and whole grains in children's lunches, based on data from 132 parent-child dyads in 6 child care centers, with 3 randomly assigned to offer the intervention

Gooze, Rachel A. (2010). [Reaching staff, parents, and community partners to prevent childhood obesity in Head Start, 2008](#). *Preventing Chronic Disease*, 7(3), 1-9

A survey of obesity prevention activities in Head Start to train staff, educate parents and involve community partners from questionnaire responses of 1,583 Head Start programs in 2008

Freedman, Marjorie R. (2010). [Impact of after-school nutrition workshops in a public library setting](#). *Journal of Nutrition Education and Behavior*, 42(3), 192-196

A study of the influence of Snack Smart after school nutrition workshops conducted in 8 public library branches over the course of 3 weeks on lasting changes in participants' food choices from data collected from ethnically diverse samples of 232 children ages 9 through 14, and 76 parents in San Jose, California

D'Onise, Katina. (2010). [Can preschool improve child health outcomes?: A systematic review](#). *Social Science & Medicine*, 70(9), 1423-1440

A review of the literature on child health effects of center-based preschool intervention programs for healthy 4 year olds beyond the preschool years, from 37 studies published between 1980 to July 2008

De Silva-Sanigorski, Andrea M. (2010). [Reducing obesity in early childhood: Results from Romp & Chomp, an Australian community-wide intervention program](#). *American Journal of Clinical Nutrition*, 91(4), 831-840

A comparison of obesity, healthy eating, and active play in 2 subsamples of children between the ages of birth through 5 in a community-wide, multi-setting intervention conducted between 2004 and 2008

Ward, Dianne S.; Vaughn, Amber; McWilliams, Christina; Hales, Derek. (2010). [Interventions for increasing physical activity at child care](#). *Medicine & Science in Sports & Exercise*, 42(3), 526-534

A review of the results of 19 implementations of interventions in child care settings intended to improve children's physical activity or related motor skills

Hughes, Cayce C.; Gooze, Rachel A.; Finkelstein, Daniel; Whitaker, Robert C. (2010). [Barriers to obesity prevention in Head Start](#). *Health Affairs*, 29(3), 454-462

A description of obesity prevention practices and environments in Head Start, with a focus on both healthy eating and gross motor activity, from a survey of 1,583 Head Start directors

Hesketh, Kylie D.; Campbell, Karen J. (2010). [Interventions to prevent obesity in 0-5 year olds: An updated systematic review of the literature](#). *Obesity*, 18(Supplement 1), s27-s35
A review of research on obesity prevention interventions from 23 articles published from January 1995 to August 2008

De Bock, Freia; Fisher, Joachim E.; Hoffmann, Kristina; Renz-Polster, Herbert; Baden-Württemberg, Landesstiftung. (2010). [A participatory parent-focused intervention promoting physical activity in preschools: Design of a cluster-randomized trial](#). *BMC Public Health*, 10

A study of the effects of a parent focused intervention on measures of children's health and physical activity and a qualitative study of the interventions' acceptance and adaptation by parents and teachers, their feelings that the program meets local needs, its feasibility in the German preschool setting, and impediments and factors that promote successful implementation and outcomes

Whitaker, Robert C.; Gooze, Rachel A.; Hughes, Cayce C.; Finkelstein, Daniel. (2009). [A national survey of obesity prevention practices in Head Start](#). *Archives of Pediatrics & Adolescent Medicine*, 163(12), 1144-1150

A study of obesity prevention practices in Head Start programs and an exploration of program characteristics associated with healthy eating and physical activity, based on a survey of 1,583 programs nationwide

Beets, Michael W.; Beighle, Aaron; Erwin, Heather E.; Huberty, Jennifer L. (2009). [After-school program impact on physical activity and fitness: A meta-analysis](#). *American Journal of Preventive Medicine*, 36(3), 527-537

A Meta-analysis of 13 articles from 11 after-school interventions on the effectiveness of after-school programs in increasing physical activity

Ward, Dianne S.; Benjamin, Sara E.; Ammerman, Alice S.; Ball, Sarah C.; Neelon, Brian; Bangdiwala, Shrikant I. (2008). [Nutrition and physical activity in child care: Results from an environmental intervention](#) *American Journal of Preventive Medicine*, 35(4), 352-356

A study of the impact of a Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) intervention to promote healthy weight development in preschool children on child care practices, environments, and policies in 56 intervention centers and 26 control sites in North Carolina over six months

Maher, Erin J.; Li, Guanghui; Carter, Louise; Johnson, Donna B. (2008). [Preschool child care participation and obesity at the start of kindergarten](#). *Pediatrics*, 122(2), 322-330

An examination of the association between type of child care, participation in different types of child care in the year before kindergarten and the likelihood of obesity at the start of kindergarten using a nationally representative sample of 15,691 first-time kindergartners from the Early Childhood Longitudinal Study-Kindergarten Cohort

Ammerman, Alice S.; Ward, Dianne S.; Benjamin, Sara E.; Ball, Sarah C.; Sommers, Janice K.; Molloy, Meg; Dodds, Janice M. (2007). [An intervention to promote healthy weight: Nutrition and Physical Activity Self-Assessment for Child Care \(NAP SACC\) theory and design.](#) *Preventing Chronic Disease*, 4(3), 1-12

An account of the initial implementation of a healthy weight intervention based on national recommendations and standards and made up of continuing education workshops, collaborative action planning and technical assistance materials, a resource manual, and an environmental self-assessment instrument to assess physical activity and nutrition policies and practices in child care settings based on data from 15 interviews with child care providers, 3 parent focus groups with 17 parents of young children in child care

Benjamin, Sara E. (2007). [Reliability and validity of a nutrition and physical activity environmental self-assessment for child care.](#) *International Journal of Behavioral Nutrition and Physical Activity*, 4(29)

A validity study of the Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC), a measure of child care nutrition and physical activity environments from the self assessments of 59 child care center directors and 109 staff

Benjamin, Sara E.; Neelon, Brian; Ball, Sarah C.; Bangdiwala, Shrikant I; Ammerman, Alice S.; Ward, Dianne S. (2007). [Nutrition and Physical Activity Self-Assessment for Child Care \(NAP SACC\): Results from a pilot intervention.](#) *Journal of Nutrition Education and Behavior*, 39(3), 142-149

A study of the influence of a nutrition and physical activity environmental intervention on a convenience sample of 15 intervention and 4 comparison child care centers in 8 counties across North Carolina

Taveras, Elsie M.; LaPelle, Nancy; Gupta, Ruchi S.; Finkelstein, Jonathan A. (2006). [Planning for health promotion in low-income preschool child care settings: Focus groups of parents and child care providers.](#) *Ambulatory Pediatrics*, 6(6), 342-346

An examination of best practice methods for promoting health practices in low income child care settings through six focus groups of parents with children attending child care centers and family child care homes and directors of child care centers and family child care homes

Mahoney, Joseph L.; Lord, Heather; Carryl, Erica. (2005). [Afterschool program participation and the development of child obesity and peer acceptance.](#) *Applied Developmental Science*, 9(4), 202-215

A longitudinal study of the relationship between after school program participation and the obesity and peer acceptance of early elementary school children

Story, Mary; Sherwood, Nancy E.; Himes, J. H. (John H.); Davis, Marsha; Jacobs, David R.; Cartwright, Yolanda; Smyth, Mary; Rochon, James. (2003). [An after-school obesity prevention program for African-American girls: The Minnesota GEMS pilot study.](#) *Ethnicity & Disease*, 13(1 Suppl. 1), S54-S64

A presentation of findings on the development of an after school obesity prevention program for African-American girls in Minnesota, based on a sample of 54 8 to 10-year-old girls and their caregivers

Other

Fiene, Richard. (2008). [Using childcare programs as a portal for changing the eating behaviors of young children](#). In L. Birch and W. Dietz (Eds.), *Eating behaviors of the young child: Prenatal and postnatal influences on healthy eating* (pp. 247-261), Elk Grove Village, IL: American Academy of Pediatrics

Highlights of a study of the effects of a mentoring intervention for early childhood educators on the promotion of healthy eating behaviors and body weight for infants and toddlers in south central Pennsylvania, and a discussion of policy implications for the systemic fight against childhood obesity

Deiner, Penny Low; Qiu, Wei. (2007). [Embedding physical activity and nutrition in early care and education programs](#). *Zero to Three*, 28(1), 13-18

Suggestions caregivers can use to encourage active play, teach young children about nutrition and create healthy habits in the earliest years

Policies, Regulations, and Monitoring

Journals

Larson, Nicole; Ward, Dianne S.; Neelon, Sara E. Benjamin; Story, Mary; (2011). [What role can child-care settings play in obesity prevention?: A review of the evidence and call for research efforts](#). *Journal of the American Dietetic Association*, 111(9), 1343-1362.

A review of literature published January 2000 through July 2010 on practices and policies on healthy eating and physical activity in center- and home-based child care environments in the United States

Kimbro, Rachel Tolbert; Rigby, Dawn Elizabeth. (2010). [Federal food policy and childhood obesity: A solution or part of the problem?](#) *Health Affairs*, 29(3), 411-418

An examination of the relationship between changes in federal food program participation and low income young children's body mass index measurements

Kaphingst, Karen M.; Story, Mary. (2009). [Child care as an untapped setting for obesity prevention: State child care licensing regulations related to nutrition, physical activity, and media use for preschool-aged children in the United States](#). *Preventing Chronic Disease*, 6(1)

A categorical study of state obesity prevention-related child care licensing regulations in the areas of nutrition, physical activity, and electronic media usage for center-based and family-based child care settings

Lumeng, Julie C.; Kaciroti, Niko; Frisvold, David E. (2010). [Changes in body mass index z score over the course of the academic year among children attending Head Start](#). *Academic Pediatrics*, 10(3), 179-186

A study of changes in children's body mass index (BMI) over the course of enrollment in Head Start and examination of variations in BMI by gender, single-parent status, program year, race, age at initial enrollment, and family income divided by household size, from a secondary analysis of retrospective longitudinal growth of 1,914 children enrolled in a Michigan Head Start program over 2 academic years and the intervening summer

Benjamin, Sara E.; Copeland, Kristen A.; Craddock, Angie; Neelon, Brian; Walker, Elizabeth M.; Slining, Meghan; Gillman, Matthew. (2009). [Menus in child care: A comparison of state regulations with national standards](#). *Journal of the American Dietetic Association*, 109(1), 109-115

A comparison of state and national regulations for menu options in child care centers and family child care homes

Trost, Stewart G.; Messner, Lana; Fitzgerald, Karen; Barbara, Roths. (2009). [Nutrition and physical activity policies and practices in family child care homes](#). *American Journal of Preventive Medicine*, 37(6), 537-540

A survey of policies and practices related to nutrition and physical activity in a stratified sample of 297 registered Kansas family child care homes

Ward, Dianne S.; Hales, Derek; Haverly, Katie; Marks, Julie; Benjamin, Sara E.; Ball, Sarah C.; Trost, Stewart G. (2008). [An instrument to assess the obesogenic environment of child care centers](#). *American Journal of Health Behavior*, 32(4), 380-386

A validity study of an instrument to evaluate nutrition and physical activity environments at 9 child care centers

Ball, Sarah C.; Benjamin, Sara E.; Ward, Dianne S. (2007). [Development and reliability of an observation method to assess food intake of young children in child care](#). *Journal of the American Dietetic Association*, 107(4), 656-661

A discussion of the development and testing of a structured observation system for assessing dietary intake of young children in child care settings

Story, Mary; Kaphingst, Karen M.; French, Simone. (2006). [The role of child care settings in obesity prevention](#). *The Future of Children*, 16(1), 143-168

A discussion of regulations for child care centers in terms of nutrition and exercise standards, and the implications for future research and policies in this area

Universities & Research Organizations

Gabor, Vivian, Mantinan, Karah. (2012). [State efforts to address obesity prevention in child care quality rating and improvement systems](#). Ann Arbor, MI: Altarum Institute.

An examination of the use of state child care quality rating and improvement system provisions to address obesity prevention, based on information gathered from participants at an advisory committee meeting, interviews with 18 key informants from 8 states, a document review, and input from representatives from 8 states

Gabor, Vivian; Mantinan, Karah; Rudolph, Kara; Morgan, Ruth; Longjohn, Matt. (2010). [Challenges and opportunities related to implementation of child care nutrition and physical activity policies in Delaware](#). Ann Arbor, MI: Altarum Institute

An inquiry into policies and practices regarding nutrition and physical activity in child care settings, based on information gathered from focus groups with 59 providers and 24 parents whose children attend child care in Delaware

Gordon, Rachel A.; Kaestner, Robert; Korenman, Sanders; Abner, Kristin. (2010). [The Child and Adult Care Food Program: Who is served and what are their nutritional outcomes?](#) (NBER Working Paper Series No. 16148). Cambridge, MA: National Bureau of Economic Research

An inquiry into whether the Child and Adult Care Food Program (CACFP) reaches its targeted population, and an examination of the relationship between the food intake, weight, and food security of CACFP participants, based on data on more than 10,000 children who participated in the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B)

Sklar, Cara; Kossen, Janine. (2009). [Good nutrition feeds healthy development and a healthy future: Reauthorization of WIC and CACFP](#). Washington, DC: Zero to Three, Policy Center

Policy recommendations for reauthorizing the Women, Infants, and Children program and the Child and Adult Care Food Program

Herbst, Chris M.; Tekin, Erdal. (2009). [Child care subsidies and childhood obesity](#). (NBER Working Paper Series No. 15007). Cambridge, MA: National Bureau of Economic Research

An exploration of the relationship between child care subsidy receipt, subsidy policies, and children's obesity, based on data from a sample of more than 21,000 children who participated in the Early Childhood Longitudinal Study-Kindergarten cohort (ECLS)-K

Benjamin, Sara E.; Cradock, Angie; Walker, Elizabeth M.; Slining, Meghan; Gillman, Matthew. (2008). [Obesity prevention in child care: A review of U.S. state regulations](#). BMC Public Health, 8

An investigation of state regulations on nutrition guidelines and physical activity requirements for child care centers and family child care homes, and a discussion of the influence of these policies on childhood obesity rates

Other

National Resource Center for Health and Safety in Child Care (U.S.), (2011). [Achieving a state of healthy weight: A national assessment of obesity prevention terminology in child care regulations 2010](#). Aurora, CO: National Resource Center for Health and Safety in Child Care.

A study of the extent to which state child care regulations meet standards related to obesity prevention in the areas of infant feeding, nutrition, and physical activity

National Women's Law Center. (2009). [2009 child nutrition reauthorization: Child and Adult Care Food Program preschool recommendations](#). Washington, DC: National Women's Law Center

A discussion of policy recommendations for legislation reauthorizing the Child and Adult Care Food Program

National Women's Law Center. (2009). [The Access to Nutritious Meals for Young Children Act of 2009, S. 2749/H.R. 4402](#). Washington, DC: National Women's Law Center

A description of a 2009 legislative proposal for the expansion of the Child and Adult Care Food Program (CACFP)

Afterschool Investments Project. (2006). [Promoting physical activity and healthy nutrition in afterschool settings: Strategies for program leaders and policy makers](#). Washington, DC: U.S. Child Care Bureau

A presentation of strategies for planning and financing after school programs to promote healthy lifestyles among children aged 6-19

To suggest additions to this Key Topic Resource List, please email us at contact@researchconnections.org.

The full results came from searches of *Research Connections*' collection using the terms obesity, nutrition, and physical activity.