Pediatric Obesity:

The Essentials for Helping without Harming

CHEO's Centre for Healthy Active Living

CHAL Team

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Building a Tool Box

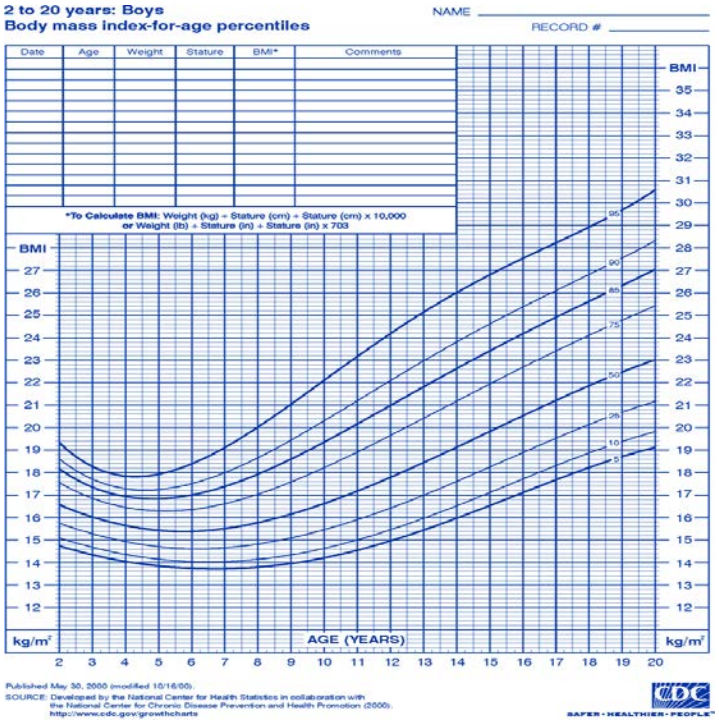
- Includes tools from all disciplines
- Each family will need different tools
- Your clinic might only be able to use certain tools
- Work first with those you're most comfortable with
- Slowly learn to work with new tools
- Continue updating and adding to your tool box
- A tool box is more effective than a pre-determined check-list that might not fit every patient and family

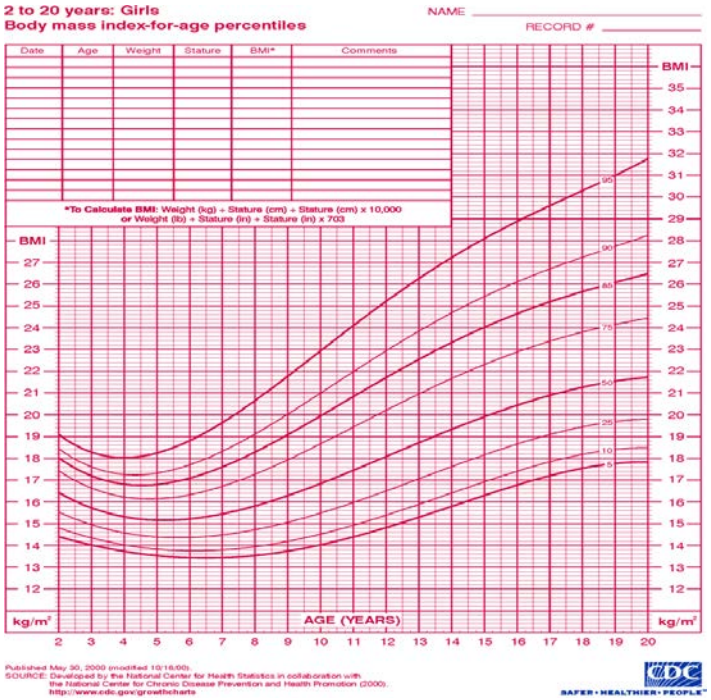
Objectives

- Understanding the complexity of obesity
  - Drivers of weight gain
  - Barriers to weight management

- Tools for Assessment and Management:
  - 5As
  - 4Ms
  - EOSS-P

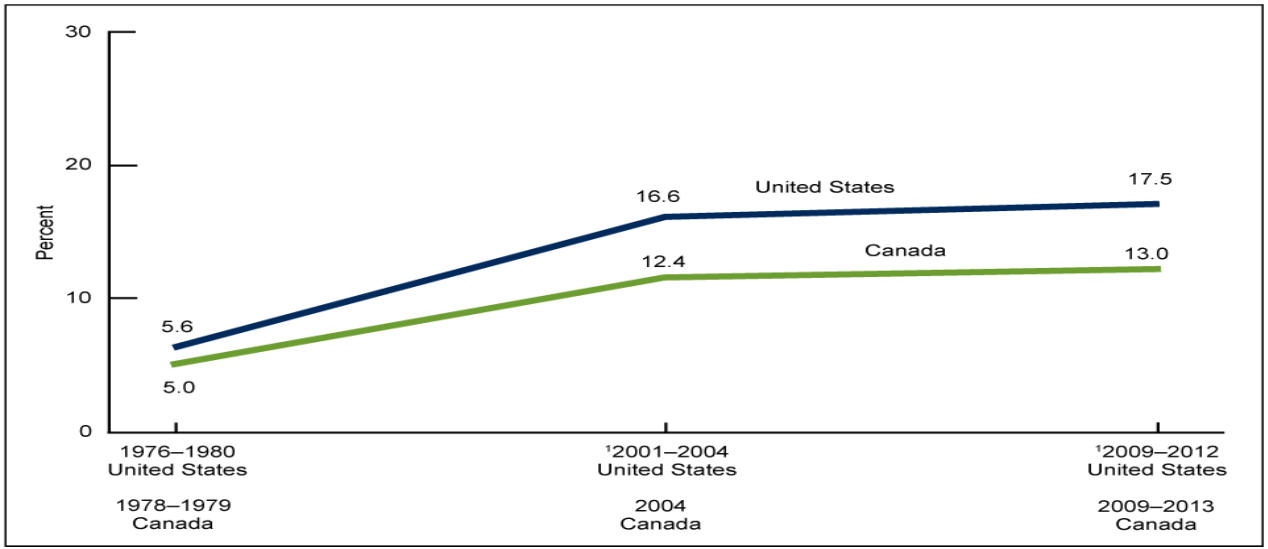
Obesity is Defined as BMI > 95th%





Trends in Childhood Obesity Prevalence

Figure 1. Trends in childhood obesity among children and adolescents aged 3–19 in Canada and the United States



[1]Statistically significant difference compared with Canada, $p < 0.001$.
NOTE: Pregnant girls are excluded.
SOURCES: CDC/NCHS, National Health and Nutrition Examination Surveys, 1976–1980, 2001–2004, and 2009–2012; Canada Health, 1978–1979; Canadian Community Health Survey—Nutrition 2004; and Canadian Health Measures Survey, 2009–2013.

Highly heritable trait

- We carry the vulnerability to obesity in our genes
  - *50-90% of risk for obesity is genetically determined*

- In modern times
  - *Subgroup of the population that is more susceptible to and a subgroup that is more resistant to developing obesity*

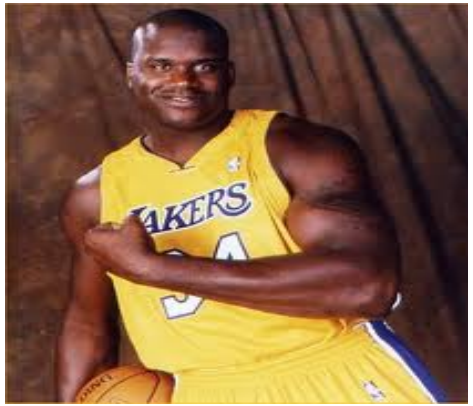
Perinatal risk factors

- Maternal diabetes
- Maternal smoking
- High birth weight
- Low birth weight
- High maternal body weight at beginning of pregnancy
- Increased weight gain during pregnancy

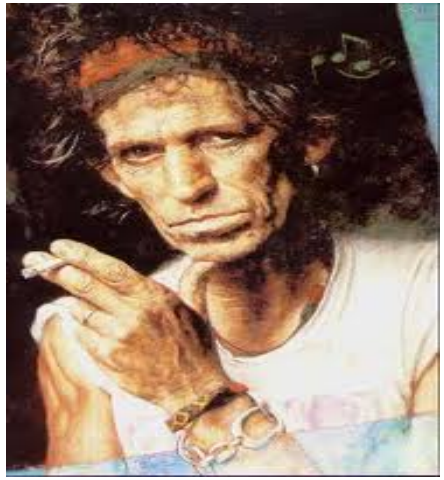
But what is obesity?

- A marker of body size
- A risk factor for health complications

Limitations of BMI



BMI= 32 kg/m2



BMI= 21 kg/m2

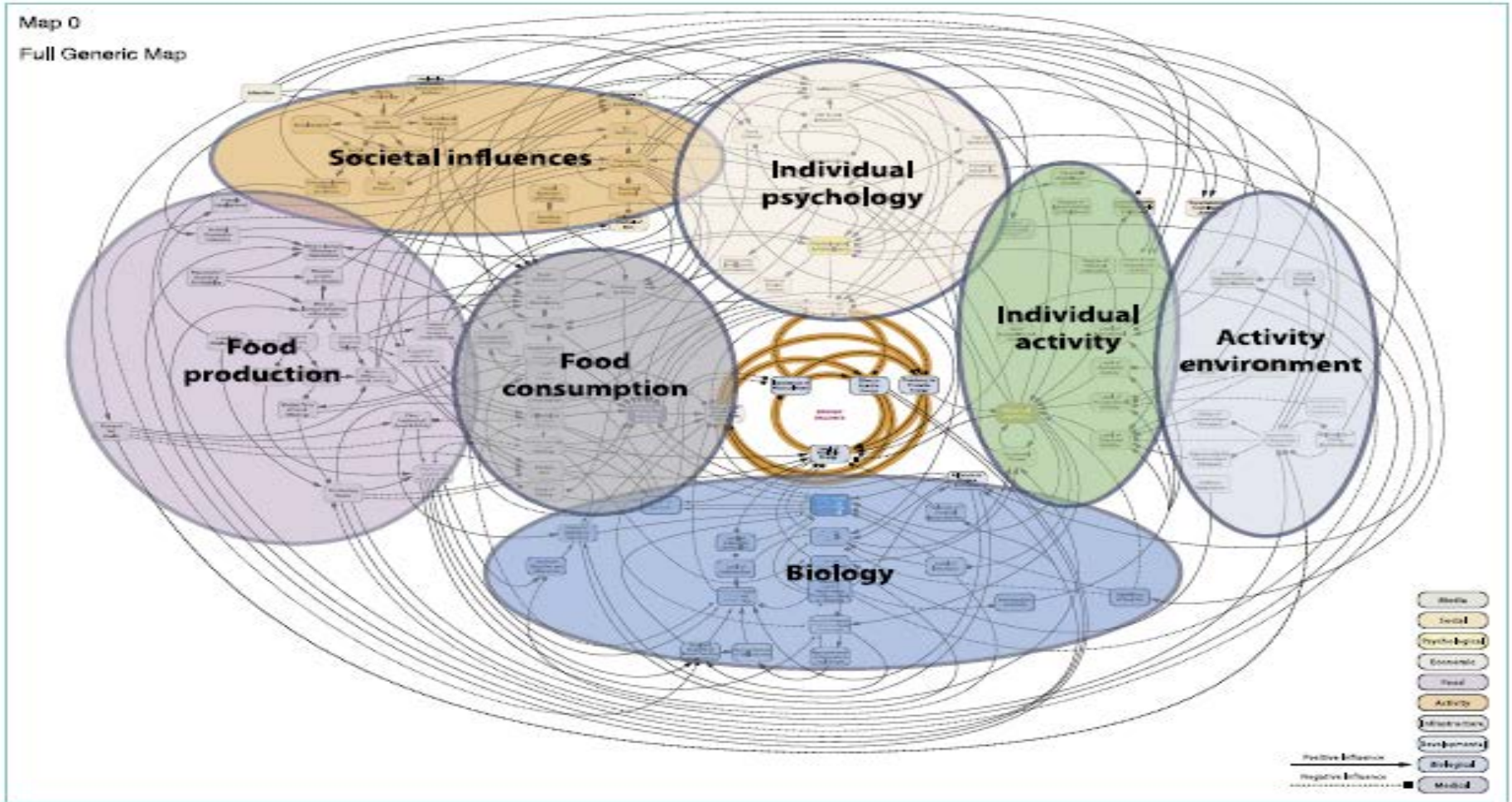
Obesity is….

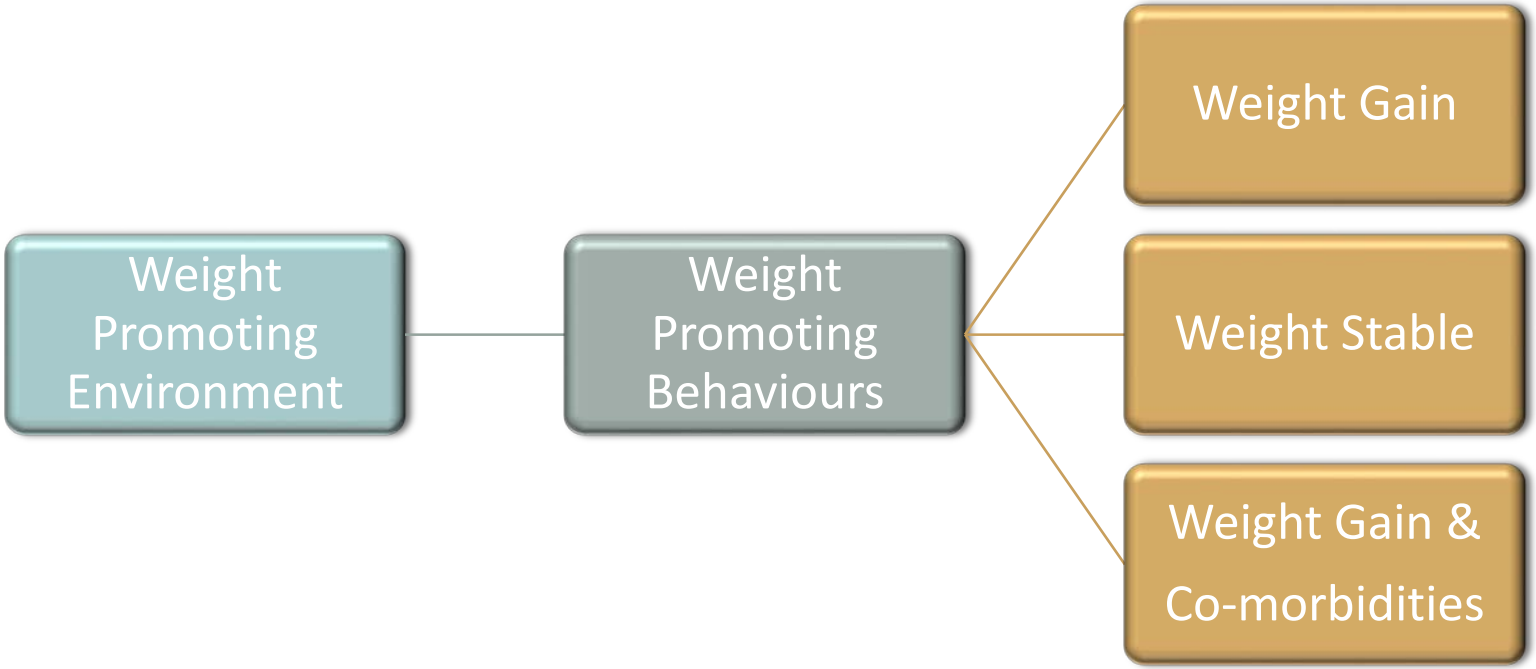
- A sign or symptom
- A disorder of energy balance
  - *Adaptive/ Maladaptive?*
- A risk factor for disease
  - *Modifiable through health behaviours*

Obesity is not….

- A sensitive indicator of health
- A sensitive indicator of health behaviours
- A character flaw
- A lack of will power

Figure 8.1: The full obesity system map with thematic clusters (see Section 4 for discussion). Figure highlights broader determinants of health such as drivers of food production and components of the physical activity environment.

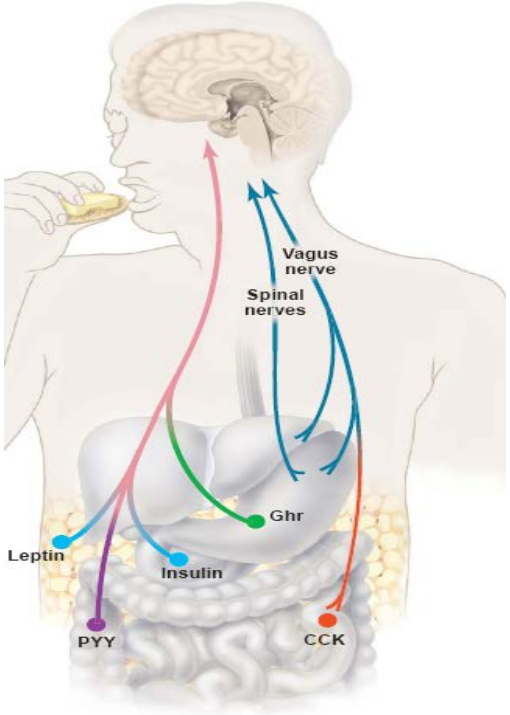


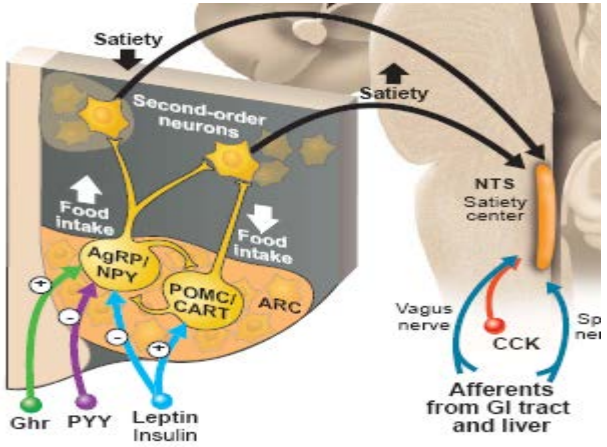


Sensitivity to weight promoting environments and behaviours modified through genetic and pre-natal programming

Beyerlein et al, PLoS one (2011)

Neuroendocrine Control of Energy Balance

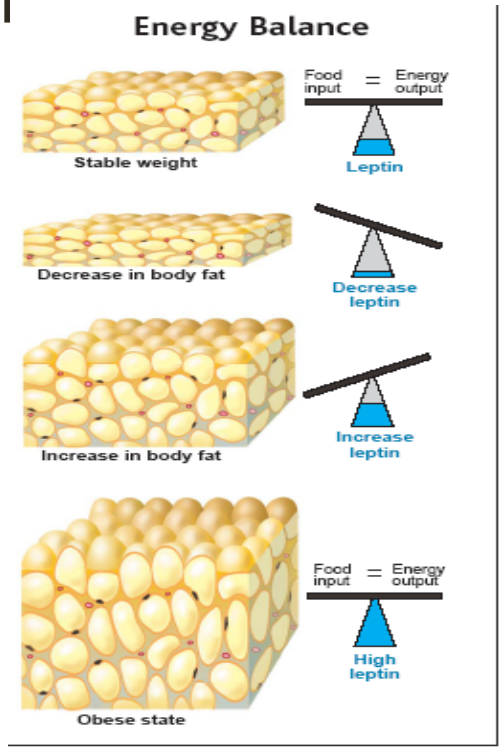




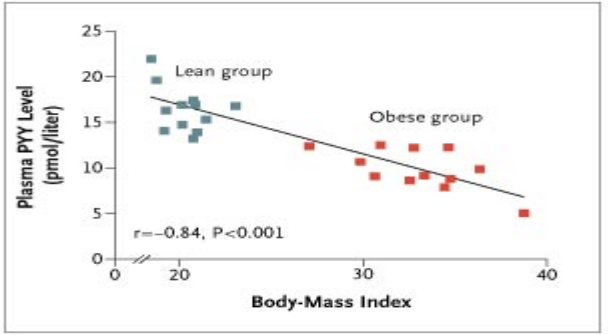
Science. Feb 7, 2003

Neuroendocrine Differences: Lean vs. Obese

Leptin

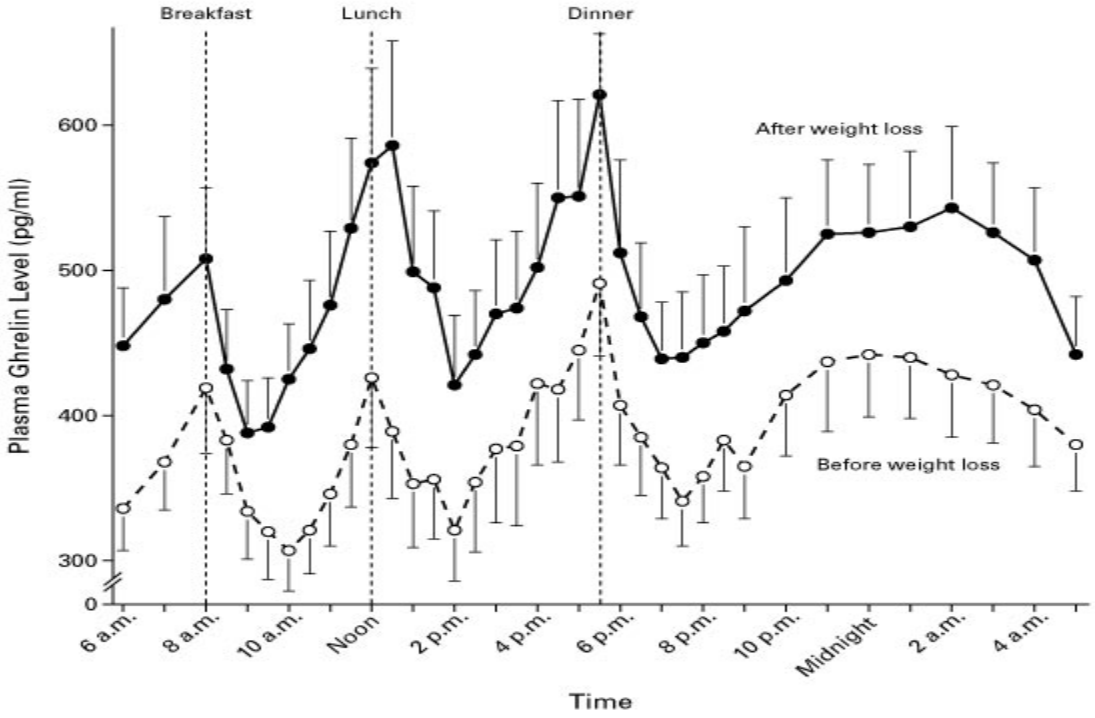


PYY3-36



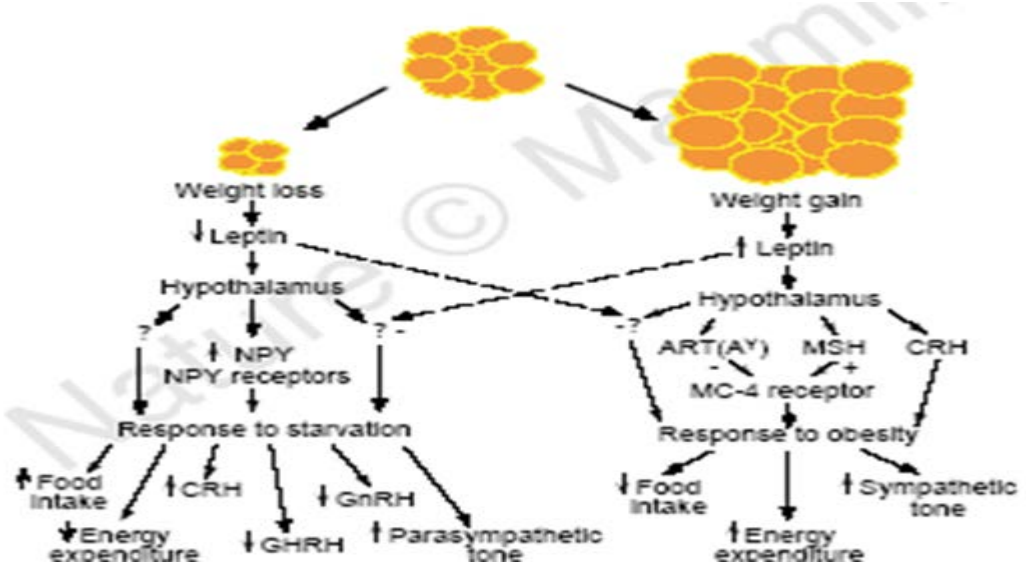
Batterham, R. L. et. al. N Engl J Med 2003;349:941-948

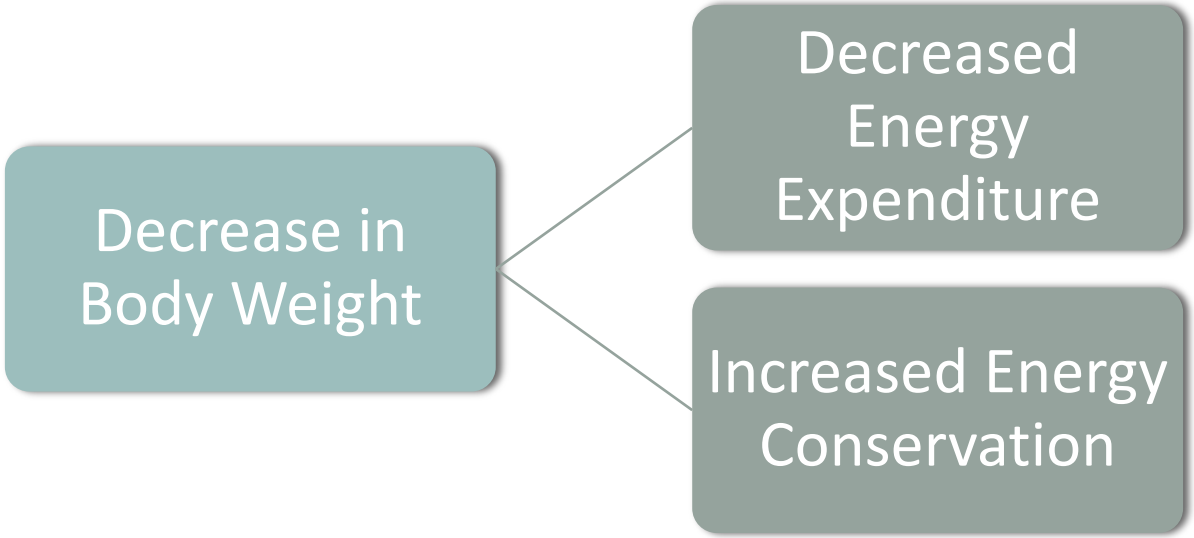
Hormonal Adaptations to Weight Loss: **Ghrelin**



Cummings, D. E. et. al. N Engl J Med 2002;346:1623-1630

Hormonal Adaptations to Weight Loss: **Leptin**





Additional weight loss can only be achieved by a more severe diet and further increases in physical activity

Katan B et al JAMA (2010)

Expected Change in BMI *(6-12 months)*

	Lifestyle	Medication	Surgery
Δ BMI (kg/m^2)	-1.9-3.3	-0.85 (orlistat) -0.9 to 1.8 (metformin)	-8.5

USPSTF Task Force, Pediatrics (2010)
Journal of Pediatric Surgery (2010)
Boland et al, Annals of Pharmacotherapy (2015)

The Psychosocial Realities of Living at a Higher Weight

A Weight Obsessed World

Societal Pressures

- In Western Society the media is a powerful influence and pressure on youth today
- Body image messages are ever present and typically state:
  - Thin women are beautiful, successful and happy
  - Muscular, lean men are handsome and successful

Grabe et al. Psychological Bulletin (2003)

THIN, THIN, THIN

MUSCLE, MUSCLE, MUSCLE

Body Image: Through the Eyes of the Media

- Reflects societal trends
- Promotes an unattainable ideal
- Creates body dissatisfaction, attacks self-esteem, and capitalizes on insecurities
- Creates and perpetuates stereotypes
- Redefines *beauty* by linking it to specific religious and moral values

Body Image and Dieting in Youth Today

- 40-60% of adolescent girls and 25-25% of adolescent boys report being dissatisfied with their body.
- 30-60% of adolescent girls and 20-30% of adolescent boys are engaged in purposeful weight loss strategies.

Jones et al. 2001; McVey et al., 2004

Buchholz, et al., 2007

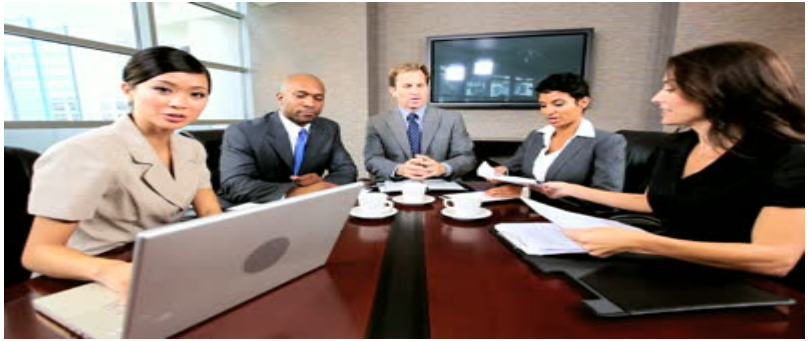
Medical Versus Self Esteem Concerns

Most Kids:

- Want to lose weight to make the teasing and harassment stop
- They would prefer to have diabetes and be thin than to be “fat” and “healthy”

But by suggesting that children focus on weight as an outcome we are setting them up for weight preoccupation, dieting and likely weight gain

Weight Bias: It's Everywhere



The Science on Weight Bias

- **Substantial Evidence of Bias in:**
  - **Employment**
  - **Education**
  - **The Media**
  - **Interpersonal Relationships**
  - **Youth**
  - **Health care**

Puhl, R. (2013). Obesity Stigma: Implications for Patients and Providers. http://www.yaleruddcenter.org

Bullying

- 30% of overweight girls and 25% of overweight boys experience weight focused peer victimization
  - *60% of the most severely overweight kids report harassment*

- 40% of youth report that obesity is the primary reason why peers are teased or bullied
  - *37% reported being gay or lesbian as the primary reason*
  - *10% reported race, ethnicity, disability, religion*

Eisenberg M et al Arch Pediatr Adolesc Med (2003)
Puhl RM et al, J Sch Health (2011)

Weight Bias at home

- 47% of overweight girls and 34% of overweight boys report being teased about their weight by their parents

- 72% of overweight adults reported they had experienced weight bias from family members as children

Puhl RM et al, J Sch Health (2011)
Puhl RM et al, Psych Bull (2007)

Weight Bias

Documented in Studies of:

- Nurses
- Medical Students
- Psychologists
- Dietitians
- Fitness Professionals
- Physicians

Puhl, R. (2013). Obesity Stigma: Implications for Patients and Providers. http://www.yaleruddcenter.org

Providers View Obese Patients as:

- Noncompliant
- Lazy
- Lacking in self-control
- Awkward
- Weak-willed
- Sloppy
- Unsuccessful
- Unintelligent
- Dishonest

Puhl, R. (2013). Obesity Stigma: Implications for Patients and Providers. http://www.yaleruddcenter.org

Health Care Professionals

- Can you talk about your overall experience in providing care to overweight or obese clients?
- What do you talk about with obese and overweight clients?
- Can you talk about your experience in delivering care to overweight and obese patients?

*Health care professionals experienced **frustration** and **disappointment** with individuals who were unable to lose weight, they struggled to understand the complexity of the issue, which often led to blaming the individual.*

Kirk et al., Qualitative Health Research, 2014

Health Care Professionals

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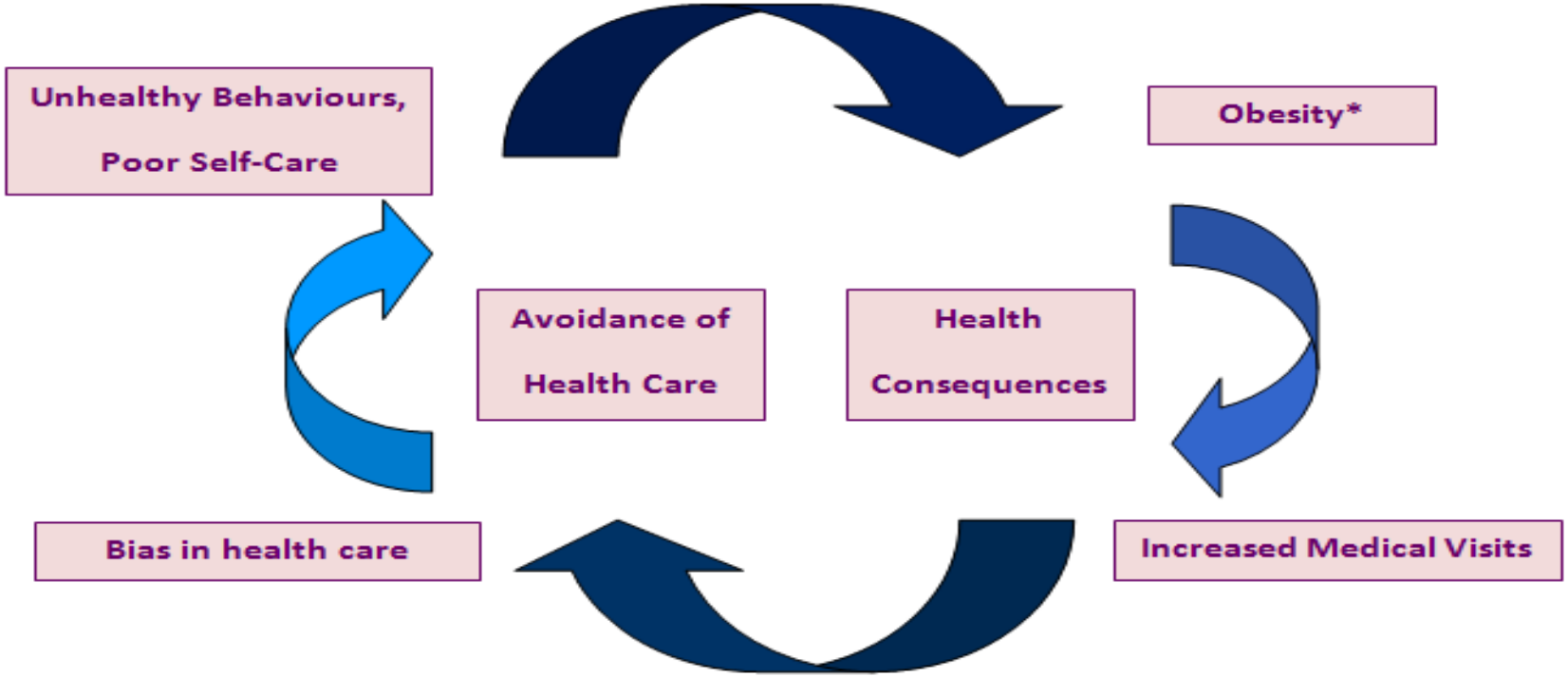
Kirk et al., Qualitative Health Research, 2014

The Patient Experience:
A Mother's Perspective

Cycle of Bias & Obesity



Puhl, R. (2013). Obesity Stigma: Implications for Patients and Providers. http://www.yaleruddcenter.org

The Diet Industry Culture

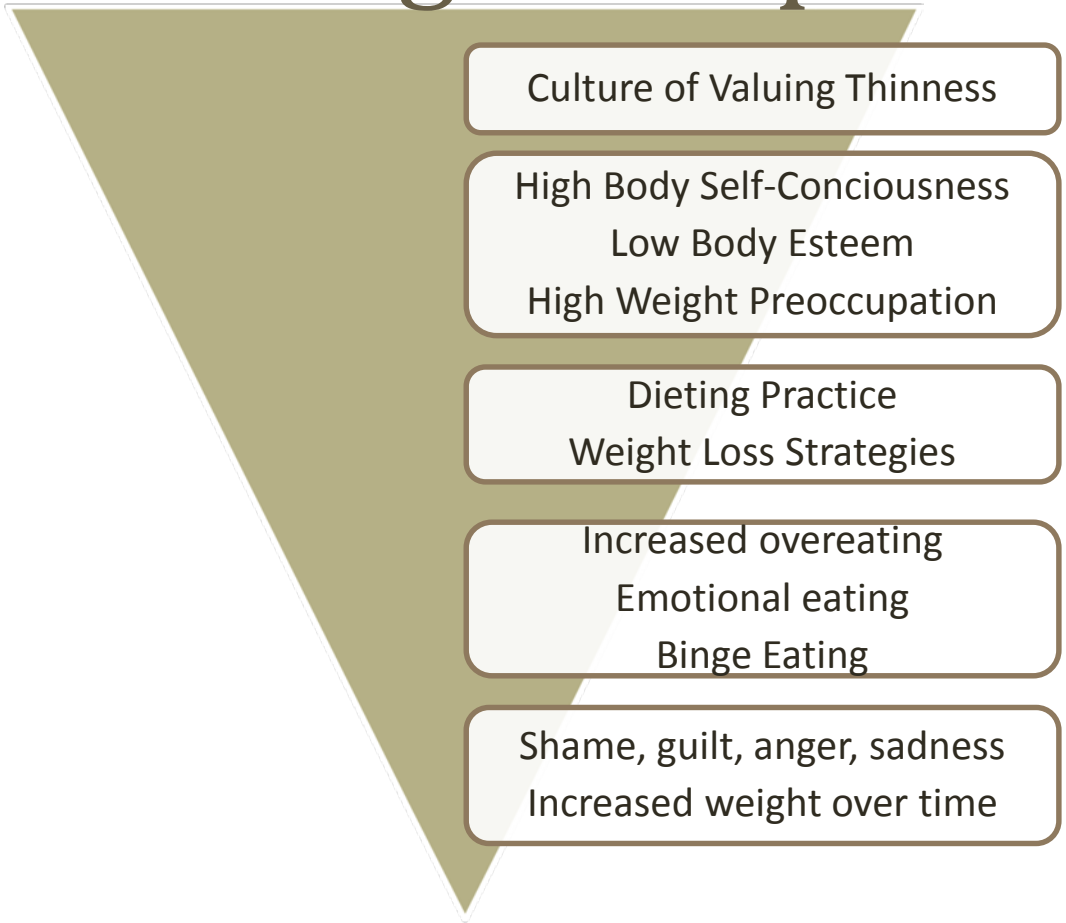
(Pawlak, 2009)

Familiar Claims:

- *"Lose weight quickly"*
- *"Reset your genetic code"*
- *"Eat all you want – Lose up to 30 pounds in 3 weeks"*
- *"Scientifically sound", "Based on proven studies"*

Private weight loss industry in the US estimated at $58.6 billion annually *(Marketdata Enterprises, 2009)*

The Negative Spiral



What Influences Body Image?

The Media

Community & Culture

School

Friends & Peers

Family

Individual

Macro-level

Micro-level

The Impact of Living with Weight Management Issues in Today's World

- Low body satisfaction
- Low self esteem
- High depressive symptoms
- Poor self-perception of physical appearance
- Disordered eating (bulimic behaviours)
- Isolation/ withdrawal

Puhl RM et al, J Sch Health (2011)
Puhl RM et al, Psych Bull (2007

The Impact (cont'd)

- Increased sedentariness
- Poor academic outcomes
- School absences
- Poor peer relationships
- Increase risk & unhealthy behaviours

Puhl RM et al, J Sch Health (2011)
Puhl RM et al, Psych Bull (2007

Key Principles

Key Principles

Obesity Management is About Improving Health and Well-being, and not Simply Reducing Numbers on the Scale

Key Principles

Weight bias can be a barrier to weight management

Key Principles

Interventions should include addressing ‘root causes’ of obesity and removing roadblocks for families to make healthy changes

Key Principles

A Child's 'Best' BMI May Never Be His or Her 'Ideal' BMI

Key Principles

Success is different for every child and family


ASK for Permission to Discuss Weight
ASSESS obesity related risk and potential 'root causes' of weight gain
ADVISE on obesity risks, discuss benefits & options
AGREE on a realistic SMART plan to achieve health behaviour outcomes
ASSIST in addressing drivers & barriers, offer education & resources, refer to provider, and arrange follow-up

ASK for permission to discuss weight

Weight is a sensitive issue. Many children and parents may be embarrassed or fear blame and stigma, so ‘asking’ is an important first step.

When ASKing…

ASK

- Do you have any concerns about your/your child's health?
- Do you have any concerns about your/your child's weight?
  - What are your concerns about your/your child's weight?
  - How does your/your child's weight impact you/them?

Terms for Describing Weight

ASK

Desirable terms

- Weight
- BMI

Undesirable terms

- Fatness
- Excess fat
- Obesity
- Large size
- Heaviness
- Unhealthy BMI
- Unhealthy body weight
- Weight problem

http://www.yaleruddcenter.org/resources/bias_toolkit/index.html

ASSESS obesity related risk and potential ‘root causes’ of weight gain

ASSESS

- Assess Obesity Status and Stage
- Assess for Obesity Drivers, Complications, and Barriers (4Ms)
- Assess for Root Causes of Weight Gain

ASSESS

Create a Weight-Friendly Practice

- **Facilities:** wide doors, large restrooms, floor-mounted toilets
- **Scales:** over 350lb/160kg, wheel-on accessible, located in private area and used with sensitive weighing procedures
- **Waiting room:** sturdy, armless chairs, appropriate reading material – no glossy fashion magazines
- **Exam room**: appropriate-sized gowns, wide and sturdy exam tables, extra-large blood pressure cuffs, longer needles and turniquets, long-handled shoe horns

ASSESS

Assess for Obesity Status and Stage

- Obesity status in children is defined using BMI growth charts specific for age and gender.
  - CDC >95th percentile
  - WHO> 97th percentile
- Obesity Stage is based on the 4Ms (Mental, Mechanical, Metabolic and Milieu), which quantify the impact of obesity on children's overall health.

ASSESS

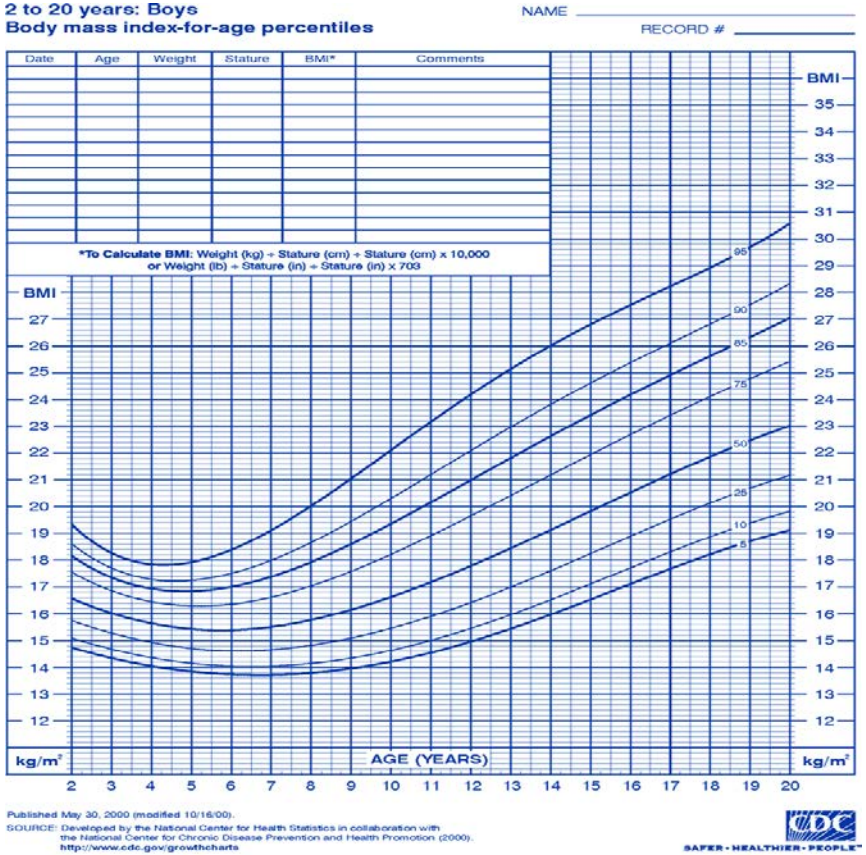
Sensitive Weighing Procedures

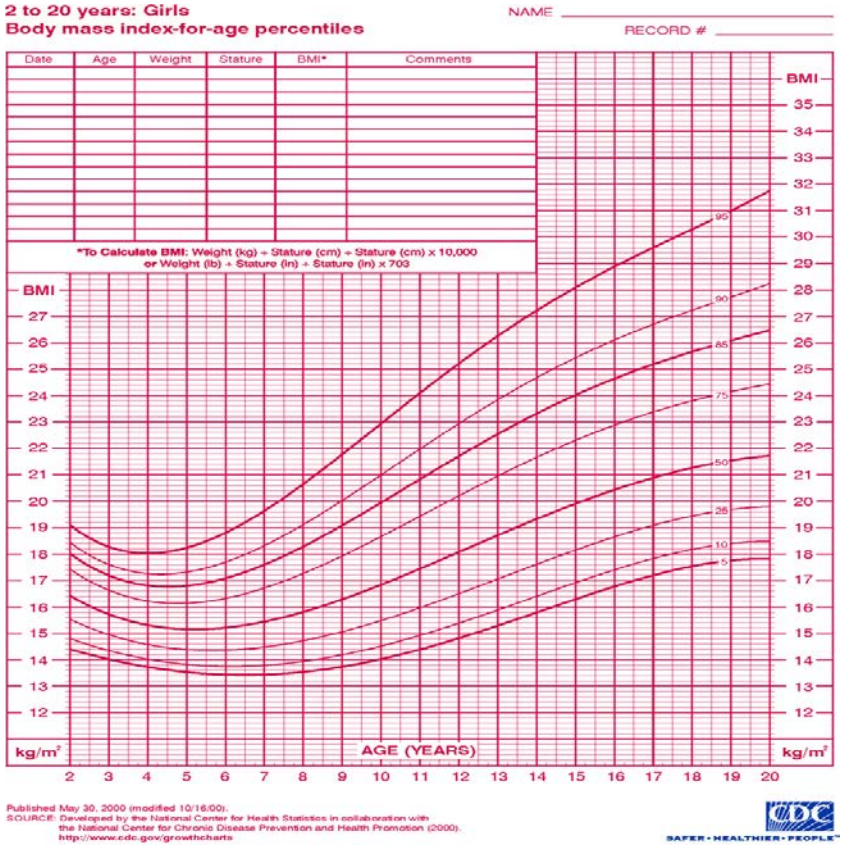
- Ensure that weighing procedures take place in a private location that protects confidentiality of patients
- Record the patient's weight without judgement or comments
- Offer patients the choice of not seeing the results if they prefer

http://www.yaleruddcenter.org/resources/bias_toolkit/index.html

BMI Graphs for Children (CDC)

ASSESS





Etiology of Pediatric Obesity

ASSESS

- **Endocrine**
  - Low growth velocity
  - Hypo-thyroidism
  - Growth Hormone Deficiency
  - Cushing's Syndrome
- **Monogenic**
  - Obesity onset before 6 months of age
  - Increased appetite
  - MC4R defect/ Leptin deficiency
- **Genetic Syndrome**
  - Dysmorphic features
  - Neurocognitive delay
  - Prader Willi Syndrome
  - Bardet Biedl Syndrome
  - Alstrom
- **CNS/ hypothalamic damage**
  - Hypo-thalamic obesity
  - Increased appetite
  - Decreased energy expenditure
  - Hypo-pituitarism
- **Acquired***
  - Normal or increased growth velocity
  - Highly heritable
  - Intrauterine exposures

*most common form of pediatric obesity

The 4Ms of Pediatric Obesity

ASSESS

Mental

- Anxiety
- Depression
- Body image
- ADHD
- Learning disorder
- Sleep disorder
- Eating disorder
- Trauma

Mechanical

- Sleep apnea
- MSK pain
- Reflux disease
- Stress incontinence
- Encopresis
- Intertrigo

Metabolic

- IGT/T2DM
- Dyslipidemia
- Hypertension
- Fatty liver
- Gallstones
- PCOS
- Medication
- Genetics

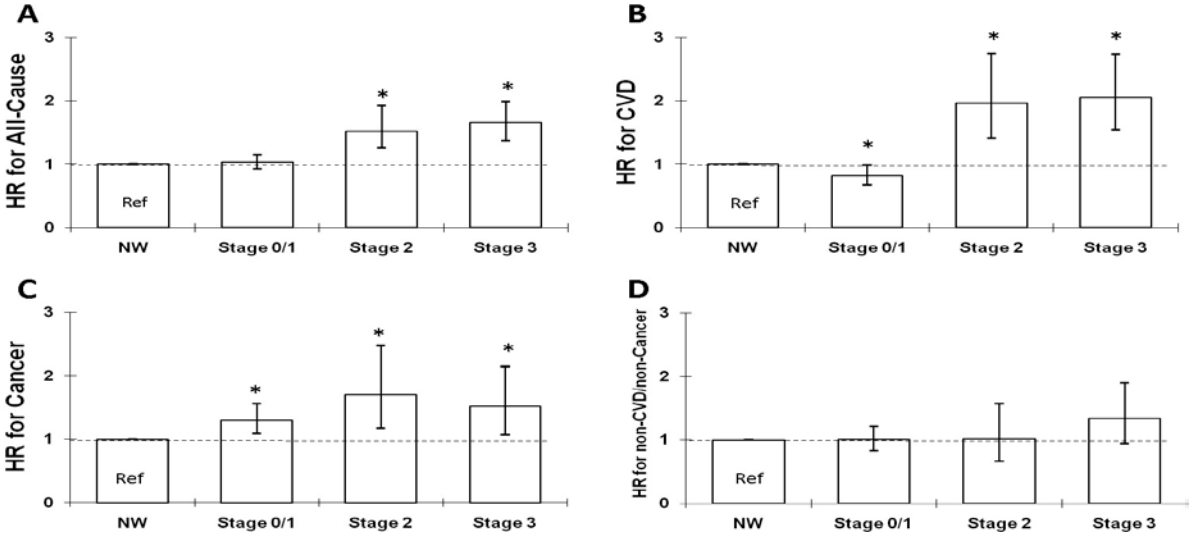
Milieu

- Parent health/disability
- Family stressors
- Family income
- Bullying/Stigma
- School attendance
- School support
- Neighbourhood safety
- Medical insurance
- Accessible facilities
- Food Environment
- Opportunities for physical activity

Edmonton Obesity Staging System *(Kuk et al, 2011)*

- New risk-stratification system that classifies adults with obesity into 5 graded categories based on morbidity and health-risk profiles

- EOSS independently predicted increased mortality even after adjustment for common methods of classifying obesity
  (Padwal et al., 2011)

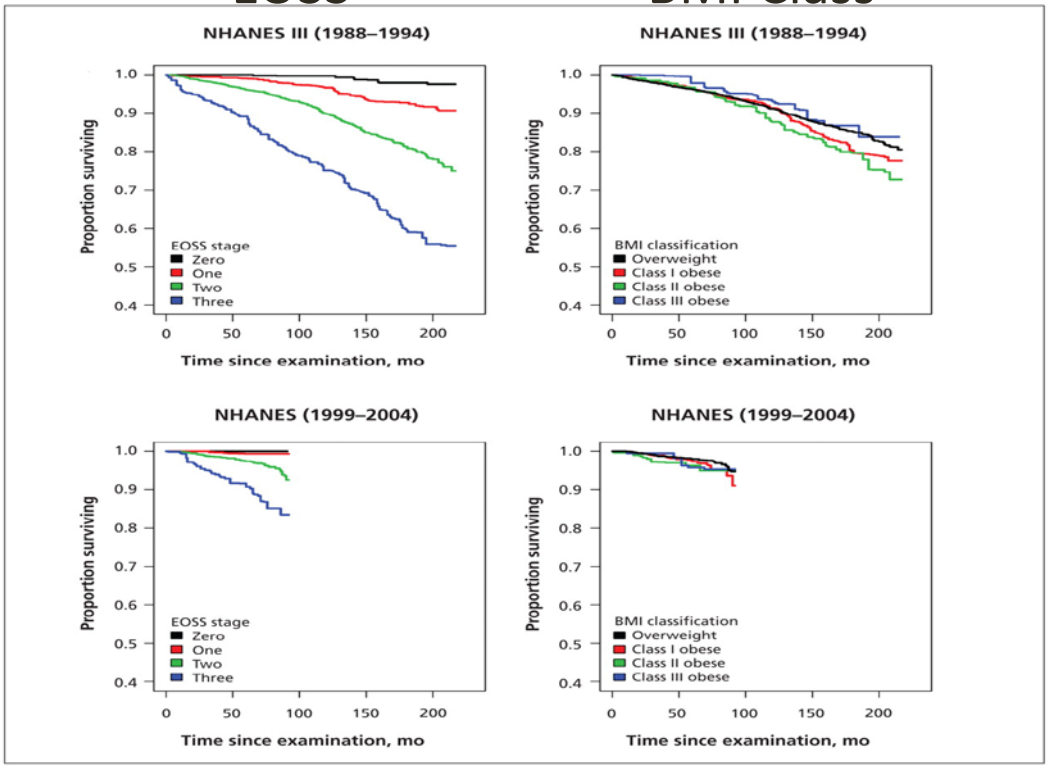


29, 533 obese individuals Morbidity and Mortality Risk based on EOSS at 16 year follow up compared to normal weight controls

Kuk et al, App. Physiol. Nutr. Metab. (2011)

EOSS

BMI Class



Survival Curves diverge when stratified by EOSS score but not BMI Class

Padwal R S et al. CMAJ (2011)

STAGE	METABOLIC	MECHANICAL	MENTAL HEALTH	MILIEU
0	*No metabolic complications*	*No bio-mechanical Complications*	*No mental health difficulties*	*No social stressors -home, school, community*
1	*Mild metabolic abnormalities- not requiring medication*	*Mild bio-mechanical complications- not interfering with ADL*	*Mild difficulties not interfering with functioning*	*Mild social stressors*
2	*Moderate metabolic complications – requiring pharmacotherapy*	*Moderate biomechanical complications requiring intervention*	*Moderate mental health difficulties- requiring therapy*	*Moderate social stressors*
3	*Inadequately managed metabolic complications*	*Severe mechanical complications interfering with ADL*	*Uncontrolled mental health difficulties*	*Severe social stressors*

E O S S - P

ASSESS

Metabolic

Metabolic

ASSESS
Metabolic

- Impaired Glucose Tolerance (IGT), Impaired Fasting Glucose (IFG)
- Type 2 Diabetes (T2DM)
- Dyslipidemia
- PCOS
- Hypertension
- Non-Alcoholic Fatty Liver Disease
- Gallstones

Risk Factors

ASSESS
Metabolic

- Family History
- Intrauterine Exposures
  - Maternal Diabetes, Pre-Pregnancy Overweight/Obesity, Increased gestational weight gain, Smoking, High/low birthweight
- Ethnicity
  - Aboriginal, Hispanic, African, Caribbean, South/East Asian, Pacific Islanders
- Body Composition
  - Increased waist circumference/increased visceral fat

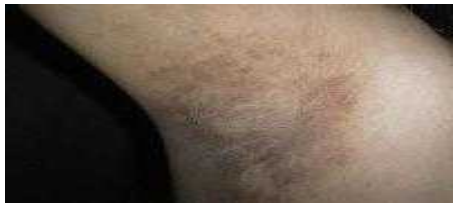
Clinical Features

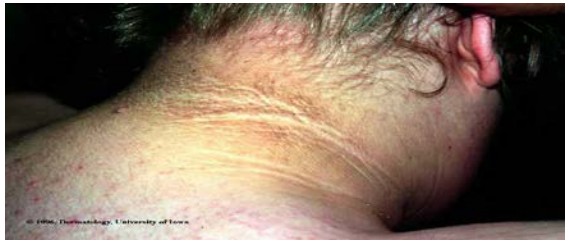
ASSESS
Metabolic

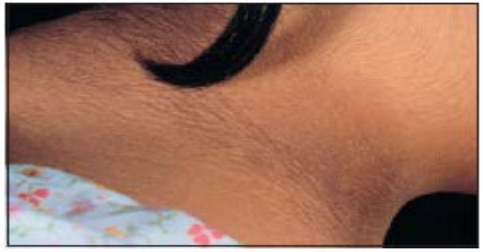
- Abdominal Obesity- Increased waist circumference
- Acanthosis Nigricans/ skin tags
- Hypertension
- Fatty infiltration of liver- Ultrasound
- Benign Premature Adrenarche
- Hyperandrogenemia- females
- PCOS
- Pseudoacromegaly
- Advanced Bone Age
- Gynecomastia

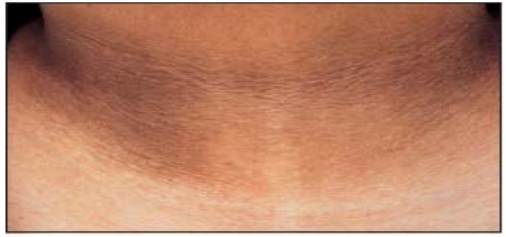
Acanthosis Nigicans

ASSESS
Metabolic









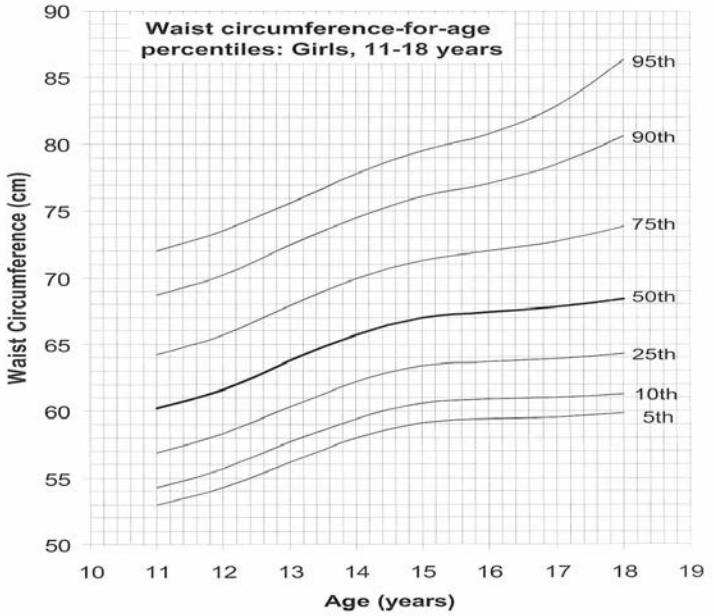
Waist Circumference

ASSESS
Metabolic

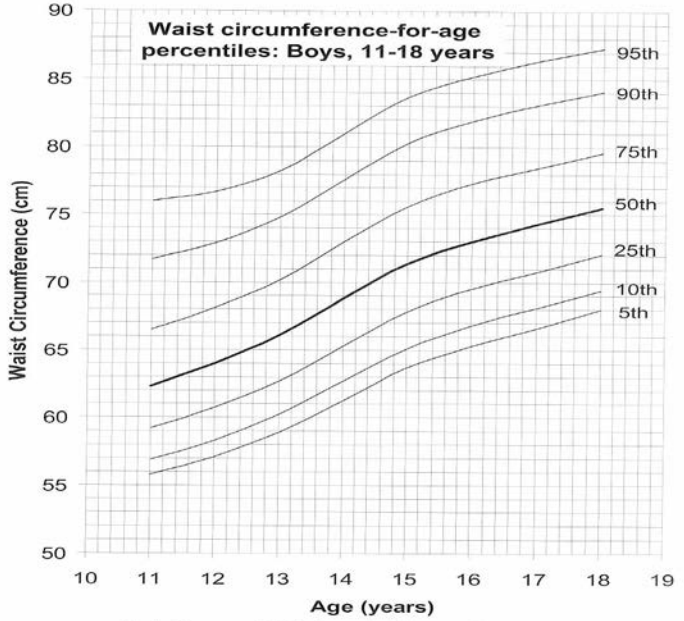
- Surrogate marker of visceral fat
- Related to risk for T2DM and CVD
- Lack of standardized evidence- based protocol for measurement of waist circumference
  - Narrowest site
  - Mid-point between floating rib and iliac crest
  - Waist to height ratio (more sensitive)?

Waist circumference curves

ASSESS
Metabolic



Data Source: 1981 Canada Fitness Survey.
From: Katzmarzyk. Eur J Clin Nutr 2004;58:1011-15.



Data Source: 1981 Canada Fitness Survey.
From: Katzmarzyk. Eur J Clin Nutr 2004;58:1011-15.

Simple BP Table

ASSESS
Metabolic

TABLE 1 **Blood Pressure Values Requiring Further Evaluation, According to Age and Gender**[4,6]

Age, y	Blood Pressure, mm Hg			
	Male		Female	
	Systolic	Diastolic	Systolic	Diastolic
3	100	59	100	61
4	102	62	101	64
5	104	65	103	66
6	105	68	104	68
7	106	70	106	69
8	107	71	108	71
9	109	72	110	72
10	111	73	112	73
11	113	74	114	74
12	115	74	116	75
13	117	75	117	76
14	120	75	119	77
15	120	76	120	78
16	120	78	120	78
17	120	80	120	78
≥18	120	80	120	80

These values represent the lower limits for abnormal blood pressure ranges, according to age and gender. Any blood pressure readings equal to or greater than these values represent blood pressures in the prehypertensive, stage 1 hypertensive, or stage 2 hypertensive range and should be further evaluated by a physician.

Kaelber, DC & F Pickett. Simple Table to Identify Children and Adolescents Needing Further Evaluation of Blood Pressure. *Pediatrics.* 2009; 123(6): e972-e974

Biochemical Features

ASSESS
Metabolic

- High Triglycerides
- Low HDL-Cholesterol
- High non-HDL-Cholesterol
- High fasting insulin
- High fasting blood sugar
- High ALT >AST

Screening

ASSESS
Metabolic

- Beginning Age 10 years or earlier if puberty has started:
  - Fasting blood glucose and/or 2h OGTT if BMI ≥ 99th%
  - A1C
  - Fasting lipid profile
  - ALT, AST
  - Creatinine
  - LH, FSH, DHEAS, Free Testosterone (Females)

International Diabetes Federation, The Lancet, vol 369, June 23, 2007

Mechanical

Mechanical

ASSESS
Mechanical

- Obstructive Sleep Apnea
- Gastroesophageal reflux disease
- Slipped capital femoral epiphyses
- Tibia Vera (Blount's disease)
- Intertrigo
- Limitations in activities of daily living
- Encopresis
- Voiding dysfucntion-urinary leakage- stress incontinence

Obstructive Sleep Apnea

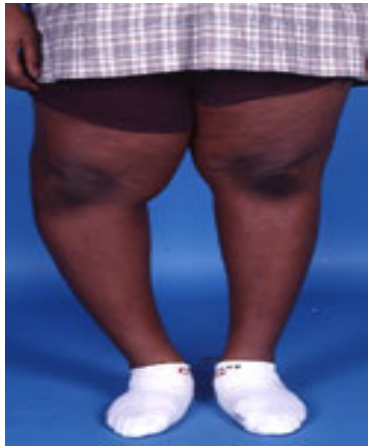
ASSESS
Mechanical

- Snoring
- Early morning headaches
- Daytime fatigue
- Attention difficulties
- Declining school performance
- Depressed mood

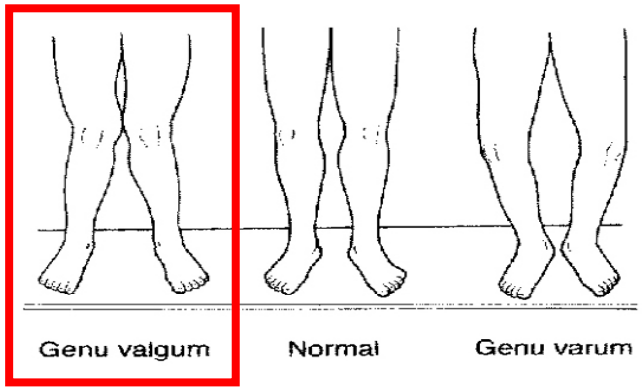
MSK

ASSESS
Mechanical

- Blount's Disease



- Genu Valgum



ASSESS

Alice

- 8 year old girl
- Height 143.3 cm, Weight 66 kg- BMI- 32.7 kg/m^2 (Z +4.13) up from 29.5 kg/m^2 (Z +3.94) 6 months ago
- Growth velocity- normal (tall for age)
- Onset of obesity- 4 years of age
- She has hypothyroidism – diagnosed at 6 years of age and asthma – infrequent need for systemic corticosteroids- trigger: physical activity
- She has urinary leakage/stress incontinence- (urology- dysfunctional voiding of urine)

ASSESS

Alice

- Term baby- 8 lb, 8 oz
- No GDM; No hypertension; No smoking
- Born by C/Section

- Mom's BMI- 37.8 kg/m^2 - She has hypertension
- Dad's BMI- 38.5 kg/m^2 - He has chronic depression and anxiety
- Sister 11 years of age BMI 19 kg/m^2 (70^{th}%)

ASSESS

Alice

	Results
Fasting blood glucose	5.3 mmol/L
2hr blood glucose	5.2 mmol/L
A1C	5.6%
Total cholesterol	5.60
Triglycerides	1.79 (< 1.70 mmol/L)
LDL	3.35
HDL	0.97 (> 1.03 mmol/L)
ALT, AST	60, 55
Abdominal ultrasound	Fatty liver infiltration

ASSESS

Mental Health & Milieu

Mental Health

ASSESS
Mental & Milieu

- Anxiety Disorders
- Depression
- Body Image
- Eating Disorders/Disordered Eating
  - Elevated dietary restraint
  - Binge eating and emotional eating
  - Body image preoccupation and low body esteem

Mental Health

ASSESS
Mental & Milieu

- Bullying and/or Social Isolation
- ADHD
- Learning Disorders
- Oppositional Defiance symptoms
- Sleep Disorders
- Screen Addiction

Signs of Poor Body Image

ASSESS
Mental & Milieu

- Frequent negative comments about one's body
- Avoiding certain activities because s/he is concerned about the way they will look/appear doing them
- Avoiding social situations because of concerns about appearance
- Frequent comparing to peers

Assessing Body Image

ASSESS
Mental & Milieu

- Teens and Adults
  - How do you feel about your body?
  - Do you like your body?
  - If not, what is it you do not like? What do you think would change if your body changed?
    - Magical thinking
    - Realistic versus unrealistic expectations
    - Instrumental versus ornamental changes

Assessing Body Image

ASSESS
Mental & Milieu

- Younger Children
  - How do you feel about your body?
  - Do you feel strong in your body?
  - Can you do all of the things you want to do? Can you keep up with your friends?

Psychosocial Factors to Consider

ASSESS
Mental & Milieu

- Family Functioning
- Caregiver Mental Health
- Peer Relations
- School Functioning
- Risk Behaviors
- Interests and Strengths

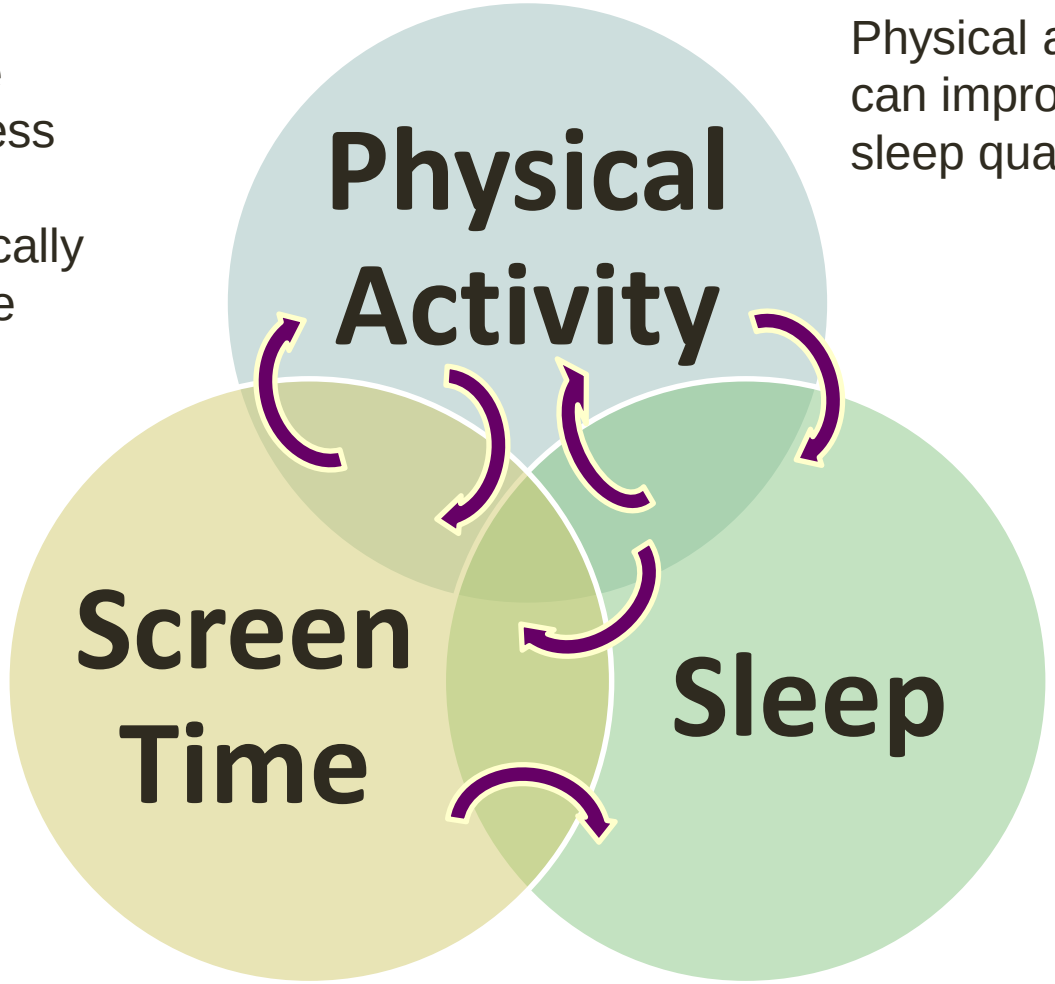
Assessing Physical Activity, Screen Time & Sleep

ASSESS

Mental & Milieu

Screen time can mean less time spent being physically active & vice versa

Physical activity can improve sleep quality



Insufficient sleep can reduce physical activity due to fatigue

Screen time can disrupt sleep

Insufficient sleep is associated with more screen time late at night

Typical Day…

ASSESS
Mental & Milieu

- Have them walk you through a typical weekday and weekend day

Example – morning of a *school day*

6:30 - wakes with alarm, hits snooze a few times
6:55 – eats breakfast in front of TV
7:10– showers
7:35– catches bus
8:00– arrives at school, sits in cafeteria with friends
8:20 – 11:45 – in class
11:45-12:45 – eat lunch, hang out with friends, walking
12:45-14:45 – in class, bus home

Typical Day…Sleep

ASSESS
Mental & Milieu

- Wake and sleep times
- Quality – difficulty falling asleep, waking, feeling refreshed, snoring
- Naps/feeling sleepy
- Where are they sleeping and environment
- Screen access/engagement

Sleep Assessment Q's

Golem et al. Adv Nutr. (2014)

Questions	Desired Answers
What time do you go to bed every night and wake up every morning	Consistent (even on weekends)
How many hours do you sleep on average at night?	9-11h (school aged, 6-13yrs) 8-10h (adolescents)
Do you have difficult falling asleep once in bed?	No, I usually fall asleep within 30 minutes
How many times do you wake up each night?	Never or once per night
Do you snore?	Never
Do you feel refreshed upon waking in morning?	Yes
How often do you feel sleeping during the day? Do you take naps?	Never or rarely

Typical Day…Screen Time

- Screen access and preference
- Quantity
- Location – bedroom?
- What – social, entertainment, interest, gaming
- Current limits/rules

Typical Day…Activities

- Current, past, future interest
- Chores
- PE class
- Barriers
  - financial
  - environment/location
  - physical
  - mental health

Assessing Eating Behaviours and Nutrition

ASSESS

Mental & Milieu

Typical Day…

ASSESS
Mental & Milieu

- Have them walk you through a typical weekday and weekend day:

Example of a school day:
7:00 – wakes with alarm
7:30 – out of bed
7:55 – leaves home to catch bus (no time for breakfast)
8:15 – arrives at school
8:20 – classes start
11:45-12:45 – buys lunch off-campus (shawarma + pop)
14:25 – classes end, buses home
15:00 – “tears down the fridge” then sometimes naps
18:30 – not hungry for the family dinner, might still eat
22:30 – snacks on leftovers, chips, lunch snacks
23:30 – in bed on phone. Asleep by 24:00 – 1:00.

Typical Day…Eating Habits

ASSESS
Mental & Milieu

- When do they eat/drink (skipped meals or snacks)
- Where are they when they eat (eating in private)
- Who are they with when they eat (people or screens)
- What are they eating/drinking
- How much do they like to eat/drink
- Why are they eating (hunger, schedule, habit, mood)

Typical Day…Bowel Habits

ASSESS
Mental & Milieu

- Bowel movement frequency
- Stomach pains/cramps
- Types of BMs (Bristol stool chart)
- Size of BMs (require a plunger?)
- Leak stool in underwear

Typical Day…
Food Environment

ASSESS
Mental & Milieu

- Types of foods and drinks available at home
- Foods purchased outside of the home, how often
- Costco food
- Diet foods
- Who does food prep and plate fixing
- Treat food management (hidden, locked, off-limits)
- Food security

Screening for Food Insecurity

ASSESS
Mental & Milieu

- “Within the past 12 months, have you worried whether your food would run out before you got money to buy more?”
- “Within the past 12 months, did the food you bought just not last and you didn’t have money to get more?”

Typical Day…
Eating Behaviours

ASSESS
Mental & Milieu

- Rate hunger throughout the day
- How fast does everybody eat
- Trigger foods and times
- Healthy eating score 0 - 10

Just for parents:

- Eating behaviour concerns (sneaking, binge eating)
- Dieting history, weighing at home, youth's BMs

Alice

- Lives with mom, dad and older sister
- Parents both work full time
- Maternal grandmother helps with child care

- School: significant peer relationship difficulties- feels excluded, weight-based teasing
- Alice has a positive body image, but anxiety related to peer relations.
- Parents main concerns today: weight based teasing at school and potential physical health complications

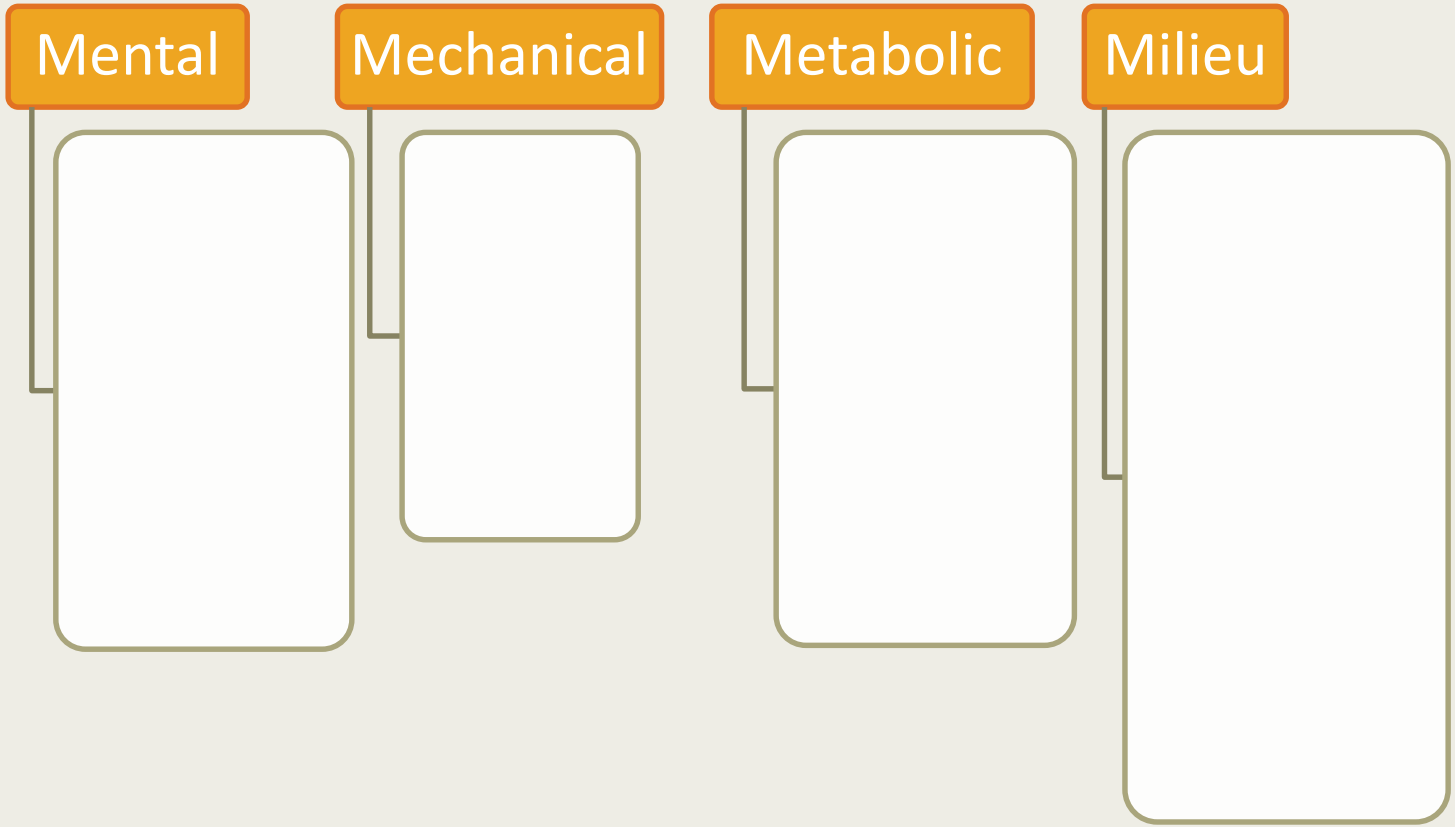
Alice *cont.*

- Difficulty in gym class; unable to ride a bike; Enjoys swimming, trampoline and piano, and interested in dance
- Screen time: 2-3 hours during the week and more on weekends. Engaged in screen time at bedtime
- She is asleep between 21:00-21:30 and wakes at 06:00 with some difficulty. She does snore at night. No morning headaches or afternoon naps

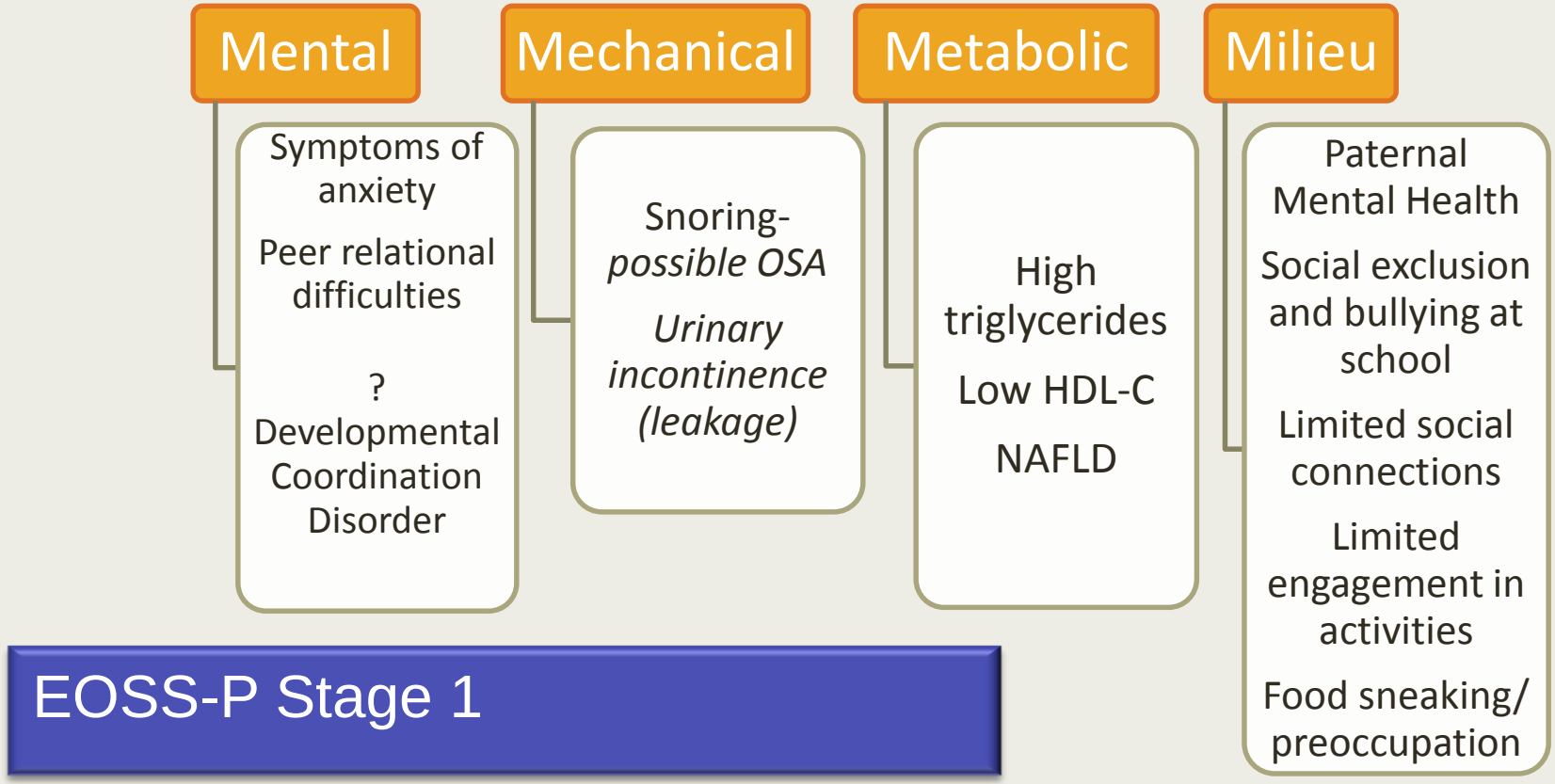
Alice *cont.*

- Alice has a small breakfast, parents pack a small lunch and Alice is very hungry after school but grandmother limits her snack portion. Treat foods are restricted for Alice
- Parents have noticed an increase in “food sneaking”
- Older sister is lean and is free to decide on her own portion sizes at meals
- Meals and snacks eaten in the living room in front of the TV
- Parents report that she has always had a high appetite, difficult to distract from food

“Putting it all together” – Alice’s 4Ms:



Alice



EOSS-P Stage 1

Alice

- **Drivers**
  - Bullying
  - Insufficient/quality of sleep
  - Limited engagement in extracurricular activities
  - Food restriction
- **Barriers**
  - Dad’s mental health
  - Multiple care givers
  - Peer relationship difficulties
  - Coordination difficulties

ADVISE on obesity risks, discuss benefits & options

Size Acceptance

ADVISE

"Here at CHAL we know that healthy and beautiful/strong bodies come in all shapes and sizes. We are here to help you achieve your best health."

ADVISE

- Advise on Obesity Risks
- Explain Benefits of Health Behaviours
- Explain Need for Long-Term Strategy
- Advise on Management Options

Advise on Obesity Risks

ADVISE

- Obesity risks are more related to the OBESITY STAGE than to BMI
- Focus of management should be on IMPROVING HEALTH and WELL-BEING rather than simply losing weight

Obesity with no comorbidities

ADVISE

- Do No HARM
  - Promote body satisfaction
  - Promote health behaviours
  - Do not focus or counsel on weight loss

How to Discuss Weight with Parents

ADVISE

- Educate parents about BMI (risk and limitations)
- Avoid placing blame on parents
- Encourage parents to be role models
- Help them set behavioural goals
- Focus on health behaviours

http://www.yaleruddcenter.org/resources/bias_toolkit/index.html

Discussing Weight with Youth

ADVISE

- Approach with sensitivity
- Use language patient is comfortable with
- Speak to their motivations
- Promote/Protect Body Esteem
  - Educate about media: unrealistic images conveyed

http://www.yaleruddcenter.org/resources/bias_toolkit/index.html

ADVISE

Explain Benefits of Health Behaviours

- The first goal is to STABILIZE BMI
- Changes in health behaviours can result in substantial health benefits including improvements in:
  - Lipid profile
  - Blood glucose control
  - Blood pressure control
  - Fitness
  - Sleep
  - Body image
  - Self-esteem
  - Coping

ADVISE

Explain Need for Long-Term Strategy

- Relapse is virtually inevitable when any intervention stops.
- This means that all management strategies must be FEASIBLE and SUSTAINABLE.
- Interventions focusing on “quick fixes” and unsustainable strategies will result in an inability to maintain health behaviours.

Advise on Family-Based Management Options

ADVISE

- Sleep
- Sedentary Behaviour
- Eating Behaviours
- Mental Health
- Physical Activity
- Bariatric Surgery

Advise on Family-Based Management Options

ADVISE

Sleep	• management interventions can significantly improve eating and activity behaviours as well as mood and school performance.
Eating Behaviours	• should focus on eating & drinking hygiene. Extreme and "fad" diets are not sustainable in the long-term.
Physical Activity	• interventions should aim at reducing sedentariness and increasing daily physical activity levels to promote fitness, overall health, and general well-being , rather than focusing on "burning calories".

Advise on Family-Based Management Options

ADVISE

Sedentary Behaviour	• should be limited through minimizing recreational screen time to less than 2 hours per day, choosing active transportation over motorized, and increasing active play and active family time.
Mental Health	• treatment referrals to help manage underlying /co-morbid psychological issues • interventions can improve body-esteem, self-esteem, reduce emotional eating, and promote coping strategies.
Bariatric Surgery	• may be considered for adolescents who've reached their final adult height, with BMI>40, and with obesity related health complications. Candidates & their families are required to have completed a multidisciplinary 6-month presurgical intervention.

Mental Health

Advise

Mental Health

ADVISE

- Validate the Youth/Parents' realities
- Focus on Health Behaviours and Not Weight
  - Find common ground
- Realistic expectations - No quick fixes

Mental Health

ADVISE

- Mental Health Supports are very important
  - Social Anxiety
  - Child is being bullied at school
  - Child not attending school
  - Child is depressed and not getting out much
  - Parents' mental health
  - Undiagnosed learning and attention issues
  - Binge eating

Fostering Positive Body Image

ADVISE

We Need to Start with Ourselves

- Get comfortable with your own body
- Put an end to size-ism – start with yourself
- Help Make the office an ‘appearance safe’ zone
  - Keep glossy diet fitness & fashion magazines out of the office
  - Ask coworkers not to criticize their own appearance or clothes in front of clients

Fostering Positive Body Image

ADVISE

- For young children
  - Focus on feeling good and strong
  - Enjoyment in moving the body

- For older children and teens
  - Focus on efforts and giving real compliments
  - Celebrate individual differences
  - Explain individual differences in pubertal development

ADVISE

Physical Activity, Screen Time & Sleep:

Creating Balance

ADVISE

Activities

- Education
  - Activities vs. physical activities
  - The REAL benefits of physical activity
  - Division of responsibility
  - Appropriate activities for youth
- Identify and reduce barriers
- Support in finding opportunities youth is interested in
- Encourage family activities

ADVISE

Division of Responsibility: Physical Activity

Parents provide:

- Structure
- Safety
- Opportunities

Children choose:

- How much to move
- Whether to move
- Manner of moving

Supporting without controlling,
Giving autonomy without abandoning

ADVISE

Screen Time

- Education
  - How much their youth is engaging in
  - Current guidelines
  - Consequences of too much screen time
    - Disrupted mood, behaviour
    - Impaired academic performance
    - Poorly developed/stunted social & communication skills
    - Decreased time for play
  - This is the area parents have more control

ADVISE

Screen Time

- Setting limits
  - Screens out of the bedroom
  - Cut off time for screens at night
  - No screens at meals
  - General limits – weekdays, weekends

Sleep

ADVISE

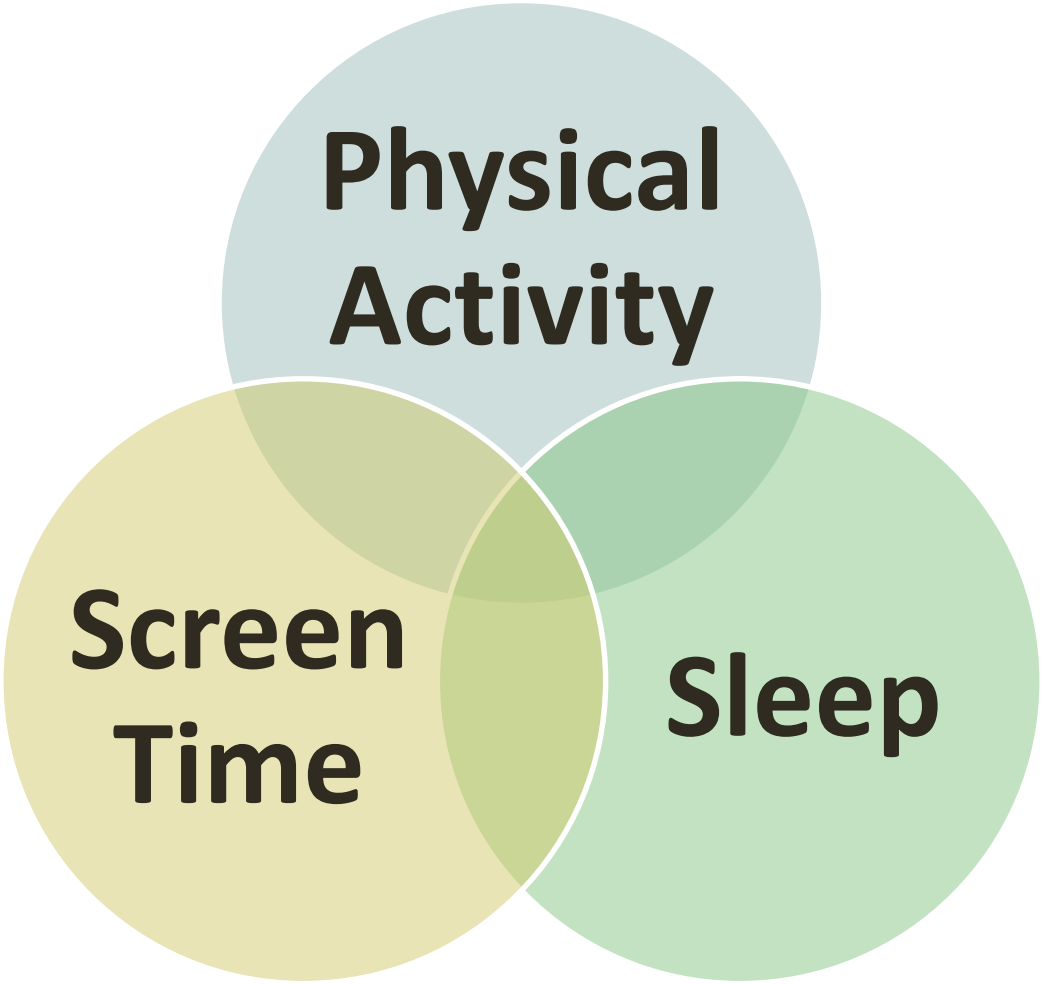
- Education
  - Areas affected negatively by poor sleep: weight management, mood, thinking, concentration, memory, leaning, vigilance and reaction time
  - Sleep guidelines

Age	Recommended
Newborns **0-3 months**	14-17 hours
Infants **4-11 months**	12-15 hours
Toddlers **1-2 years**	11-14 hours
Preschoolers **3-5 years**	10-13 hours
School-aged Children **6-13 years**	9-11 hours
Teenagers **14-17 years**	8-10 hours
Young Adults **18-25 years**	7-9 hours
Adults **26-64 years**	7-9 hours
Older Adults **≥ 65 years**	7-8 hours

Sleep

ADVISE

- Creating good sleep habits
  - Bedroom environment
    - Is it their bedroom?, sharing with siblings/parent
  - Presence and use of screens before/at bedtime
  - Quality of sleep – addressing barriers
    - OSA
    - Mental health
  - Regular sleep and wake times
  - Quantity of sleep


Physical Activity
Screen Time
Sleep

ADVISE

Eating Behaviours & Nutrition

Creating Structure & Finding Balance

ADVISE

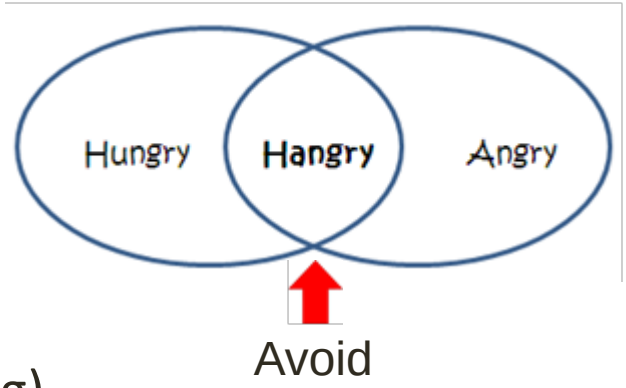
Healthy Eating Behaviours

- Education
  - Hunger management
  - Division of responsibility in feeding
  - Realistic healthy eating
  - Healthy eating for metabolic complications
- Identify and reduce barriers
- Support small healthy eating behaviour changes over time
- Discourage restrictive dieting
- Encourage family meals

ADVISE

Hunger Management

- Normalize over-hunger → over-eating
- 3 meals/day + 1 – 3 snacks as needed
- Include protein at meals and snacks for satiety
- Eat at a table with people, not screens
- Limit sweet drinks
- Avoid diet foods
- Tune in to hunger/fullness feelings
- Plate your own food
- Slow down when eating (mindful eating)



Division of Responsibility: Feeding

ADVISE

Parents responsible for:

- What food is served
- When meals and snacks are served
- Where the family eats

Children responsible for:

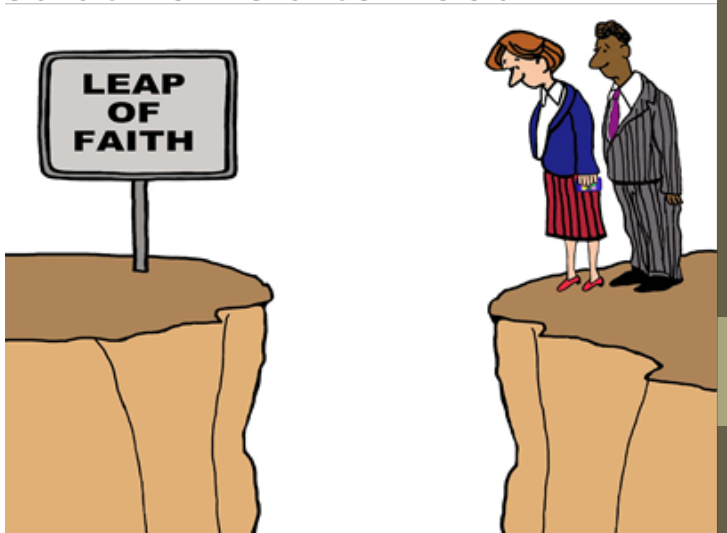
- Whether or not to eat
- How much to eat

Providing not depriving,
Trust rather than control

Division of Responsibility: Feeding

ADVISE

- Kitchen is closed between meals and snacks except for water
- Parents can say “how much” dessert
- Kids will eat more when DOR is applied at home after food restriction strategies are lifted
- Same meal for everyone
- Trust the model, stay the course
- Help families troubleshoot



ADVISE

Realistic Healthy Eating

- Healthy yet still enjoyable eating
- Discourage all or nothing thinking
- Change the language from “cheat” to “treat”
- All foods can fit, help families find their balance
- Discourage “forbidden foods”
- Treat food management
- Identify dieting baggage
- Support movement toward a healthy relationship with food

Alice's Care Plan

Over the course of the assessment day, we identified the following health complications:

Current health complications

- Fatty infiltration of liver
- High triglycerides
- Low HDL-Cholesterol “good cholesterol”

Below are the areas identified by yourself and our team that, if worked on, will likely improve the health complications listed above:

Areas of Focus

- Hunger management
- Sleep & Screens
- Friendships

AGREE on realistic weight-loss expectations and on a SMART plan to achieve behavioural goals

ASSIST in addressing drivers & barriers, offer education & resources, refer to provider, and arrange follow-up


Beavotron.com

AGREE on a Management Plan

AGREE

- Realistic and sustainable BEHAVIOUR CHANGE.
- Address the **Drivers** of weight gain
  - e.g. anxiety, sleep apnea, family stressors, etc.
- Success = improvements in health and well-being
  - e.g. self-esteem, sleep, fitness, blood sugars, etc.

Agree on Behaviour Change Outcomes

AGREE

- Unrealistic weight-loss expectations can lead to DISAPPOINTMENT and NON-ADHERENCE.

- For some children, PREVENTION or SLOWING of WEIGHT GAIN may be the best goal.

Agree on Sustainable Behavioural Goals & Health Outcomes

AGREE

- Focus on sustainable behavioural changes rather than on specific weight targets
- Behavioural goals should be SMART:
  - **S**pecific
  - **M**easurable
  - **A**chievable
  - **R**elevant
  - **T**imely

Goal Setting: Considerations when working with Children and Youth

AGREE

- For younger children, you may be goal setting with parents only
- Parents and youth may have different motivations for change, as well as different ideas of where to start
  - Youth's goals trump parents'

ASSIST

- Assist Families in Identifying and Addressing Drivers and Barriers
- Provide Education and Resources
- Refer to Appropriate Provider
- Arrange Follow-Up

ASSIST

Provide Education and Resources

- Family EDUCATION is central to management.
- Help children and their families identify CREDIBLE weight management information and resources.

Key Ingredients to Effective Weight Management Programs

ASSIST

General Considerations

- Moderate to High Intensity
  - *> 25 hours of contact with child/family over 6 months*
- Parental Involvement
- Starting early in childhood

Key Ingredients to Effective Weight Management Programs

ASSIST

Key Areas

- Behaviour modification education
- Dietary counseling
- Physical activity counseling
- Self-esteem and emotional wellbeing

Arrange Follow-Up

ASSIST

- Given the chronic nature of obesity, LONG-TERM follow-up is ESSENTIAL.
- Success is directly related to FREQUENCY of provider contact.
- Weight cycling and weight gain should not be framed as "failure" – rather, they are the natural and expected consequence of dealing with this chronic condition.

Improvements in:

- Lipid profile
- Blood pressure
- Insulin sensitivity
- Apnea/hypopnea index in those youth with established sleep disordered breathing
- Quality of Life measure (using PedsQL)
- Decreased dependence on pharmacotherapeutic and technological support;
- Improved physical activity and sedentary behaviour profile
- Improved indicators of cardiorespiratory and musculoskeletal fitness (measured by objective exercise and fitness testing);
- Reduced scores on a validated measure of disordered eating.