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REVIEW

Weight Loss Diets, Fads, and Trends

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Abstract

Purpose of Review To review popular dietary trends and provide recommendations regarding validated dietary approaches for weight loss in the pediatric population.

Recent Findings Like adults, children and adolescents trying to lose weight will succumb to diets promoted by the media. Many of these so-called "fad" diets tout unsupported claims for health but prove very difficult for long-term adherence. Since childhood is a pivotal time for establishing lifestyle habits, we need to provide practical dietary advice supported by scientific research. Studies suggest that emphasizing macronutrient balance while limiting both ultraprocessed foods and sugar-sweetened beverages can help our pediatric patients achieve and maintain a healthy weight.

Summary We review literature discouraging the use of restrictive dieting in the pediatric population and instead encourage a whole-foods-based, balanced dietary approach, along with regular physical activity. The goal is to support reasonable and sustainable lifestyle habits that ultimately allow children to establish lifelong health-promoting behaviors.

Keywords Diet · Fad · Obesity

Introduction

Obesity is an epidemic in the USA, with the most recent prevalence rate reported at 41.9% in 2020, which increased from years prior. Rates of childhood obesity are also on the rise at 19.7% based on the 2020 statistics [1]. As such, many adults and children alike are trying to lose weight. The demand for products and services aimed at weight loss has created a multi-billion dollar industry, with the latest reports from 2023 estimating nearly 3.4 billion dollars. Accounting for three-quarters of the industry, global sales attributed to diet strategies far surpass both equipment and education sales [2]. There are countless businesses promoting various dietary approaches, so it is not surprising that patients are confused when it comes to choosing a way of eating to encourage weight loss.

Dieting in Childhood and Adolescent Years

Dietary restriction is discouraged in the general pediatric population. However, some pediatric patients are advised by their healthcare providers to lose weight to prevent health complications of obesity. Other children and adolescents are driven to be thinner due to body image dissatisfaction that stems from unrealistic expectations set by the media. While many adults recognize that media-promoted weight loss strategies are unreliable and not backed by scientific evidence, most adolescents do not have the ability to discern between fact and fiction when it comes to popular weight loss fads.

Some dieting behaviors can be health-promoting; however, the majority are not. Improper dieting can lead to disordered eating patterns and even diagnoses such as anorexia and binge-eating disorder, with or without compensatory behaviors of purging, laxative use, or excessive exercise [3]. Dieting and disordered eating are more common in females and increase with age [4]. A review of teenage dieting trends

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reported that 41 to 66% of girls and 21 to 30% of boys have attempted weight loss by following a diet [5].

If the method of dieting is unhealthy, there can be both physical and psychological consequences. Some diets, including popular plant-based diets, may predispose to nutrition deficiencies due to inadequate intake of micro- or macronutrients. If energy or protein consumption is deficient, there is a risk for growth deceleration, delayed puberty, and menstrual irregularities.

Many lifestyle habits are established during adolescence, so it is important to consider the impact of dietary restrictions on long-term physical and emotional health. While there are not enough studies to define the effects of dieting on pediatric mental health, we know from studies in adults that dieting is associated with numerous maladaptive symptoms including irritability, depression, and fatigue. A study on 54 children with obesity ages 10 to 15 enrolled in a weight loss program showed that dieting can negatively impact self-esteem, primarily due to distress about physical appearance [6]. For many children, adopting a preoccupation with food or exercise can lead to lifelong struggles with dysfunctional eating.

Additionally, there is concern for paradoxical weight gain after following a diet and perhaps into adulthood. A study of over 15,000 children ages 9 to 14 revealed that children who dieted gained more weight over the subsequent 3-year period compared to non-dieters [7].

Fad Diet Culture

Fad diets have become a mainstay of the American health scene. Fad diets are defined as popular or trendy dietary patterns that promise quick weight loss results over a short period of time. They often restrict or promote one specific food item or food group that can lead to inadequate nutritional intake. These restrictive dietary patterns lead to rapid weight loss initially but are difficult to maintain long-term. Even though most fad diets are not based on scientific evidence, they are often disseminated and promoted widely in the media [8]. Recent studies have shown that various forms of media are finding their way into the hands of children and adolescents earlier in childhood, and screen time by this population has only risen since the pandemic [9]. Navigating the plethora of information from these outlets can prove to be challenging for adolescents whose ideas of diet culture may be shaped by factors such as peer pressure, societal standards set by celebrities or influencers, and their developing self-esteem. [10••]

In this population, restrictive fad diets can be problematic for a few reasons. Lack of adequate oversight or education and readily available misinformation can lead to unsafe dieting practices. Certain diets, if done without proper medical guidance, can lead to nutritional deficiencies or impede growth and development. In addition, decisions regarding diet may be influenced by perceived body image or be an indication of an underlying eating disorder. Dieting has been shown to be an important predictor for developing an eating disorder [11]. This is why practitioners and caregivers should ensure that the motivations behind initiating any diet are ultimately rooted in healthy behaviors. Caregivers should also try to exemplify good dieting practices, as the literature suggests that adult modeling is a strong influence on a child's eating habits [12]. Next, we discuss four popular diets including intermittent fasting, paleolithic, ketogenic, and plant-based diets.

Intermittent fasting has been quite popular in the media in recent years. The term encompasses multiple variations of the diet including time-restricted eating (eating within a particular time window, typically 6 to 8 h in a day), 5:2 fasting (fasting 2 days of the week), and alternate-day fasting [10••]. This type of dieting does not restrict food groups or calories during the time designated for eating. In studies conducted in adults, benefits in terms of weight loss and possibly metabolic risk factors have been noted, but there is a paucity of data in the pediatric population [13•]. Interestingly, a systematic review showed an association between skipping breakfast with increased weight and metabolic risk in children and adolescents [14]. The American Academy of Pediatrics does not recommend skipping breakfast [15••]. Overall, more studies need to be conducted regarding intermittent fasting in the pediatric population.

The ketogenic or "keto" diet historically was used as a way to treat refractory epilepsy in the 1920s. With the advent of antiepileptic drugs, it began to lose favor. However, more recently, the ketogenic diet has made a comeback in popular dieting culture. The keto diet is considered high in fat, moderate in protein, and extremely restricted in carbohydrates. Carbohydrate intake is typically less than 50 g/day. With the deprivation of carbohydrates, glycogen stores are depleted, and the body resorts to ketogenesis and consumption of fat to meet metabolic demands [10••]. The theory is that this accelerated fat-burning state leads to weight loss. While the exact mechanisms of weight loss with a ketogenic diet are not fully understood, it may also lead to decreased caloric intake due to the restriction of a major food group. Additionally, formed ketone bodies may have a direct effect on satiety [16]. Short-term benefits for weight loss and metabolic parameters have been noted; however, the long-term benefits and sustainability of this extreme diet are often questioned [13•]. Reassuringly, a 5-year prospective study which followed children with GLUT1 deficiency treated with a ketogenic diet did not show any adverse long-term nutritional, growth, or metabolic outcomes [17]. In summary, a ketogenic diet may be appropriate and safe in some cases but should always be done with the guidance of a nutritional

expert to ensure adequate caloric and macronutrient intake especially in the pediatric population.

Plant-based diets are known for their multiple health benefits, particularly for preventing significant chronic diseases in adults. However, plant-based diets have not been studied extensively in the pediatric population. A vegetarian diet excludes meat and seafood but does include eggs and dairy, while a vegan diet excludes all animal products. Weight loss is likely due to an inherent calorie restriction, as most plants by weight are less calorie-dense than other sources of nutrition. A plant-based diet can be safe for children provided it is well-balanced, including a variety of fruits, vegetables, whole grains, legumes, nuts, and seeds [19]. The concern arises when younger patients who consume a vegetarian or vegan diet turn to highly processed foods and plant-based meat or dairy substitutes assuming they are healthy [20]. In addition, especially in the vegan diet, there could be a risk for deficiencies in protein; vitamins B12, D, and A; zinc; and calcium [18]. Ultimately, nutrition counseling to ensure adequate intake for growth and development is crucial. Further discussion of motivating factors is especially important in the adolescent group, as the literature shows a potential correlation between the initiation of a vegetarian diet and eating disorders [21].

The Paleolithic or "Paleo" diet tries to mimic the diet of our pre-agricultural, hunter-gatherer ancestors. The theory is that the human body has not adapted to more recent changes in diet from the introduction of agriculture and is better suited to a Paleo diet [10••]. This diet includes meat, fruits, and vegetables while excluding cereal grains, legumes, dairy, or any other processed foods. Overall, the diet is high in protein and moderate in fat and carbohydrate intake [13•]. It promotes weight loss due to the restriction of processed food products and sugar. The main concerns with a Paleo diet include low long-term adherence and potential deficiencies of vitamin D, calcium, and iodine. Additionally, excluding grains could reduce carbohydrate intake too drastically to support appropriate growth. Short-term studies in adults show some benefit in weight loss and metabolic parameters; however, no long-term studies have been published [10••]. Additionally, there is no literature to support the Paleo diet for the pediatric population.

Evidence-Based Recommendations

The 2020 Healthy Eat Index, which looked at the US population's diet quality in comparison to the recommended Dietary Guidelines of Americans (DGA), found that as a country, our eating habits are quite poor. With 100 representing the highest adherence to the DGA, it was shown that toddlers from age 0–24 months scored 62, with that number decreasing to 54 in those ages 2–18 years [22]. This underscores a national crisis of unhealthy eating habits that continues to contribute to the high prevalence of obesity in this population. Children with obesity have a higher risk for adult obesity and its associated co-morbidities including cardiovascular disease, type 2 disease, liver disease, and even premature death, all of which place a heavy burden on the healthcare system [23, 24]. Childhood is a pivotal time for establishing behavioral patterns, so an emphasis should be placed on educating younger patients about healthy lifestyle habits to prevent chronic disease.

As discussed, popular culture and fad diets suggest eliminating a specific nutrient or food to see results in weight loss. However, the literature has repeatedly shown that this is not necessary [13•]. One such study by Gardner et al. compared a healthy low-carb diet to a healthy low-fat diet. Emphasis was placed on high-quality foods and beverages including foods that were minimally processed and low in added sugar, refined flour, and trans fats. There was no significant difference in weight loss between the diet groups at 12 months, suggesting that effective weight loss can be achieved when the focus is placed on high diet quality, rather than restricting a particular nutrient [25, 26]. Instead of focusing on percentages of macronutrient intake, the evidence is shifting the paradigm to focus on reducing ultraprocessed foods.

Ultraprocessed foods (UPFs) are defined as foods that are primarily industrially manufactured and contain little to no whole food [27]. UPFs are usually energy-dense, high in added sugar and sodium, and low in protein, fiber, and important micronutrients [27]. Hall et al. showed that adult patients who consumed diets high in ultraprocessed foods had significantly higher energy intake by about 500 cal/day. They showed that eliminating ultraprocessed foods from the diet leads to weight loss and could be an effective strategy for both obesity treatment and prevention [28•]. Similarly, among children, a diet high in UPFs has been shown to be associated with higher body fat percentage, waist circumference, total cholesterol, and triglyceride levels [27]. Considering that 60% of the calories consumed by children are from UPFs, this is cause for concern but also an area for great opportunity [27].

Research findings like this have led to the creation of guidelines from physician groups as well as US agencies promoting healthy eating behaviors and strategies. The 2020–2025 DGA recommends incorporating foods that are nutrient-dense instead of ultraprocessed alternatives. They place an emphasis on a "healthy eating pattern" to establish habits that will lead to meaningful health benefits and deter chronic diseases in the long term [29]. The American Association of Pediatrics (AAP) also recommends nutrition counseling with an emphasis on healthy behaviors and food choices rather than one specific diet. They go further to highlight indirect behaviors that may be associated with increased energy intake such as higher screen times, family eating patterns, and eating outside the home [15••].

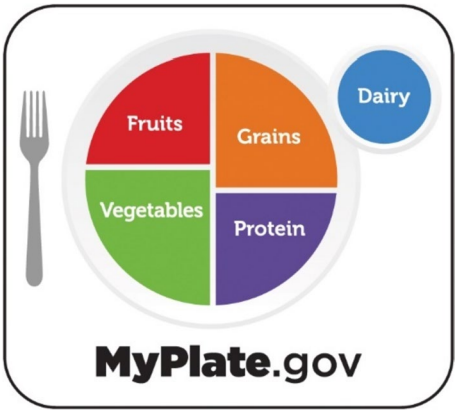

Fig. 1 MyPlate was created by the US Department of Agriculture (USDA) and depicts a balanced meal (myplate.gov). This replaced the previous food pyramid in 2011 [27]

Ultimately, guidelines and findings from studies must be translated into actionable strategies to produce an impact on the public health landscape. The "My Plate" approach, created by the USDA and endorsed by the AAP, is a simple and quick tool that clinicians can use to educate patients and families on food group balance (Fig. 1) [15, 29]. It recommends portion control and macronutrient balance with half of one's plate comprised of fruits and vegetables and a quarter each comprised of carbohydrates and protein [29]. The recommended drink is low-fat milk, dairy-free milk, or water. Furthermore, food intake should be spread evenly throughout waking hours, incorporating three balanced meals per day. As previously mentioned, a systematic review showed that skipping breakfast in the pediatric population is associated with overweight/obesity, negative cardiometabolic outcomes, and lower quality dietary intake overall [14].

Numerous societies including the American Heart Association (AHA), DGA, and AAP have specifically called for a reduction in sugar-sweetened beverages (SSBs) like sports drinks, soft drinks, and fruit juices [15••, 31]. One systematic review showed an association between SSB consumption and weight gain in both adults and children. Additionally, it showed a correlation with high fructose corn syrup and visceral adiposity [30•]. The AHA recommends that children aged 2–18 consume less than 100 cal (6 teaspoons)/day of added sugar and drink only one 8 oz SSB per week. A strategy that may simultaneously target SSB and UPF consumption is a reduction in fast food [26]. Fast food consumption has been associated with weight gain and obesity especially in lower socioeconomic groups [15••].

Table 1 provides a summary of evidence-based dietary recommendations for pediatric patients. At the end of the day, while these are all validated strategies, a practical approach should consider a patient's lifestyle, time constraints, budget, and family support to be successful.

There is evidence to support that family and caregiver involvement plays an integral role for success of dietary interventions. The family's eating preferences, the caregiver's modeling of eating behaviors, and food availability within the home are extremely influential on a child's food preferences and habits. Family-focused interventions are shown to be more successful in achieving and maintaining weight loss than just those involving the child, for example at a school or camp [15••]. Empowering parents and children together can lead to shared values and joint ownership of a healthy lifestyle, which benefits the entire family [15••]. Simple practices like daily family dinners, limiting screen time for kids, and reducing fast food intake can be very impactful and have been associated with lower BMI and adiposity in early adolescence [11].

As providers, we should be prepared to meet families at their level. It is easy to recommend adding vegetables to a diet and cooking more meals at home, but this suggestion may not seem feasible for a family who is limited in time, education, and finances. Strategies can be employed to make our advice more practical and attainable. Meal kits, meal delivery services, or batch-cooking recipes can be useful resources for those who struggle to find time to cook [26]. The budget-constrained family can be directed to free resources and recipes on the UDSA

Table 1 High impact dietary strategies

Strategy	Description	Evidence
Reduction in SSBs	Higher intake of SSBs is associated with weight gain. Limit added sugar to 25 g/day. Limit SSB consumption to one 8 oz portion per week. Do not substitute fruit juice for whole fruit	Systematic review [28•], AHA circulation 2017 [30•, 31]
Choose My Plate	USDA's recommendations for healthy eating that encompass multiple goals including balance in protein and carbohydrates, incorporating plant-based foods with each meal, and not excluding any food group	USDA choosemyplate.gov [27]
Traffic Light Diet	Categorizes food/beverage choices into three colors: green (unlimited), yellow (occasionally), and red (avoid or minimize). Promotes higher consumption of health-promoting foods and encourages limiting processed/convenience foods and SSBs	Academy of Nutrition and Dietetics [11, 32]
Avoiding skipping breakfast	Amongst children, skipping breakfast on a regular basis is associated with higher BMI and lower dietary quality throughout the day	Systematic review [14]

website, as well as Internet blogs on money-conscious meals. Education regarding choosing healthy options while eating out of the home can also be beneficial [26]. Ultimately, a successful intervention is one that can be sustained in the long term. The goal is to support patients and families to maintain these healthy lifestyle habits and develop lifelong health-promoting behaviors.

Conclusion

Given the rise in obesity amongst both adults and children, it is understandable that our patients are searching for successful weight loss strategies. The media and Internet provide easy access to a wealth of dietary information, some of which may not be advisable for growing children or supported by science. As clinicians, we should educate ourselves on evidence-based strategies so we can counsel our patients on healthy, sustainable eating behaviors. Popular dietary approaches such as intermittent fasting, paleolithic, ketogenic, and plant-based diets are not recommended in the pediatric population. The primary concern is the elimination of food groups important for growth and development, in addition to the lack of scientific evidence to support their safety and efficacy in this population. Rather, we recommend validated approaches such as balanced meals, emphasizing unprocessed foods, and eliminating SSBs. Regardless of the strategy implemented, individual and family factors should be considered to ensure both the practicality and durability of the intervention.

Author Contribution AB and SJ jointly wrote the main manuscript and compiled the list of references. AB prepared Table 1. AB provided supervision and oversight for SJ and edited the final product.

Data Availability All relevant data and materials that support the findings of this study are available from the corresponding author upon reasonable request.

Compliance with Ethical Standards

Conflict of Interest The authors declare no competing interests.

Human and Animal Rights Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

References

Papers of particular interest, published recently, have been highlighted as:
- • Of importance
- •• Of major importance

1. Centers for Disease Control and Prevention. Overweight and obesity. https://www.cdc.gov/obesity/data/index.html
2. Phoenix S. Weight loss statistics 2023. Great Green Wall. 2023. https://www.greatgreenwall.org/supplements/weight-loss-statistics/
3. Dieting in adolescence. Paediatr Child Health. 2004;9(7):487–503.
4. Story M, Rosenwinkel K, Himes JH, Resnick M, Harris LJ, Blum RW. Demographic and risk factors associated with chronic dieting in adolescents. Am J Dis Child. 1991;145:994–8.
5. Daee A, Robinson P, Lawson M, Turpin JA, Gregory B, Tobias JD. Psychologic and physiologic effects of dieting in adolescents. South Med J. 2002;95:1032–41.
6. Cameron JW. Self-esteem changes in children enrolled in weight management programs. Issues Compr Pediatr Nurs. 1999;22:75–85.
7. Field AE, Austin SB, Taylor CB, et al. Relation between dieting and weight change among preadolescents and adolescents. Pediatrics. 2003;112:900–6.
8. Tahreem A, Rakha A, Rabail R, Nazir A, Socol CT, Maerescu CM, Aadil RM. Fad diets: facts and fiction. Front Nutr. 2022;9:960922.
9. Technology and Media. The common sense census: media use by tweens and teens. 2021
10. •• Athanasian CE, Lazarevic B, Kriegel ER, Milanaik RL. Alternative diets among adolescents: facts or fads? Curr Opin Pediatr. 2021;33(2):252–9. **This review discusses popular fad diets like the Mediterranean, Paleo, vegan, and ketogenic diets as well as intermittent fasting. It focuses on the implementation and shortcomings of each diet.**
11. Liu A. Healthy eating and diets: fad or rad? Pediatr Ann. 2022;51(3):E88–92.
12. Mahmood L, Flores-Barrantes P, Moreno LA, Manios Y, Gonzalez-Gil EM. The influence of parental dietary behaviors and practices on children's eating habits. Nutrients. 2021;13(4):1138.
13. • Freire R. Scientific evidence of diets for weight loss: different macronutrient composition, intermittent fasting, and popular diets. Nutrition (Burbank, Los Angeles County, Calif). 2020;69:110549. **This article synthesizes evidence suggesting that no single dietary strategy is superior for weight loss. Rather than macronutrient composition, more impactful factors include negative energy balance, nutritional quality, and long-term adherence.**
14. Monzani A, Ricotti R, Caputo M, et al. A systematic review of the association of skipping breakfast with weight and cardiometabolic risk factors in children and adolescents. What should we better investigate in the future? Nutrients. 2019;11(2):387.
15. •• Hampl SE, Hassink SG, Skinner AC, et al. Clinical practice guideline for the evaluation and treatment of children and adolescents with obesity. Pediatrics (Evanston). 2023;151(2). **This includes guidance for the treatment and evaluation of children and adolescents with obesity. It discusses a multipronged approach to managing obesity including behavioral changes, family involvement, and other strategies.**
16. Liu YM, Williams S, Basualdo-Hammond C, Stephens D, Curtis R. A prospective study: growth and nutritional status of children treated with the ketogenic diet. J Am Diet Assoc. 2003;103(6):707–12.
17. De Amicis R, Leone A, Pellizzari M, Foppiani A, Battezzati A, Lessa C, Tagliabue A, Ferraris C, De Giorgis V, Olivotto S, Previtali R, Veggiotti P, Bertoli S. Long-term follow-up of nutritional status in children with GLUT1 deficiency syndrome treated with classic ketogenic diet: a 5-year prospective study. Front Nutr. 2023;24(10):1148960.
18. Andrewski E, Cheng K, Vanderpool C. Nutritional deficiencies in vegetarian, gluten-free, and ketogenic diets. Pediatr Rev. 2022;43(2):61–70.

19. Perry CL, McGuire MT, Neumark-Sztainer D, Story M. Characteristics of vegetarian adolescents in a multiethnic urban population. J Adolesc Health. 2001;29:406–16.
20. Gehring J, Touvier M, Baudry J, Julia C, Buscail C, Srour B, Hercberg S, Péneau S, Kesse-Guyot E, Allès B. Consumption of ultra-processed foods by pesco-vegetarians, vegetarians, and vegans: associations with duration and age at diet initiation. J Nutr. 2021;151(1):120–31.
21. Sergentanis TN, Chelmi ME, Liampas A, Yfanti CM, Panagouli E, Vlachopapadopoulou E, Michalacos S, Bacopoulou F, Psaltopoulou T, Tsitsika A. Vegetarian diets and eating disorders in adolescents and young adults: a systematic review. Children (Basel). 2020;8(1):12.
22. U.S. Department of Agriculture, Food and Nutrition Service, Center for Nutrition Policy and Promotion. 2023. Average healthy eating index-2020 scores for the U.S. population - total ages 2 and older and by age groups, WWEIA, NHANES 2017–2018.
23. Calcaterra V, Klersy C, Muratori T, et al. Prevalence of metabolic syndrome (MS) in children and adolescents with varying degrees of obesity. Clinical endocrinology (Oxford). 2008;68(6):868–72.
24. Bass R, Eneli I. Severe childhood obesity: an under-recognised and growing health problem. Postgrad Med J. 2015;91(1081):639–45.
25. Gardner CD, Trepanowski JF, Del Gobbo LC, et al. Effect of low-fat vs low-carbohydrate diet on 12-month weight loss in overweight adults and the association with genotype pattern or insulin secretion: the DIETFITS randomized clinical trial. JAMA. 2018;319(7):667–79.
26. Zachary M, Sisley S. The pediatric obesity encounter: literature and resources to help with 4 common issues. Current nutrition reports. 2020;9(2):94–100.
27. Livingston AS, Cudhea F, Wang L, et al. Effect of reducing ultraprocessed food consumption on obesity among US children and adolescents aged 7–18 years: evidence from a simulation model. BMJ nutrition, prevention & health. 2021;4(2):397–404.
28.• Hall KD, Ayuketah A, Brychta R, Cai H, Cassimatis T, Chen KY, Chung ST, Costa E, Courville A, Darcey V, Fletcher LA, Forde CG, Gharib AM, Guo J, Howard R, Joseph PV, McGehee S, Ouwerkerk R, Raisinger K, Rozga I, Stagliano M, Walter M, Walter PJ, Yang S, Zhou M. Ultra-Processed diets cause excess calorie intake and weight gain: an inpatient randomized controlled trial of ad libitum food intake. Cell Metab. 2019;30(1):67-77.e3. **This study showed that ultraprocessed foods were associated with weight gain.**
29. U.S. Department of Agriculture and U.S. Department of Health and Human Services. Dietary guidelines for Americans, 2020–2025. 9th Edition. December 2020. Available at DietaryGuidelines.gov
30.• Malik VS, An P, Willey WC, Hu FB. Sugar-sweetened beverages and weight gain in children and adults: a systematic review and meta-analysis. Am J Clin Nutr. 2013;98(4):1084–102. **This systematic review showed that sugar-sweetened beverages are associated with weight gain in children and adults.**
31. Vos MB, Kaar JL, Welsh JA, Van Horn LV, Feig DI, Anderson CAM, Patel MJ, Cruz Munos J, Krebs NF, Xanthakos SA, Johnson RK. American heart association nutrition committee of the council on lifestyle and cardiometabolic health; Council on clinical cardiology; Council on cardiovascular disease in the young; Council on cardiovascular and stroke nursing; Council on epidemiology and prevention; Council on functional genomics and translational biology; and Council on hypertension. Added sugars and cardiovascular disease risk in children: a scientific statement from the American heart association. Circulation. 2017;135(19):e1017–34.
32. Traffic light diet or similar approaches. Academy of Nutrition and Dietetics. Evidence Analysis Library. 2006. https://www.andeal.org/topic.cfm?cat=1429