INDICATORS OF HEALTH

"Not all fat's bad. Maybe you're gaining the omega-3 polyunsaturated kind."

Indicators of a Healthy Body

- **nutrition** is one of several factors supporting wellness
- our overall state of nutrition is influenced by:
  : how much energy we **consume**
  : how much energy we **expend doing daily activities**
- **physical activity** has a major impact on how we use the nutrients in our food
  = we can perform more strenuous activities for longer periods of time when we eat a nutritious diet, where as
  an inadequate or excessive food intake can make us lethargic
- serious health problems can occur with a poor **diet**, **inadequate or excessive** physical activity or a combination of these

- There are a variety of measures which can be used in order to determine whether a human body is healthy and well-functioning.
- Examples:
  : **Body Composition**
  : **BMI (body mass index)**
- Each test is used to check different factors and each comes with its own set of advantages and disadvantages

A. Body Composition

- body composition = the amount of body fat **(adipose tissue)** and lean body mass **(lean tissue)**
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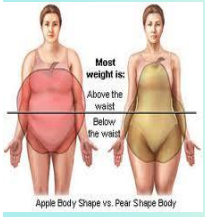
- provide only estimates of body fat & range of error from **3% to 20%** so should **not** be used as the only indicator

B. Fat Distribution Patterns

- where fat is located on the body is known to affect risk factors for various diseases



Apple Body Shape vs. Pear Shape Body

Upper body obesity (Apple Shaped)
= fat is stored around the abdomen and between vital organs **(viseral fat)**
- causes problems in the metabolism of **fat & carbohydrates**, leading to unhealt changes in blood cholesterol, insulin, glucose & blood pressure
- is known to significantly increase the risk for certain diseases such as:
  : **type 2 diabetes**
  : **heart disease**
  : **high blood pressure**

Lower body obesity (Pear Shaped)
= fat stored **below the waist**
- does not seem to increase the risk for chronic diseases
- **women** tend to store fat in their lower bodies, and **men** in their abdominal region

Determining the Type of Fat Patterning:
1. Measure the circumference of your natural waist
   = the narrowest part of your torso as observed from the front
2. Measure your hip circumference at the widest part of your buttocks as seen from the side
3. Divide the waist value by the hip value
   = **waist/hip (in same units)**

- an increased risk for chroni disease is associated with the following waist to hip ratios -
  MEN: higher than **0.90**
  WOMEN: higher than **0.80**

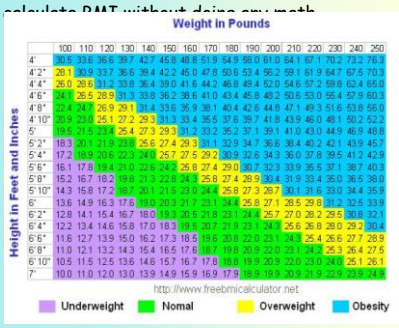
C. Body Mass Index (or Quetelet's index)

- a commonly used index representing the ratio of a person's body weight to the square of his/her height

BMI (kg/m2) = weight (kg)/height (m2)

- provides a clue to your overall health
- once the value is calculated, it is ranked as falling within one of the following categories: underweight
healthy weight
overweight
obese
**some also include morbid obesity

- there are also charts (which are less exact) that can be used to calculate BMI without doing any math



Weight in Pounds

Height in Feet and Inches	100	110	120	130	140	150	160	170	180	190	200	210	220	230	240	250
4'	30.5	33.6	36.6	39.7	42.7	45.8	48.8	51.9	54.9	58.0	61.0	64.1	67.1	70.2	73.2	76.3
4' 2"	28.1	30.9	33.7	36.6	39.4	42.2	45.0	47.8	50.6	53.4	56.2	59.1	61.9	64.7	67.5	70.3
4' 4"	26.0	28.6	31.2	33.8	36.4	39.0	41.6	44.2	46.8	49.4	52.0	54.6	57.2	59.8	62.4	65.0
4' 6"	24.1	26.5	28.9	31.3	33.8	36.2	38.6	41.0	43.4	45.8	48.2	50.6	53.0	55.4	57.8	60.3
4' 8"	22.4	24.7	26.9	29.1	31.4	33.6	35.9	38.1	40.4	42.6	44.8	47.1	49.3	51.6	53.8	56.0
4' 10"	20.9	23.0	25.1	27.2	29.3	31.3	33.4	35.5	37.6	39.7	41.8	43.9	46.0	48.1	50.2	52.2
5'	19.5	21.5	23.4	25.4	27.3	29.3	31.2	33.2	35.2	37.1	39.1	41.0	43.0	44.9	46.9	48.8
5' 2"	18.3	20.1	21.9	23.8	25.6	27.4	29.3	31.1	32.9	34.7	36.6	38.4	40.2	42.1	43.9	45.7
5' 4"	17.2	18.9	20.6	22.3	24.0	25.7	27.5	29.2	30.9	32.6	34.3	36.0	37.8	39.5	41.2	42.9
5' 6"	16.1	17.8	19.4	21.0	22.6	24.2	25.8	27.4	29.0	30.7	32.3	33.9	35.5	37.1	38.7	40.3
5' 8"	15.2	16.7	18.2	19.8	21.3	22.8	24.3	25.8	27.4	28.9	30.4	31.9	33.4	35.0	36.5	38.0
5' 10"	14.3	15.8	17.2	18.7	20.1	21.5	23.0	24.4	25.8	27.3	28.7	30.1	31.6	33.0	34.4	35.9
6'	13.6	14.9	16.3	17.6	19.0	20.3	21.7	23.1	24.4	25.8	27.1	28.5	29.8	31.2	32.5	33.9
6' 2"	12.8	14.1	15.4	16.7	18.0	19.3	20.5	21.8	23.1	24.4	25.7	27.0	28.2	29.5	30.8	32.1
6' 4"	12.2	13.4	14.6	15.8	17.0	18.3	19.5	20.7	21.9	23.1	24.3	25.6	26.8	28.0	29.2	30.4
6' 6"	11.6	12.7	13.9	15.0	16.2	17.3	18.5	19.6	20.8	22.0	23.1	24.3	25.4	26.6	27.7	28.9
6' 8"	11.0	12.1	13.2	14.3	15.4	16.5	17.6	18.7	19.8	20.9	22.0	23.1	24.2	25.3	26.4	27.5
6' 10"	10.5	11.5	12.5	13.6	14.6	15.7	16.7	17.8	18.8	19.9	20.9	22.0	23.0	24.0	25.1	26.1
7'	10.0	11.0	12.0	13.0	13.9	14.9	15.9	16.9	17.9	18.9	19.9	20.9	21.9	22.9	23.9	24.9

http://www.freebmicalculator.net

Underweight | Nomal | Overweight | Obesity

- Notice this chart is **not** metric = uses feet & pounds

Uses of BMI

- BMI offers a quick overview of health
  : a person's risk for type 2 diabetes, high blood pressure, heart disease, and many other diseases increases significantly when BMI has a value **above 30**

  : being underweight with a BMI **below 18** is also associated with an increased risk for health problems

- **mortality** (or death rate), from all diseases and risk of premature death **increases significantly** with a BMI value outside of the normal range

Limitations of BMI

- cannot tell us how much of a person's body mass is **composed** of fat

- does not show where that fat is **stored**

- age affects BMI, not relevant for people **over 65 or children**

- does not take into account **physical and metabolic** differences between people of different ethnic backgrounds.
  :Example--
  Even at the same BMI level, Asian, Hispanic & African American women have a higher risk for diabetes than Caucasian women

- limited when used with people who have a disproportionately higher **muscle mass** for a given height (ie. body builders)