Understanding Childhood Obesity: A Strength Based Approach

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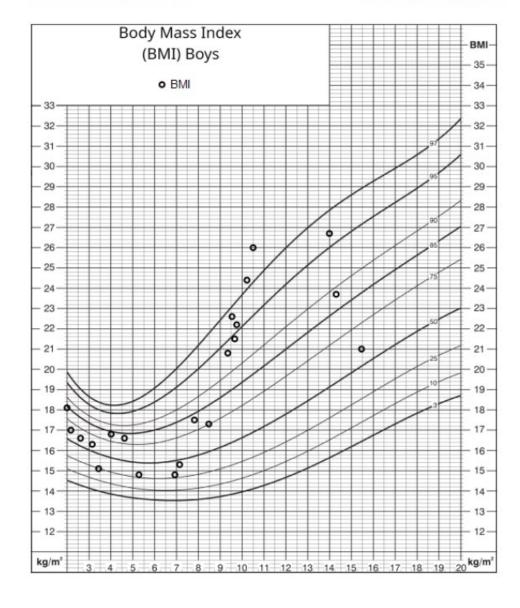
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Overview

- Obesity as a complex, chronic disease
 - Context:
 - Systems factors
 - Pathophysiology
- Evaluation of Obesity
 - Weight bias and stigma
- Using the evaluation to foster motivation
- Discussion

Child Growth Chart

Printed 02/27/2025 03:11



Whole Child Approach

- Understanding the underlying genetic, biological, environmental, and social determinants that pose risk for obesity is the bedrock of all evaluation and intervention.
- Allowing the family to have a safe space to understand and process the complexity of obesity and its chronicity requires tact, empathy, and humility.
- Using the whole child approach
 - Enables the patient and family recognize risk factors in their environment and behaviors
 - Honor cultural preferences
 - Institute changes independently as well as under the guidance of a trusted and well-trained advocate.

SPIRITUALITY

Social &

Community Cohesion

- · Holistic identity
- Belonging
- · Spirituality
- Community and self-efficacy

Early Life Experiences & Environment

- · Safe, stable, nurturing
- Early environmental exposures
- Prenatal & early life nutrition

Education Access & Quality

- Literacy
- Language
- Early childhood education
- Vocational training
- Higher education

COMMUNITY

FAMILY I INTERPERSONAL

Food Access

- Nutrition
- · Food systems
- Food sovereignty
- Cultural food access and sovereignty

Economic Stability

- Employment Opportunities
- Wages
- · Cost of living

INDIVIDUAL

Connection to Land

- Identity
- Spiritual/Ceremonial
- Access to land & water
- Climate change

Access to Health Care

- Transportation
- Health insurance
- Ability to recruit health professionals

Neighborhood & Built Environment

- Housing
- Utilities
- Broadband
- Safety
- Environmental conditions

Z. ICIES

JISTORIC!

MITERGENERATONAL TRAUMA

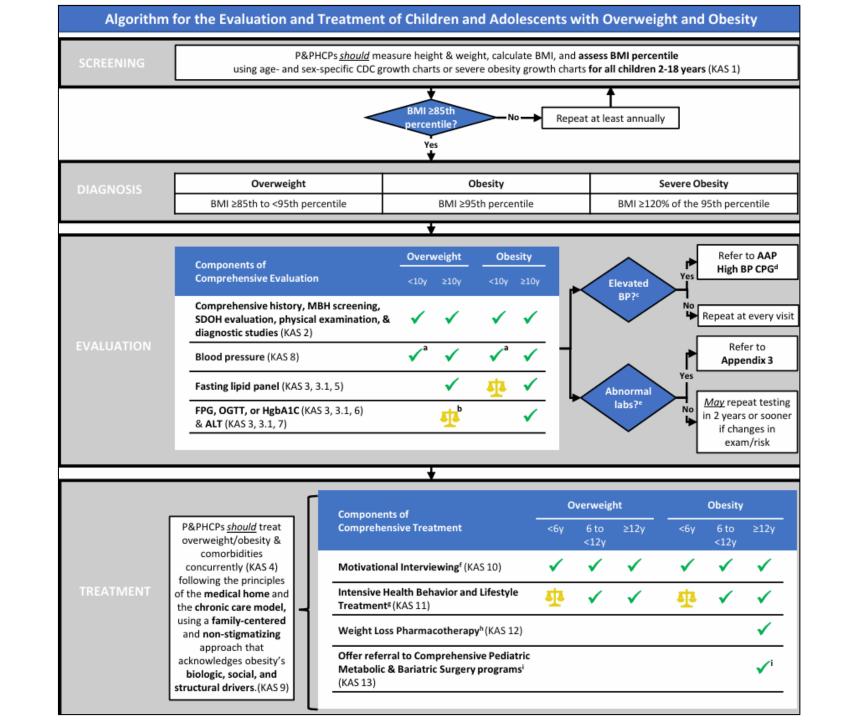
CULTURE

New from previous recommendations

- We understand more fully the implications of obesity as a chronic disease.
- We understand the physiological impacts of social determinants of health on obesity more completely.
- We know more fully that weight bias and stigma is pervasive and harmful and can be a barrier to treatment.

Obesity is a complex chronic disease

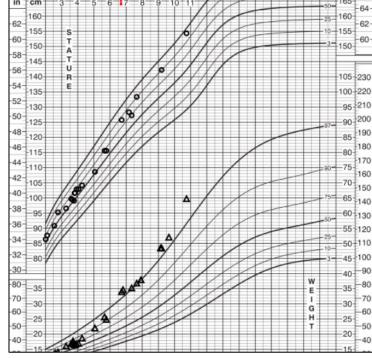
- Obesity is often an indicator of structural inequities like unjust food systems, health inequities and environmental & community factors.
- Genetics, obesity-promoting environments, life experiences combined with inequities and structural barriers to healthy living all contribute to overweight and obesity.
- Understanding the underlying genetic, biological, environmental, and social determinants that are risks for obesity is the foundation of evaluation and treatment.

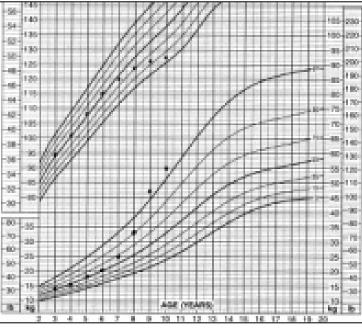


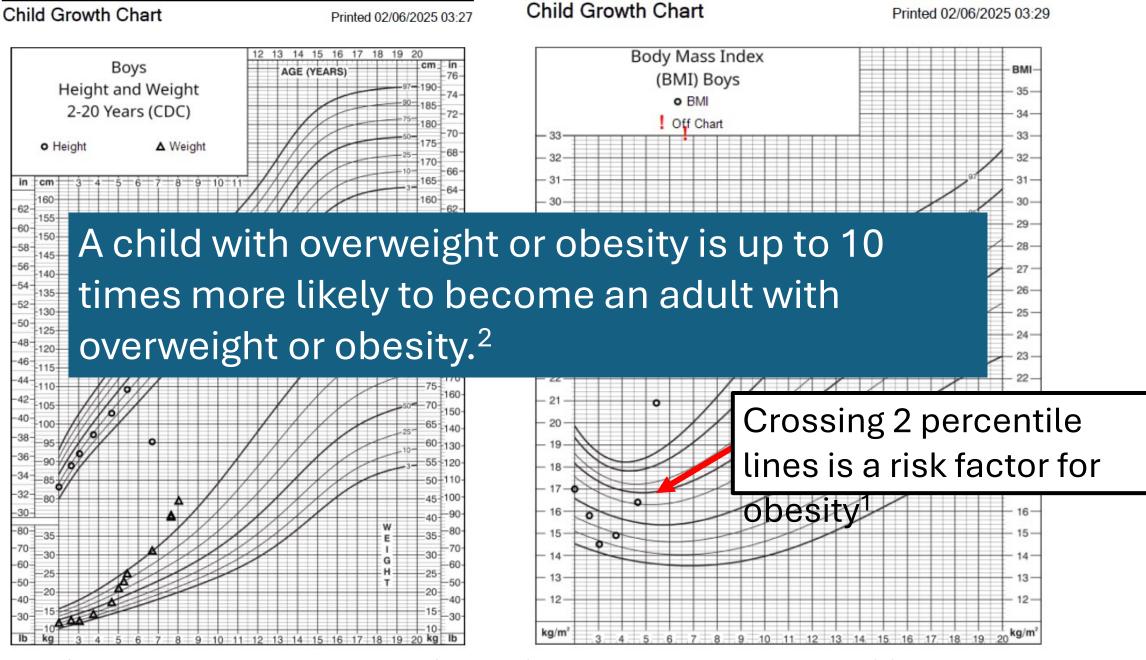
- 8 yo boy presents with his mother for a Well Child Check
- Chief complaint: "What concerns, if any, do you have about your child's growth and health?" and "Is there anything about your body or how you feel that you want to talk about?"
 - Only concern is mild, intermittent abdominal pain and constipation.
- HPI:
 - Last seen 1 year ago for primary care (and three months ago for a sick visit)
 - Diet and exercise recommendations made
 - No specific changes made since then
 - Feels limited in sports or running due to being "slow" and "my asthma."
 - Initial conversation does not reveal any symptoms of depression, anxiety, or history of bullying
 - Growth trajectory

The Growth Curve Tells a Story

- DDx of obesity starts with linear growth trajectory
 - Underlying endocrinopathy will often have decreased linear growth
 - Over nutrition will often have consistent or accelerated growth
 - Rare genetic causes are more likely if severe obesity occurs under age 5
 - Changes can reflect significant life events/ disruptions in one's environment or disordered eating

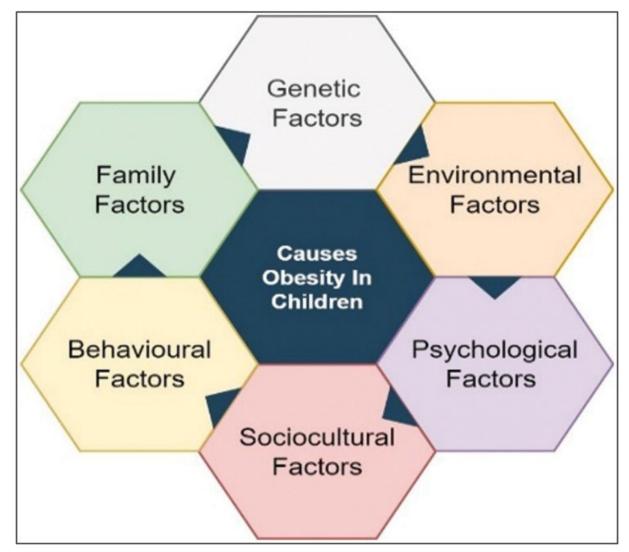






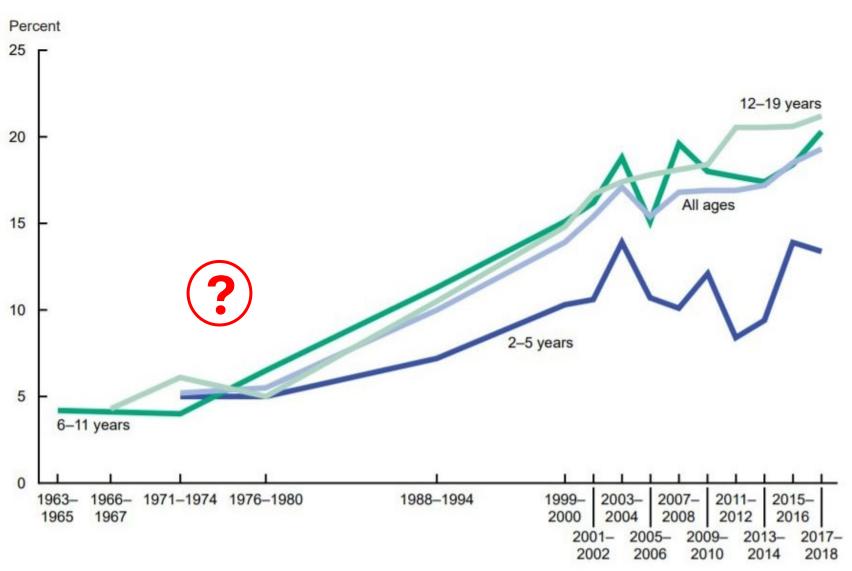
- 1. Taveras EM, Rifas-Shiman SL, Sherry B, et al. Crossing growth percentiles in infancy and risk of obesity in childhood. Arch Pediatr Adolesc Med. 2011;165(11):993-998.
- 2. Singh AS, Mulder C, Twisk JW, et al. Tracking of childhood overweight into adulthood: a systematic review of the literature. Obes Rev. 2008;9:474–488. American Academy of Family Physicians. Recommendations for clinical preventive services. Available at: www.aafp.org/online/en/home/ clinical/exam/k-o.html

A (Very) Complex, Chronic Disease



Amin, Bhat Ulfat. Childhood obesity: Causes, comorbidities, prevention, and management. Jimph. 2022; 1 (2)34-41

Trends in obesity among US children and adolescents 2–19 years of age



Obesity among AI/AN children

- Highest prevalence among all groups
 - ... with younger onset

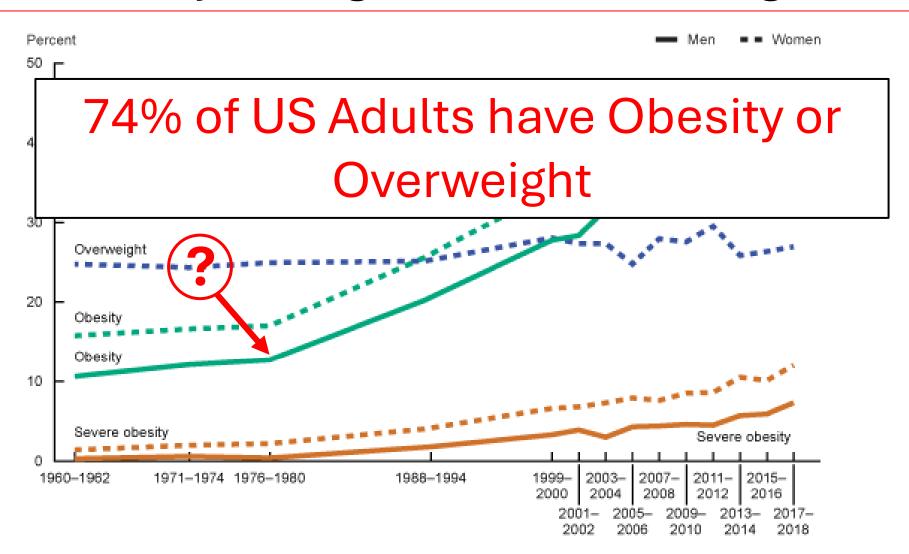
Disparities are a reflection of the society in which they exist, not of the community they affect.

- 18% had overweight
- 31% had obesity
- 20% 6-11 years old had severe obesity
- Poverty levels correlated with higher prevalence of obesity/overweight²

^{1.} Bell S, et. Al. AAP Caring for American Indian and Alaska Native Children and Adolescents. Pediatrics. 2021 Apr;147(4):e2021050498. doi: 10.1542/peds.2021-050498.

^{2.} Fyfe-Johnson AL, et. al. Social Determinants of Health and Body Mass Index in American Indian/Alaska Native Children. Child Obes. 2023 Jul;19(5):341-352. doi: 10.1089/chi.2022.0012. Epub 2022 Sep 28.

Age-adjusted trends in overweight, obesity, and severe obesity among men and women aged 20–74



Obesity is a Complex, Chronic Disease

- When three-quarters of people struggle with a system, the cause is not with the people. It is with the system which is working against them.
 - Our society (including healthcare) routinely attributes obesity to insufficient willpower, effort, education, or strength.
 - We do not recognize the "design error" in our system.
 - Compassionate, non-stigmatizing care should be grounded in this understanding.

"Systems Issues" Contributing to Childhood Obesity

Over the past 60+ years, dramatic changes have occurred in:

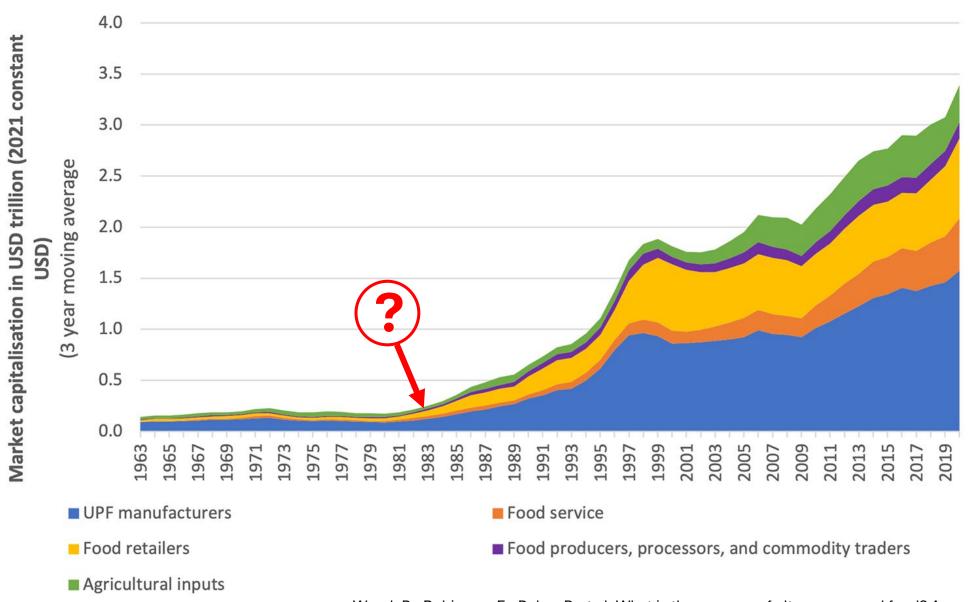
- 1. The amount of food provided
 - Average caloric intake has increased by 20% since 1980¹
- 2. How children spend free time
 - Roughly 8 hours of screen-time per day among teens²
- 3. The nature of the food itself
 - Now over 70% Ultraprocessed food³
- 4. Psychosocial factors
 - Within the context of existing historical and intergenerational trauma

^{1.} Duffey KJ, Popkin BM. Energy density, portion size, and eating occasions: contributions to increased energy intake in the United States, 1977-2006. PLoS Med. 2011 Jun;8(6):e1001050. doi: 10.1371/journal.pmed.1001050.

^{2.} National Education Association: https://www.nea.org/nea-today/all-news-articles/all-scrolling-how-screen-time-impacts-students

[.] Wang L, Martínez Steele E, Du M, Pomeranz JL, O'Connor LE, Herrick KA, Luo H, Zhang X, Mozaffarian D, Zhang FF. Trends in Consumption of Ultraprocessed Foods Among US Youths Aged 2-19 Years, 1999-2018. JAMA. 2021 Aug 10;326(6):519-530. doi: 10.1001/jama.2021.10238. PMID: 34374722; PMCID: PMC8356071

Growth of the Food Industry



Wood, B., Robinson, E., Baker, P. et al. What is the purpose of ultra-processed food? An exploratory analysis of the financialisation of ultra-processed food corporations and implications for public health. Global Health 19, 85

How do ultra-processed foods contribute to obesity?

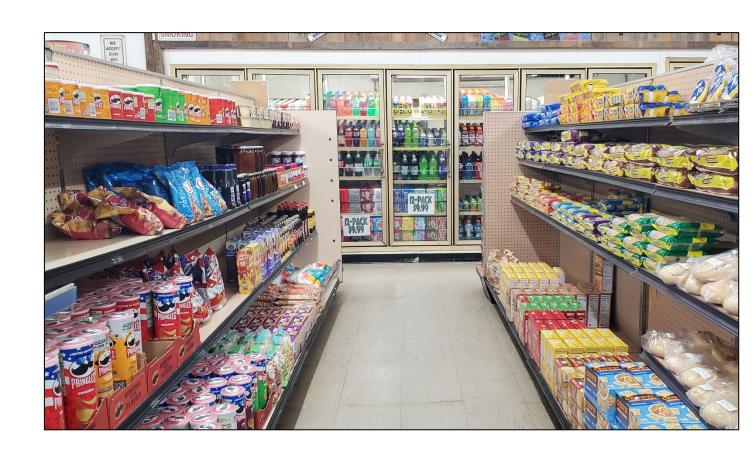
• Because ultra-processed foods are like pre-digested foods



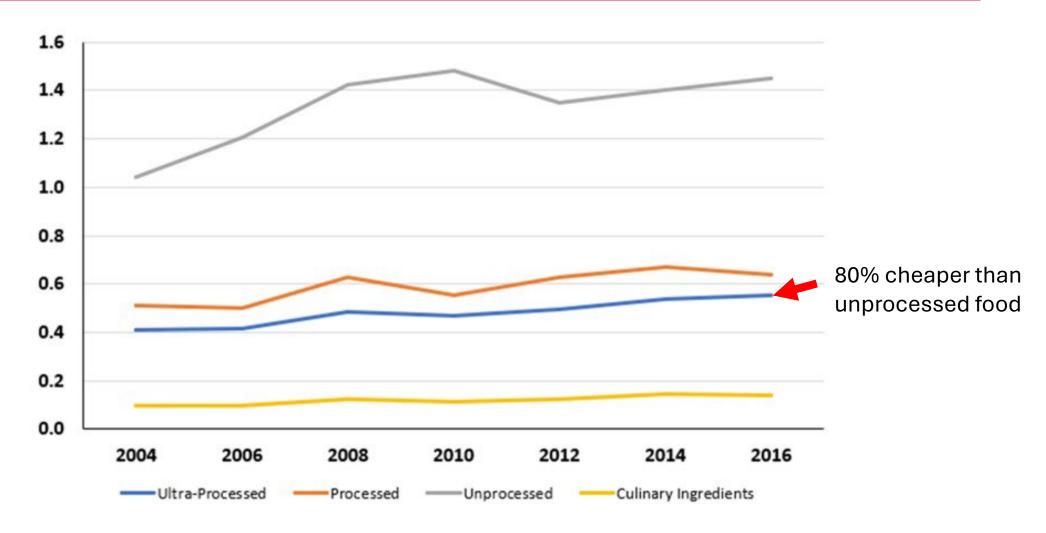
https://www.washingtonpost.com/wellness/2023/06/27/ultra-processed-foods-predigested-health-risks/

The healthy choice is rarely the easy choice

- SG's mom, living on a remote reservation community, shopping for 7
- Weekly budget for groceries: \$900
- As she does her weekly shopping at the store 25 miles from home, 85% of the food sold is ultraprocessed



Relative Food Costs (\$/100 kcal)



Gupta S, Hawk T, Aggarwal A, Drewnowski A. Characterizing Ultra-Processed Foods by Energy Density, Nutrient Density, and Cost. Front Nutr. 2019 May 28;6:70. doi: 10.3389/fnut.2019.00070

What would you choose?



- Option A
- Hamburger Helper
- Cost: \$17
- Prep Time: 30 minutes Prep Time: 60 minutes
- Kid's reaction:



"Thanks mom!"

- Option B
- Baked chicken with green beans and brown rice
- Cost: \$35
- Kid's Reaction:





"What's this? Do we have anything else?"

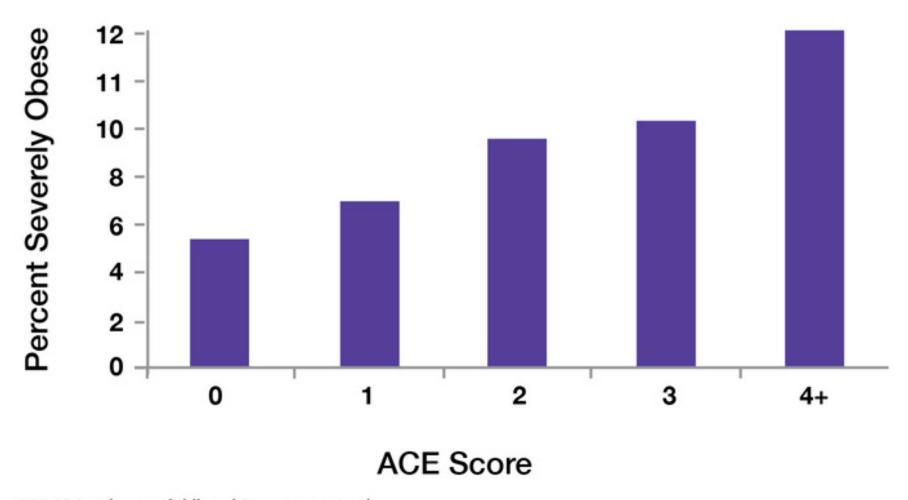
Legacy of Historical and Intergenerational Trauma

- Violent loss of land and food sovereignty
- Systematic destruction of culture, traditional wisdom, parenting skills
 - By 1925, over 80% of AIAN youth attended boarding schools²
- Introduction of alcohol
- Poverty
- Racism



1. Maillacheruvu, Sara Usha. The Historical Determinants of Food Insecurity in Native Communities. Center on Budget and Policy Priorities. October 4, 2022. Available at: https://www.cbpp.org/research/food-assistance/the-historical-determinants-of-food-insecurity-innative-communities

Adverse Childhood Experiences & Prevalence of Adult Severe Obesity - BMI > 35



Source: 1998 CDC, Adverse Childhood Experiences Study

https://marygiuliani.net/addiction-obesity-ace-study/

Evolving Definition of Obesity

Obesity Medicine Association

 "a chronic, relapsing, multifactorial, neurobehavioral disease, wherein an increase in body fat promotes adipose tissue dysfunction and abnormal fat mass physical forces, resulting in adverse metabolic, biomechanical, and psychosocial health consequences."

AAP

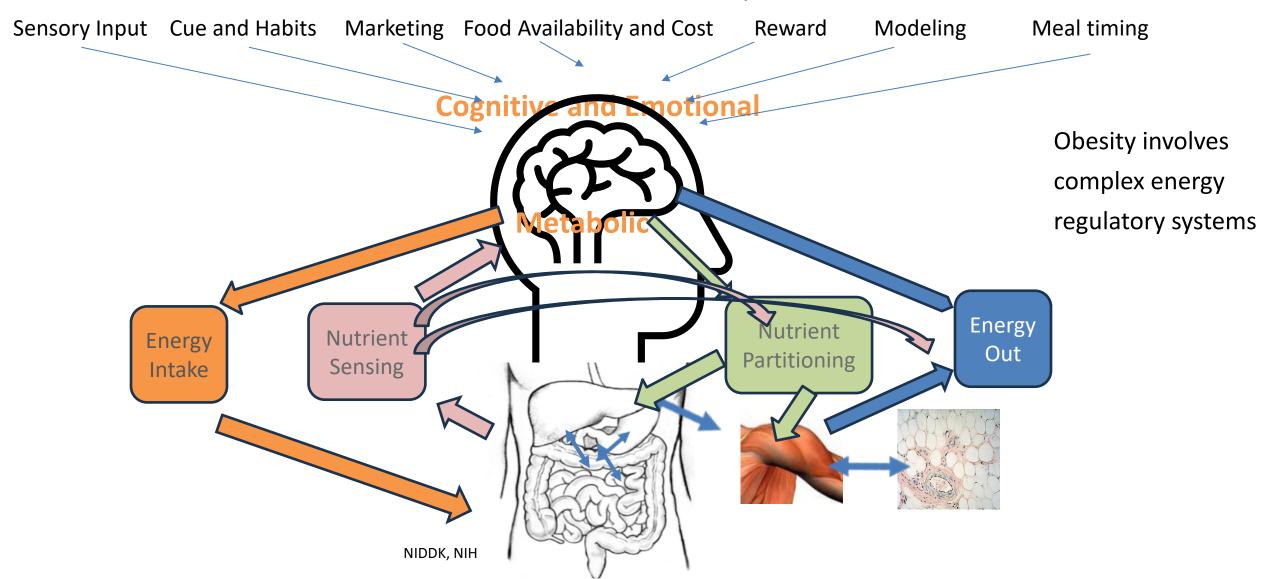
 "Obesity is a chronic disease that results in altered anatomy, physiology, and metabolism, all of which adversely affect the physical and mental health trajectory of children and adolescents."²

^{1.} https://obesitymedicine.org/2017/08/29/definition-of-obesity/

^{2.} Obesity Management and Treatment During COVID-19 https://services.aap.org/en/pages/2019-novel-coronavirus-covid-19-infections/clinical-guidance/obesity-management-and-treatment-during-covid-19/

Obesity Disease Pathophysiology

Environment and Lifestyle



Adipose tissue secretes hundreds of adipokines

Secretory Cells of Adipose Tissue:

- Adipocytes
- Precursor Cells
- Endothelial Cells
- Macrophages
- Foam Cells
- Neutrophils
- Lymphocytes
- Fibroblasts
- Others

Cytokine and Cytokine-Like Proteins

- TNF-a
- IL-6
- MCP-1

- Resistin
- Progranulin

Proteins of the Fibrinoltic System

PAI-1

Tissue factor

Complement and Complement-Related Proteins

- Adipsin
- Complement factor B
- ASP
- CTRPs

Enzymes

• DPP-4

Lipid Transport

- Apolipoprotein E
- Cholesterol ester transfer protein
- Lipoprotein lipase

Endocannabinoids and other lipids

Anandamide

- 2-AG
- Free fatty acids

Proteins of RAS

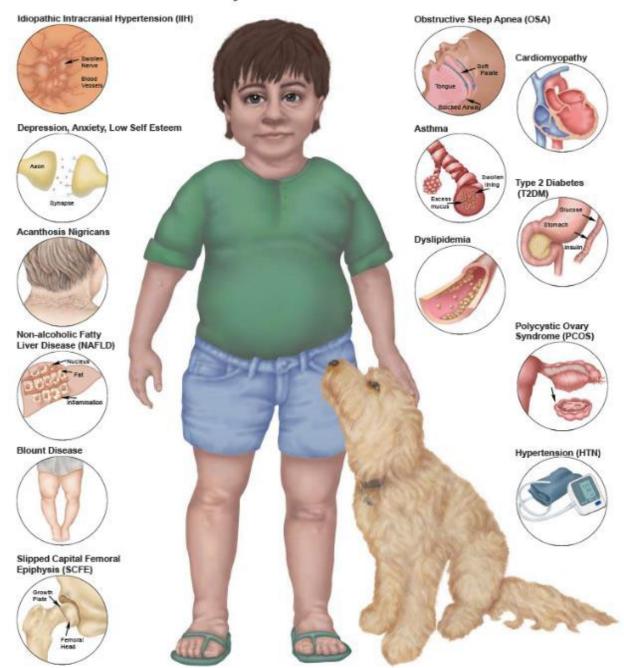
Angiotensinogen

Adipokines

- Leptin
- Adiponectin
- Visfatin/Nampt/PBEF
- Vaspin

- RBP4
- FGF21
- BMPs
- Nesfatin-1

Obesity Comorbidities

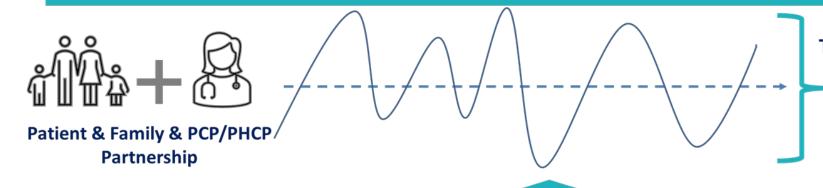


Obesity is a Chronic Disease

➤Offer treatment early and immediately – there is no benefit to watchful waiting

Longitudinal Non-Stigmatizing Care Coordinated Patient-Centered Treatment Across Lifespan

- Shared decision making with patient & family
- Culturally competent care
- Treatment coordinated in the medical home
- Transition planning



Treatment intensity & support vary to address relapsing & remitting nature of obesity as a chronic disease

Structural and Contextual Factors

- Access to Care
- Weight Bias and Stigma
- Obesogenic Environments
- That Impede & Influence
 - **Health & Treatment**
- Adverse Child Experiences
- Racism
- Health Inequities

PMHx:

- Born via NSVD at 37 weeks due to preeclampsia and GDM
 - GDM doubles the probability of childhood overweight/obesity at ages 2-5 years old.1
- Mild Intermittent Asthma
- Medications:
 - Budesonide/Formoterol MDI prn
- Social History:
 - Lives on a rural reservation community in New Mexico
 - In 3th grade, No academic concerns Family connected with heritage and participates in cultural activities
 - Family connected with heritage and participates in cultural activities
 - Lives with his mom, grandparents, and three siblings (age 11, 16, 19)
 - Father died in 2021 from complications of EtOH
 - Mom is working two jobs. Grandparents provide the majority of day-to-day care

^{1.} Mantzorou M, Papandreou et al. Maternal Gestational Diabetes Is Associated with High Risk of Childhood Overweight and Obesity: A Cross-Sectional Study in Pre-School Children Aged 2-5 Years. Medicina (Kaunas). 2023 Feb 24;59(3):455. doi: 10.3390/medicina59030455.

Family History:

- Type 2 DM: Father, grandmother and grandfather
- Both parents, two siblings, one grandparent with obesity
- Grandmother requiring dialysis due to Type 2 DM
- Diet: Most meals and snacks are provided by his grandparents
 - Sleep: 9pm- 6:00 am. Keeps tablet in bed "to help him sleep." Sleeps until noon on weekends
 - Screen time: Hard to determine, but probably 3 hours on school nights and over 8 on weekends
 - Snacks: Chips, Hot Cheetos, cookies and cakes are common. Occasional fruits
 - Meal time: Family dinners cooked at home (burgers, chicken, stews common), large portions.
 - Sugar Sweetened Beverages: Juice and soda readily available and served with meals
 - Fast food: 1-3 times per week

• Exercise:

- Enrolled in local youth sports leagues (basketball, flag football).
- Has basketball hoop in driveway
- Plays outside with neighborhood friends and cousins
- Likes to go fishing with his grandfather

- Behavior Health History:
 - While discussing his food and activity preferences and brainstorming possible goals ...
 - "When I say I want to have something healthy, my sisters and brother say 'that's because you're too fat."
 - Previous attempts to limit soda in the house led siblings to blame him for "ruining it for everyone."
 - While his grandparents readily offer sugary foods and drinks, he often feels reprimanded when him mom comes home
 - When feeling stressed "food helps me feel better."
 - Significant history of trauma related to Substance Use Disorder among close family and the death of his father

Obesity Evaluation & Addressing Weight Stigma and Bias go Hand in Hand



Assessment & Evaluation KAS Topics



BMI Measurement



Comprehensive Evaluation (PE, ROS, Hx, etc)



Risk Assessment (Whole child)



Comorbidity Evaluation (labs, tests)

Don't Forget the Purpose of the Evaluation

Designed to build relationship and gain insight, so you can help!

- Building Trust:
 - 1. Express your authenticity
 - Respect and value the uniqueness of each child and family
 - 2. Demonstrate empathy
 - Validate the challenges and that they are doing their best!
 - Celebrate their strengths
 - 3. Instill Confidence
 - That you have the knowledge to help them find and meet their goals



The Clinic Environment

Team Approach

- Negative messages from any aspect of the visit can be damaging
 - Staff attitudes and beliefs matter
 - Emphasize that everyone has a role to play (e.g. receptionist, support staff, lab)
- Identify Office and Clinical Champions to ensure a welcoming environment

Office Space and Flow

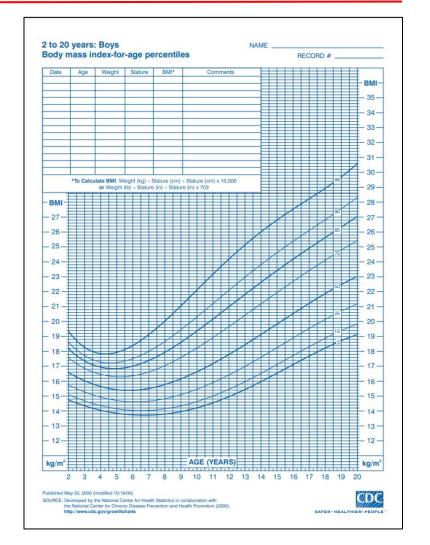
- Are you able to schedule frequent follow-up visits?
- Comfortable seating, medical equipment, and accommodations
- Positive messages and posters
- Consider a healthy habits questionnaire a part of the usual care



Diagnosis and Evaluation

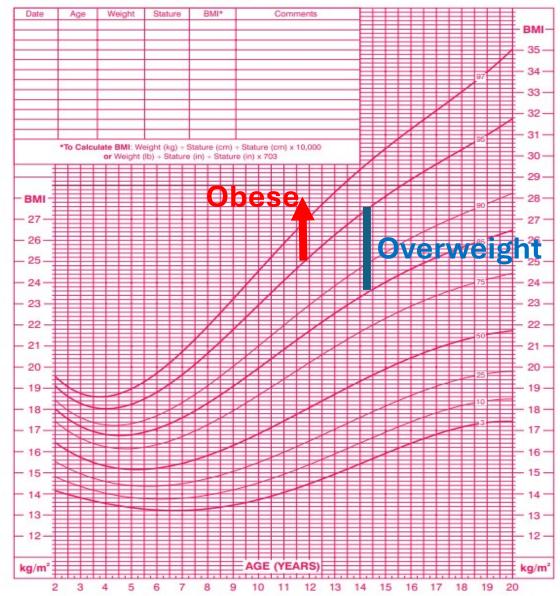
Clinical Practice Guideline for the Evaluation and Treatment of Children and Adolescents With Obesity

- Key Action Statement (KAS) 1: Screening for Obesity Grade B
 - Assess BMI percentile using age- and sexspecific CDC growth charts or growth charts for children with severe obesity at least annually for all children 2 to 18 y of age.



2 to 20 years: Girls Body mass index-for-age percentiles

NAME		
	RECORD #	



Published May 30, 2000 (modified 10/16/00).

SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).

http://www.cdc.gov/growthcharts



Girls: Ages 2-20 years

NAME

December 15, 2022
Data source: National Health Examination Survey and National Health and Nutrition Examination Survey.
Developed by: National Center for Health Statistics in collaboration with National Center for Chronic Disease Prevention and Health Promotion, 2022.

AGE (YEARS)





Evaluation of Patients With Overweight or Obesity

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

Non-stigmatizing conversation about weight with patients and families:

- 1. Ask permission to discuss the patient's BMI and/or weight.
- 2. Avoid labeling by using person-first language ("Child with obesity"; not "obese child" or "my patient is affected by obesity; not "my patient is obese").
- 3. Use words that are **perceived as neutral** by parents, adolescents, and children (e.g. "unhealthy weight, gaining too much weight for age, height, or health)."

Keep the focus on health, not weight



Diagnosis and Evaluation

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

- Key Action Statement (KAS) 2:
 Evaluation of Overweight and Obesity Grade B
 - Evaluate children 2 to 18 y of age with overweight and obesity for obesity-related comorbidities by using a comprehensive patient history, mental and behavioral health screening, SDoH evaluation, physical examination, and diagnostic studies



Evaluation of Patients With Overweight or Obesity

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

Medical History

- Chief Complaint
- History of the Present Illness
 - Review of Systems*
- Past Medical History
- Medications
- Family History
 - 40-70% genetic contribution to obesity risk¹

- Social History*
 - Nutrition and Physical Activity History*
- Behavioral Health History

Readiness for Change

Motivational Interviewing

Physical Exam*

Labs

Review of Systems - Relevant Findings		
System	Symptoms of Obesity-related Conditions	
General	Poor/slowed linear growth velocity, hyperphagia from early childhood, developmental delay, obesity onset <age 5<br="">years or syndromic features</age>	
Respiratory	Shortness of breath, snoring, apnea, disordered sleep	
Gastrointestinal	Asymptomatic vague abdominal pain, heartburn, dysphagia, chest pain, regurgitation, abdominal pain, enuresis, encopresis, anorexia, right upper quadrant pain; hyperphagia	
Endocrine	Polyuria, polydipsia	
GYN	Oligomenorrhea, dysfunctional uterine bleeding	
Orthopedic	Hip, thigh or groin pain, painful or uneven gait, knee pain, foot pain, back pain, proximal muscle wasting	
Mental health	Sadness, depression, anhedonia, body dissatisfaction, school avoidance, poor self- image, impulse eating, distractibility, hyperactivity, purging, restricting intake, binge- eating, night eating, flat affect	
Urinary	Nocturia, enuresis	
Dermatologic	Rash, darkened skin on flexural surfaces, pustules, abscesses, hirsutism in females, flesh- colored striae, purplish striae, skin fold irritation	
Neurologic	AM headache, daytime sleepiness, persistent headache	

Sarah E. Hampl, et. al. CPG Pediatrics February 2023; 151 (2): e2022060640. 10.1542/peds.2022-0606



Social History

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

- Family and Home Environment
 - Family meals, routines and limits are protective.¹
- Food Environment and Preferences:
 - Relationship with food
 - What are the healthy foods that you like? (fruit and vegetable menu)
- Nutrition and Physical Activity History
 - Diet history*

- Screen Time
- Sedentary Behavior
- Sleep Duration
 - Shorter sleep time is associated with obesity in children.²
- Psychosocial Stress
 - Bullying
 - Depression and Anxiety
 - Trauma
- SDoH
- ACEs

^{1.} Bates CR, Buscemi J, Nicholson LM, Cory M, Jagpal A, Bohnert AM. Links between the organization of the family home environment and child obesity: a systematic review. *Obes Rev.* 2018;19(5):716–727

^{2.} Magee L, HaleL. Longitudinal associations between sleep duration and subsequent weight gain: a systematic review. Sleep Med Rev. 2012;16(3): 231–241

Diet and Activity History

- Start by discovering and celebrating the current strengths
 - Cultural activities and sources of strength
 - Healthy foods they like
 - Fun activities
 - Discover their Interests in learning
 - Cooking
 - Gardening
 - New activities
 - Opportunities for family time



Nutrition and Physical Activity History

- 24 Hour Recall: "Walk me through what you ate and drank yesterday."
 - Fruits and vegetables
 - Snacking
 - Regular, balanced meals (Food insecurity)
 - Meal skipping
 - Selective eating
 - Disordered eating
 - Beverages (especially sweet drinks)
 - Frequency of eating out, fast food
 - Eating as a family
 - Portion size
 - Influence of grandparents or other caregivers on diet
- Screen Time: "What kind of screens, video games, or devices do you use?"
 - Using screens in bed
 - Any parental control settings

Relevant Physical Exam Findings		
Vital signs	Anthropometric	
 Hypertension Increased heart rate 	 Changes in height velocity Changes in weight gain 	
Gastronintestinal	Genitourinary	
 Hepatomegaly 	Buried penis	
HEENT	Chest	
PapilledemaDental cariesTonsillar hypertrophy	Gynecomastia Cervicodorsal hump	
Musculoskeletal	Skin	
 Gait Lordosis Hip pain and/or limp Genu varum/valgum Ped planus 	 Acanthosis Hirsutism/acne Striae Intertrigo Pannus 	

"Motivationally- Supportive" Approach to Evaluating Obesity





Honoring Basic Psychological Needs

HUMAN BEINGS HAVE THREE BASIC NEEDS:

COMPETENCE

People need to gain

mastery and control

of their own lives &

their environment.

Essential to wellness.

AUTONOMY

People need to feel

in control of their

own life, behaviours

and goals. This is

about choice.

RELATEDNESS

People need to

experience a sense

of belonging and

connection with

other people.

Feeling cared for by others & to care for others.

Based on the work of Richard Ryan and Edward Deci.

https://opentextbc.ca/peersupport/chapter/self-determination-

A Good H&P is not Worth Undermining Autonomy

- Ask permission to discuss topics
- Open-ended questions
 - Red flag: you're doing most of the talking
- Importance & confidence scales
- Let the patient sent the agenda
 - Offer choices if necessary (topiccards)

AUTONOMY

People need to feel in control of their

own life, behaviours

and goals. This is

about choice.

Create a Strengths Inventory

- Highlight all the things that are already going well
 - Healthy foods and activities which they like
 - Positive family routines
 - Positive relationships
 - Cultural Heritage
- Celebrate their pre-existing knowledgebase
- Explore past successes
- Acknowledge strengths

COMPETENCE

People need to gain

mastery and control

of their own lives &

their environment.

Essential to wellness.

The Messenger is at least as Important as the Message

- Ask fun questions too
 - Do they have any pets?
 - What's the farthest they've been from home?
- Reflective listening
 - "Here is how I heard what you were saying..."
 - Patients are more likely to be motivated by hearing what they have said, instead of what other people have told them.
- Express that they are not alone in their challenges
- Convey your enthusiasm to work side by side with them over time

Let your questions spring from genuine interest and curiosity, not a need to collect data

RELATEDNESS

People need to

experience a sense

of belonging and

connection with

other people.

Feeling cared for by others & to care for others.

(Concurrent Core Elements)

Foundational

Longitudinal comprehensive patient-centered obesity treatment coordinated in the medical home

Adjunct tools to leverage where appropriate and in conjunction with foundational elements









Provision or referral to intensive Health Behavior and Lifestyle (HB&L) treatment (>=26 contact hours over 2-12 months)

Use of MI for shared decision making & ongoing behavioral counseling

Ongoing assessment of individual, social and contextual risk factors and evaluation for comorbidities & comorbidity treatment



Layer in multidisciplinary care & community resources as available and tailored to patient/family strengths and needs.



Treating Childhood and Adolescent Obesity

Know where you are and start there.

This is a marathon not a sprint.

Practice change is most successful when goals are achievable, clear, measurable and supported by the team and the system you are working in.

Identify subspeciality referral network

Set and track goals in follow up visits

Begin ordering recommended labs

Identify regional obesity treatment and metabolic and bariatric surgery

programs

Include obesity relevant history and ROS on your intake forms

Engage in team training re. obesity

Make obesity treatment a practice/strategic priority

Identify community partners for IHBLT

Screen for SDoH, obesity comorbidities, eating disorders, depression anxiety

Resources: AAP
Institute for Health
Childhood Weight

Website: https://ihcw.aap.org
www.aap.org/obesitycpg

