

Garden City PTA

Nutrition For Growing Bodies

The Middle School Years

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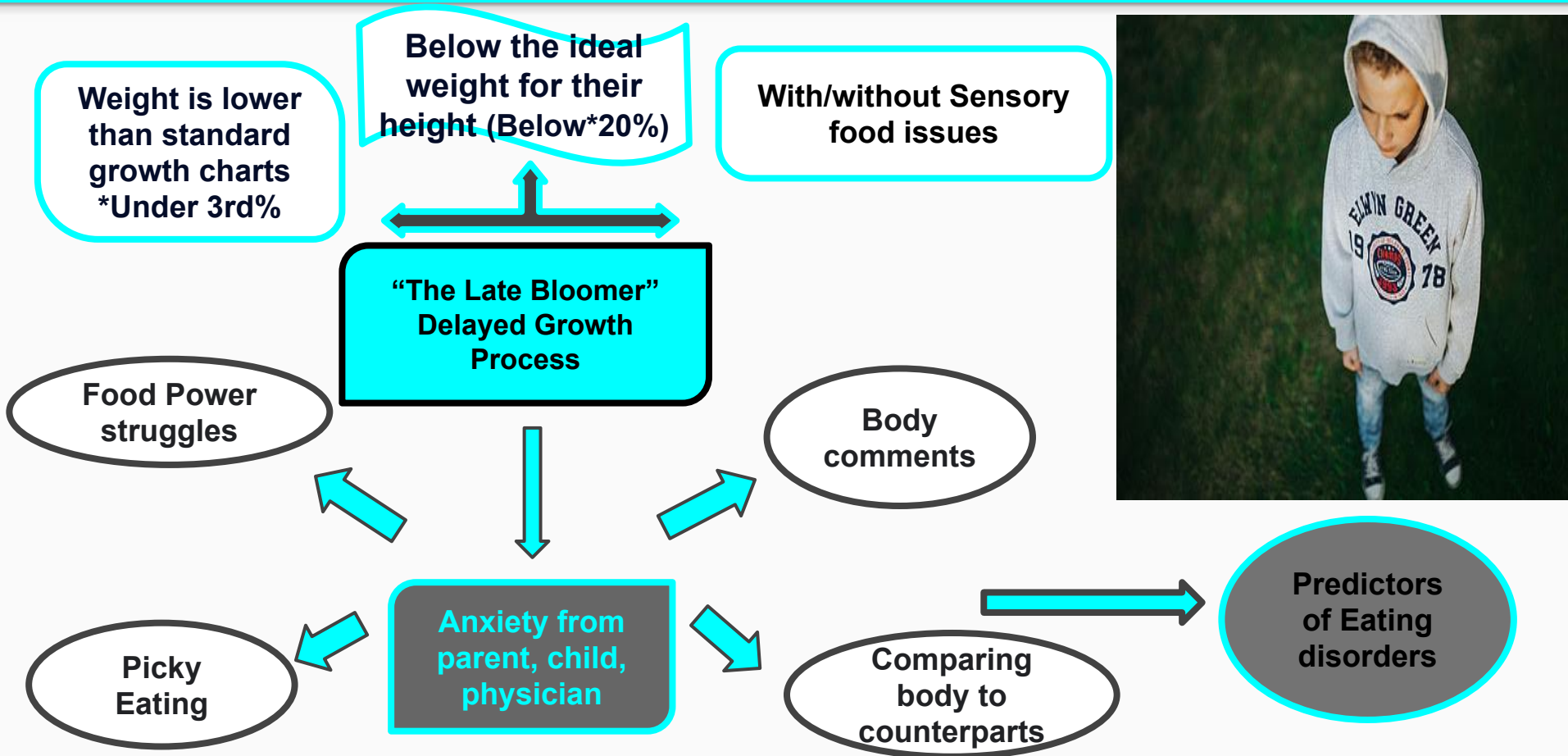
Our Children Are Very Busy *GROWING*

-
- **Puberty**- the physical maturing that makes an individual capable of sexual reproduction (10-12 yo)
 - **Adolescence**- the period of psychological and social development and changes (10-19 yo)

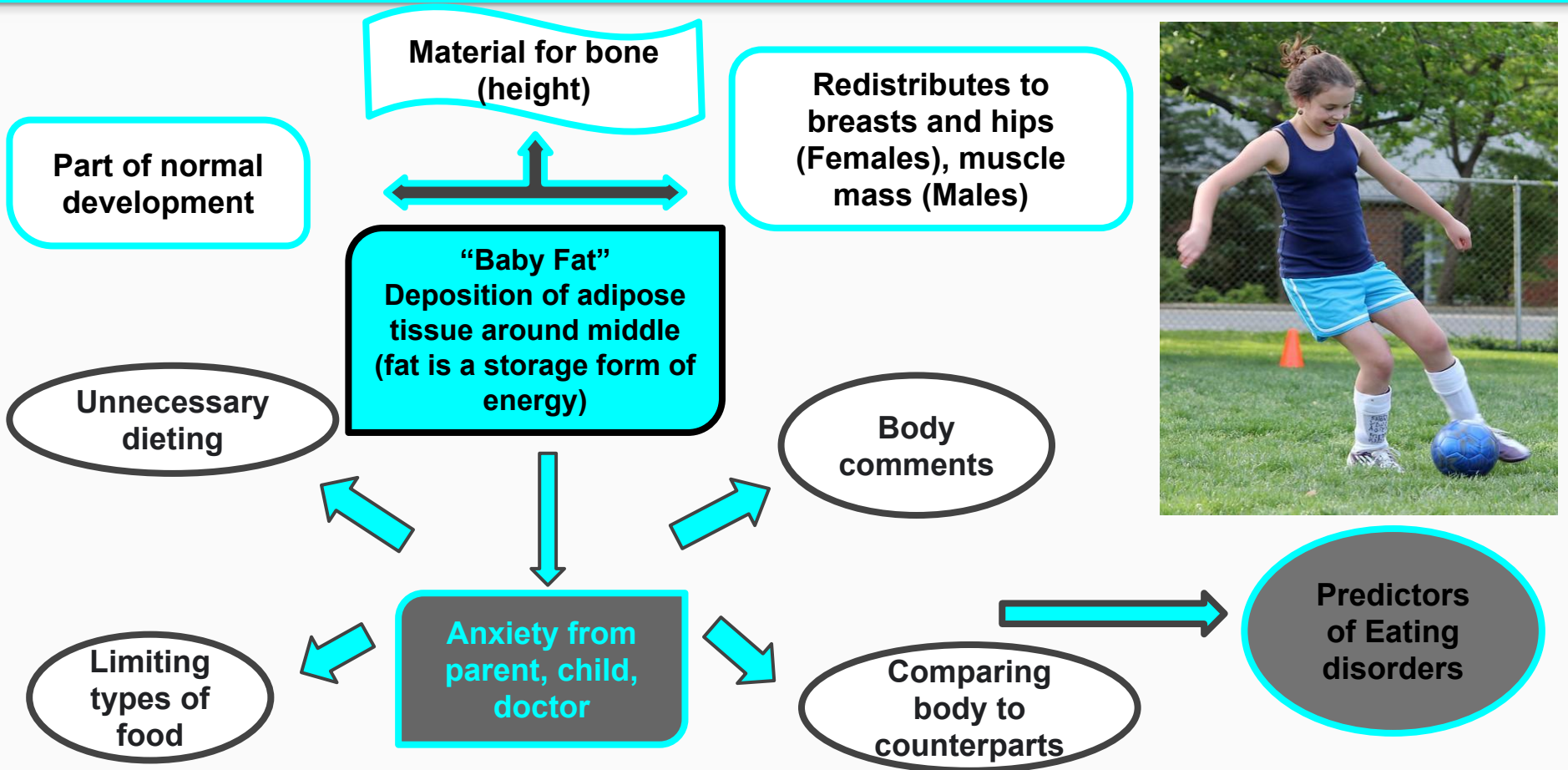
Two Sides Of The Spectrum

(And everywhere in between)

The Adolescent Body



The Adolescent Body



Statistics on Eating Disorders in Adolescents and Teenagers

35% of "normal dieters" progress to pathological dieting. 20-25% progress to eating disorders.

(Shisslak & Crago, 1995)

ARFID in school children aged 8-13 years at 3.2% (APA 2022)

95% of those with ED are between the ages of 12 and 25 *(SAMHSA)*

Among high-school students, 44% of females and 15% of males attempted to lose weight.

(Serdula et al., 1993)

$\frac{1}{2}$ of teenage girls and $\frac{1}{3}$ of teenage boys use unhealthy weight control behaviors *(Neumark-Sztainer, 2005)*

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The Growing Body

(Notice how many of these processes use Proteins (amino acids), Carbohydrates (glucose) and Fat (lipids, cholesterol, FA)

→ Tissue Synthesis

- ◆ Their hearts are literally getting bigger!
- ◆ Process utilizes energy (called ATP) from **GLUCOSE**.
- ◆ Maintenance of cells depends on **FAT** and **PROTEIN**.

→ Muscle Synthesis

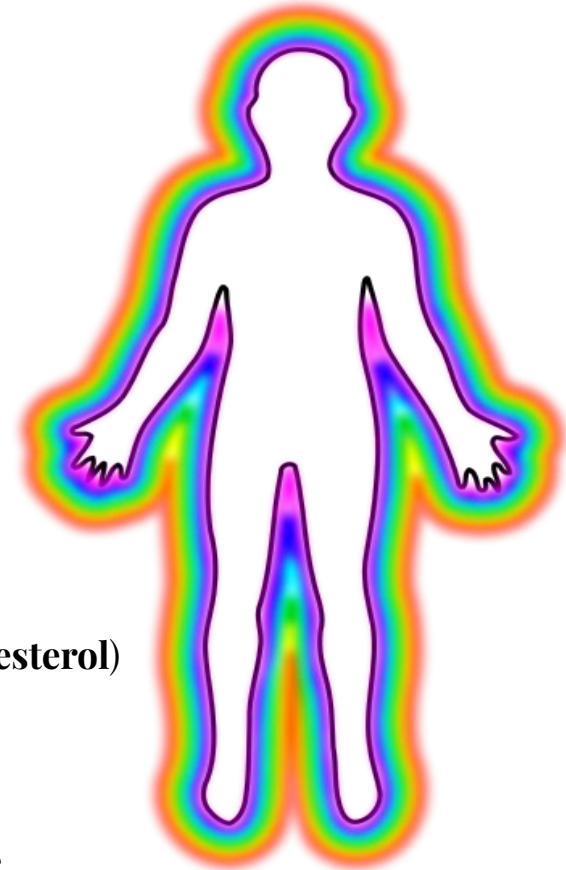
- ◆ They are getting stronger!
- ◆ **AMINO ACIDS** created by process that uses **GLUCOSE**.

→ Bone growth

- ◆ They are getting taller!
- ◆ Osteoblasts utilizes ATP energy **GLUCOSE** and calcium.

→ Hormone Production

- ◆ They are becoming young adults!
- ◆ Hormones made from **AMINO ACIDS** and **FAT** (including **Cholesterol**) and are **FAT Soluble**
- ◆ Estrogen tells bodies to store fat in certain areas.
- ◆ Testosterone tells bodies to increase protein synthesis.
- ◆ Growth Hormone (GH) influences our height, bone and muscle development



The Growing Brain

→ Neurogenesis:

- ◆ The process of brain growth (until about 25 years old).
- ◆ Need **FAT** for neural transmission.

→ Neuroplasticity

- ◆ The ability for the brain to reorganize neural connections.
- ◆ Easiest before 25 years old.
- ◆ Need fats for cognition.

→ Brain chemicals (mostly made of **AMINO ACIDS**):

- ◆ Glutamate & GABA-Makes neurotransmitters.
- ◆ Serotonin-Promotes calm and hope.
- ◆ Dopamine- Arousal, stimulation, “Feel good hormone”
- ◆ Endorphins- Pain relief
- ◆ Noradrenalin- Regulates arousal, attention, cognitive function and reaction to stress and stressors.



→ THE BRAIN'S MAIN SOURCE OF ENERGY IS **GLUCOSE** (FROM THE BLOODSTREAM)

Feeding the Adolescent Body

Vroom Vroom...



To keep this car optimal:

- It will need high octane fuel. (**Supply high octane fuel**)
- The engine will suffer if it runs low on gas. (**Keep your tank full**)

The Growing Body-How much fuel fills their tank?

- Growing bodies have different needs than Adult bodies.
- Adolescents are in a growth state, adults are in maintenance.
 - ◆ For boys ages 11-15 = Min 2,500/daily
 - ◆ For girls ages 11-15 = Min 2,200/daily.
 - ◆ Older teens = about 2400 (girls) 3,000 (boys) cal/ day.
 - ◆ Active athletes may need up to 5,000/daily.
 - ◆ Increased needs for protein, iron, calcium, zinc and folate during this **critical period of rapid growth**.
 - ◆ Malnutrition can delay the onset/ progression of puberty. This includes dieting, picky eating, sensory associated eating issues, over exercise, etc



Breakfast-Putting the Keys in the Ignition

- Don't Skip Breakfast!!
- Eating Breakfast within the first 30-60 minutes after waking up.
- Eating every 3-4 hours after breakfast.
- Planning meals AND snacks throughout the day.
- Skipping meals can lead to night time overeating, decreased overall energy, inability to focus.
- Sleep hygiene very important.



Circadian rhythms are physical, mental, and behavioral changes that follow a 24-hour cycle and respond to light and dark.

Full Octane vs Low Octane -Balance and Synergy

- Proteins
 - ◆ Animal: Fowl, beef, lamb, pork, fish, seafood, eggs.
 - ◆ Dairy: milk, yogurt, cottage cheese, cheese
 - ◆ Plant: nuts, beans, legumes, nut butter, hummus, soy-based, edamame, tofu
- Carbohydrates: breads, cereal, oats and oatmeal, rice, corn, quinoa, barely, potatoes, sweet potatoes.
- Fats: Olives, olive oil, tahini, mayo, avocado, coconut, salad dressing, soft cheeses like cream cheese, brie, butter.
- Fruits and vegetables: fresh, frozen, canned, dried, freeze dried.



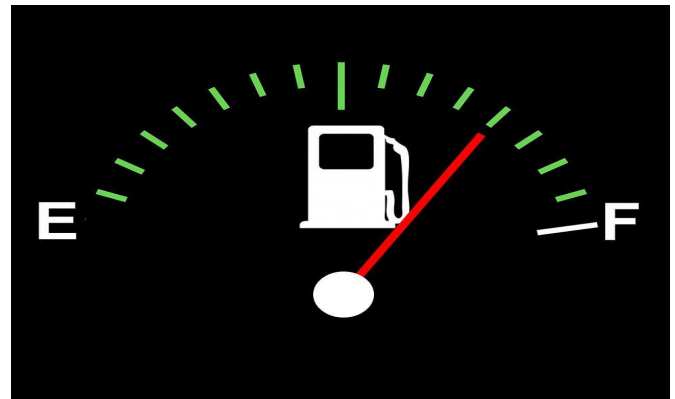
Meals should be balanced with: PREMIUM FUEL

- ◆ Protein
- ◆ Carbohydrates
- ◆ Fat
- ◆ Fruits and /or Vegetables

Building a Meal Plan 2250-2250 cal

- Breakfast 400-500 cal
 - ◆ 2 waffles, 2 tbsp PB, banana
 - ◆ 1 cup yogurt, ½ cup granola, 2 tbsp nuts, ½ cup fruit
 - ◆ 2 eggs, cheese, 2 toast
- Lunch: 500-600 cal
 - ◆ Turkey and cheese sandwich, fruit, cookie
 - ◆ PBJ sandwich, apple, pretzels
- Dinner: 600-700 cal
 - ◆ Chicken cutlet, 1 ½ cup rice, broccoli
 - ◆ 3 rolls of sushi, salad with dressing
 - ◆ Pasta with meatballs and tomato sauce
- Snacks x3 @250 cal each

Plating balanced meals like this fills up the tank!



Snacks-Rest Stop (200-300 cal-Aim for 3 per day)

→ Examples

- ◆ Low fat or full fat yogurt, fruit, nuts
- ◆ Smoothies with nut butter/fruit
- ◆ Protein Drinks (Core Power)
- ◆ Trail mix
- ◆ Nut butter and banana
- ◆ Oatmeal raisin cookies and milk
- ◆ String cheese and crackers/chips, apples
- ◆ Hummus, carrots, pretzels
- ◆ Turkey Jerky and Plantain chips
- ◆ Hard boiled egg, avocado mash, rice cake
- ◆ Ricotta with honey, berries, granola
- ◆ Turkey and cheese roll ups with goldfish
- ◆ Homemade/store made Protein Balls
- ◆ Protein bars:
 - Nugo (gluten free/nut free), Perfect, Kind, Go Macro, Cliff, Zeek, Power Crunch Kids



→ Snacks should ALSO be balanced:

- ◆ Protein/Fat Combination
- ◆ Fruit/Veg/Complex Carb



Feeding the Adolescent Body

Other Considerations

Nutrition for Menstruation

- There are 4 hormones that make a menstrual cycle
 - ◆ Estradiol, Progesterone, Luteinizing Hormone (LH) and Follicle Stimulating Hormone (FSH)
- Bodies require 100 – 300 more calories during menstruation.
- Basal Metabolic Rate (BMR) increases by 10-20%.
- Increased needs:
 - ◆ **Iron**
 - Red meat, leafy greens, beans/legumes, dried fruit, fortified foods
 - ◆ **Fats**
 - Avocados, nuts, olive oil, flax and chia seeds, salmon
 - Avocado, wild salmon, sesame and sunflower seeds support skin health and prevent breakouts.
 - ◆ **Carbohydrates**
 - Oats, pasta, rice, potatoes, sweet potatoes, etc
 - ◆ **Vit B6** supports healthy progesterone levels, and decrease menstrual mood swings.
 - Salmon, tuna, chicken, pork, beef, eggs, chickpeas
 - Avocados, bananas, cereals, spinach, milk, nuts, sunflower seeds.
- Hunger signals more intense/more fatigue/blood sugar levels more sensitive
- Supplements: MVI + Fe, Magnesium or Evening Primrose Oil, Omega 3,6,9

Food and Movement

- Exercise uses **GLUCOSE (carbohydrates)** for immediate energy, **FAT** for sustained energy and **PROTEIN** to repair muscle.
- **Eat foods high simple and complex carbohydrates before exercise/sports/activity-**
 - ◆ Banana
 - ◆ Pretzels
 - ◆ Toast
- **Eat foods high protein and fat after exercise/sports/activity**
 - ◆ Nuts and nut butters
 - ◆ Eggs
 - ◆ Turkey and avocado sandwich
 - ◆ Protein Bar
 - ◆ Full fat Yogurt
- **HYDRATE!!!**
- **Add extra 300-500 cals per day to replenish nutritional needs**



Food For Focus and Mood

- **Foods high in protein make “feel good” brain chemicals and keep you alert:**
 - ◆ Animal/Plant Proteins
- **Foods with Omega 3 Fatty Acids decrease the risk of depression:**
 - ◆ Fatty Fish, nuts, seeds
- **Leafy Greens and Cruciferous Vegetables increase brain chemicals leading to positive mood, alertness and energy.**
 - ◆ Lettuce
 - ◆ Brussels Sprouts
 - ◆ Cauliflower
 - ◆ Broccoli
- **Complex carbohydrates** for CALM
- Food Jags, Preferences, Cravings



- **Snack Ideas;**
 - ◆ Smoked salmon, cream cheese and lettuce on crackers
 - ◆ Chia seed pudding with nuts
 - ◆ Broccoli and cauliflower dipped with hummus made with tahini

What to do if your growing child...

- **Eats a lot of sugar:**
 - ◆ Assess if they are skipping meals and/or snacks
 - ◆ Assess overall balance and calories
- **Is very picky**
 - ◆ Keep track of their weight
 - ◆ Use supplements
 - ◆ Find a few balanced meals and snacks that work.
- **When to get help:**
 - ◆ **When picky eating leads to weight loss or failure to grow**
 - ◆ **Hiding food, eating secretly**
 - ◆ **Dieting, high distress about body image**



What To Say?

Bodies are changing at different rates and that's completely normal.

Sometimes bodies hold onto fat so you can use this energy to make bone and muscle.

You need good nutrition for growth.

Let's focus on balanced meals and snacks (nutrition) and not on your body shape/size/weight.

Your Body and Brain deserve to be fed correctly.

Thank You!

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