



Nutrition, Diets, and Fads In Pediatrics

COLENE STOERNELL, MS, RDN, LD

PEDIATRIC DIETITIAN

OHSU DOERNBECHER SPECIALTY PEDIATRICS CLINIC

Overview

- ▶ What are Fad Diets
- ▶ Current Pediatric Diet Concerns
- ▶ Brief Review of Current Fad Diets
- ▶ 2020-2025 Dietary Guidelines
- ▶ Mindful Eating
- ▶ Guidelines in Clinical Practice

What are Fad Diets?

- ▶ Hyped as fastest approach to losing weight or “curing” a chronic condition
- ▶ Eliminating food that contain nutrients to maintain good health
- ▶ Often very little research
- ▶ Endorsed by celebrities or promoted through social media
- ▶ May be recommended in special situations

How to tell if something is a Fad Diet

- ▶ Missing food groups
- ▶ Rely on “patented” powders, pills, beverages
- ▶ Seems too good to be true



Children's typical diet

- ▶ Fail to meet Dietary Guidelines
- ▶ Higher proportion of energy from fat and/or added sugar
- ▶ Lower intake of a vitamin A, folic acid, fiber, iron, calcium, vitamin D, and zinc
 - ▶ Vitamin D deficiency
 - ▶ Decreased bone density and probably fracture risk
 - ▶ Iron deficiency
 - ▶ Impair cognitive function and physical performance
 - ▶ Inadequate calcium intake may
 - ▶ Increase fracture risk
 - ▶ Risk of developing osteoporosis in later life

Typical Diet Continued

- ▶ Data from six national representative surveys
 - ▶ Total energy intake among United States adolescents increased through 2004, then decreased through 2010
 - ▶ Full-fat milk, meats, ready-to-eat cereals, burgers, fried potatoes, fruit juice, and vegetables decreased, whereas nonfat milk, poultry, sweet snacks and candies, and tortilla- and corn-based dishes increased through 2010
 - ▶ Contributing to the decline in caloric intake prior to 2010
 - ▶ Decreases in sugar-sweetened beverages, pizza, pasta dishes, bread and savory snacks, and significant increases in fruit.
- ▶ Analysis of national survey data between 1999 and 2016
 - ▶ Modest improvement in diet quality but more than two-thirds of adolescents still had poor diet quality as defined by the American Heart Association and less than 1 percent had ideal diet quality.
 - ▶ Consumption of sugar-sweetened beverages and added sugars generally decreased and sodium intake increased

Children and Fad Diets

- ▶ Parents / Caregivers
 - ▶ Lose weight
 - ▶ “Become healthy”
- ▶ Peers
- ▶ Social media

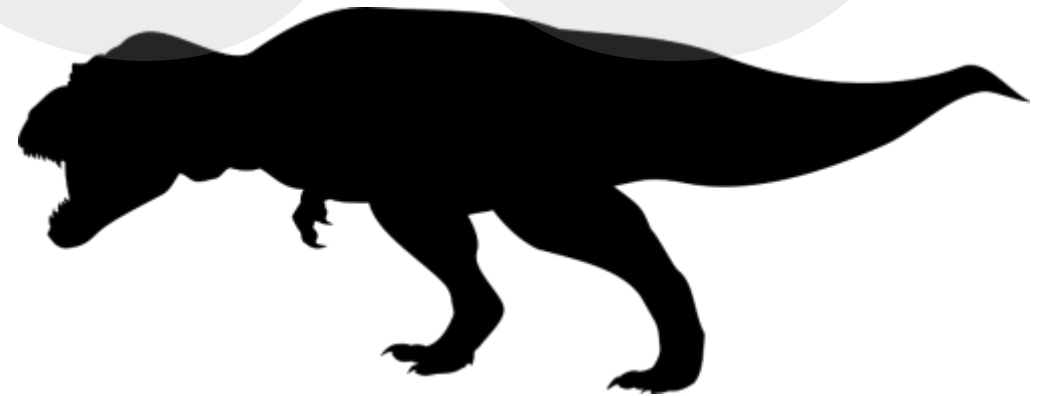


Current Hot Diet Trends

- ▶ Paleo
- ▶ Intermittent Fasting
- ▶ Keto / Keto Lite

Paleo

- ▶ Eat like our caveman ancestors
- ▶ Includes berries, nuts, and wild-caught animal meat (fish, chicken, etc), grass fed whey and collagen peptides
- ▶ Bans anything that requires industrialized farming techniques, including grains, wheat, corn, dairy, processed foods



Paleo

▶ Included in the Diet:

- ▶ Lean meats
- ▶ Fish
- ▶ Fruits
- ▶ Vegetables
- ▶ Nuts
- ▶ Seeds

▶ Restricted:

- ▶ Grains
- ▶ Beans and other legumes
- ▶ Dairy products
- ▶ Potatoes and other starchy vegetables
- ▶ Processed foods



Paleo Risks for Children

- ▶ High fat / high protein
 - ▶ Possible caloric deficient
- ▶ Excludes all dairy
 - ▶ Vitamin D and Calcium Risks
- ▶ Excluding grains
 - ▶ Not enough carbs for growth and Development

Intermittent fasting (IF)

- ▶ Fast / Eat cycles
- ▶ Various different cycles
 - ▶ 16/8 method being the most popular

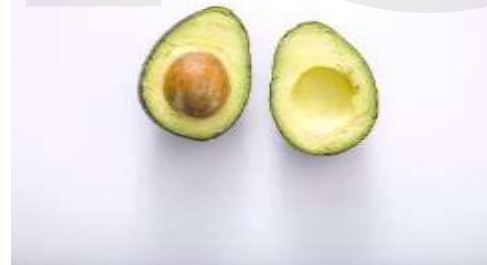


IF Risks for Children

- ▶ No studies in children
- ▶ Breakfast omission
 - ▶ Affect school performance and the overall quality of the diet
 - ▶ Total nutrient intakes are lower
 - ▶ Foods that typically are skipped with breakfast include fruits, breads, and calcium- and iron-rich foods (milk and iron-fortified cereals, respectively)
 - ▶ Tend not to compensate for these losses at other meals

Keto Light / Keto

- ▶ True Keto
 - ▶ Ketosis by eating mostly fat (70% or more of total diet)
 - ▶ Low sugar / Net Carbs
- ▶ Keto Light
 - ▶ High protein
 - ▶ Traditional keto limits protein to $\leq 20\%$ of total diet
 - ▶ Moderate fat from high quality sources
 - ▶ almonds, coconut, avocado
 - ▶ Extremely low sugars
 - ▶ 4g net carbs
 - ▶ Gluten-free ???



Keto / Keto light risks for children

- ▶ Carbohydrate Limitation
 - ▶ 20-30 grams a day
- ▶ Dehydration
- ▶ Electrolyte imbalance
- ▶ Digestive issues
 - ▶ nausea, vomiting, diarrhea, and constipation
- ▶ Elevated blood cholesterol levels
- ▶ Low blood sugar
- ▶ Impaired growth
- ▶ Vitamin and mineral deficiencies



Overall harmful effects of Fad Diets

- ▶ Parents / caregivers
 - ▶ mixed-messages about "healthy" eating
- ▶ May feel badly about eating particular foods restricted on the diet
 - ▶ Affecting self-esteem.
 - ▶ unable to find balance their diet / all foods work
- ▶ Restrictive diets
 - ▶ affect their relationship with food.
 - ▶ could lead to eating disorders

Academy of Nutrition and Dietetics Position Statement

- ▶ Eat a variety of foods
- ▶ Moderation



What should kids eat?

- ▶ Dietary Guidelines for Americans 2020
- ▶ Follow a healthy eating pattern:
- ▶ Focus on Variety, Nutrient Density, & Amount
- ▶ Limit Calories from Added Sugars & Saturated Fats
- ▶ Reduce Sodium Intake
- ▶ Shift to Healthier Food & Beverage Choices

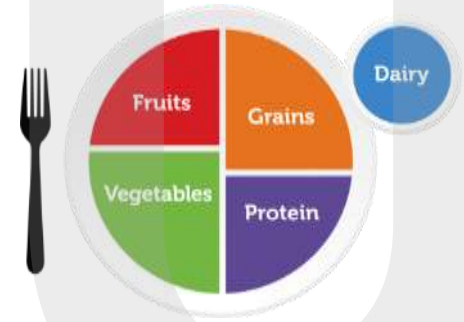
Healthy Eating Pattern

- ▶ Healthy US
- ▶ Mediterranean
- ▶ Vegetarian



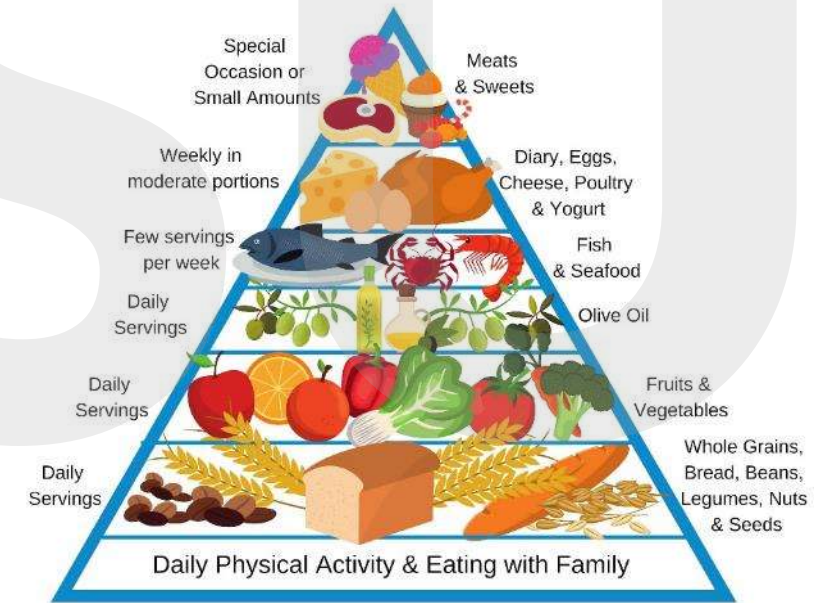
US Healthy Eating Pattern

- ▶ Vegetables
 - ▶ dark green; red and orange; beans, peas, and lentils; starchy; and other vegetables
- ▶ Fruits
 - ▶ whole fruit
- ▶ Grains
 - ▶ whole grain
- ▶ Dairy
 - ▶ fat-free or low-fat milk, yogurt, and cheese, and/or lactose-free versions and fortified soy beverages and yogurt as alternatives
- ▶ Protein
 - ▶ lean meats, poultry, and eggs; seafood; beans, peas, and lentils; and nuts, seeds, and soy products
- ▶ Oils
 - ▶ vegetable oils and oils in food, such as seafood and nuts



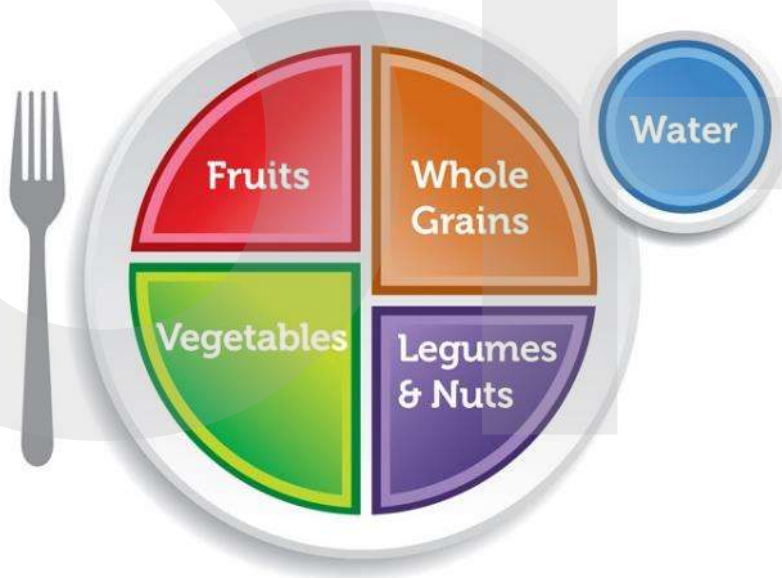
Mediterranean Diet

- ▶ **Fruits and vegetables**
 - ▶ Aim for 7 to 10 servings a day of fruit and vegetables.
- ▶ **Whole grains**
 - ▶ Whole grains, bulgur and farro.
- ▶ **Healthy fats**
 - ▶ olive oil
- ▶ **Seafood**
 - ▶ fish twice a week including water-packed tuna, salmon, trout, mackerel and herring
- ▶ **Reduce red meat**
 - ▶ Substitute fish, poultry or beans for meat
 - ▶ If you eat meat, make sure it's lean and keep portions small
- ▶ **Dairy**
 - ▶ low-fat Greek or plain yogurt and a variety of cheeses.
- ▶ **Spice it up**
 - ▶ Herbs and spices boost flavor and lessen the need for salt



MEDITERRANEAN DIET

Vegetarian / Plant Based



- ▶ May include soy or another milk alternative
- ▶ Proteins derived from plant sources
 - ▶ Legumes (soy, peanut, fresh peas, green beans)
 - ▶ Pulses (Beans, lentils, chickpeas, split peas)
 - ▶ Nuts (almond, walnuts, cashew, hemp)
 - ▶ Seeds (pumpkin, watermelon)

Plant-Based Considerations

- ▶ Can meet nutrient needs for growth and development
 - ▶ Need to be carefully planned to meet energy, protein, iron, calcium, vitamin D, and vitamin B12 and, to a lesser extent, zinc, long-chain omega-3 fatty acids
- ▶ Risks for inadequate nutrient intake
 - ▶ during periods of growth
 - ▶ Restriction plant based diets
 - ▶ Choose low-fat / Avoid saturated fat
- ▶ Vegetarian or vegan diets should include a variety of nutrient-rich foods
 - ▶ cooked legumes and pulses, whole grain breads, enriched cereals, nuts and nut spreads (peanut, tahini, almond, and cashew butter), nutlike seeds (sunflower seeds, soybeans, sesame seeds), avocados, and dried fruits

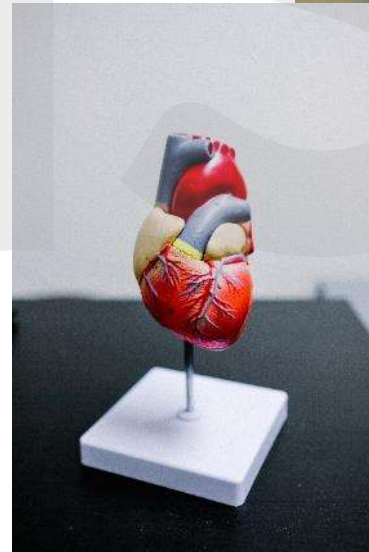
Limit Added Sugars

- ▶ Limit sugars to < 10% of total calories daily
 - ▶ Children under the age of 2, food and beverages with added sugars are not recommended
 - ▶ Natural sugars—in fruits, vegetables, and milk—are not added sugars.)
 - ▶ Almost 50% of all added sugars in the American diet are in drinks
- ▶ American Heart Association **limit** for **added sugars**
 - ▶ 6 teaspoons (24 grams) of **sugar** for women
 - ▶ 9 teaspoons (36 grams) of **sugar** for men



Saturated Fat

- ▶ Limit saturated fats to less than 10% of total calories daily by replacing them with unsaturated fats
- ▶ Limit trans fats to as low as possible



Sodium

- ▶ Limit Sodium to less than 2,300 mg daily (for adults and children 14 years and older)



What about the Calories???

- ▶ Multiple Predictive Equations in Pediatrics
 - ▶ DRI with Activity coefficients
 - ▶ EER
 - ▶ Schofield
 - ▶ WHO
 - ▶ Developmental Disabilities Equations
- ▶ Historical Weight Data
- ▶ Growth Velocity
- ▶ Clinical Judgement



Mindful Eating

- ▶ Taking the time to slow down and pay attention to what you are eating and feeling
- ▶ Used for weight management and Selective Eaters
- ▶ Exploring Foods
- ▶ Different hungers
 - ▶ Eye, Nose, Mouth, Mouth, Cellular, Mind, Heart

Putting it all Together In Clinical Practice

- ▶ 14 year Hispanic Male with NAFLD and obesity (BMI $\geq$ 95th percentile for age)
- ▶ Referred to Dietitian for Lifestyle Modification
- ▶ 24-Hr Recall
 - ▶ Bread and Hot chocolate for Breakfast
 - ▶ Water all day
 - ▶ Soup for Dinner
 - ▶ Snacks at night on chips, Cheetos, and Doritos

Lifestyle Modification

- ▶ Well Balanced Lifestyle Pattern
 - ▶ Mediterranean Diet
- ▶ Limited added sugars in foods and beverages
- ▶ Moderate to High Intensity Physical Activity



References

Stratbucker. W, et.al. **Fad Dieting and Weight Loss in Children**. Pediatrics in Review Aug 2016, 37 (8) 357-359; DOI: 10.1542/pir.2016-0009

Cioci A, Rudnick C, Ohanian L. Accidental ketosis-induced polyuria in a toddler: a case report. BMC Pediatr. 2019 Oct 30;19(1):395. doi: 10.1186/s12887-019-1785-z. PMID: 31666031; PMCID: PMC6821017.

Mediterranean diet 101 brochure. Oldways Preservation Trust. <https://oldwayspt.org/resources/mediterranean-diet-101-brochure>. Accessed April 13, 2020.

Sofi F, et al. Adherence to Mediterranean diet and health status: Meta-analysis. BMJ. 2008;337:a1344.

Mitrou PN, et al. Mediterranean dietary pattern and prediction of all-cause mortality in a U.S. population. Archives of Internal Medicine. 2007;167:2461.

Monounsaturated fat. American Heart Association. http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/Nutrition/Monounsaturated-Fats_UCM_301460_Article.jsp#.VrkGZtjbJMw. Accessed April 20, 2020.

Zeratsky KA (expert opinion). Mayo Clinic, Rochester, Minn. May 29, 2019.

Rimm EB, et al. Seafood long-chain n-3 polyunsaturated fatty acids and cardiovascular disease: A science advisory from the American Heart Association. Circulation. 2018;138:e35.

Van Horn L, et al. Recommended dietary pattern to achieve adherence to the American Heart Association/American College of Cardiology (AHA/ACC) guidelines: A scientific statement from the American Heart Association. Circulation. 2016;134:e505.

2020-2025 Dietary Guidelines for Americans. U.S. Department of Health and Human Services and U.S. Department of Agriculture. : https://www.dietaryguidelines.gov/sites/default/files/2021-03/Dietary_Guidelines_for_Americans-2020-2025.pdf . Accessed April 13, 2020.

Demory-Luce, D., et al. Vegetarian diets for children. UpToDate. Accessed April 13th, 2020.

Demory-Luce, D., et al. Adolescent eating habits. UpToDate. Accessed April 13th, 2020.

References

What's the Mediterranean diet? Mediterranean Diet Foundation. <https://dietamediterranea.com/en/nutrition/#decalogo>. Accessed April 13, 2020

British Journal of Nutrition , Volume 99 , Issue S1 , February 2008 , pp. S22 - S25 DOI: <https://doi.org/10.1017/S0007114508892471>

Bostock Emmanuelle C. S., et al. Consumer Reports of “Keto Flu” Associated With the Ketogenic Diet, *Frontiers in Nutrition*. 2020; Vol. 7. doi: 10.3389/fnut.2020.00020

Pardee PE, Lavine JE, Schwimmer JB. Diagnosis and treatment of pediatric nonalcoholic steatohepatitis and the implications for bariatric surgery. *Semin Pediatr Surg*. 2009;18(3):144-151. doi:10.1053/j.sempedsurg.2009.04.004

NASPGHAN Clinical Practice Guideline for the Diagnosis and Treatment of Nonalcoholic Fatty Liver Disease in Children: Recommendations from the Expert Committee on NAFLD (ECON) and the North American Society of Pediatric Gastroenterology, Hepatology and Nutrition (NASPGHAN), *Journal of Pediatric Gastroenterology and Nutrition*: February 2017 - Volume 64 - Issue 2 - p 319-334 doi: 10.1097/MPG.000000000000148

Della Corte C, Mosca A, Vania A, Alterio A, Iasevoli S, Nobili V. Good adherence to the Mediterranean diet reduces the risk for NASH and diabetes in pediatric patients with obesity: The results of an Italian Study. *Nutrition*. 2017 Jul-Aug;39-40:8-14. doi: 10.1016/j.nut.2017.02.008. Epub 2017 Feb 27. PMID: 28606575.