Energy & Physical Activity

ENERGY, WHERE DOES IT COME FROM?

SOURCES OF ENERGY:

- CARBOHYDRATES
- FATS
- PROTEINS

ALL FOUND IN FOODS THAT YOU EAT.

CARBOHYDRATES

- MOST READILY AVAILABLE SOURCE OF FOOD ENERGY (4 calories)
- MAIN FUNCTION IS TO SERVE AS AN ENERGY FUEL FOR THE BODY
- STORED IN YOUR MUSCLES AND LIVER AS GLYCOGEN
- BROKEN DOWN INTO SIMPLE SUGAR (GLUCOSE)
- THE PRIMARY ENERGY SOURCE FOR MOST PHYSICAL ACTIVITIES.

Simple Vs. Complex Carbohydrates

Simple

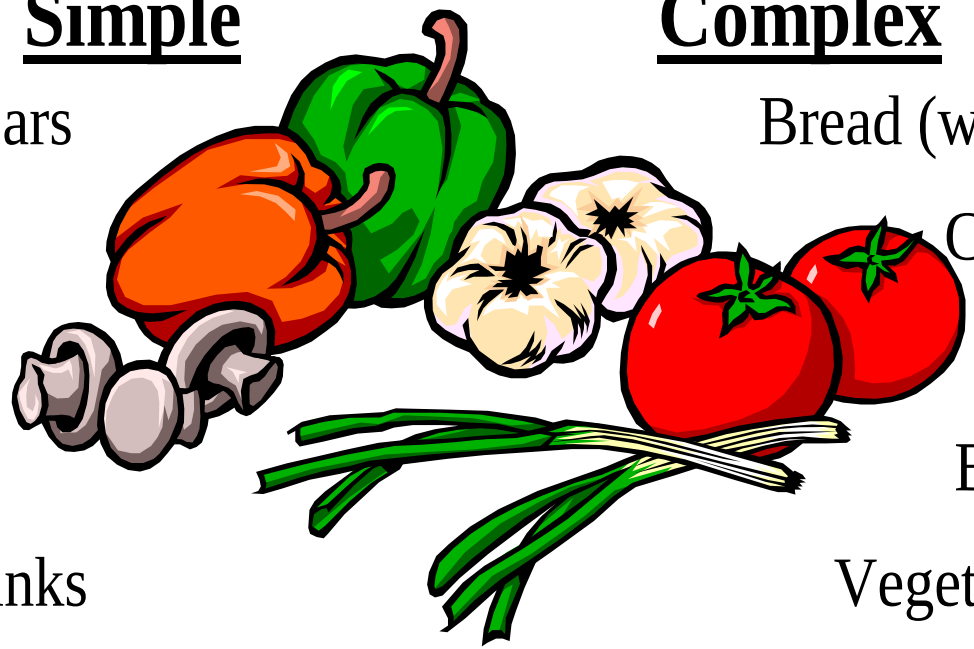
- Contain a lot of sugar but not much of anything else nutritious.
- Calories known as empty calories.

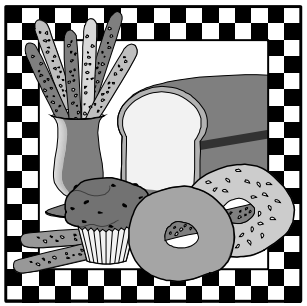
Complex

- Not only do they contain the energy that you need, but theyalso contain other nutrients like vitamins and minerals that are important to proper body functioning.
- Released into your blood stream at a slower and steadier rate giving you sustainable energy over time.

What form does this energy come in?

Simple	**Complex**
Candy Bars	Bread (wheat)
Donuts	Cereal
Cookies	Rice
Cake	Beans
Fruit Drinks	Vegetables
Soda	Fruits





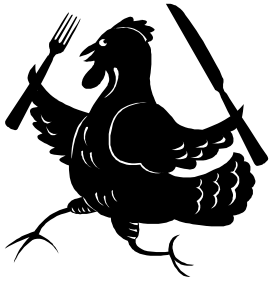
FATS

- Fats contain the largest amount of food energy (9 calories)
- Fat is used as an energy fuel in physical activities of a long duration.
- Carbohydrate energy that is not used is converted to fat and saved as stored energy.
- Diets that contain a lot of fat as energy can lead to health risks like heart disease, strokes, cancer, and diabetes.

Fat is essential to your body however:

- Cell membranes
- Blood
- Body Temperature
- Process Vitamins

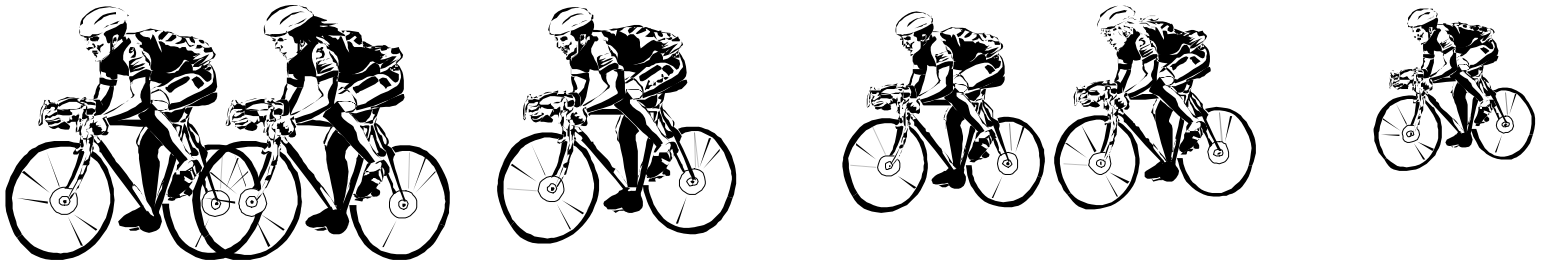
Protein



- Not a significant energy source at rest or during exercise (4 calories)
- Your body will use protein for energy if you are not eating enough.
- Protein is the structural component of all body tissues.
- Found in meat, fish, dairy, eggs, poultry, beans, grains, vegetables, fruits, nuts, and seeds.

USING ENERGY DURING PHYSICAL ACTIVITY

- Carbohydrates are the primary source of energy during physical activity
- During your first several minutes of physical activity, your body uses carbohydrates exclusively for energy.
- Between 6-8 minutes of sustained activity, your body begins to break down fat as an energy source.
- In order to use fat as a source of energy, you need oxygen (this is why you breathe heavier). If you do not have oxygen, you could only use carbohydrates for energy (sugar glucose).
- The longer you exercise, the greater amount of fat you use for energy.



Verses

Aerobic

With Oxygen

Uses Fats as a primary energy source.

Uses Carbohydrates as a secondary source of energy.

What types of physical Activities?

Anaerobic

Without Oxygen

Uses Carbohydrates as a primary energy source.

Typically short duration physical activities.

What types of physical Activities?

Physical Activity and Energy Spent Per Minute

Lying Quietly	.99	Aerobics	6.0
Sitting and Writing	1.2	Football	3.3 - 5.5
Archery	3.1	Golf (carrying clubs)	3.6
Badminton	3.6	Golf (riding a cart)	1.9
Baseball	3.1	Hiking	4.5
Basketball	4.9 - 6.5	Handball	6.5
Bicycling	4.2 - 7.3	Field Hockey	5.0
Dancing	4.5	Ice Hockey	6.6

Physical Activity and Energy Spent Per Minute

Horseback Riding	1.9 (walk) 2.7 (sitting trot) 4.2 (post) 5.7 (gallop)	**Volleyball**	2.9-6.5
Judo & Karate	8.5	**Walking**	2.1-7.7
Mountain Climbing	6.5	**Weight Training**	5.2
Roller Skating	4.2	**Wrestling**	8.5
Running	6.0 - 10.8	**Skiing**	6.5
Soccer	5.9	**Swimming**	Back Stroke (2.5 -5.5) Breast Stroke (3.1- 6.3) Front Crawl (3.1 - 7.0)
Table Tennis	3.4		

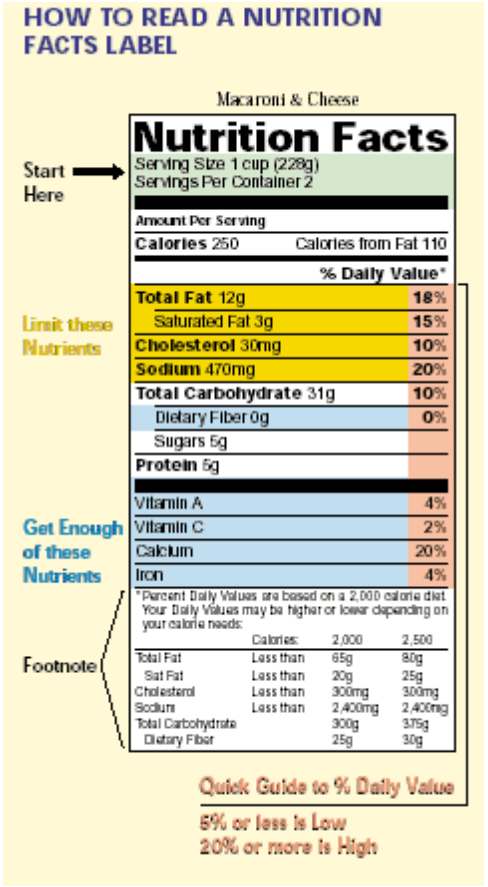
What is a byproduct of energy use?

- When your body exercises and uses food energy, it produces HEAT as a byproduct.
- In order to combat overheating, what does your body do in response?

Water is also important when it comes to physical activity:

- All energy production takes place in water!
- Water regulates your body temperature and helps you cool down when exercising.
- Younger people are more susceptible to overheating.

WHAT TYPE OF ENERGY AM I PUTTING IN MY BODY?



Good Old Food Pyramid