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## Macronutrients: Carbohydrate Structure and Function Introduction

Dr. Ritamarie Loscalzo

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**Medical Disclaimer:** The information in this presentation is not intended to replace a one-on-one relationship with a qualified health care professional, and is not intended as medical advice. It is intended as a sharing of knowledge and information from the research and experience of Dr. Ritamarie Loscalzo, drritamarie.com, and the experts who have contributed. We encourage you to make your own health care decisions based upon your research and in partnership with a qualified health care professional.



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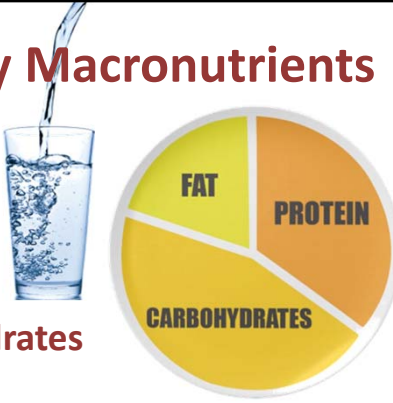
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## Primary Macronutrients



- ✓ Water
- ✓ Fat
- ✓ Protein
- ✓ Carbohydrates



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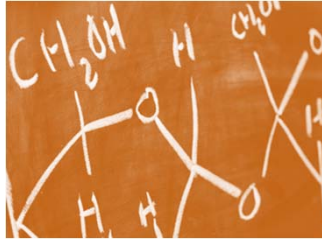
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# INE: Macronutrients - Carbohydrates

## Structure and Function Introduction

### What You'll Learn:

- ✓ What carbohydrates are
- ✓ Introduction to the carb family members
- ✓ Food sources of carbohydrates
- ✓ Refined vs whole carbs
- ✓ How to know which carbs work best
- ✓ Therapeutic diets related to carbs
- ✓ How to determine what's needed for each client – low, medium, or high carbohydrate intake



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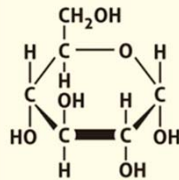
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### What Are Carbohydrates?

- ✓ Large molecules consisting of carbon (C), hydrogen (H), and oxygen (O) atoms, usually with a hydrogen-to-oxygen ratio of 2:1  $C_m(H_2O)_n$ , i.e., glucose is  $C_6H_{12}O_6$
- ✓ Hydrates of carbon:  $H \rightarrow C \rightarrow O \rightarrow H$
- ✓ Also known as saccharides:
  - Monosaccharides (1 sugar)
  - Disaccharides (2 sugars)
  - Oligosaccharides (3-9 sugars)
  - Polysaccharides (many sugars)

GLUCOSE MOLECULE



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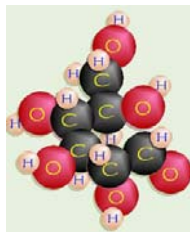
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### Function Of Carbohydrates

- ✓ Energy
- ✓ Fiber for intestinal function
- ✓ Spare protein for use as energy
- ✓ Transport of proteins, and other cellular recognition processes



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### Carbohydrates in Foods

#### Simple Carbs

- ✓ Sugar
- ✓ Candy
- ✓ Drink powders
- ✓ White flour anything – crackers, cookies, pizza crust, cereal
- ✓ White rice
- ✓ Flour products



#### Complex Carbs

- ✓ Legumes
- ✓ Whole grains
- ✓ Nuts and seeds
- ✓ Vegetables
- ✓ Fruit
- ✓ Tubers and root vegetables

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