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Knowing Nutrients

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Nutrients' Role in our Bodies

- Build and repair body tissues
- Regulate body processes
 - Digestion
 - Energy Production
 - Muscle contraction


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Food and Energy

- The total energy/calories in a food depends on the amount of carbohydrate, protein and fat it contains:


Calories per gram:	
Carbohydrate	4
Protein	4
Fat	9


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Energy Density


- Calorie Dense vs Nutrient Dense:
 - A calorie dense food is high in calories but contains few nutrients
 - A nutrient dense food has low calories but is high in nutrients




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Carbohydrate




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Carbohydrates


- Provides the main energy source for the body
- End product of carbohydrate is glucose
 - Glucose that is not immediately used for energy is stored in liver or muscle as glycogen OR is stored as fat.
 - Simple carbs are often processed, but can be naturally occurring in fruit and milk. Processed carbs are typically energy dense, and low in nutrient
 - Complex carbs are long chains of many simple carbs, includes starches and fiber. Typically nutrient dense.

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Protein

- Principal component of muscle tissue
- Provides building blocks for hormones (chemical messengers, ex. insulin) and many enzymes
- Necessary for a healthy immune system and to carry oxygen in the blood
- Some proteins are fibrous, providing cells & tissues with stiffness & rigidity. Collagen is an example



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Fat


- Enhances the flavor of food, improves satiety, aids in absorption of fat soluble vitamins and phytochemicals
- Stored fat insulates the body, protects vital organs and forms healthy cell membranes and hormones.
- Saturated fats vs Unsaturated fats

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Water

- Comprises 55-70% of the body
- Doesn't provide energy (calories) but we can't survive without it!
- Regulates body temperature, is the basic component of blood, sweat, urine, intercellular fluid
- Lubricates joints
- Helps transport oxygen & nutrient around the body
- Removes toxins & waste from the body



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Vitamins

- Doesn't provide energy, but required for most aspects of metabolism, growth and other processes
- Fat soluble vitamins: A,D,E,K. Requires presence of fat for absorption, stored in fat. Used for bones, blood, hair, skin and nails
- Water soluble vitamins: B vitamins, C. Absorbed in body's water and excreted in urine if not needed. Used for energy production, healthy nervous system.

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