Child Healthy Weight

May 2018

1. Bates, C. R., Buscemi, J., Nicholson, L. M., Cory, M., Jagpal, A. and Bohnert, A. M. Links between the organization of the family home environment and child obesity: a systematic review. Obes Rev. 2018 19 5 716-727. Due to increasingly high rates of child overweight and obesity, it is important to identify risk and protective factors that may inform more effective prevention and intervention. The degree of organization in the family home environment is a studied, but not well-specified, factor that may impact child weight. Prior research on household organization has examined an array of constructs, including family routines, limit setting, household chaos, crowding and the broad home environment. This study systematically reviews literature on organization within the family home environment and weight among children ages 2-12. Six hundred thirty-seven studies were reviewed by four coders for eligibility, and 32 studies were included in the final synthesis. Overall, 84% of studies provided evidence for relations between at least one indicator of organization within the family home environment and child weight. Studies provided compelling evidence across several constructs, suggesting that the relevance of household organization to child weight extends beyond a single indicator. Directions for future work include (i) examining the mediating role of health behaviours, (ii) examining the moderating role of socioeconomic factors, (iii) broadening this evidence base across cultures and nationalities and (iv) integrating constructs to develop a comprehensive model of organization within the home environment.; © 2018 World Obesity Federation.

2. Bell, Lucinda K., Perry, Rebecca A. and Prichard, Ivanka. Exploring Grandparents’ Roles in Young Children’s Lifestyle Behaviors and the Prevention of Childhood Obesity: An Australian Perspective. J NUTR EDUC BEHAV. 2018 50 5 516-521. Childhood obesity remains a significant public health issue. Because lifestyle behaviors and weight are established early and track through life stages, prevention strategies must commence in the first years of life. Traditionally, such strategies target parents or formal child care providers. Yet grandparents are increasingly providing care to grandchildren and therefore have an important role in their eating and activity behaviors, which creates a major research gap. This commentary piece, focusing on the Australian context, argues that it is imperative and timely for obesity prevention research to include investigations regarding the role of grandparents in the prevention of obesity-related behaviors in young children.

Submit your literature search request to: findforme@lanarkshire.scot.nhs.uk

All eUpdates are produced by Knowledge Services, NHS Lanarkshire
3. Black, M., Joseph, V., Mott, L. and Maheswaran, R. Increasing inequality in childhood obesity in primary schools in a northern English town. Public Health (Elsevier). 2018 158 9-14. Objective To undertake an analysis of National Child Measurement Programme (NCMP) data to quantify the obesity prevalence gap over time between children in primary schools in the most and least deprived areas of Doncaster. Study design The research design for this study was retrospective quantitative analysis of secondary data. Methods The study undertook secondary analysis of NCMP data on obesity prevalence in children in Reception Year and Year 6 in primary schools in Doncaster for the period 2006-2007 to 2014-2015. Data were combined into three 3-year periods (2006-2007 to 2008-2009; 2009-2010 to 2011-2012; and 2012-2013 to 2014-2015), and schools were grouped by deprivation based on the national Indices of Multiple Deprivation 2015. Analysis was undertaken to assess whether there is a difference in obesity prevalence for Reception Year and Year 6 children in schools in the most deprived areas compared with the least deprived (prevalence gap), over time. Results The difference in obesity prevalence between children attending schools in the most and least deprived areas has increased over time. For Reception Year children, the prevalence gap has widened from a difference of 1.01% higher in the most deprived schools in 2006-2007 to 2008-2009 to 3.64% higher in 2012-2013 to 2014-2015. In the same time periods, for Year 6 children, the obesity prevalence gap has also increased over time from 2.82% to 5.08%. Conclusions There is inequality in relation to obesity in primary school children in Doncaster with those in schools in the most deprived areas carrying the greatest burden. Research is needed to understand why the plateau seen nationally is not reaching the most deprived children. Order.

4. Braun, Joseph M., Kalkwarf, Heidi J., Papandonatos, George D., Chen, Aimin and Lanphear, Bruce P. Patterns of early life body mass index and childhood overweight and obesity status at eight years of age. BMC Pediatr. 2018 18 1. Background: Excess weight gain in infancy and childhood is associated with increased risk of subsequent obesity. Identifying patterns of infancy and childhood weight gain associated with subsequent obesity or overweight status could help identify children at highest risk. Thus, we examined patterns of infancy and early childhood BMI in relation to mid-childhood overweight and obesity status. Methods: In a prospective cohort of 215 children from Cincinnati, OH (born: 2003-2006), we measured weight and length or height at ages 4 weeks and 1, 2, 3, 4, 5, and 8 years. We calculated BMI z-scores using World Health Organization references. Using linear fixed effect models, we estimated mean BMI at each age and rates of change in BMI between ages 4 weeks and 5 years by children’s overweight and obesity status at age 8 years, assessed with BMI z-scores or bioelectric impedance analysis (BIA). Results: Children who became overweight (BMI, n = 51 and BIA, n = 37) or obese (BMI, n = 22 and BIA, n = 29) at age 8 years had greater BMI at all ages compared to normal weight children. Children who were overweight had similar rates of change in BMI as children who were lean. Children who were obese had greater gains in BMI between age 4 weeks and 5 years, with the most rapid gains in the first 2 years. Conclusions: Results from this study of modest sample size, suggest that adiposity patterns in the first 5 years of life are related to subsequent childhood overweight and obesity risk.
6. Burton, E. T., Smith, Webb A., Thurston, Idia B., et al. Interdisciplinary Management of Pediatric Obesity: Lessons Learned in the Midsouth. CLIN PEDIATR. 2018 57 5 509-518. The Healthy Lifestyle Clinic (HLC) is an interdisciplinary weight management clinic conceived to address alarming rates of pediatric obesity and related comorbidities in the midsouth region of the United States. The clinical cohort presented is a subset of the 609 patients evaluated during the first 2 years of the HLC and comprises 380 patients with a minimum of 6 months of follow-up. The primarily non-Hispanic black (67.1%) cohort presented with severe obesity (MzBMI = 2.52 ± 0.41) and particularly high rates of insulin resistance, among other comorbidities. This article offers insight into the challenges of intervening with a cohort of youth and their families, many with limited resources to support intensive behavioral and lifestyle changes. Our experiences implementing a weight management clinic with a diverse clinical cohort provide guidance for emerging programs and impetus to investigate environmental and cultural factors that contribute to high attrition in the treatment of pediatric obesity.

7. Criado, Kristen K., Sharp, William G., McCracken, Courtney E., et al. Overweight and obese status in children with autism spectrum disorder and disruptive behavior. AUTISM. 2018 22 4 450-459. Overweight and obesity are common in pediatric populations. Children with autism spectrum disorder and disruptive behavior may be at higher risk. This study examined whether children with autism spectrum disorder and disruptive behavior are more likely to be overweight or obese than matched controls. Baseline data from medication-free children with autism spectrum disorder who participated in trials conducted by the Research Units on Pediatric Psychopharmacology Autism Network (N = 276) were compared to 544 control children from the National Health and Nutrition Examination Survey database matched on age, sex, race, parent education, and era of data collection. The mean age of the children with autism spectrum disorder was 7.9 ± 2.6 years; 84.4% were males. In the autism spectrum disorder group, the prevalence was 42.4% for overweight and 21.4% for obesity compared to 26.1% for overweight and 12.0% for obesity among controls (p < 0.001 for each contrast). Within the autism spectrum disorder sample, obesity was associated with minority status and lower daily living skills. These findings suggest that children with autism spectrum disorder and disruptive behavior are at increased risk for obesity and underscore the need for weight management interventions in this population.

8. Delisle Nyström, Christine, Sandin, Sven, Henriksson, Pontus, Henriksson, Hanna, Maddison, Ralph and Löf, Marie. A 12-month follow-up of a mobile-based (mHealth) obesity prevention intervention in pre-school children: the MINISTOP randomized controlled trial. BMC Public Health. 2018 18 1. Background: To date, few mobile health (mHealth) interventions aimed at changing lifestyle behaviors have measured long term effectiveness. At the 6-month follow-up the MINISTOP trial found a statistically significant intervention effect for a composite score comprised of fat mass index (FMI) as well as dietary and physical activity variables; however, no intervention effect was observed for FMI. Therefore, the aim of this study was to investigate if the MINISTOP intervention 12-months after baseline measurements: (i) improved FMI and (ii) had a maintained effect on a composite score comprised of FMI and dietary and physical activity variables.Methods: A two-arm parallel randomized controlled trial was conducted in 315 healthy 4.5 year old children

Submit your literature search request to: findforme@lanarkshire.scot.nhs.uk
between January 2014 and October 2015. Parents' of the participating children either received the MINISTOP intervention or a basic pamphlet on dietary and physical activity behaviors (control group). After 6 months, participants did not have access to the intervention content and were measured again 6 months later (i.e. the 12-month follow-up). The Wilcoxon rank-sum test was then used to examine differences between the groups.

Results: At the 12-month follow-up, no statistically significant difference was observed between the intervention and control groups for FMI (p = 0.57) and no maintained effect for the change in composite score was observed (mean ± standard deviation for the intervention and control group: + 0.53 ± 1.49 units and + 0.35 ± 1.27 units respectively, p = 0.25 between groups).

Conclusions: The intervention effect observed at the 6-month follow-up on the composite score was not maintained at the 12-month follow-up, with no effect on FMI being observed at either follow-up. Future studies using mHealth are needed to investigate how changes in obesity related markers in young children can be maintained over longer time periods.

Trial Registration: ClinicalTrials.gov (NCT02021786; 20 Dec 2013).

9. Fitzgerald, Michael P., Hennigan, Kerrie, O'Gorman, Clodagh, S. and McCarron, Laura. Obesity, diet and lifestyle in 9-year-old children with parentally reported chronic diseases: findings from the Growing Up in Ireland longitudinal child cohort study. Ir. J. Med. Sci. 2018. Background: The incidence and prevalence of childhood chronic disease is increasing worldwide. Obesity, poor diet and lifestyle may be more prevalent in children with a chronic disease than in their healthier contemporaries. The Growing Up in Ireland (GUI) study is a nationally representative cohort study of children living in the Republic of Ireland. The study has collected information from 8568 9-year-old Irish children on their experiences within their families, childcare settings, schools and communities, and how these impact on all aspects of children's development.; Aims: This study aims to establish the prevalence of parentally reported chronic disease in children in Ireland and to describe their diet and lifestyle.; Methods: This study analyzed data from the Growing Up in Ireland longitudinal child cohort study and compared the diet, lifestyle and prevalence of obesity in children with and without a parentally reported chronic disease.; Results: Overall, 954 parents in the sample (11.1%) reported that their child had a chronic illness and 43.4% of these children are hampered by it in their daily activities. Respiratory disorders were the commonest type of chronic disease (46%) reported. Children with a chronic illness were more likely to be overweight or obese (32.9% compared to 25.0% of those without a chronic illness, p < 0.001). Children with chronic illness were also found to have a poorer diet, take less exercise and experienced significantly more social isolation than their peers (all p < 0.05).; Conclusions: Public health measures to address diet and lifestyle choices need to be cognisant of the needs of children with chronic diseases and tailor activities offered to be inclusive of all children. Medical professionals having contact with children with chronic conditions need to remember to reinforce the importance of diet and lifestyle whenever possible and to explore with families solutions to barriers to making healthy diet and lifestyle choices.

across the age spectrum, but there is a relative paucity of research in children with both conditions. This study aimed to characterize general executive functioning among children with overweight and LOC eating as compared to their overweight and normal-weight peers. Participants were 75 racially diverse children (58.7% female; 81.3% African-American), aged 9-12y (M age = 10.5 ± 1.1), of whom 26 were overweight/obese and endorsed LOC eating (OW-LOC), 34 were overweight controls (OW-CON), and 15 were normal-weight controls (NW-CON). All children completed interview-based measures of eating pathology, and behavioral measures of executive functioning. Parents reported on behavioral facets of children's executive functioning. Groups were compared across parent-report measures and behavioral tasks using analyses of covariance (ANCOVAs) and multivariate analyses of covariance (MANCOVAs) which adjusted for general intellectual functioning. Significant group differences were revealed on a behavioral measure of planning, the Tower of London task $F(5,65) = 3.52; p = 0.007$, and a behavioral measure of working memory, the List Sorting task $F(2,71) = 6.45; p = 0.003$. Post-hoc tests revealed that OW-LOC and OW-CON performed worse than NW-CON on the Tower of London, with relative decrements in accuracy rather than performance time. Further, OW-LOC performed worse than both OW-CON and NW-CON on the List Sorting task. Overweight with or without concomitant LOC eating in children may characterize a unique pattern of executive dysfunction. Interventions for eating- and weight-related problems in youth should address underlying deficits in planning and working memory. Order.

11. Hayes, Jacqueline F., Eichen, Dawn M., Barch, Deanna M. and Wilfley, Denise E. Executive function in childhood obesity: Promising intervention strategies to optimize treatment outcomes. Appetite. 2018 124 10-23. Executive functions (EFs) are hypothesized to play a role in the development and maintenance of obesity due to their role in self-regulatory processes that manage energy-balance behaviors. Children with obesity have well-documented deficits in EF, which may impede effectiveness of current, evidence-based treatments. This review examines top-down EF processes (e.g., inhibitory control, working memory, cognitive flexibility), as well as bottom-up automatic processes that interact with EFs (e.g., attentional bias, delay discounting) and their relation to weight-loss treatment success in children. It then evaluates EF-related interventions that may improve treatment response. Empirical studies that included an intervention purported to affect EF processes as well as pre-post measurements of EF and/or relative weight in populations ages 19 or younger with overweight/obesity were reviewed. Findings indicate that poorer EF may hinder treatment response. Moreover, there is preliminary evidence that behavioral weight loss intervention and physical activity may positively affect EF and that improvements in EF are related to enhanced weight loss. Finally, novel intervention strategies, such as computer training of core EFs, attention modification programs, and episodic future thinking, show promise in influencing both EFs and EF-related skills and weight. Further research is needed to provide more conclusive evidence of the efficacy of these interventions and additional applications and settings should be considered. Order.

life risk factors of overweight/obesity at age 6 years and their cumulative effects on overweight/obesity at ages 2, 4 and 6 years. Methods: Altogether 1031 Spanish children were evaluated at birth and during a 6-year follow-up. Early life risk factors included: parental overweight/obesity, parental origin/ethnicity, maternal smoking during pregnancy, gestational weight gain, gestational age, birth weight, caesarean section, breastfeeding practices and rapid infant weight gain collected via hospital records. Cumulative effects were assessed by adding up those early risk factors that significantly increased the risk of overweight/obesity. We conducted binary logistic regression models. Results: Rapid infant weight gain (OR 2.29, 99% CI 1.54-3.42), maternal overweight/obesity (OR 1.93, 99% CI 1.27-2.92), paternal overweight/obesity (OR 2.17, 99% CI 1.44-3.28), Latin American/Roma origin (OR 3.20, 99% CI 1.60-6.39) and smoking during pregnancy (OR 1.61, 99% CI 1.01-2.59) remained significant after adjusting for confounders. A higher number of early life risk factors accumulated was associated with overweight/obesity at age 6 years but not at age 2 and 4 years. Conclusions: Rapid infant weight gain, parental overweight/obesity, maternal smoking and origin/ethnicity predict childhood overweight/obesity and present cumulative effects. Monitoring children with rapid weight gain and supporting a healthy parental weight are important for childhood obesity prevention.

13. Iveland Ersfjord, Ellen Margrete. Taking children's humor seriously: A study of humor in children diagnosed with obesity and the medicalization of body weight. CHILDHOOD. 2018 25 2 189-202. Within the social studies of children and childhood, children's humor is an under-explored area. In this article, I explore the use of humor by children diagnosed with severe obesity while attending long-term rehabilitation together with their families. In the children's use of humor, I found a transition from the use of "fat jokes" to "biopedagogical humor," which involved jokes about instructions related to food and physical activity as conveyed by members of the rehabilitation team. I interpret their humor as signifying how they were affected by the biopedagogical messages involved in treatment and how they started self-monitoring their food intake and physical activity. I claim that their humor also can point to a process of medicalization of their condition, where their understanding of themselves as "fat" was replaced by "I suffer from obesity." Order.

14. Kloppenborg, Julie T., Gamborg, Michael, Fonvig, Cilius E., et al. The effect of impaired glucose metabolism on weight loss in multidisciplinary childhood obesity treatment. PEDIATR DIABETES. 2018 19 3 366-374. Objective: To investigate whether children and adolescents exhibiting an impaired glucose metabolism are more obese at treatment entry and less likely to reduce their degree of obesity during treatment. Methods: The present study is a longitudinal observational study, including children and adolescents from the Children's Obesity Clinic, Holbæk, Denmark. Anthropometrics, pubertal development, socioeconomic status (SES), and fasting concentrations of plasma glucose, serum insulin, serum C-peptide, and whole blood glycosylated hemoglobin (HbA1c) were collected at treatment entry and at follow-up. Proxies of Homeostasis Model Assessment 2-insulin sensitivity (HOMA2-IS) and Homeostasis Model Assessment 2-β-cell function (HOMA2-B) were calculated with the Homeostasis Model Assessment 2 program. Results: In total, 569 (333 boys) patients, median 11.5 years of age (range 6-22 years), and median body mass index (BMI) z-score 2.94 (range 1.34-5.54) were included. The mean BMI
z-score reduction was 0.31 (±0.46) after 13 months (range 6-18) of treatment. At treatment entry, patients with impaired estimates of glucose metabolism were more obese than normoglycemic patients. Baseline concentration of C-peptide was associated with a lower weight loss during treatment in girls (P = .02). Reduction in the insulin concentrations was associated with reduction in BMI z-score in both sexes (P = .0005). During treatment, values of glucose, HbA1c, HOMA2-IS, and HOMA2-B did not change or impact the treatment outcome, regardless of age, sex, SES, or degree of obesity at treatment entry. Conclusion: The capability to reduce weight during multidisciplinary treatment in children and adolescents with overweight/obesity is not influenced by an impaired glucose metabolism at study entry or during the course of treatment.

15. Lepkowska, Dorothy. **Sleep deprivation in children is a risk factor for obesity.** BR J SCH NURS. 2018 13 4 174-176. New research shows that sleep deprivation in young children is an important risk factor or marker for obesity. Dorothy Lepkowska reports on some of the latest research on obesity. [Order](#).

16. McPherson, A. C., Knibbe, T. J., Oake, M., et al. "Fat is really a four-letter word": Exploring weight-related communication best practices in children with and without disabilities and their caregivers. Child Care Health Dev. 2018. Background: Health care professionals play a critical role in preventing and managing childhood obesity, but the American Academy of Pediatrics recently stressed the importance of using sensitive and nonstigmatizing language when discussing weight with children and families. Although barriers to weight-related discussions are well known, there are few evidence-based recommendations around communication best practices. Disability populations in particular have previously been excluded from work in this area. The objectives were to present the findings of a recent scoping review to children with and without disabilities and their caregivers for their reactions; and to explore the experiences and perceptions of the children and their caregivers regarding weight-related communication best practices.; Methods: Focus group and individual interviews were conducted with 7-18-year olds with and without disabilities and their caregivers. The interview guide was created using findings from a recent scoping review of weight-related communication best practices. Inductive thematic analysis was employed.; Results: Eighteen children (9 boys; 7 children with disabilities) and 21 caregivers (17 mothers, 1 step-father, 3 other caregivers) participated in 8 focus group and 7 individual interviews. Preferred communication strategies were similar across those with and without disabilities, although caregivers of children with autism spectrum disorder endorsed more concrete approaches. Discussions emphasizing growth and health were preferred over weight and size. Strengths-based, solution-focused approaches for weight conversations were endorsed, although had not been widely experienced.; Conclusion: Perceptions of weight-related communication were similar across stakeholder groups, regardless of children's disability or weight status. Participants generally agreed with the scoping review recommendations, suggesting that they apply broadly across different settings and populations; however, tailoring them to specific circumstances is critical. Empirical evaluations are still required to examine the influence of weight-related communication on clinically important outcomes, including behaviour change and family engagement in care.; © 2018 John Wiley & Sons Ltd.
17. Millner, Vaughn, McDermott, Ryon C. and Eichold, Bernard H. Alabama Children's Body Mass Index, Nutritional Attitudes, and Food Consumption: An Exploratory Analysis. South. Med. J. 2018 111 5 274-280. Objectives: This study had three aims: assess the extent to which middle school children in southern Alabama were classified as overweight or obese; determine the magnitude of the relation between children's attitudes toward healthy eating and their actual dietary choices; and examine the role of race, sex, and ZIP codes on children's eating attitudes and behaviors. Methods: Registered dietitians took height and weight measurements of middle school children in southern Alabama to establish body mass index (BMI). Children were given a Likert-type survey with multiple-choice items to assess the study's objectives. Descriptive statistics were generated, and structural equation modeling was used to examine potential moderating effects on the associations between a latent variable of healthy eating attitudes and a latent variable of healthy eating behaviors across race and ethnicity. A series of analyses of variance was used to determine any significant differences in the children's attitudes across schools. The χ2 tests were used to examine potential race differences in BMI. Results: A total of 630 children participated in the study. Their average age was 12 years. More than half (53%) of the children were girls, and more than half (61%) were White. Approximately one-third (29%) identified as Black/African America. A large proportion of children across the sample (42.3%) were classified as overweight or obese. The multigroup structural equation modeling yielded a significant direct path between healthy attitudes and healthy eating behaviors. Healthy eating attitudes strongly predicted intentions toward healthy eating behaviors for children classified as normal weight and for those children classified as overweight or obese. Children's BMI classifications did not differ significantly across schools, race, or sex. Conclusions: A large percentage of children in south Alabama were classified as overweight or obese, conditions that are preventable. Moreover, evidence suggests a lack of nutritious food in their diets. Children overall endorsed healthy eating attitudes, and those attitudes were strongly related to healthy food choices; however, their level of healthy food consumption was not related to their BMI classification. Although children in this study were from three schools and represented a variety of racial, sex, and socioeconomic systems, there were more similarities than differences in their healthy eating attitudes or behavior. These similarities highlight the need for research to examine other factors, such as southern culture, as a potential contributor to childhood obesity.

18. Morrison, Kyle M., Cairney, John, Eisenmann, Joe, Pfeiffer, Karin and Gould, Dan. Associations of Body Mass Index, Motor Performance, and Perceived Athletic Competence with Physical Activity in Normal Weight and Overweight Children. J OBESITY. 2018 1-10. Children who are overweight and obese display lower physical activity levels than normal weight peers. Measures of weight status, perceived motor competence, and motor skill performance have been identified as potential correlates explaining this discrepancy. 1881 children (955 males; 926 females; 9.9 years) were assessed as part of the Physical Health Activity Study Team project. The age, habitual physical activity participation (PAP), body mass index (BMI), socioeconomic status (SES), motor performance (MP), and perceived athletic competence (PAC) of each child included were assessed. Gender-specific linear regression analyses (main effects model) were conducted to identify the percent variance in PAP explained by the following variables: BMI, MP, and PAC. For males,
18.3% of the variance in PAP was explained by BMI, MP, and PAC. PAC explained 17% of the variance, while MP, BMI, and SES only accounted for 0.6%, 0.7%, and 0.5%, respectively. PAC explained 17.5% of PAP variance in females; MP explained 0.8%. BMI, SES, and chronological age were not significant correlates of PAP in girls. An established repertoire of motor skill performance has been seen as a vehicle to PAP in children; however, this study indicates that PAC should not be overlooked in intervention strategies to promote increased PAP.

19. O’Shea, Muireann, O’Shea, Carol, Gibson, Louise, Leo, Jennifer and Carty, Catherine. The prevalence of obesity in children and young people with Down syndrome. J Appl Res Intellect Disabil. 2018. Background: Overweight and obesity is a growing concern among individuals with intellectual disabilities; however, little is known about the prevalence among children and youth with Down syndrome (CYDS). The purpose of this study was to determine the prevalence of overweight/obesity among CYDS in South West Ireland.; Methods: This cross-sectional study measured height and weight of 61 CYDS aged 4-16 years. Body mass index (BMI) was calculated and percentage body fat (PBF) was measured using bio-electrical impedance analysis (BIA).; Results: Using the International Obesity Task Force BMI cut-offs, 51.6% of males and 40% of females were overweight/obese compared to 32% and 14.8%, respectively, using PBF. The mean PBF for males was 18.76 versus females 22.38 (p < .05). There is a higher prevalence of overweight/obesity, particularly in males, compared to the general population of children.; Conclusions: The difference in estimation of overweight/obesity between BMI and BIA has implications for research and clinical practice.; © 2018 John Wiley & Sons Ltd.

20. Pittman, David W., Bland, Ida R., Cabrera, Isai D., et al. The Boss’ Healthy Buddies Nutrition Resource Is Effective for Elementary School Students. J OBESITY. 2018 1-10. Previously we have shown that our Healthy Eating Decisions school-based intervention can influence students’ selections of the healthiest foods available in their elementary school cafeterias through positive reinforcement techniques. Although effective, we recognized that students were missing fundamental nutrition knowledge necessary to understand why the Healthy Eating Decisions program identified particular beverages and foods as the healthiest in the cafeteria. Therefore, we developed the Boss’ Healthy Buddies nutrition education resource as a freely available curriculum matched with South Carolina education standards and designed for elementary school students from kindergarten through fourth grade. The current study implemented Boss’ Healthy Buddies and compared its efficacy to a commercially available nutrition program, CATCH. Elementary school students in Spartanburg, South Carolina, received weekly twenty-minute Boss’ Healthy Buddies lessons for eight weeks. Results from preassessment and postassessment surveys were compared with a positive control elementary school using the CATCH program and a negative control school receiving no nutrition education. Results show that Boss’ Healthy Buddies was equally effective as the CATCH program in improving the nutrition attitudes regarding healthiest beverages and food selections with the advantage of being freely available and minimizing the impact on classroom instruction time. In order to reduce most effectively the high prevalence of childhood overweight and obesity, it is crucial that children are taught nutrition education to support healthy eating habits at an early age. Both the Healthy
Eating Decisions school-based intervention and the Boss' Healthy Buddies nutrition education program are available online for use as free resources to aid in reducing childhood overweight and obesity within elementary schools.

21. Rancourt,Diana, Barker,David H. and Jelalian,Elissa. **Sex as a Moderator of Adolescents’ Weight Loss Treatment Outcomes**. J.Adolesc.Health. 2018 62 5 591-597. Purpose Weight loss treatments targeting adolescents often occur in mixed-sex contexts and produce variable outcomes. Sex considerations may be of particular importance, especially given differences in social relating. This study aggregated data from two randomized controlled trials of a peer-enhanced intervention compared with a standard cognitive-behavioral weight loss intervention to test the hypothesis that adolescent girls may demonstrate greater benefit than boys from a peer-enhanced weight loss intervention. Methods Participants were 193 adolescents with overweight/obesity (age M = 14.4 years, standard deviation = .99) from two randomized clinical trials comparing a peer-enhanced intervention with an active cognitive-behavioral weight loss intervention. Adolescents' percent over body mass index (percent greater than the 50th percentile for age and sex) was measured at baseline, end of treatment, and approximately 6 months post treatment. Multilevel modeling was used to test hypotheses. Results Findings suggested different weight change trajectories from baseline to end of treatment, and from end of treatment to follow-up. On average, all participants demonstrated weight loss from baseline to end of treatment and there was evidence that adolescent boys in the peer-enhanced condition may have benefited the most. On average, weight was maintained from end of treatment to follow-up. Conclusion Adolescent males may particularly benefit from weight loss interventions that incorporate a team component to supervised physical activity. **Order.**

22. Shafiee,Gita, Qorbani,Mostafa, Heshmat,Ramin, et al. **Wrist circumference as a novel predictor of obesity in children and adolescents: the CASPIAN-IV study.** J.Pediatr.Endocrinol.Metab.2018. Background: Recent studies have discussed the application of wrist circumference as an easy-to-use predictor of general and abdominal obesity. The aim of the current study is to evaluate the association of wrist circumference with generalized and abdominal obesity and to determine its sex- and age-specific optimal cutoff points in association with generalized and abdominal obesity in a national sample of pediatric population.; Methods: This nationwide survey was conducted among 14,880 students, aged 6-18 years, selected through a multistage, random cluster sampling method from rural and urban areas of 30 provinces in Iran from 2011 to 2012. Anthropometric indices (weight, height, wrist circumference, waist circumference WC, hip circumference HC]) were measured by standard protocols using calibrated instruments. Body mass index (BMI) and waist-to-height ratio (WHtR) were calculated. By considering the area under the curve (AUC) of the receiver operator characteristic (ROC) curves, we evaluated the association of wrist circumference with obesity indices and determined its sex- and age-specific optimal cutoff points in association with obesity. AUC: 0.5, AUC: 0.5-0.65 and AUC: 0.65-1.0 were interpreted as equal to chance, moderately and highly accurate tests, respectively.; Results: Overall, 13,486 children and adolescents with a mean age of 12.47±3.36 years completed the study (participation rate of 90.6%). In both genders, wrist circumference had a significant correlation with anthropometric measures including weight, height, BMI, WC, HC and WHtR. In all
age groups and both genders, wrist circumference performed relatively well in classifying individuals into overweight (AUC: 0.67-0.75, p<0.001), generalized obesity (AUC: 0.81-0.85, p<0.001) and abdominal obesity (AUC: 0.82-0.87, p<0.001).; Conclusions: Wrist circumference is suggested to be a useful index for assessing excess weight in the pediatric age group. Its easy measurement without the need of calculation ratios might make it as a routine measurement in daily clinical practice and in large epidemiological studies. Order.

23. Stern, Marilyn, Bleck, Jennifer, Ewing, Linda J., et al. NOURISH-T: Targeting caregivers to improve health behaviors in pediatric cancer survivors with obesity. Pediatr Blood Cancer. 2018 65 5 e26941-e26941. Background: Obesity rates in pediatric cancer survivors (PCS) are alarmingly high. Although healthy lifestyle changes may prevent future health complications, promoting healthy behaviors in PCS is challenging, and few interventions have successfully addressed this issue.; Procedure: This randomized control trial evaluated the feasibility and preliminary effectiveness of a parent-focused six-session intervention, NOURISH-T (Nourishing Our Understanding of Role Modeling to Improve Support and Health for Healthy Transitions), compared with enhanced usual care (EUC) on the outcomes of caregiver and PCS anthropometric measurements, eating behaviors, and physical activity. Behavioral and self-report assessments of caregivers and PCS in both conditions were conducted at baseline, postintervention, and at a 4-month follow-up.; Results: In comparison to no change among EUC caregivers, NOURISH-T caregivers showed small yet significant decreases from baseline through follow-up on BMI, waist-hip ratio, and total daily caloric intake. However, there was no change with regard to daily fat and sugar intake. NOURISH-T caregivers also showed positive changes in their child feeding behaviors, including decreases inpressuring their child to eat and restricting their child’s eating and increased eating together as a family. Similarly, decreases in BMI percentile, waist-hip ratio, and sugary beverage consumption were found for NOURISH-T PCS from baseline to postintervention. NOURISH-T PCS also significantly increased their daily steps, whereas EUC PCS decreased their daily steps.; Conclusions: Results suggest that an intervention targeting parents is feasible and demonstrates preliminary effectiveness. NOURISH-T showed a longer term effect on caregivers, and, although shorter term effect, a positive impact on the PCS themselves. Implications for ways to improve NOURISH-T as an intervention for increasing healthy behaviors of PCS are discussed.; © 2018 Wiley Periodicals, Inc.

24. Tabak, Rachel G., Dsouza, Nishita, Schwarz, Cynthia D., Quinn, Karyn, Kristen, Patricia and Haire-Joshu, Debra. A formative study to understand perspectives of families eligible for a pediatric obesity program: a qualitative study. BMC Public Health. 2018 18 1 586-586. Background: Raising Well® (RW) was initiated in 2015 by Envolve PeopleCare™ at the request of health plans seeking a solution to work with families on Medicaid that have a child with overweight or obesity. RW uses expert clinical coaches via phone contact to deliver an educational intervention promoting lifestyle change to families with at least one overweight or obese child in an eligible Medicaid health plan. This gives RW significant potential for reach and population impact. This project aimed to understand how to maximize this impact by exploring perspectives of RW, using a conceptual framework informed by the Conceptual Model of Implementation Research, including assessment of the
feasibility, acceptability, and appropriateness of RW; determining satisfaction among those experiencing coaching; identifying reasons individuals do not participate; and developing recommendations to enhance interest and participation. Methods: Semi-structured interviews were conducted with 70 RW-eligible families across four states, who were described as: active participants, respondents who dropped or stopped RW, and RW non-participants. Following the interviews, the transcripts were coded inductively and deductively using a grounded theory approach, considering themes from the conceptual framework; themes also emerged from the data. Results: From this sample, 19 families reported to be active coaching participants, 24 had dropped coaching, and 27 were RW non-participants. A number of themes were identified. Feasibility themes included coaches’ flexibility and willingness to work with the family’s schedule. Acceptability themes suggest providing actionable strategies tailored to the family’s context and needs, beyond just nutrition information and tips, early in the coaching relationship so the family perceives a benefit for continued participation. With regard to appropriateness, families were also interested in other methods of communication including email, texting, and in person visits. Access to resources for activity and healthy eating in their local community was also recommended. Conclusions: RW has the potential to improve health and promote wellness. To enhance the impact of this program, RW could incorporate these findings to promote feasibility, acceptability, and appropriateness and improve program implementation. Strategies may include modifying the information provided or the mode of delivering the information.

25. Trude, Angela Cristina Bizzotto, Kharmats, Anna Yevgenyevna, Jones-Smith, Jessica and Gittelsohn, Joel. Exposure to a multi-level multi-component childhood obesity prevention community-randomized controlled trial: patterns, determinants, and implications. TRIALS. 2018 19 1. Background: For community interventions to be effective in real-world conditions, participants need to have sufficient exposure to the intervention. It is unclear how the dose and intensity of the intervention differ among study participants in low-income areas. We aimed to understand patterns of exposure to different components of a multi-level multi-component obesity prevention program to inform our future impact analyses. Methods: B’more Healthy Communities for Kids (BHCK) was a community-randomized controlled trial implemented in 28 low-income zones in Baltimore in two rounds (waves). Exposure to three different intervention components (corner store/carryout restaurants, social media/text messaging, and youth-led nutrition education) was assessed via post-intervention interviews with 385 low-income urban youths and their caregivers. Exposure scores were generated based on self-reported viewing of BHCK materials (posters, handouts, educational displays, and social media posts) and participating in activities, including taste tests during the intervention. For each intervention component, points were assigned for exposure to study materials and activities, then scaled (0-1 range), yielding an overall BHCK exposure score youths: mean 1.1 (range 0-7.6 points); caregivers: 1.1 (0-6.7), possible highest score: 13]. Ordered logit regression analyses were used to investigate correlates of youths' and caregivers' exposure level (quartile of exposure). Results: Mean intervention exposure scores were significantly higher for intervention than comparison youths (mean 1.6 vs 0.5, p < 0.001) and caregivers (mean 1.6 vs 0.6, p < 0.001). However, exposure scores were low in both groups and 10% of the comparison group was moderately exposed to the intervention. For each
1-year increase in age, there was a 33% lower odds of being highly exposed to the intervention (odds ratio 0.77, 95% confidence interval 0.69; 0.88) in the unadjusted and adjusted model controlling for youths' sex and household income. Conclusion: Treatment effects may be attenuated in community-based trials, as participants may be differentially exposed to intervention components and the comparison group may also be exposed. Exposure should be measured to provide context to impact evaluations in multi-level trials. Future analyses linking exposure scores to the outcome should control for potential confounders in the treatment-on-the-treated approach, while recognizing that confounding and selection bias may exist affecting causal inference. Trial Registration: ClinicalTrials.gov, NCT02181010. Retrospectively registered on 2 July 2014.

26. Vaughns, Janelle D., Conklin, Laurie S., Long, Ying, et al. Obesity and Pediatric Drug Development. J.Clin.Pharmacol. 2018 58 5 650-661. Abstract: There is a lack of dosing guidelines for use in obese children. Moreover, the impact of obesity on drug safety and clinical outcomes is poorly defined. The paucity of information needed for the safe and effective use of drugs in obese patients remains a problem, even after drug approval. To assess the current incorporation of obesity as a covariate in pediatric drug development, the pediatric medical and clinical pharmacology reviews under the Food and Drug Administration (FDA) Amendments Act of 2007 and the FDA Safety and Innovation Act (FDASIA) of 2012 were reviewed for obesity studies. FDA labels were also reviewed for statements addressing obesity in pediatric patients. Forty-five drugs studied in pediatric patients under the FDA Amendments Act were found to have statements and key words in the medical and clinical pharmacology reviews and labels related to obesity. Forty-four products were identified similarly with pediatric studies under FDASIA. Of the 89 product labels identified, none provided dosing information related to obesity. The effect of body mass index on drug pharmacokinetics was mentioned in only 4 labels. We conclude that there is little information presently available to provide guidance related to dosing in obese pediatric patients. Moving forward, regulators, clinicians, and the pharmaceutical industry should consider situations in drug development in which the inclusion of obese patients in pediatric trials is necessary to facilitate the safe and effective use of new drug products in the obese pediatric population.

27. Wald, Ellen R., Ewing, Linda J., Moyer, Stacey C. L. and Eickhoff, Jens C. An Interactive Web-Based Intervention to Achieve Healthy Weight in Young Children. CLIN PEDIATR. 2018 57 5 547-557. This prospective, randomized, controlled trial for parents of overweight and obese 3- to 7-year-olds was performed to assess the feasibility of a program promoting healthy eating and lifestyle by targeting parents as agents of change. The intervention was composed of 6-in-person group sessions and a customized website over 12 months. The control group received customary care. The primary outcome was feasibility of the intervention to promote healthy behavior change measured by attendance. The secondary outcome was effectiveness assessed by attaining reduced body mass index (BMI) z scores, healthy behavior changes and increased parent self-efficacy. Seventy-three child-parent dyads were enrolled; 14 parents never attended any sessions. Participation in follow-up assessments did not meet the hypothesized level. Ultimate BMI z scores did not differ between control and intervention groups. Parenting skills did not
improve in the intervention group. This intervention to achieve healthy lifestyle changes in children via their parents as “change agents” was unsuccessful.

28. Ziauddeen, Nida, Page, Polly, Penney, Tarra L., Nicholson, Sonja, Kirk, Sara F. L. and Almiron-Roig, Eva. Eating at food outlets and leisure places and "on the go" is associated with less-healthy food choices than eating at home and in school in children: cross-sectional data from the UK National Diet and Nutrition Survey Rolling Program (2008-2014). Am. J. Clin. Nutr. 2018. Background: Where children eat has been linked to variations in diet quality, including the consumption of low-nutrient, energy-dense food, a recognized risk factor for obesity. Objective: The aim of this study was to provide a comprehensive analysis of consumption patterns and nutritional intake by eating location in British children with the use of a nationally representative survey. Design: Cross-sectional data from 4636 children (80,075 eating occasions) aged 1.5-18 y from the UK National Diet and Nutrition Survey Rolling Program (2008-2014) were analyzed. Eating locations were categorized as home, school, work, leisure places, food outlets, and "on the go." Foods were classified into core (considered important or acceptable within a healthy diet) and noncore (all other foods). Other variables included the percentage of meals eaten at home, sex, ethnicity, body mass index, income, frequency of eating out, takeaway meal consumption, alcohol consumption, and smoking. Results: The main eating location across all age groups was at home (69-79% of eating occasions), with the highest energy intakes. One-third of children from the least-affluent families consumed ≤25% of meals at home. Eating more at home was associated with less sugar and takeaway food consumption. Eating occasions in leisure places, food outlets, and "on the go" combined increased with age, from 5% (1.5-3 y) to 7% (11-18 y), with higher energy intakes from noncore foods in these locations. The school environment was associated with higher intakes of core foods and reduced intakes of noncore foods in children aged 4-10 y who ate school-sourced foods. Conclusions: Home and school eating are associated with better food choices, whereas other locations are associated with poor food choices. Effective, sustained initiatives targeted at behaviors and improving access to healthy foods in leisure centers and food outlets, including food sold to eat "on the go," may improve food choices. Home remains an important target for intervention through family and nutrition education, outreach, and social marketing campaigns. This trial was registered with the ISRCTN registry (https://www.isrctn.com) as ISRCTN17261407.
• **Downloading Articles**

Articles with a Full Text/Order hyperlink can be downloaded directly from the Knowledge Network using your Athens password. These can be printed and used for your personal use within copyright and no further permissions are required. If you need to use an article in a group setting (training, journal club) please contact Amanda Minns, Knowledge and Library Services Manager as further copyright permissions may be needed.

Any article without the Full Text/Order hyperlink can be ordered from Knowledge and Library Services. Please email libraries@lanarkshire.scot.nhs.uk.

• **Athens Passwords**

Your Athens password is used to give you access to subscription material available on the Knowledge Network. To register for an Athens password logon to the Knowledge Network and click Login link at the top right hand side of the screen.

If you have forgotten your Athens password:

- Login to - [http://www.openathens.net/](http://www.openathens.net/)
- Select – Forgotten your password
- Fill in form on screen and your password will be sent to you.