

# Difference Between Holozoic and Holophytic Nutrition

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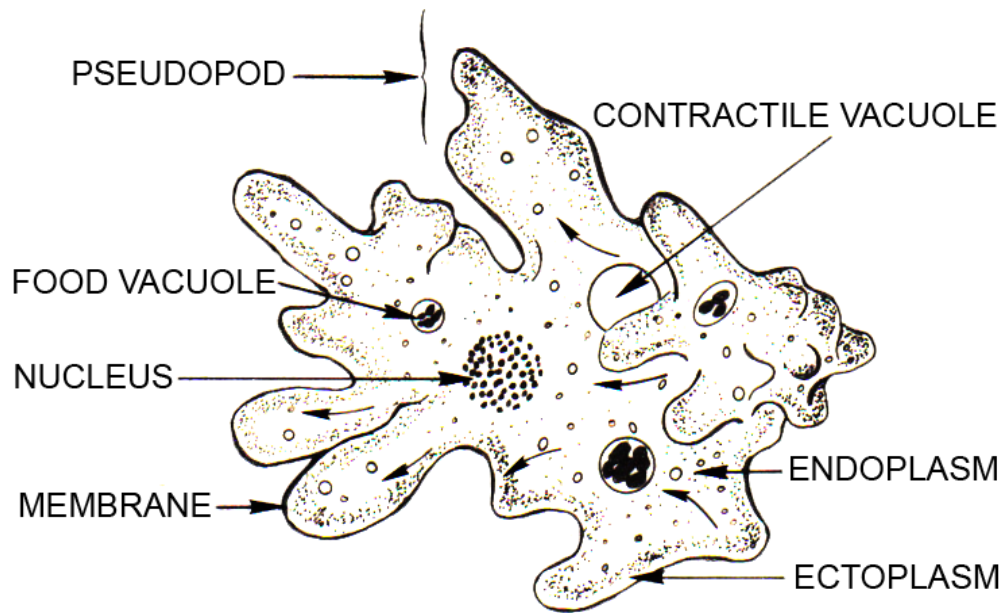
## Key Difference - Holozoic vs Holophytic Nutrition

**Nutrition** is the method by which organisms obtain [energy](#) and nutrients. It is dependent upon the source of carbon and the source of energy. Based on the source of energy, nutrition can be chemotrophic and phototrophic, whereas based on the source of carbon, nutrition can be categorized as autotrophic and heterotrophic. Nutrition is divided into holozoic nutrition and holophytic nutrition. Holozoic nutrition is a heterotrophic type of nutrition in which organisms consume solid food and is composed of different steps – [ingestion](#), [digestion](#), [absorption](#), [assimilation](#), and ejection. Holophytic nutrition is a nutrition mode of plants which is also referred to as [autotrophs](#) and use solar energy and inorganic carbon as the source of energy and the source of carbon respectively. The **key difference** is between the two types of nutrition is the form of carbon source. **Holozoic nutrition uses an organic carbon source whereas holophytic nutrition uses an inorganic carbon source.**

## What is Holozoic Nutrition?

Holozoic nutrition is a mode of nutrition in organisms that contain a complete digestive system which can use food produced by the primary producers. Moreover, in this nutrition mode, the organisms use organic carbon forms to obtain energy.

Holozoic nutrition has different processes following the ingestion of food. There are four main processes in holozoic nutrition namely ingestion, digestion, absorption, assimilation and egestion. Ingestion is the process of taking in food in the form of solid food by higher level organisms. Digestion refers to the process of transforming complex food into simple food. At the end of the digestion process, [carbohydrates](#) are converted to [glucose](#), lipids are converted to [fatty acids](#), and [glycerol](#) and proteins are converted to [amino acids](#). Digestion mainly is composed of [mechanical digestion](#) processes and chemical digestion processes. Mechanical digestion takes place in the buccal cavity and the stomach. Chemical digestion takes place with the aid of [enzymes](#), mucous and other lubricating fluids secreted by different digestive organs and glands.



**Figure 01: Holozoic nutrition shown by Entamoeba histolytica**

Absorption of the digested products mainly takes place in the [small intestine](#) via the [microvilli](#) and the lacteals. The complex food is absorbed in glucose, fatty acids, glycerol and amino acids. Water is mainly absorbed in the large intestines. Assimilation is the process by which various organs and cells use the absorbed nutrients in the body. Egestion is the process by which the undigested food is removed via the anus. The undigested food reaches the anus via the rectum and is released into the exterior.

## What is Holophytic Nutrition?

Holophytic nutrition is shown by plants. This is a characteristic type of nutrition pattern of plants. This is also referred to as the autotrophic nutrition in plants. In this nutrition pattern, plants utilize inorganic forms of carbon such as [carbon dioxide](#).



**Figure 02: Holophytic or Autotrophic Nutrition**

In the case of plants, the source of energy is solar energy. Hence, this type of nutrition is also referred to as a photoautotrophic mode of nutrition.

# What is the Similarity Between Holozoic and Holophytic Nutrition?

- Both nutrition types are dependent on the source of carbon and the source of energy

# What is the Difference Between Holozoic and Holophytic Nutrition?

Holozoic vs Holophytic Nutrition	
Holozoic nutrition is a heterotrophic type of nutrition in which organisms consume solid food and is composed of different steps; ingestion, digestion, absorption, assimilation, and ejection.	Holophytic nutrition is a nutrition mode of plants which is also referred to as autotrophs and use solar energy and inorganic carbon as the source of energy and the source of carbon respectively.
Carbon Source	
Holozoic nutrition is a mode of nutrition which uses organic C sources.	Holophytic nutrition is a mode of nutrition which uses inorganic C sources.
Types of Processes	
Five main processes in holozoic nutrition such as ingestion, digestion, absorption, assimilation, egestion.	No subprocesses in holophytic nutrition.
Specific Organisms	
Holozoic nutrition is shown by man and other higher forms of animals.	Holophytic nutrition is mainly found in Plants.
Digestive System	
Animals which show holozoic nutrition have a well developed digestive system.	Plants which show holophytic nutrition lack digestive system.

## Summary - Holozoic vs Holophytic Nutrition

Nutrition is a vital process for all living beings. It depends on the source of carbon and source of energy. Holozoic nutrition is the process in which organic food produced by primary producers and includes several processes such as ingestion, digestion, absorption, assimilation, and egestion. Holophytic nutrition patterns are specific to plants. The source

of carbon in holophytic nutrition is an inorganic form, and the source of energy is solar energy. This can be described as the difference between holozoic and holophytic nutrition.

### Reference:

1. "Competition Science Vision." Google Books. [Available here](#)
2. Gupta.R,Jindal. R,"Holozoic Nutrition", Fun Science. [Available here](#)

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