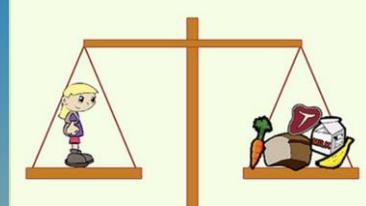


11. Maintaining a Healthy Weight

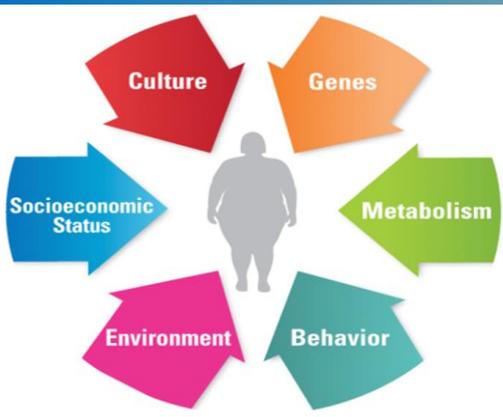


11. Maintaining a Healthy Weight

- our energy is balanced when we **consume** the same amount of energy that we **burn** each day
- we gain or lose weight when our energy expenditure & our energy intake are out of **balance**



- many factors affect whether or not we achieve this balance



A. Energy Expenditure

- : is the energy our body expends to maintain its basic **functions** & to perform all levels of **movement & activity**
- : this includes energy expended when **at rest** and during **physical activity**

- : there are 3 components of energy expenditure:



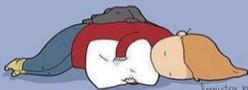
- 1) basal metabolic rate (**BMR**)
- 2) the thermic effect of food (**TEF**)
- 3) the energy cost of physical activity (**ECP**)

a) Basal Metabolic Rate

= our energy expenditure **at rest**

- Is the energy we expend just to maintain our body's **basal**, or resting, functions (ie. respiration, circulation, etc)
- = about **60-75%** of our energy expenditure each day

Newton's 1st law:
A body at rest, wants
to stay at rest.



- BMR varies widely among people because of:

i) lean body mass (muscle mass)

- people with a **higher** lean body mass have **higher** BMRs because lean body mass is more metabolically active than body fat
- = **it takes more energy to support this tissue**

** is the primary determinant of BMR

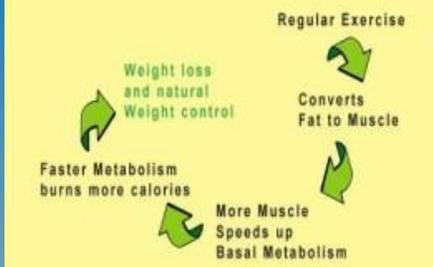
ii) age

- BMR **decreases** with age, ~ 3-5% each decade after 30
- : due to **hormonal changes** and loss of **lean body mass**

iii) other factors

- ie. height, gender, pregnancy, stress, illness, diet, certain drugs like caffeine & tobacco

The Magic of Basal Metabolism



b) The Thermic Effect of Food (TEF)

- = the energy we expend as a result of **processing** the food we eat
- usually **5-10%** of the energy contained in a meal is needed to **digest, absorb, transport, metabolize and store** the nutrients we need

Do you think there are such things as negative calorie foods?

- in actuality, there are really no “negative calorie” foods that offer the body zero minus whatever calories
- Calories wasted in extracting nutrients are already considered in calculating the Thermic Effect of Food

: l) Celery

10 calories per stalk – 1 calorie to digest = 9 calories = better to be called “Low Calorie” foods



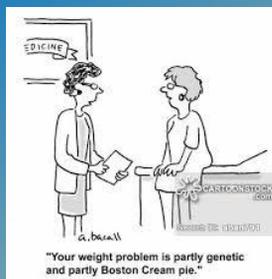
c) Energy Cost of Physical Activity (ECP)

- = energy expended **above the basal level** doing activities such as sitting, standing, walking, running, skiing, bicycling, etc.
- generally accounts for ~**15-35%** of our total energy output each **day**
- is also dependent upon **lean body mass** as more energy is needed to fuel it



B. Genetics

- influences our height, weight, body shape & metabolic rate
- only **25%** of our body fat is accounted for by genetics
- = you control the larger factors.



Think about your parents.....

Do you think that your body type takes after one of theirs?

Or is a combination of the two?

- 2 Theories of How Genetics Play a Role:

a) the thrifty gene theory

- a **gene(s)** causes a person to be energetically thrifty
- = these individuals expend **less energy** than people who do not possess this gene
- No gene has been found as of yet!



b) the set-point theory

- suggests that our bodies are designed to **maintain** our weight within a narrow range and will **shift** in response to any stresses to maintain this weight
 - = our bodies reduce BMR to conserve NRG when we diet & raise BMR to burn more calories when we overeat
- Your set-point could be "Leaner" or "Larger" than someone else's
- Evidence suggests this is true.

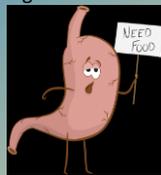
2. Composition of the Diet Affects Fat Storage

- what is eaten can affect whether or not the excess is **stored** as fat
 - Examples -- Atkins Diet, Keto Diet
 - : fat or protein eaten in the **absence** of carbohydrates is not easily stored because of the lack of **insulin** released



D. Physiologic Factors Influence Body Weight

- **Appetite** = the need for food
- **Hunger** = the desire to eat
- appetite and **satiety** (when you no longer a desire to eat) are driven by mental and physical **signals** including:
 - : a **growling stomach**
 - : **light headedness**
 - : **low blood sugar**
- these signals affect the 2 hormones that control hunger in the body
- Defects in either hormone leads to **over** or **under eating**



E. Cultural, Economic, Psychological & Social Factors



- certain cultures place food at the center of celebrations and gathering
 - = encourage **over eating** and **inactivity**
- social pressure from family and friends in terms of **eating habits** and **physical activity** can lead to negative changes in body weight

- people of **lower economic status** have higher rates of obesity as cheaper foods are less healthy (ie. pop vs milk)
- psychological factors such as:

depression
loneliness
stress



= can cause over or under eating

F. Influence of Society & Advertising on Body Weight

Society's view of the "Perfect Body" has changed over the years



- 20 years ago, the average fashion model weighed 8x less than the average woman.....



- Today, they weigh 23x less

- the fashion/advertising industry has skewed peoples' perception of what "healthy" should look like



This woman is considered a plus sized model (yes plus sized!)

- Has led to increased incidences of :



Bulemia



Anorexia



Body Dysmorphic Disorder

How much fat is appropriate?

ACE Body Fat % Chart		
Description	Women	Men
Essential fat	10-13%	2-5%
Athletes	14-20%	6-13%
Fitness	21-24%	14-17%
Average	25-31%	18-24%
Obese	32%+	25%+

Perfect Does Not = Healthy!



Eating disorders myths

Myth Eating disorders are serious and potentially life-threatening mental illnesses. A person with an eating disorder experiences severe delusions in their behavior about eating, restricting and related self-harm because of distortions in their thoughts and emotions.

Truth Due to the nature of an eating disorder a person may go to great lengths to hide behaviors, or may not recognize that there is anything wrong. Eating disorders are not a phase and will not be resolved without treatment and support.

Myth Eating disorders are a cry for attention or a person "going through a phase".

Truth Eating disorders almost invariably occur in people who have engaged in dieting or disordered eating. Dieting is also associated with other health concerns including depression, anxiety, nutritional and metabolic problems, and contrary to expectation, with an increase in weight.

Myth Families, particularly parents, are to blame for eating disorders.

Truth There is no evidence that a particular parenting style causes eating disorders. Although a person's genetics may predispose them to developing an eating disorder this is certainly not the fault of their family.

Myth Eating disorders only affect young people.

Truth Eating disorders can affect anyone. They occur across all cultures and socioeconomic backgrounds, amongst people of all ages, from children to the elderly, and in both men and women.

Myth Eating disorders only affect white, middle class females, particularly adolescent girls.

Snapshot neds.com.au/myths

Bulimic video