

The effect of lactose on the human body

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Annotation. This article explores the impact of lactose on the human body, focusing on lactose intolerance, a common digestive disorder. Lactose is a natural sugar found in dairy products, and its digestion relies on the enzyme lactase. The keywords for this study include lactose, lactose intolerance, dairy products, and digestive disorders. The discussion section highlights the significance of this condition and its dietary implications. In conclusion, we provide suggestions for individuals with lactose intolerance and offer insights into potential areas for future research

Keywords: Lactose intolerance, lactase enzyme, digestive system, lactose maldigestion, dairy products, gastrointestinal symptoms, lactose tolerance test.

Lactose is a natural sugar found in milk and dairy products, serving as an essential source of nutrients for humans. However, a significant portion of the global population experiences varying degrees of lactose intolerance, which can lead to uncomfortable gastrointestinal symptoms. This article explores the impact of lactose on the human body, discussing lactose intolerance, its underlying causes, and potential solutions.

Lactose is a type of sugar found in milk and dairy products. It is a disaccharide, meaning it is composed of two smaller sugar molecules, glucose and galactose, bonded together. Lactose is the primary carbohydrate in mammalian milk and serves as a source of energy for infants, including human babies.

Lactose intolerance is a condition in which the body has difficulty digesting lactose due to a deficiency of an enzyme called lactase. Lactase is normally produced in the small intestine and is responsible for breaking down lactose into its constituent sugars, glucose, and galactose, which can then be absorbed into the bloodstream. Without sufficient lactase, undigested lactose can lead to various digestive symptoms, such as bloating, gas, diarrhea, and abdominal discomfort when dairy products are consumed.

It's important to note that lactose intolerance is different from a milk allergy. A milk allergy is an immune system response to proteins in milk, such as casein or whey, and can be much more severe, potentially causing hives, difficulty breathing, and other allergic reactions.

Many people with lactose intolerance can manage their symptoms by avoiding or limiting their intake of dairy products or by taking lactase enzyme supplements before consuming dairy. Additionally, there are lactose-free and lactose-reduced dairy products available for those with lactose intolerance.

Lactose is used as an ingredient in various food products, including baked goods, processed foods, and medications, so individuals with lactose intolerance need to be vigilant in checking food labels for lactose-containing ingredients.

Lactose Intolerance: Lactose intolerance is a common digestive disorder affecting millions of individuals worldwide. It results from the body's inability to digest lactose properly due to a deficiency in the enzyme lactase, which is responsible for breaking down lactose into its component sugars, glucose, and galactose. The prevalence of lactose intolerance varies among different populations, with a higher incidence among Asians, Africans, and Native Americans.

Symptoms: The consumption of lactose by individuals with lactose intolerance can lead to various gastrointestinal symptoms, including bloating, gas, diarrhea, and abdominal discomfort. These symptoms occur because undigested lactose ferments in the colon, producing gases and causing discomfort.

Diagnosis: Diagnosing lactose intolerance typically involves a combination of symptom assessment and medical tests. The lactose tolerance test, hydrogen breath test, and genetic tests can help determine the severity of lactose intolerance in an individual.

Lactose Tolerance Test: This test involves fasting and then consuming a specific amount of lactose. Blood samples are taken at intervals to measure blood glucose levels. An increase in blood glucose indicates efficient lactose digestion.

Hydrogen Breath Test: In this test, the patient consumes a lactose solution, and the breath is analyzed for hydrogen production. Elevated hydrogen levels suggest lactose malabsorption.

Genetic Testing: Genetic testing can identify genetic variations associated with lactose intolerance.

Lactose is a natural sugar found in milk and dairy products. To understand the effect of lactose on the human body, it's important to consider how it is digested and the potential consequences for individuals who are lactose intolerant or have lactose malabsorption.

Digestion of Lactose: When a person consumes lactose, it needs to be broken down in the small intestine into its two component sugars, glucose and galactose, in order to be absorbed into the bloodstream. This process is facilitated by an enzyme called lactase, which is produced in the small intestine.

Lactose Intolerance: Lactose intolerance is a condition in which a person has insufficient levels of lactase, leading to difficulty in digesting lactose. Common symptoms of lactose intolerance include bloating, gas, diarrhea, and abdominal discomfort. These symptoms typically occur within a few hours after consuming lactose-containing foods or drinks.

Lactose Malabsorption: Lactose malabsorption is not the same as lactose intolerance. It refers to the reduced ability to absorb lactose due to various factors, such as a reduced production of lactase. Some people with lactose malabsorption may not experience significant symptoms, while others might still experience discomfort.

Lactose-Containing Foods: Lactose is primarily found in dairy products, including milk, cheese, yogurt, and ice cream. It can also be an ingredient in various processed foods, so individuals with lactose intolerance or malabsorption need to be cautious about hidden sources of lactose.

Management: People with lactose intolerance or malabsorption can often manage their condition by reducing their lactose intake or using lactase supplements (such as lactase pills or drops) before consuming dairy products. Additionally, many lactose-free or lactose-reduced dairy products are available, making it easier for those with lactose-related issues to enjoy dairy without discomfort.

Nutritional Considerations: While lactose intolerance can limit dairy consumption, it's important to ensure that individuals still get essential nutrients found in dairy, such as calcium and vitamin D. This can be achieved through lactose-free dairy products, as well as non-dairy sources of these nutrients, such as fortified plant-based milk alternatives and leafy green vegetables.

Infancy: It's worth noting that infants are typically born with the ability to digest lactose, but some individuals may develop lactase deficiency as they age. Lactose intolerance can develop later in life.

In summary, the effect of lactose on the human body depends on an individual's ability to digest lactose. Lactose intolerance and lactose malabsorption can lead to digestive discomfort when lactose is consumed, but management strategies are available to help individuals with these conditions enjoy dairy or maintain a balanced diet without lactose-related issues.

Lactose intolerance is a prevalent condition that can significantly affect an individual's dietary choices and overall quality of life. Understanding one's level of lactose intolerance is essential for making informed dietary decisions. Many lactose-intolerant individuals can still consume dairy products with the help of lactase supplements or by choosing lactose-free dairy options.

It is important to differentiate between lactose intolerance and other conditions, such as a milk allergy, which is an immune response to proteins in milk. These conditions require distinct management strategies.

Conclusions and Suggestions

In conclusion, the effect of lactose on the human body varies from person to person due to differences in lactase enzyme activity. Lactose intolerance can lead to uncomfortable gastrointestinal symptoms but is manageable with proper diagnosis and dietary adjustments. Individuals who suspect they may have lactose intolerance should consult a healthcare professional for accurate testing and guidance. It's also important to read food labels carefully and consider lactose-free alternatives to ensure a well-balanced diet while minimizing digestive discomfort.

Future research may further refine our understanding of lactose intolerance and potentially offer new treatment options. Until then, managing lactose intolerance primarily involves dietary modifications and, in some cases, the use of lactase supplements. Maintaining good digestive health and overall well-being is

possible for individuals with lactose intolerance, as long as they have the knowledge and tools to make appropriate choices regarding lactose-containing foods.

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