Shaping Tomorrow's Force: Addressing Pediatric Obesity Today

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Presenter

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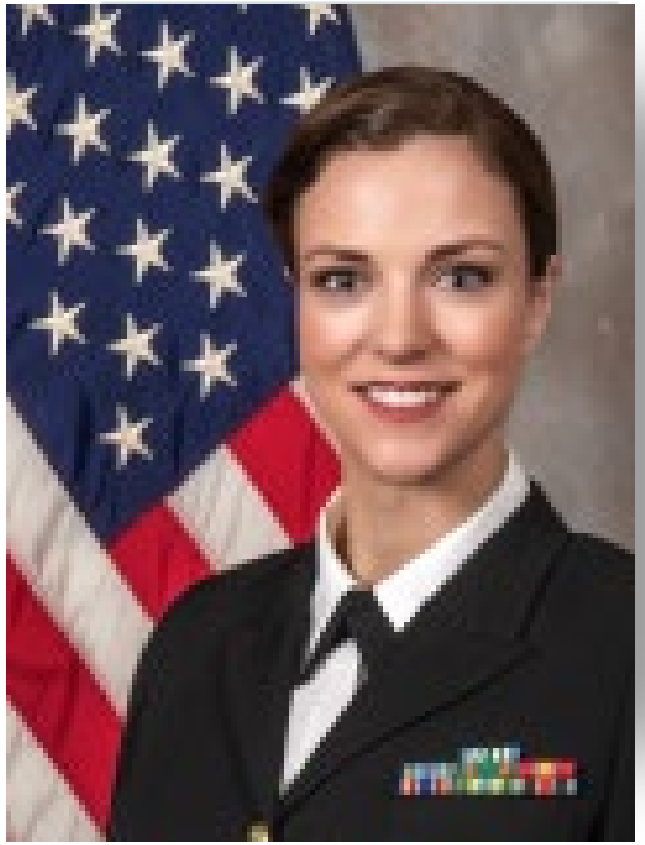

Dr. Kristan E. (Betsy) Madison is a board-certified pediatrician and Lieutenant Commander in the U.S. Navy. She received her undergraduate degree in Biological Science from the University of Notre Dame, her medical degree from Georgetown University School of Medicine and holds a Master's degree in Physiology from Georgetown University. She completed her pediatric residency at the Naval Medical Center San Diego. She also is board certified in Obesity Medicine and Lifestyle Medicine. She is an Assistant Professor of Pediatrics at USU and is currently involved in pediatric obesity research, including addressing obesity in military-connected children. She is the current Director of the Walter Reed Healthy Habits Clinic, further demonstrating her commitment to the health and well-being of children and families.

Disclosures

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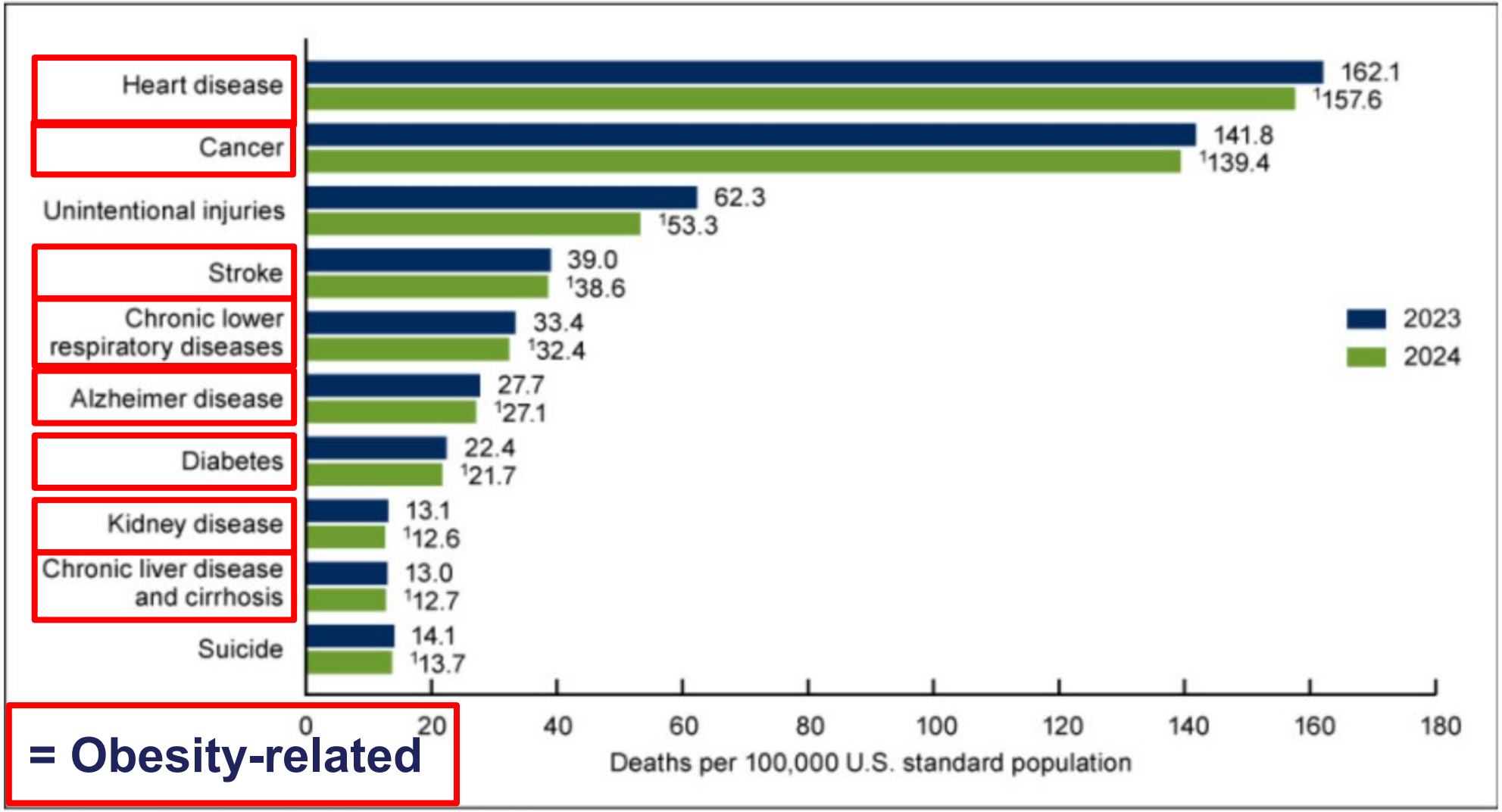
Objectives

By the end of this activity, participants will be able to:

1. Describe current trends in pediatric and active-duty obesity and explain their implications for future military readiness.
2. Identify gaps in early recognition and diagnosis of pediatric obesity, including delays highlighted in recent research and clinical practice.
3. Apply evidence-based, family-centered counseling strategies—including lifestyle medicine principles—to improve nutrition and weight management in pediatric populations within military settings.

Objective 1: Current trends in pediatric and active-duty obesity and implications for future military readiness

Figure 4. Age-adjusted death rate for the 10 leading causes of death in 2024: United States, 2023 and 2024



[1]Statistically significant decrease from 2023 to 2024 ($p < 0.05$).
NOTES: A total of 3,072,666 resident deaths were registered in the United States in 2024. The 10 leading causes of death accounted for 70.9% of all U.S. deaths in 2024. Causes of death are ranked according to number of deaths in 2024. Rankings for 2023 data are not shown.
SOURCE: National Center for Health Statistics, National Vital Statistics System, mortality data file.

2020 Obesity Rates:
42% adults
20% children

Estimated that 60% of children will develop obesity before 35

(Xu et al., 2026)

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Obesity is about more than willpower

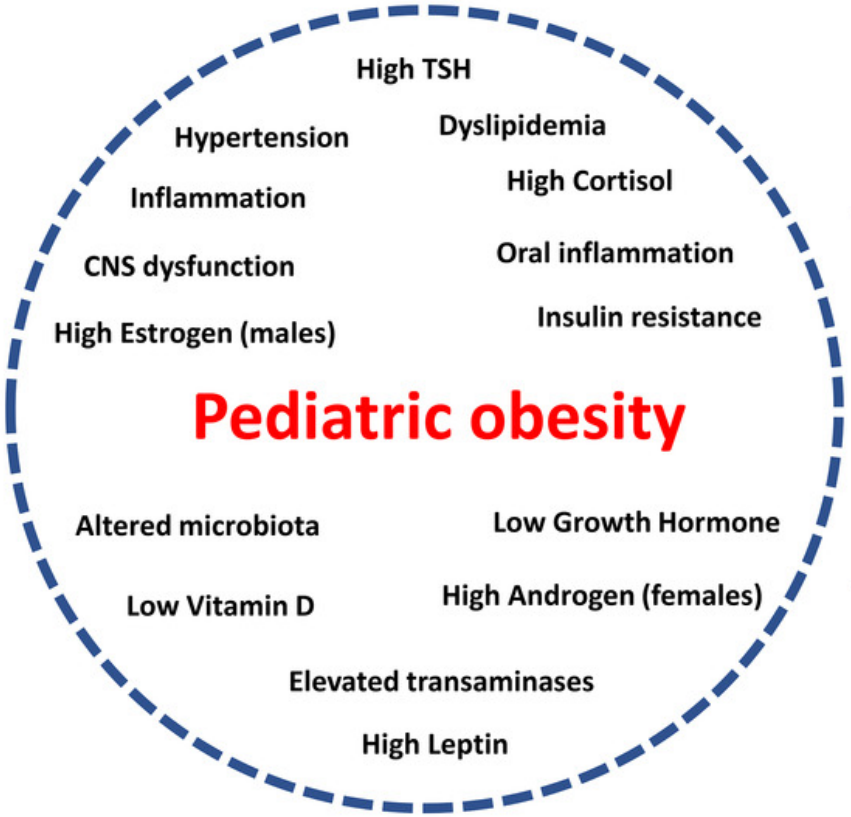
- Not a moral failing
- Not always the reason for a patient's complaint
- Not always something that is easily resolved
- Not a reason for judgement, bias and stigma
- As providers, we can do better!

Medical Consequences

Risk factors

- **Genetics**
- **Epigenetics**
- **Obesogenetic environment**
  - 24/7- food availability, affordability of energy-dense foods
  - Sedentary activities
  - Limited access to recreation areas
- **Unhealthy eating habits**
  - Large portion sizes
  - High intake of sugar-sweetened beverages
  - High glycemic foods
  - High intake of fast foods
  - Low fiber content
  - Low intake of fruits and vegetables
  - Irregular food intake
- **Lifestyle factors**
  - Low physical activity
  - Sedentary lifestyle
  - Insufficient sleep
  - Stress and depression

Mechanisms



Long-term consequences

- Type 2 diabetes
- Type 1 diabetes
- Cardiovascular disease
- Nonalcoholic fatty liver disease
- Cognition defects
- Multiple sclerosis
- Periodontitis and Caries
- Cancer – malignancies
- Mb Crohn
- PCO syndrome
- Gynecomastia
- Premature mortality
- Pseudotumor Cerebri
- Asthma
- Arthritis

TSH - Thyroid-Stimulating Hormone
Mb Crohn - Morbus Crohn (Crohn's disease)
PCO - Polycystic ovary syndrome

(Marcus et al., 2022)

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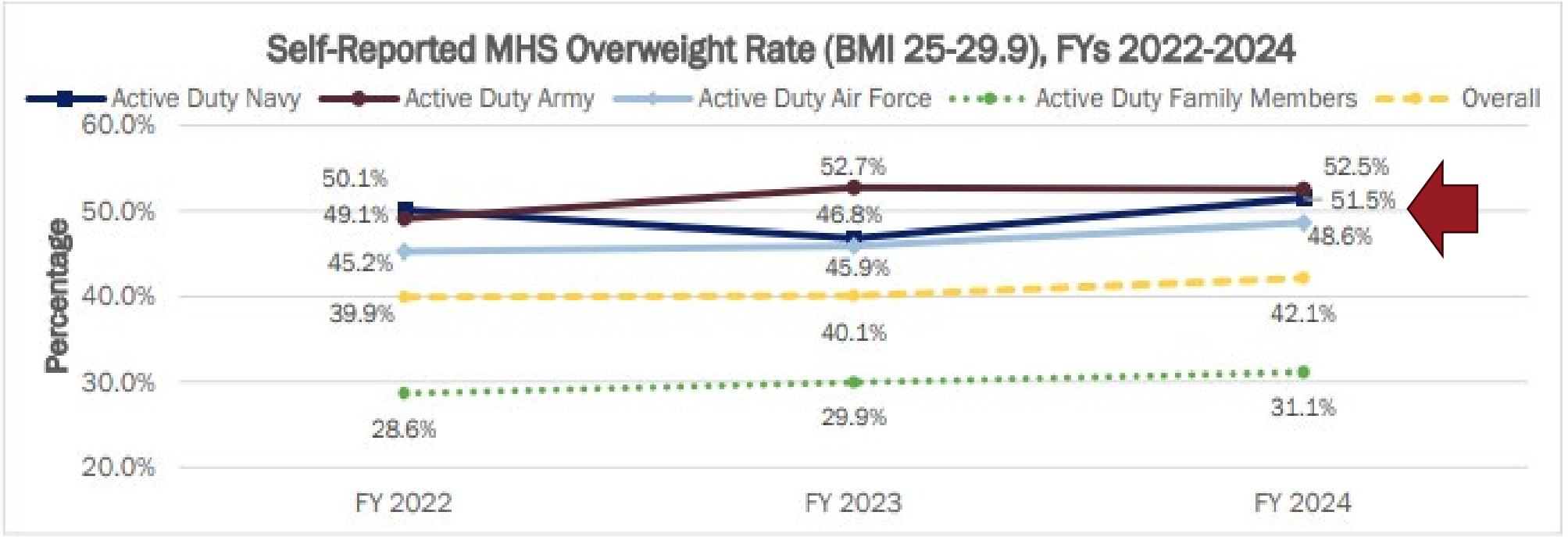
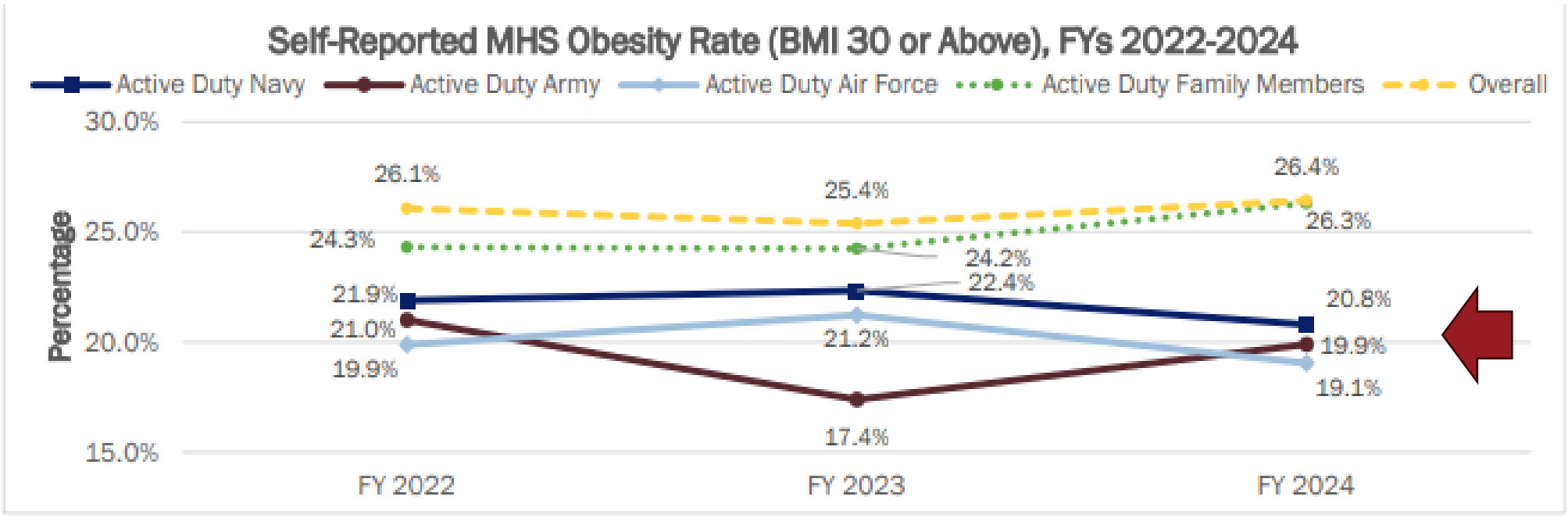


= 1 in 2 Service Members With Overweight



= 1 in 5 Service Members With Obesity

(Defense Health Agency, 2024)

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Impact of Obesity on the Military

- Rising rates of obesity across the U.S. Armed Forces were deemed an “urgent threat to readiness, manpower, and the overall health of the force” in an article published in February 2026.
- Services members with obesity are 33% more likely to have musculoskeletal injuries, affecting ability to deploy.

(Mordowanec, 2026)

Obesity Impacts the Current DoD Budget

$1.5 Billion Per Year

The Department of Defense (DOD), our nation's largest employer, spends about **$1.5 billion annually in obesity-related health care costs** for current and former service members and their families, as well as costs to replace unfit personnel.

Lost workdays due to overweight and obesity for active-duty military personnel is **658 ,000 days per year**. This costs the Department of Defense **$103 million per year**.

658K Days Per Year

Physical inactivity is associated with costly basic training discharge across the services.

(https://www.cdc.gov/physicalactivity/resources/unfit-to-serve/index.html , n.d.)

Obesity Impacts Military Readiness

- Only 2 in 5 young adults are now both weight-eligible and adequately active.
- Among new recruits, 30% have a parent in the military, and 70% report a family member in the Armed Forces.
- Military-connected providers and families play a critical role in ensuring the next generation of military personnel are optimized for military service.

(Ahl, 2022)

Objective 2: Identify gaps in early recognition and diagnosis of pediatric obesity, including delays highlighted in recent research and clinical practice.

Challenges in Pediatric Obesity

- Historical delay in recognizing pediatric obesity as a chronic disease
- A misconception that elevated BMI in childhood will not translate to adulthood
- Lack of screening for comorbidities or knowledge about managing “adult conditions”
- Less awareness that genetic factors may also play a large role
- Lack of actionable nutrition knowledge of providers
- Changes in food and lifestyle environments over time
- Easier to avoid conversations that providers think will appear judgmental or risk eating disorders.

(Hampl et al., 2023)

Policy and Clinical Guidance shift

- Change with the publication of the 2023 Clinical Practice Guideline (CPG) in January 2023.
- Key changes:
  - Earlier intervention
  - More proactive treatment
    - Comorbidity Screening
    - Anti-obesity Medications
    - Bariatric Surgery

FROM THE AMERICAN ACADEMY OF PEDIATRICS | CLINICAL PRACTICE GUIDELINE | JANUARY 09 2023

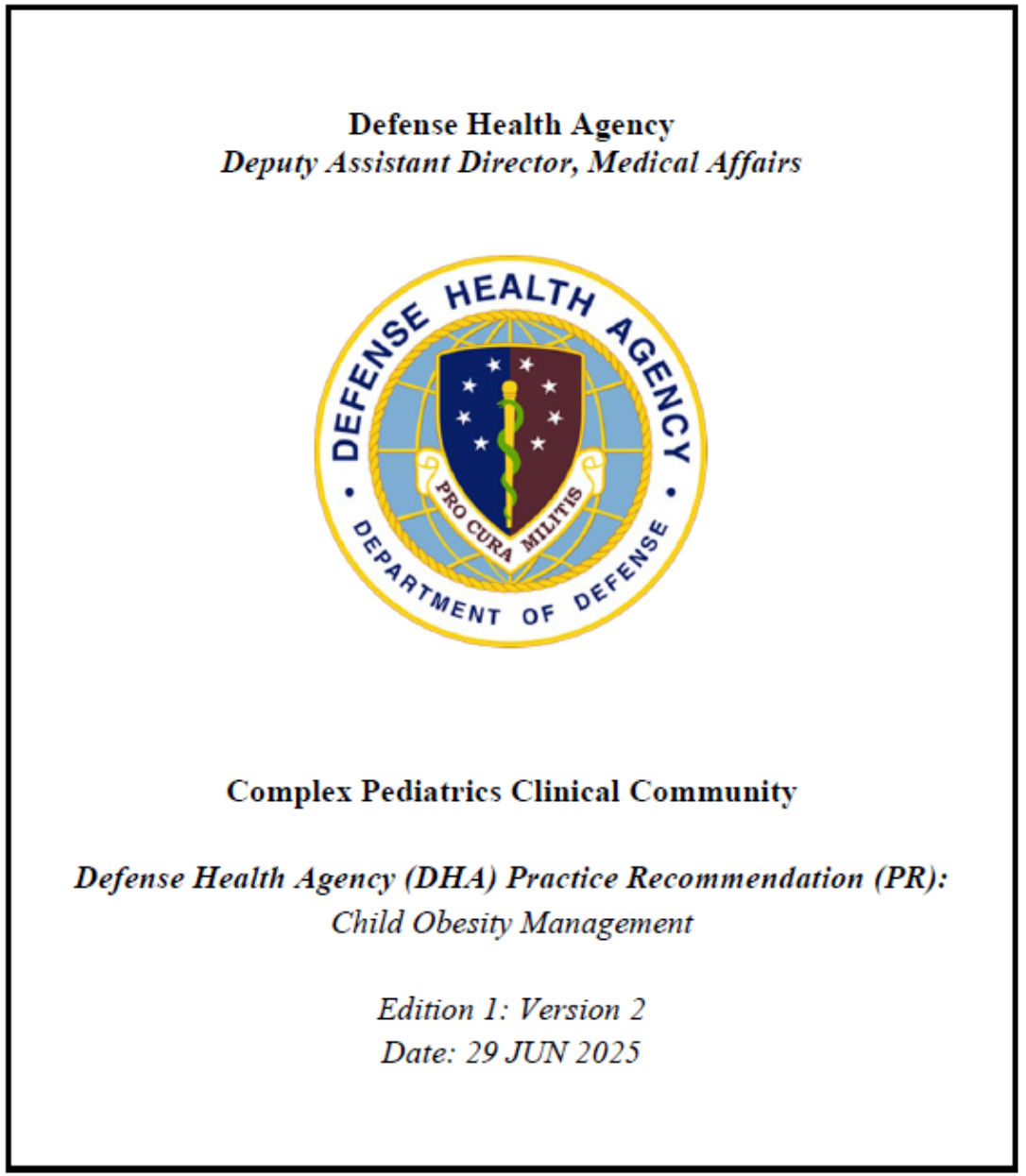
Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents With Obesity

Sarah E. Hampl, MD, FAAP; Sandra G. Hassink, MD, FAAP; Asheley C. Skinner, PhD; Sarah C. Armstrong, MD, FAAP; Sarah E. Barlow, MD, MPH, FAAP; Christopher F. Bolling, MD, FAAP; Kimberly C. Avila Edwards, MD, FAAP; Ihuoma Eneli, MD, MS, FAAP; Robin Hamre, MPH; Madeline M. Joseph, MD, FAAP; Doug Lunsford, MEd; Eneida Mendonca, MD, PhD, FAAP; Marc P. Michalsky, MD, MBA, FAAP; Nazrat Mirza, MD, ScD, FAAP; Eduardo R. Ochoa, Jr, MD, FAAP; Mona Sharifi, MD, MPH, FAAP; Amanda E. Staiano, PhD, MPP; Ashley E. Weedn, MD, MPH, FAAP; Susan K. Flinn, MA; Jeanne Lindros, MPH; Kymika Okechukwu, MPA

(Hampl et al., 2023)

DHA Response

- Resources and an Algorithm
- Links to Prior Authorization forms for Military-Connected Providers
- Included guidance for under age 2 years



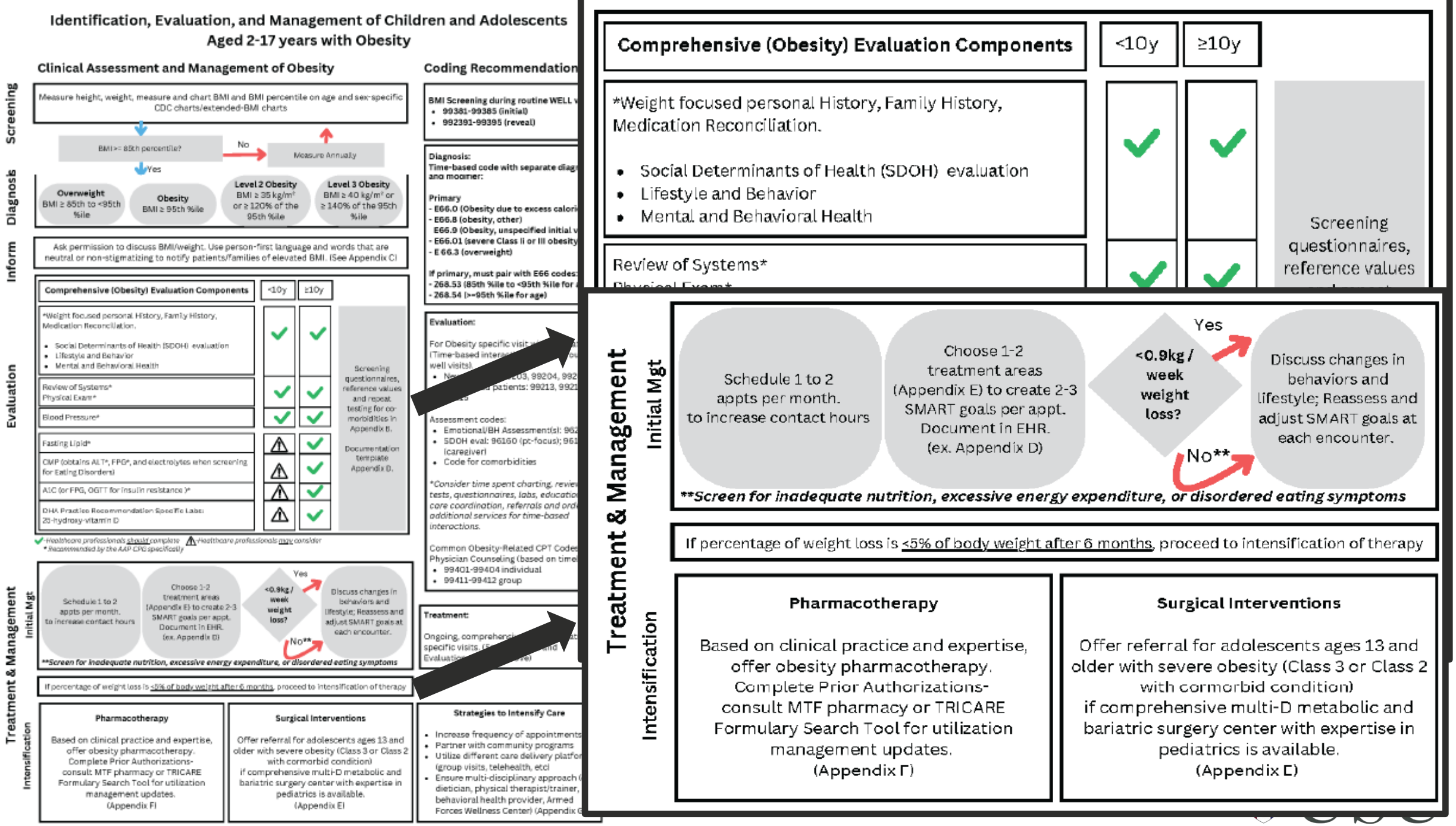
Defense Health Agency
Deputy Assistant Director, Medical Affairs

Complex Pediatrics Clinical Community

Defense Health Agency (DHA) Practice Recommendation (PR):
Child Obesity Management

Edition 1: Version 2
Date: 29 JUN 2025

(Chiccarelli et al., 2025)



(Chiccarelli et al., 2025)

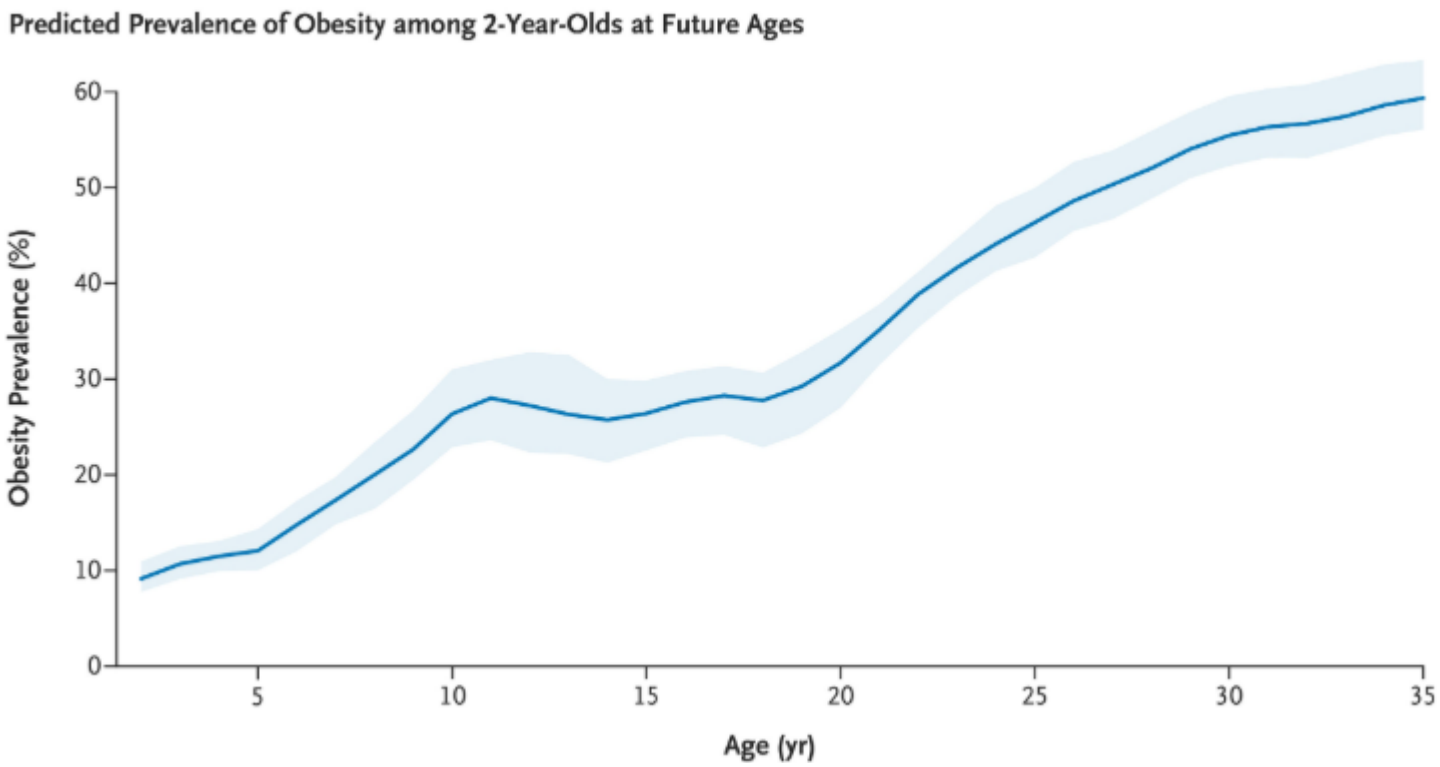
Prevalence of Early Obesity

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Simulation of Growth Trajectories of Childhood Obesity into Adulthood

Zachary J. Ward, M.P.H., Michael W. Long, Sc.D., Stephen C. Resch, Ph.D., Catherine M. Giles, M.P.H., Angie L. Cradock, Sc.D., and Steven L. Gortmaker, Ph.D.



(Ward et al., 2017)

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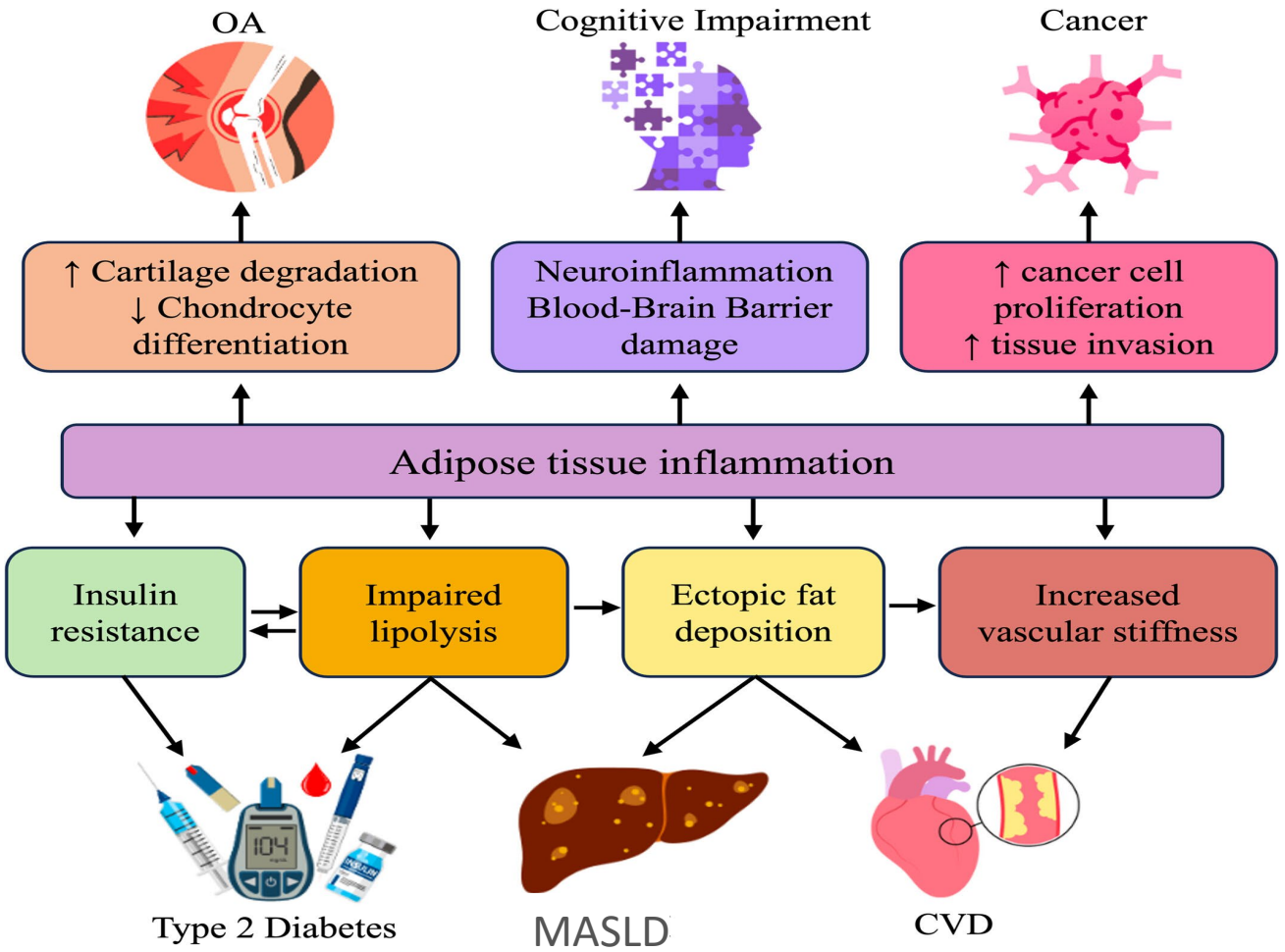
Retrospective Study of Healthy Habits Clinic

- Review of pediatric patients referred to the Healthy Habits Clinic at Walter Reed National Military Medical Center (WRNMMC) from June 2011-June 2019
- Patients were referred with either overweight or obesity between ages 6-18 years.
- Charts were reviewed for preschool height and weight measurements if available at ages 2, 3, 4, and 5 years as well as height and weight at the time of referral.
- BMIs were calculated using the CDC Extended BMI growth charts.

Obesity-Related Comorbidities



OA – Osteoarthritis

MASLD - Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD)

CVD - Cardiovascular disease

(Turner et al., 2025)

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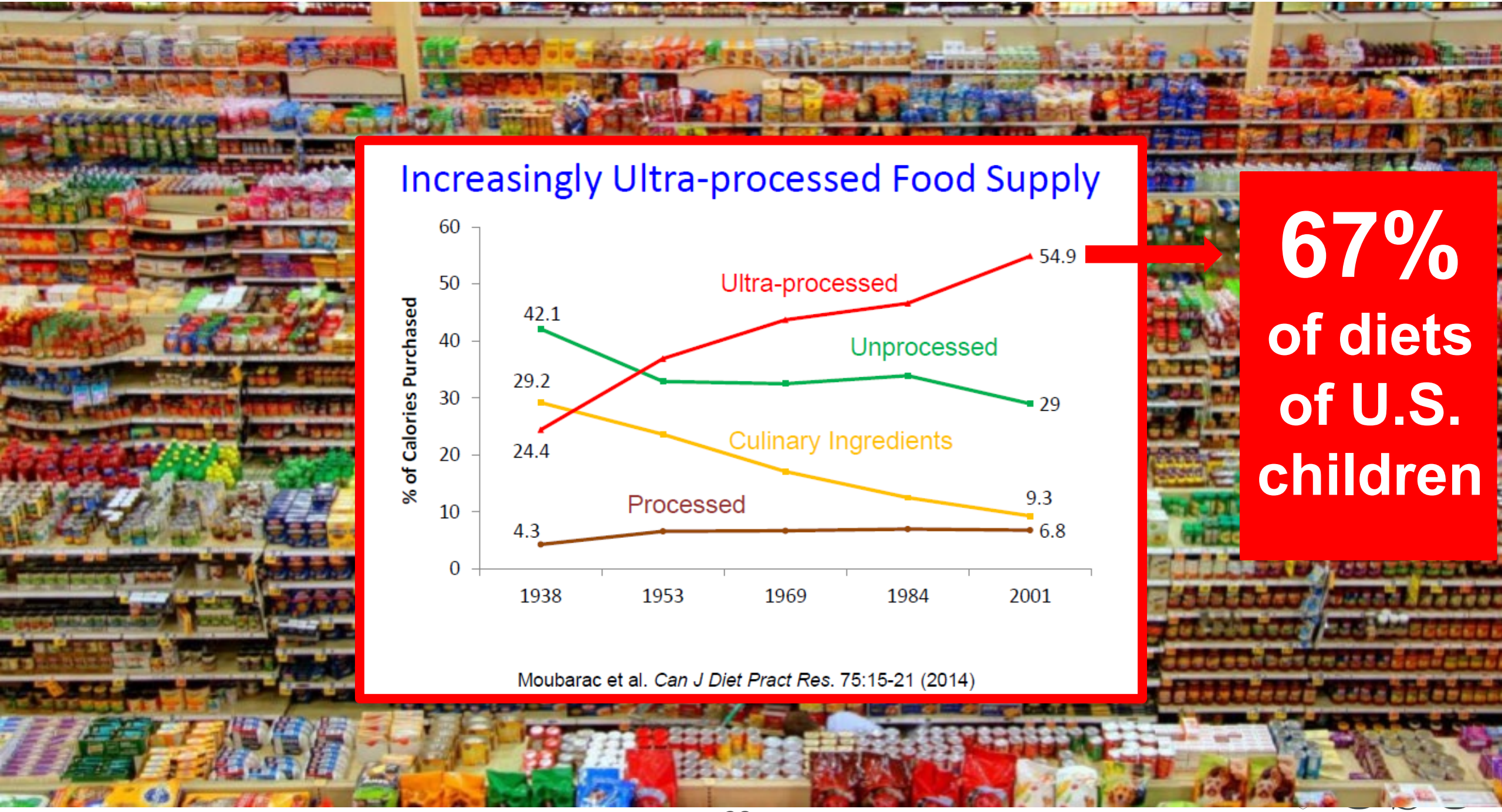
Objective 3: Apply evidence-based, family-centered counseling strategies—including lifestyle medicine principles—to improve nutrition and weight management in pediatric populations within military settings.

HOW CAN WE PARTNER WITH FAMILIES FOR CHANGE?

THE FOOD ENVIRONMENT



(Wang et al., 2021)

NOVA Food Classification

NOVA classification of foods based on degree of processing. Figure created by Chamarthi V.S., adapted from Monteiro et al. [1].

1. Ultra-Processed Food (UPF) Products: Ingredients used to identify UPFs

Food substances rarely used in home kitchens	UPF additive class markers
• Fructose • High fructose corn syrup • Fruit juice concentrates • Invert sugar • Maltodextrin • Dextrose • Lactose • Modified oils • Mechanically-separated meat • Hydrolyzed proteins • Soy protein isolates • Gluten • Casein • Whey protein	• Antifoaming agents • Bulking agents • Carbonating agents • Colors • Emulsifiers • Emulsifying salts • Foaming agents • Flavor enhancers • Gelling agents • Glazing agents • Sweeteners • Thickeners

(Dunford et al., 2026)

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What is in your pantry, fridge or freezer?

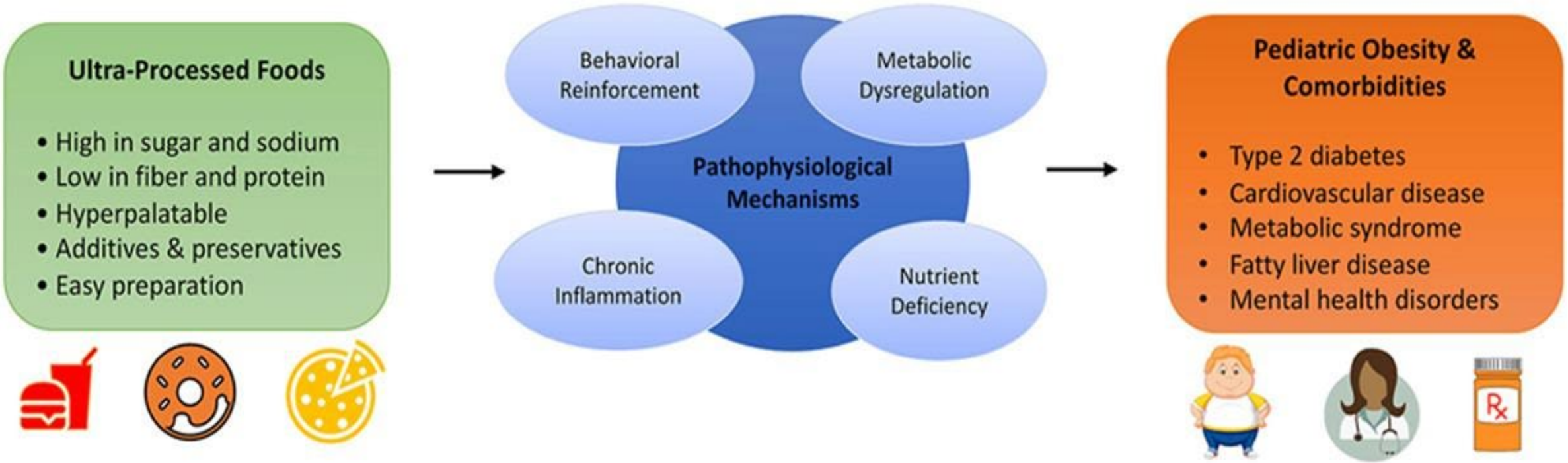
(Waldman, 2019)

Obesity Pillars
Volume 16, December 2025, 100203

The impact of ultra-processed foods on pediatric health

Venkata Sushma Chamarthi [a], Pallavi Shirsat [b], Kunal Sonavane [c], Saketh Parsi [d], Usha Ravi [e], Harikrishna Choudary Ponnam [f], Shagun Bindlish [g], Evan P. Nadler [h], Rahul Kashyap [i], Sarah Ro [j]

Ultra-Processed Foods and Pediatric Health



(Chamarthi et al., 2025)

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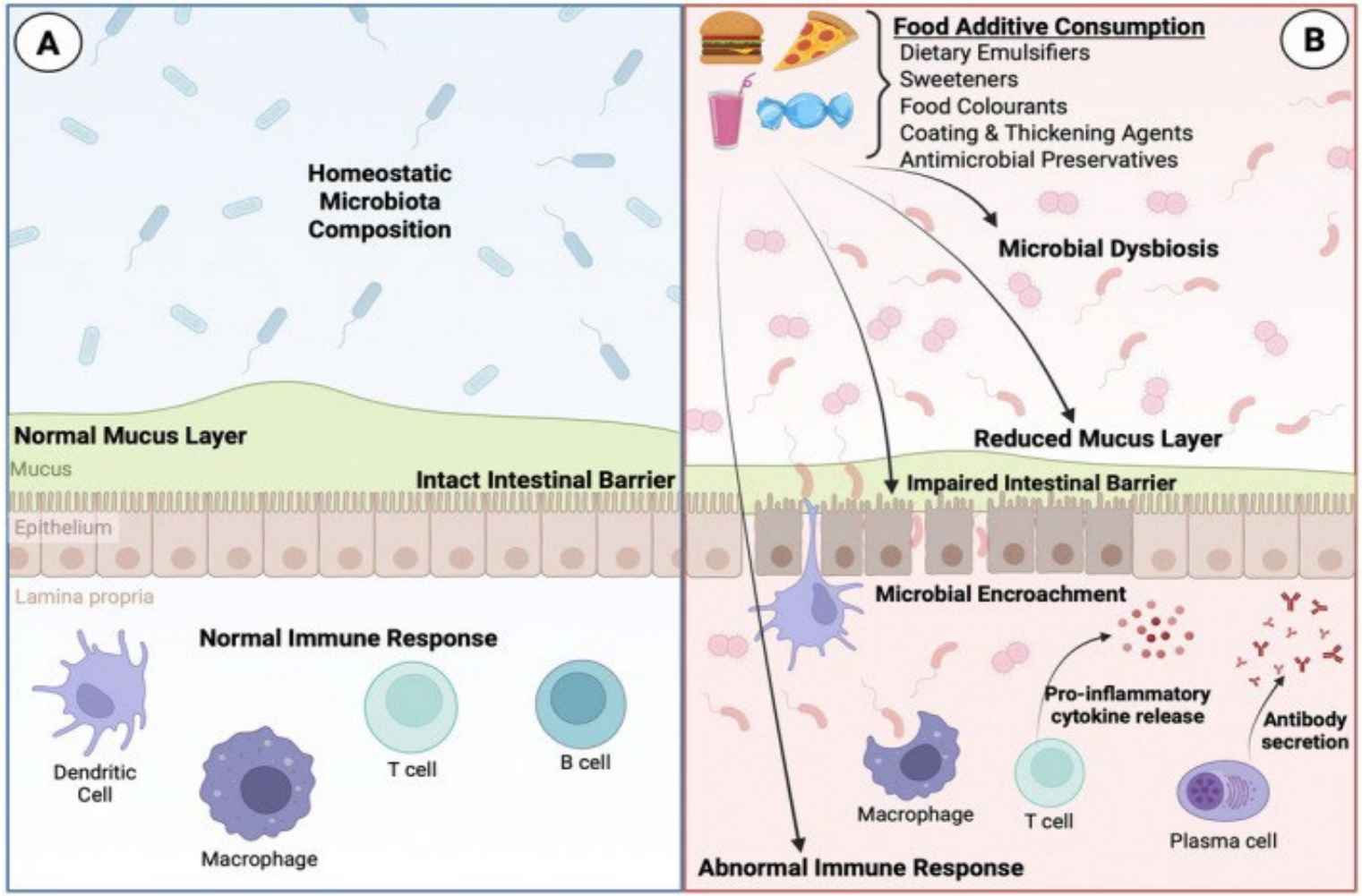
Impact on the Intestinal Barrier



(Seto et al., 2025)

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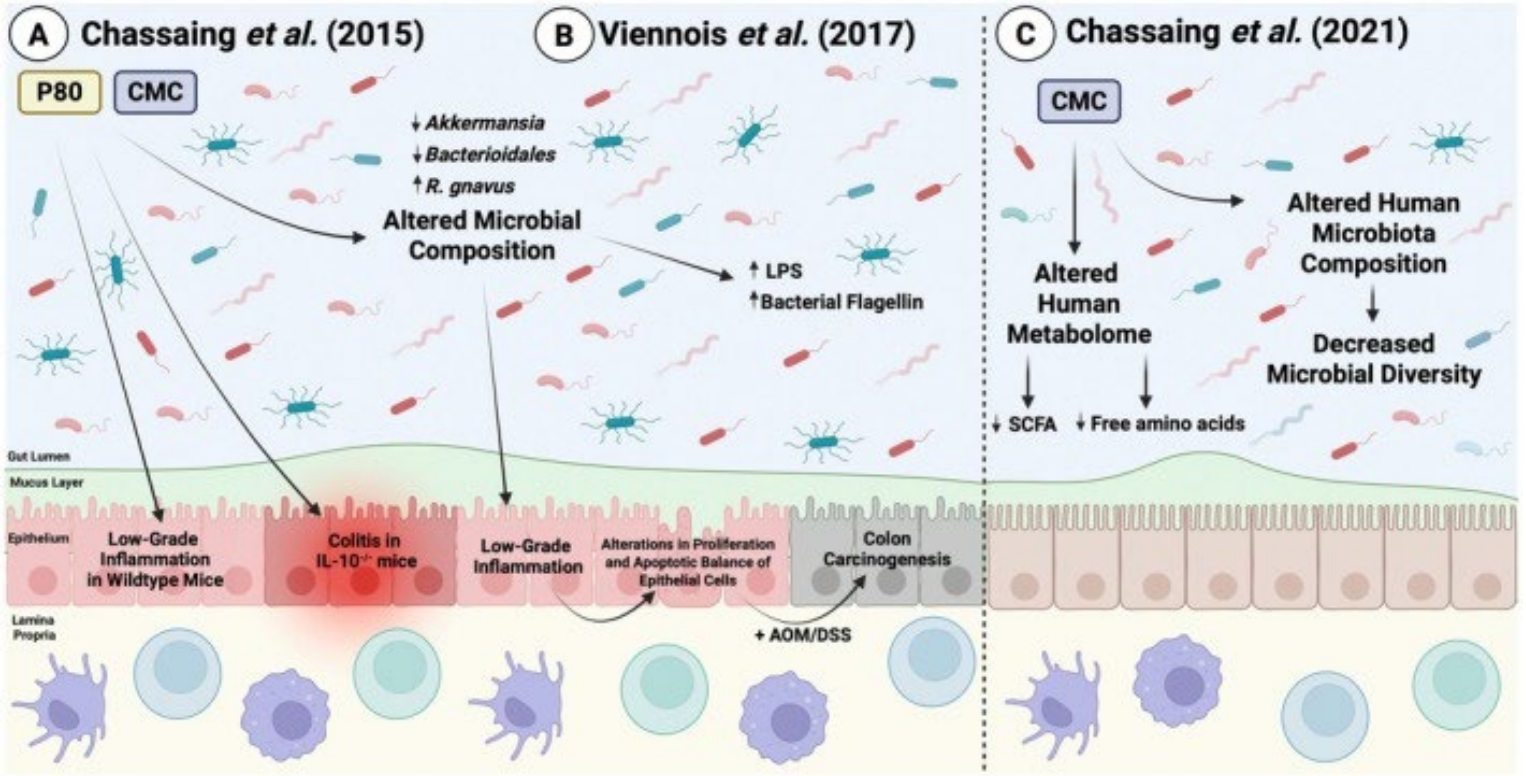
Common Food Emulsifiers

- Alginates
- Aluminum salts of fatty acids
- Calcium carbonate
- Carboxymethyl cellulose (CMC)
- Carrageenan
- Casein
- Cellulose gum
- Calcium stearoyl lactylate
- Glycerol monolaurate
- Guar gum
- Gum Arabic
- Lethicin
- Locust bean gum
- Methylcellulose
- Mono- and diglycerides
- Pectin
- Polyglycerols
- Polysorbate 80 (P80)
- Potassium salts of fatty acids
- Propylene glycol
- Sodium caprate
- Sodium stearate
- Soy protein, isolate
- Stearic acid
- Sorbitan ester
- Whey protein
- Xanthan gum



- A prospective large study in Lancet Diabetes & Endocrinology found direct associations between risk of Type 2 diabetes and exposure to food emulsifiers in humans.

- Another study assessed the impact of 20 emulsifiers on human microbiota ex vivo in the MiniBioReactor and also found that CMC and P80 and detrimental impacts on microbiota composition and function.

(FDA, 2026)
(Seto et al., 2025)
(Salame et al., 2024)
(Naimi et al., 2021)

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nutrients

MDPI

Article

Tiny Tummies, Big Questions: Unpacking Ultra-Processed Ingredients and Additives in Complementary Foods in the United States

Elizabeth K. Dunford [1,2,*], Alissa Pries [3], Mona S. Calvo [4] and Daisy H. Coyle [1]

Published 11 February 2026

- A cross-sectional analysis of 651 infant and toddler food products sold by the top 10 largest US grocery stores in 2023.
- **71% of baby food products** sold in grocery stores were classified as **ultra-processed** (by the NOVA classification system).
- They contained **105 unique additives**, including flavor enhancers, thickeners, emulsifiers and colors.

1. Recommendations: Limit UPFs

- Recommend reading ingredient lists and try to avoid foods with ingredients that are not familiar.
- Choose whole foods or minimally processed foods for snacks whenever possible.
- Save money on packaged snacks, chips, cookies, and other UPFs that require large servings to feel full.
- Look for opportunities to break the cycle of UPFs in diets and at events – often limited nutritional value.


Specific
Measurable
Achievable
Relevant
Timed
S
M
A
R
T
G
O
A
L
S

2. Sugar Sweetened Beverages (SSBs)

- Any drinks that are sweetened with various forms of added sugars
- Examples: Soda, fruit drinks, sports drinks, energy drinks, sweetened waters, coffee and tea beverages with added sugars
- SSBs offer little nutritional value and have been linked to:
  - Weight gain
  - Risk of type 2 diabetes
  - Cardiovascular disease
  - Several cancers

(Malik & Hu, 2019)
(https://soifdesante.ca/en/32/sugar-sweetened-beverages)

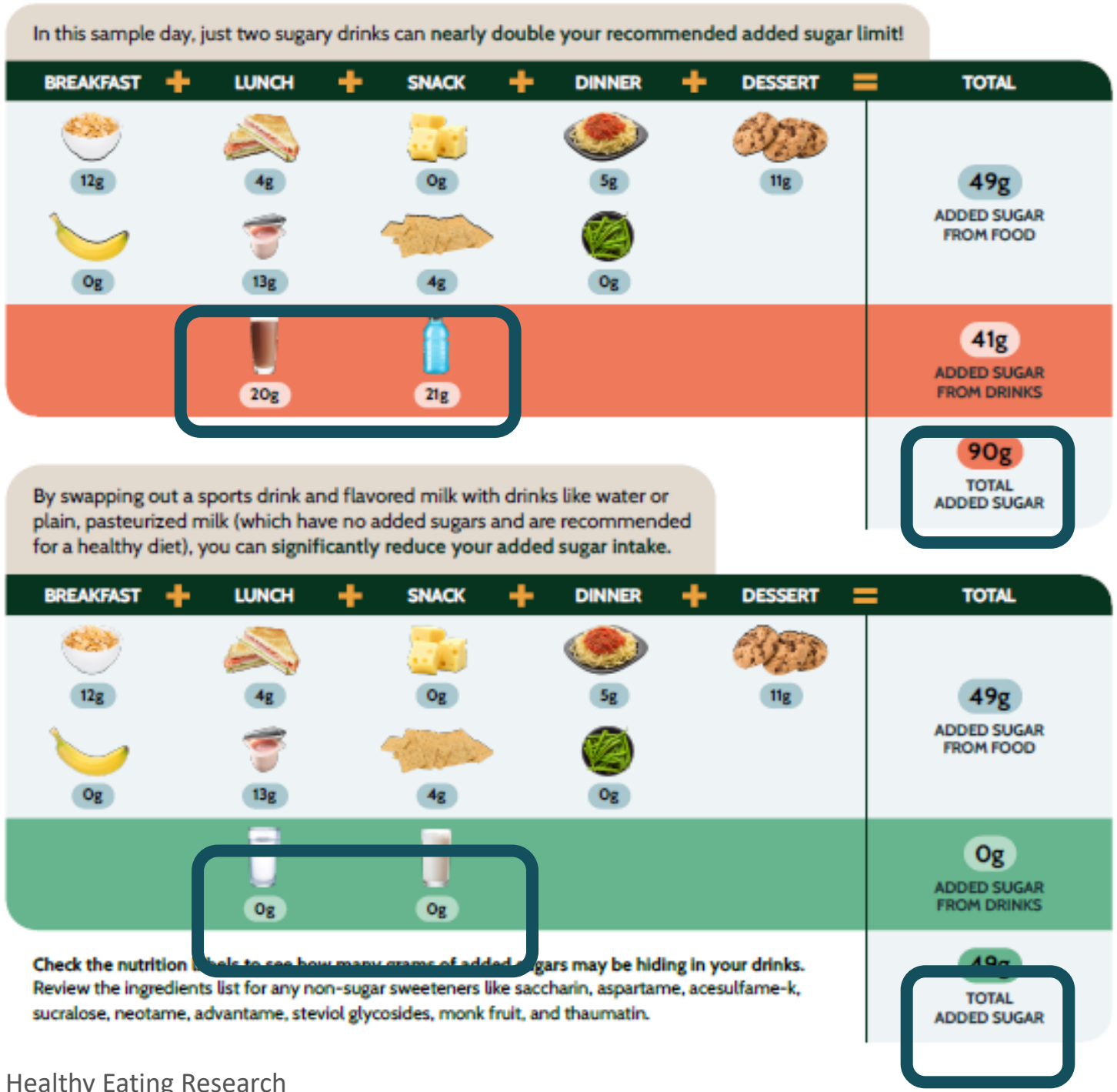
Impact of SSBs on Weight

SSB consumption by infants, children, adolescents, adults and older adults is associated with unfavorable growth patterns and body composition, and higher risk of obesity (Grade: Moderate).

- 111 articles examined SSB consumption in in infants, children, and adolescents.
  - 5 articles included data from randomized controlled trials (RCTs).
  - 106 articles included data from prospective cohort studies (PCSs).
  - 1 article was a retrospective cohort study.
- 66 articles examined SSB consumption in adults and older adults.
  - 8 were RCT and 58 were PCS.

(Deierlein et al., 2024)

The Hidden Added Sugar in Drinks



*Patients or families often do not include beverages in their dietary recall unless prompted

Pediatric Guidance

FROM THE AMERICAN ACADEMY OF PEDIATRICS | POLICY STATEMENT | JUNE 01 2017

Fruit Juice in Infants, Children, and Adolescents: Current Recommendations

Melvin B. Heyman, MD; Steven A. Abrams, MD; SECTION ON GASTROENTEROLOGY, HEPATOLOGY, AND NUTRITION; COMMITTEE ON NUTRITION; Leo A. Heitlinger, MD; Michael deCastro Cabana, MD; Mark A. Gilger, MD; Roberto Gugig, MD; Ivor D. Hill, MD; Jenifer R. Lightdale, MD; Stephen R. Daniels, MD; Mark R. Corkins, MD; Sarah D. de Ferranti, MD; Neville H. Golden, MD; Sheela N. Magge, MD; Sarah J. Schwarzenberg, MD

- The American Academy of Pediatrics (AAP) recommends:
  - **No fruit juice** for infants under 12 months
  - No juice required in older children:
  - If caregivers desire, **only 100% fruit juice** up to:
    - 1-3 years: Maximum of **4 ounces (1/2 cup) per day**
    - 4-6 years: Maximum of **4-6 ounces per day**
    - 7-18 years: Maximum of **8 ounces (1 cup) per day**
  - Not given in bottles or easily transportable covered cups to avoid sips throughout the day

(Heyman et al., 2017)

2. Recommendation: Avoid SSBs

- Recommend discussing with families as early as ages 4-6 months and reiterating for toddlers.
- This is another great option for a SMART goal.
- Avoidance saves families money with no loss of nutritional value!

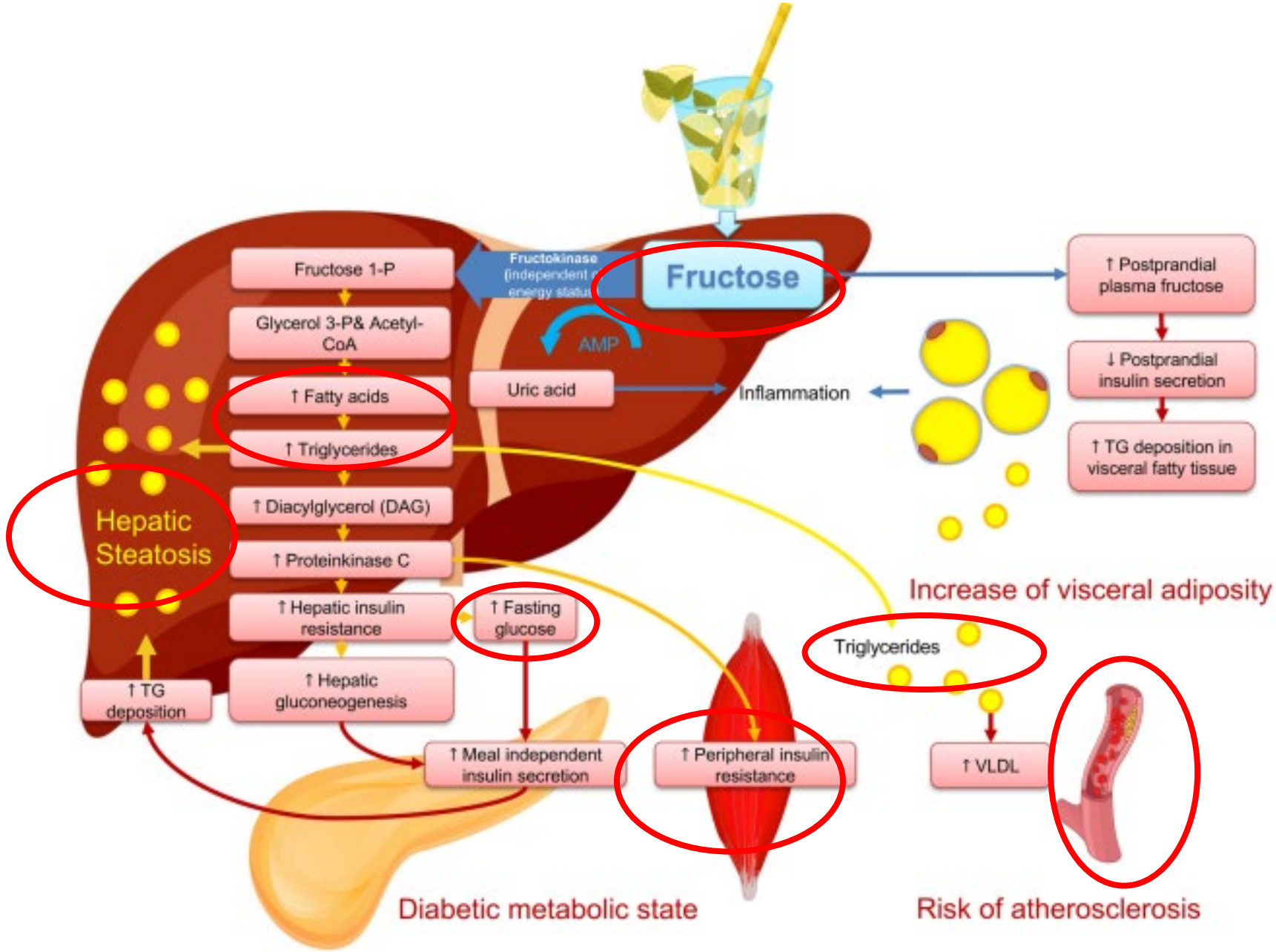
3. Added Sugars

(https://integrishealth.org/resources/on-your-health/2022/january/sneaky-sources-of-added-sugar)

Words That Really Just Mean ‘Added Sugar’

agave juice
agave nectar
agave sap
agave syrup
beet sugar
brown rice syrup
brown sugar
cane juice
cane sugar
cane syrup
caster sugar
clintose®
coconut sugar
confectioner’s sugar
corn glucose syrup
corn sweetener
corn syrup
crystalline fructose
date sugar
dextrose
dri-mol®
dri-sweet
dried raisin sweetener
edible lactose
evaporated cane juice
flo-malt®
fructose
fructose sweetener
glaze and icing sugar
golden syrup
gomme
granular sweetener
granulated sugar
hi fructose corn syrup
high fructose corn syrup
honey
honi-bake®
honi-flake®
invert sugar
inverted sugar
isoglucose
isomaltulose
kona-ame
lactose
liquid sweetener
malt
malt sweetener
malt syrup
maltose
maple
maple sugar
maple syrup
mizu-ame
molasses
nulomoline®
powdered sugar
raisin paste
rice syrup
sorghum
sorghum syrup
starch sweetener
sucanat
sucrose
sucrovert
sugar beet
sugar invert
superfine sugar
sweet ‘n neat®
table sugar
treacle
trehalose
trusweet™
turbinado sugar
versatose®

GLOBAL FOOD RESEARCH PROGRAM
University of North Carolina at Chapel Hill



(Dugic et al., 2021)

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Guidance

- The Dietary Guidelines for Americans (DGA) recommends limiting added sugars to less than 10% of total calories (50 g in a 2,000-calorie diet).
- The DGA also recommends no added sugar for children under 11.

Nutrition Facts

8 servings per container

Serving size **8 fl oz (240mL)**

Amount per serving

Calories **110**

	% Daily Value*
Total Fat 0g	**0%**
Saturated Fat 0g	**0%**
Trans Fat 0g	
Cholesterol 0mg	**0%**
Sodium 5mg	**0%**
Total Carbohydrate 27g	**10%**
Dietary Fiber 0g	**0%**
Total Sugars 25g	
Includes 23g Added Sugars	**46%**
Protein 0g	
Vitamin D 0mcg	0%
Calcium 0mg	0%
Iron 0mg	0%
Potassium 40mg	0%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

(USDA/HHS, 2026)

Words That Really Just Mean '**Low-calorie Sweetener**'

acesulfame k
acesulfame potassium
aclame™
advantame
alitame
allulose
arruva
aspartame
aspartame-acesulfame salt
brazzein
candyleaf
curculin
cweet™
cyclamate
cyclamic acid
dolcia prima®
enliten®
equal®
erylite®
erythritol
instasweet™
kakato™
kaltame®
lactitol
lakanto®
lumbah
luo han guo
luo han kuo
mabinlin
maltitol
monatin
monellin
monk fruit extract
natrataste®
necta sweet®
nectresse™
neo dhc
neohesperidine dihydro-chalcone
neotame
nutrasweet®
osladin
oubli
pentadin
psicose
purefruit™
pure via®
reb a
rebaudioside a
rebiana
saccharin
sorbitol
splenda®
stevia
steviol glycoside
stevioside
sucralose
sugarleaf®
sugar twin®
sunett®
sweet one®
sweet'n low®
sweetleaf®
swerve®
thaumatin
truvia®
twinsweet®
xylitol

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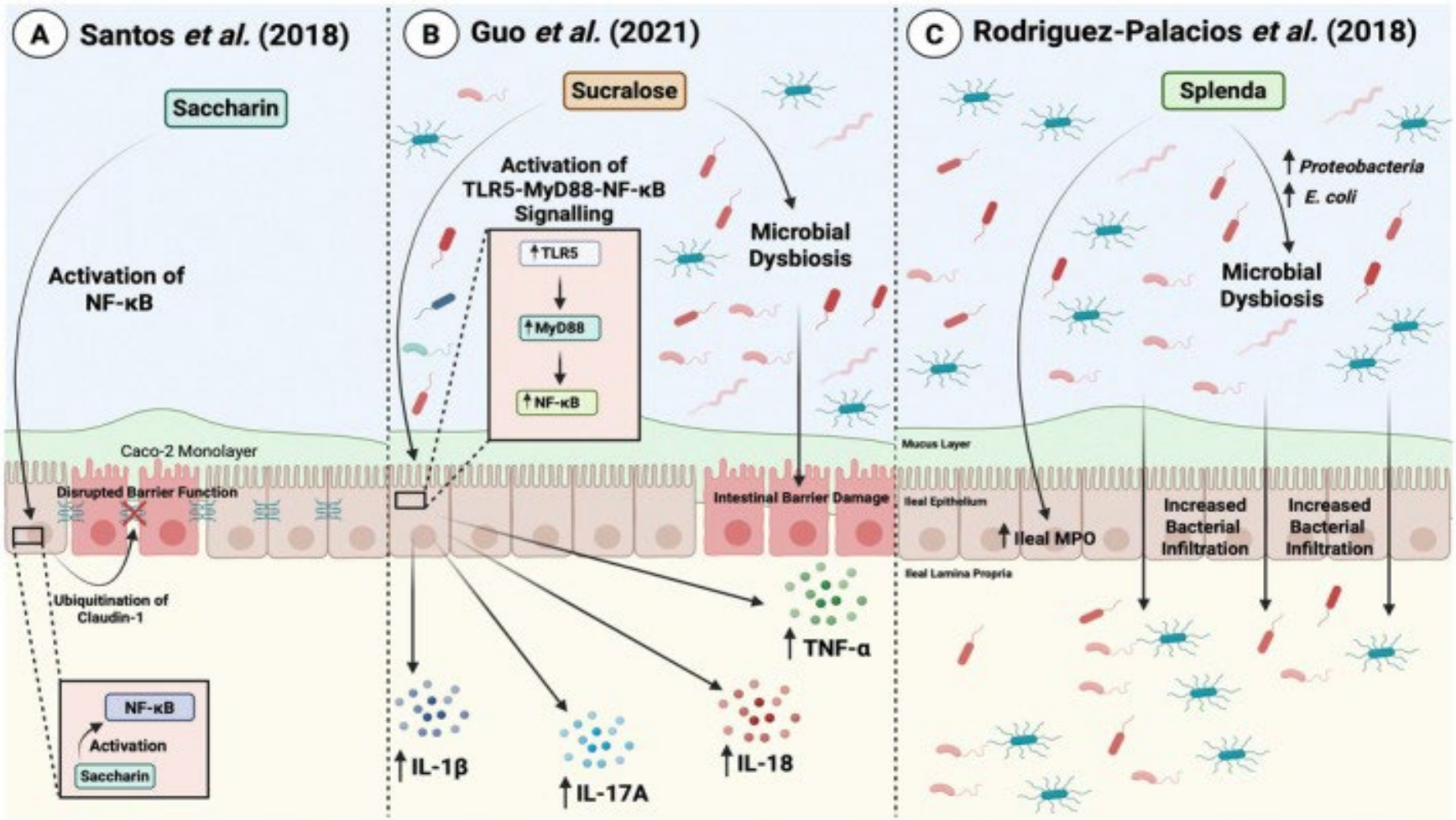
Effects of Non-Caloric Artificial Sweeteners on Gut Health



(Seto et al., 2025)

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3. Recommendation: Limit Added Sugars

- Encourage families to read nutrition labels.
- Look for foods with less or no added sugar (especially high fructose corn syrup).
- Beware of artificial sweetener alternatives.
- Teach children to appreciate the subtle sweetness of vegetables and fruits.
- Avoid making dessert a frequent habit.
- Another great option for a potential SMART goal!

4. Fiber Intake

- Current recommendations of dietary fiber are 30-35 g/day for men and 25-32 g/day for women.
- Currently over 90% of U.S. adults are not meeting that recommendation.
- Health Benefits:

Effect	Health Benefit
Metabolic	Improved insulin sensitivity (mainly insoluble fibres), reduced risk of developing T2D (mainly insoluble cereal fibres and whole grains) Improved glycaemic status and lipid profiles (mainly soluble fibres), reduced body weight and abdominal adiposity
Gut microflora	Gut microbial viability and diversity, metabolites from gut microflora (including SCFAs)
Cardiovascular	Chronic inflammation, cardiovascular risk, mortality
Depression	Chronic inflammation, gut microbiota
Gastrointestinal Localised	Colonic health and integrity, colonic motility, colorectal carcinoma

SCFAs = Short Chain Fatty Acids; T2D = Type 2 Diabetes Mellitus.

(Barber et al., 2020)

Fiber in children

- For ages 1-2 years = goal of **19 g/day**
- For ages 2 and older = goal of **14 g/1000 calories**

Fruits	Serving size (grams)	Total fiber (grams)*
Raspberries	1 cup (123)	8.0
Pear	1 medium (178)	5.5
Apple, with skin	1 medium (182)	4.5
Banana	1 medium (118)	3.0
Orange	1 medium (140)	3.0
Strawberries	1 cup (144)	3.0

Vegetables	Serving size (grams)	Total fiber (grams)*
Green peas, boiled	1 cup (160)	9.0
Broccoli, boiled	1 cup chopped (156)	5.0
Turnip greens, boiled	1 cup (144)	5.0
Brussels sprouts, boiled	1 cup (156)	4.5
Potato, with skin, baked	1 medium (173)	4.0
Sweet corn, boiled	1 cup (157)	4.0
Cauliflower, raw	1 cup chopped (107)	2.0
Carrot, raw	1 medium (61)	1.5

Legumes, nuts and seeds	Serving size (grams)	Total fiber (grams)*
Split peas, boiled	1 cup (196)	16.0
Lentils, boiled	1 cup (198)	15.5
Black beans, boiled	1 cup (172)	15.0
Cannellini, Navy, Great Northern beans, canned	1 cup (180)	13
Chia seeds	1 ounce (28.35)	10.0
Almonds	1 ounce, about 23 nuts (28.35)	3.5
Pistachios	1 ounce, about 49 nuts (28.35)	3.0
Sunflower kernels	1/4 cup (32)	3.0

Grains	Serving size (grams)	Total fiber (grams)*
Spaghetti, whole-wheat, cooked	1 cup (151)	6.0
Barley, pearled, cooked	1 cup (157)	6.0
Bran flakes	3/4 cup (30)	5.5
Quinoa, cooked	1 cup (185)	5.0
Oat bran muffin	1 medium (113)	5.0
Oatmeal, instant, cooked	1 cup (234)	4.0
Popcorn, air-popped	3 cups (24)	3.5
Brown rice, cooked	1 cup (195)	3.5
Bread, whole-wheat	1 slice (32)	2.0
Bread, rye	1 slice (32)	2.0

(Mayo Clinic, 2025)

4. Recommendations: Prioritize Fiber

- Try to reach 5 servings of fruits and vegetables per day (age-appropriate servings).
- Choose whole grains over refined grains (cereals, breads, pastas).
- Read Nutrition Labels (**5:1 Ratio** - goal of at least 1 gram of fiber for every 5 grams of total carbohydrates).
- Add beans and/or legumes to diet.
- Replace UPF snacks with whole foods with fiber (e.g., fruits, vegetables, nuts, seeds).

5. Family Habits

- In a review of eating habits, approximately 1 in 3 children did not eat a fruit daily and almost 1 in 2 did not eat a daily vegetable.
- In a review of adult eating habits, only 12.3% of adults met fruit recommendations and 10% met vegetable recommendations.

(Hamner et al., 2023)
(Lee et al., 2022)

Family "Creating Healthy Heroes" Survey

- Voluntary survey in the National Capital Region and Camp Lejeune in 2025 where caregivers were asked about the eating habits of adults and children in the family.
- The survey gathered data on demographic information, military and family factors affecting healthy eating patterns, child eating habits, adult eating habits, food accessibility and affordability, potential interventions and support.

(Bowling et al., 2025)

5. Recommendations: Focus on Family-Based Changes

- Shift from individual to family-centered approach for diet changes.
- Model consumption of fruits and vegetables (goal of prioritizing in the diet).
- Counsel on the potential need for repeated exposure for young children (at least 20 times).
- Counsel on the normal possibility of food neophobia in preschool children.
- Increase whole foods and reduce ultra-processed foods and SSBs in the family diet
- Read Nutrition Facts and Ingredient Lists – be an educated consumer.

PHYSICAL ACTIVITY / INACTIVITY

6. Physical Activity

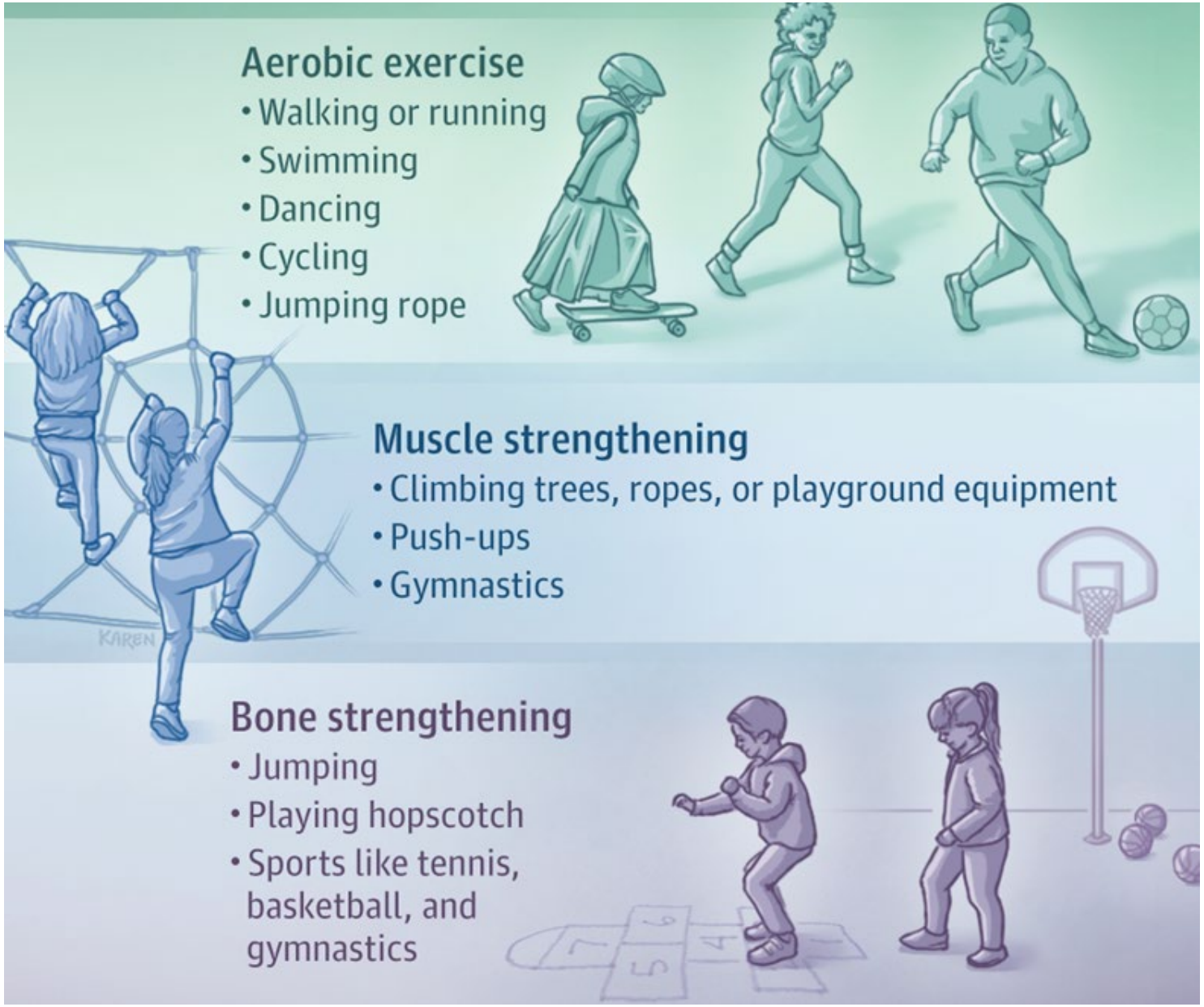
- 1 in 4 children meet the daily recommendation of 60 minutes of physical activity per day.
- Inactivity is linked to many chronic diseases and cancers.
- Adequate physical activity decreases those risks as well as decreasing stress and improving school performance, sleep and mental health.

(Michel et al., 2022)

Physical Activity Guidance

- US physical activity guidelines recommend:
  - Children ages 3-5 be physically active most of the day
  - Children ages 6-17 have at least 60 minutes of moderate to vigorous physical activity per day
    - Moderate to vigorous: raised heart rate, sweating, deeper breathing
    - Moderate: can talk but not sing
    - Vigorous: can speak in only brief sentences between breaths

(Michel et al., 2022)



3 Types of Physical Activity

- Goal of at least 3 days a week for each activity category

(Michel et al., 2022)

bmjmedicine

Check for updates

Physical activity types, variety, and mortality: results from two prospective cohort studies

Han Han [1], Jinbo Hu [1,2], Dong Hoon Lee,[1,3] Yiwen Zhang,[1] Edward Giovannucci,[1,4] Meir J Stampfer,[1,4,5] Frank B Hu,[1,4,5] Yang Hu,[1] Qi Sun [1,4,5]

- Health and lifestyle data from 111,000 adults over 30+ years showed increased variety of exercises resulted in 19% lower risk of all cause mortality.

(Brownstein, 2026)
(Han et al., 2026)

6. Recommendations: Prioritize Any Physical Activity

- Be an example.
- Make physical activity a part of the family's routine.
- Make physical activity fun – consider "snacktivities".
- Try new things!
- Be consistent.

7. Sedentary Behavior

- Many children are sedentary most of their waking hours.
- Teenagers spend an average of >6 hours on screens daily.
- Screentime is associated with adiposity and often persists even after adjustment for physical activity and diet.
- Increased screen time has been associated with increased risk of obesity, decreased physical activity, inadequate sleep, increased depression symptoms, and can contribute to “mindless eating” or grazing.

(Barnett et al., 2018)

7. Sedentary Behavior (continued)

- Limit sedentary behavior and sedentary screen time outside of that required to complete school-related assignments.
  - Under 18 months: Avoid screen time other than video chatting.
  - Ages 18-24 months: High quality programming, co-viewing with parents.
  - Ages 2-5: Limit screen use to maximum of one hour per day.
  - Ages 6-17: Recommend a Shared Family Media Plan.

(AACAP, 2025)

7. Recommendations: Limit the Screen

- Suggestions for SMART goals include turning off media that no one is using, keeping meals screen-free, avoiding screens one hour before bed and in bedrooms at night, having at least one media-free day a week, and planning media-free family activities.
- Replace screen time with family time.
- Pick activities that are not always surrounding food.
- Sit less, play more!

SLEEP

USU
Uniformed Services University

8. Sleep Impact

- The development of obesity is associated with reduced sleep duration and later sleep onset.
- Poor sleep or shortened duration also exacerbates daytime fatigue which may impact intensity and duration of physical activity.
- For patients reporting concerns with insomnia, this can be due to poor sleep hygiene, anxiety disorders as well as other concerns.
- If obstructive sleep apnea is suspected, completion of an in-lab sleep study is recommended.

(Liu et al., 2024)

Sleep Guidance

- Sleep goals should strive to be consistent even on weekends with minimal daytime napping unless age appropriate:
  - Ages 1-2 years: 11-14 hours (including naps)
  - Ages 3-5 years: 10-13 hours (including naps)
  - Ages 6-12 years: 9-12 hours
  - Ages 13-18 years: 8-10 hours

(Paruthi et al., 2016)

8. Recommendations: Prioritize Sleep

- Reinforce consistency of a nighttime schedule.
- Turn off screens an hour before bedtime.
- Remove screens from children's bedrooms.
- Ensure adequate physical activity during the day.
- Consider diet changes to optimize sleep

TREATMENTS

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Intensive Health Behavior and Lifestyle Treatment (IHBLT)

- Multidisciplinary program with goal of 26 hours over 3-12 months
- If not available, attempt to obtain the hours with the combination of primary care and multidisciplinary appointments and other supports.

(Hampl et al., 2023)

Example: Healthy Habits Clinic

- Established in 2011
- Exercise and education sessions for patients ages 6-18 years with overweight or obesity in the National Capital Region
- Previously monthly in-person sessions
- Transitioned to virtual sessions in 2020
- Returning to monthly in-person sessions with monthly parent Lunch and Learn education sessions in July 2026!

Anti-Obesity Medications (AOMs)

- Oral AOMs and Injectable AOMs
- Currently several AOMs approved down to age 12
- Benefits to decrease obesity severity and comorbidities
- Unclear in terms of long-term requirements
- AOMs without optimization of diet risks nutritional deficiencies (especially in adolescents with increased calcium, iron and vitamin D requirements)

(Hampl et al., 2023)

Lifestyle Medicine

6 Pillars:

- Whole-food, plant-predominant eating patter
- Regular physical activity
- Restorative sleep
- Stress management
- Avoidance of risky substances
- Positive social connections

Delivery of evidence-based information to prevent, treat and often reverse chronic disease

https://lifestylemedicine.org/

Lifestyle Medicine Residency Curriculum

- San Antonio Uniformed Services Health Education Consortium, Joint Base San Antonio, Texas: Internal Medicine
- Madigan Army Medical Center, Joint Base Lewis-McChord, Washington x 2: Preventive Medicine and Internal Medicine
- Eglin Sir Force Base (AFB), Florida: Family Medicine
- Travis AFB, California: Family Medicine
- Nellis AFB, Nevada: Family Medicine
- Offutt AFB, Nebraska: Family Medicine
- National Capital Consortium, National Capital Region
  - A.T. Augusta Military Medical Center, Virginia: Family Medicine
  - Walter Reed National Military Medical Center, Maryland: Pediatrics

Lifestyle and Performance Medicine (L&PM)

- Lifestyle Medicine as a Framework for support for Active-Duty Service Members and Families
- Branch Support
  - Air Force: L&PM Working Group (inclusive to members of all branches and Veteran's Affairs providers)
  - Navy: Newly Appointed L&PM Working Group

Objectives Review

By the end of this activity, I hope you are able to:

- Describe current trends in pediatric and active-duty obesity and explain their implications for future military readiness.
- Identify gaps in early recognition and diagnosis of pediatric obesity, including delays highlighted in recent research and clinical practice.
- Apply evidence-based, family-centered counseling strategies—including lifestyle medicine principles—to improve nutrition and weight management in pediatric populations within military settings.

Summary of Recommendations

1. Limit ultra-processed foods
2. Avoid sugar sweetened beverages
3. Limit added sugars
4. Prioritize fiber
5. Focus on Family-Based Changes
6. Prioritize any physical activity
7. Limit the screen
8. Prioritize sleep

Key Takeways

- Small changes can build on each other to make major impacts.
- Teaching healthy habits early in life can make lifelong positive impacts in children.
- These recommendations are important for all children, not just children with obesity.
- This is a matter of future national security.

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QUESTIONS?

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Credits are awarded by session. To claim CE/CME credit for the session(s) you attended, complete each evaluation survey and pass the posttest with 100% accuracy before the evaluation period ends on **Thursday, May 21, 2026, at 11:59 PM Eastern Time**.

1. Visit the registration page at https://www.dhaj7-cepo.com/content/2026-may-ccss#group-tabs-node-course-default4 From there, register for the event or log in to your account if already registered.
2. Once logged in and registered, on the event page, select “Get Started” (located in the menu below the event title on desktop and at the bottom of the page on mobile devices). Note: This tab will not appear unless you are registered and logged in to your account.
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