



THE UNIVERSITY of EDINBURGH
Global Academy of
Agriculture and Food Systems

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What is nutrition, and what are nutrients?

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Myths

- Nutrition solely refers to the science of what to eat to be healthy
- Nutrition science is too flawed to matter
- Your diet must be perfect if you want to be healthy



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What is nutrition?

- The science of food and nutrients
- The roles of foods and nutrients in health and disease
- The functions and interactions of nutrients in the body
- The processes of digestion, absorption, transportation, utilization and excretion of nutrients
- The social and cultural aspects of eating

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What are nutrients?

- Substances that the body's cells use for growth, maintenance, and repair of its tissues.
- Essential nutrients include:
 - Carbohydrates, fats, proteins
 - Vitamins, minerals
- Nutrients are essential if:
 - They must be obtained from foods
 - They have a specific function in the body
 - They lead to poor health if omitted
 - They restore health when added back

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Nutrients come from foods



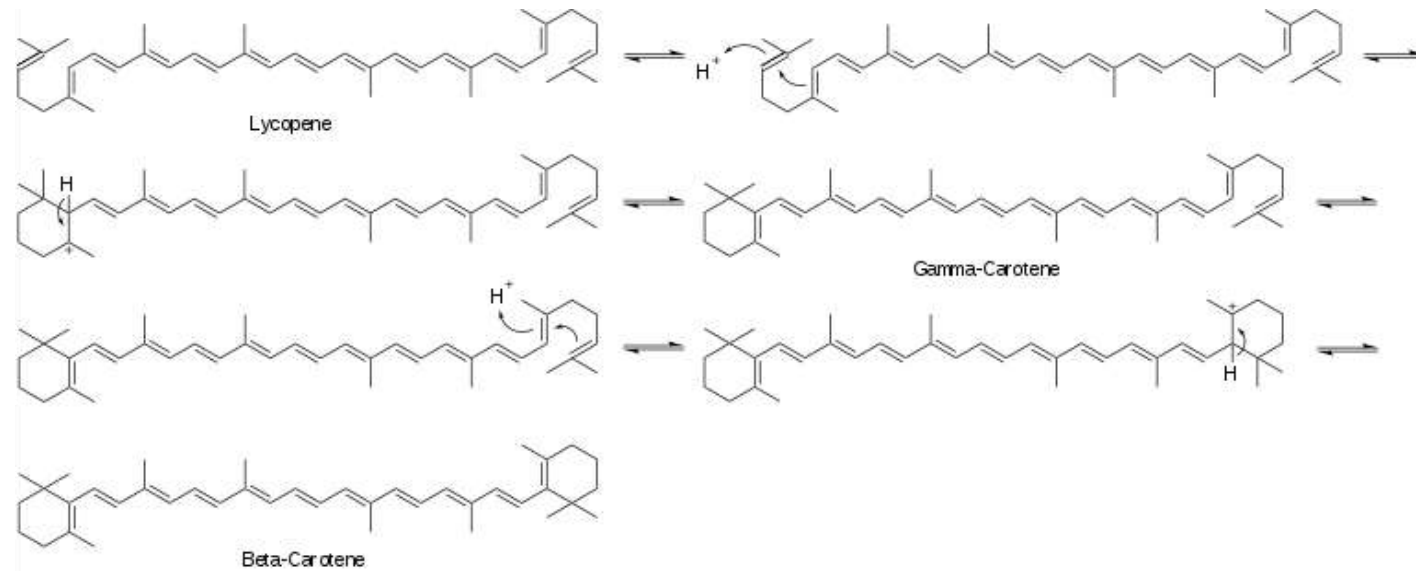
All foods contain nutrients

- Some foods contain more of certain nutrients
- Some foods contain less of certain nutrients
- There are many ways to obtain sufficient nutrients from food intake
- Sometimes it can be challenging to balance nutrient intake with what our bodies need



Not all substances in foods are nutrients

- Foods also contain other substances that can affect health, for better or worse:
 - Anti-nutrients
 - Phytochemicals
 - Pathogens
 - Contaminants
 - Mycotoxins
 - Fibre



Visual of beta-carotene mechanisms by Michael Coste, via Wikimedia Commons



All humans require the same set of essential nutrients

- The amount needed depends on:
 - Age
 - Body size
 - Physical activity
 - Gender
 - Growth
 - Illness
 - Certain behaviours
 - Certain medications
 - Certain genetic traits



Photo by Matheus Bertelli from Pexels



It is challenging to figure out what nutrients are in the foods we might choose

- Food labels are complicated and confusing!
- People describe foods as “good” and “bad”
- Health claims are everywhere!
- Are restaurants accurate with their nutrition facts?
- How well can these nutrients be measured?
- How do these nutrients interact in the body?



Data resources

- Most people do not need to calculate or estimate their nutrient intakes
- [Use food labels strategically](#)
- [Public Health England \(PHE\)'s Composition of Foods Integrated Dataset \(CoFID\)](#)
- United States Department of Agriculture (USDA)'s [Food Data Central](#)



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Thank you

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