



Symptoms Caused by Lactose Intolerance

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INTRODUCTION

Lactose intolerant people are unable to digest significant amounts of lactose due to a genetically insufficient amount of the enzyme lactase. Following the consumption of lactose containing foods, common symptoms include abdominal pain and bloating, excessive flatus, and watery stool. Lactase deficiency affects up to 15% of people of Northern European descent, up to 80% of blacks and latinos, and up to 100% of American Indians and Asians. Many adults believe they are lactose intolerant, but they do not have impaired lactose digestion, and some people with lactase deficiency can tolerate moderate amounts of ingested lactose.

Lactose intolerance is usually diagnosed through a careful history and dietary manipulation. If necessary, a breath hydrogen or lactose tolerance test can be used to confirm the diagnosis. The primary treatment is to avoid lactose containing foods. Lactase enzyme supplements could be beneficial. Lactose malabsorption varies greatly between patients with lactose intolerance. The small intestine's malabsorption of dietary lactose causes gastrointestinal symptoms such as abdominal pain, bloating, passage of loose, watery stools, and excessive flatus. Lactose intolerance is usually inherited, but it can occur temporarily as a result of an infection or other insult to the jejunal mucosa. Recognizing this common condition is critical because it is easily managed with simple dietary changes.

DESCRIPTION

Accurate lactose intolerance diagnosis can significantly reduce patient anxiety and avoid unnecessary investigation and treatment. The lactase enzyme is found in the brush border (microvilli) of the enterocyte of the small intestine. The enzyme splits and hydrolyzes dietary lactose to release glucose and galactose across the cell membrane. Lactose absorption is dependent on enzyme activity and transit time through the jejunum mucosa. Unabsorbed sugars osmotically attract fluid into the bowel lumen if lactase enzymes are absent or deficient (hypolactasia). Because the intestine cannot maintain a high electrochemical gradient between contents and blood, fluid

influx into the bowel is approximately triple the predicted amount based solely on the osmolality of the sugar content.

Unabsorbed lactose entering the colon is affected by bacteria, in addition to increasing the volume and fluidity of the gastrointestinal contents. Fermentation generates gas and causes lactose to be cleaved into mono saccharides. These mono saccharides are not absorbed by the colonic mucosa, causing osmotic pressure to rise and more fluid to enter the bowel. Some of the carbohydrates that reach the colon in lactase deficient patients can be metabolised by bacteria into short chain fatty acids and absorbed, but the net result of lactose ingestion is a significant increase in fluid. Hypolactasia causes up to 75% of dietary lactose to pass unchanged through the small intestine into the colon, where it is rapidly metabolised by colonic bacteria, resulting in an excess of fluid.

However, the symptoms patients experience vary depending on the amount of lactose consumed and the patients' ability to digest lactose. The amount of lactose required to produce symptoms in patients with common adult type hypolactasia varies but is reported to be around 12 to 18 g, or 8 to 12 oz of milk. Several factors, including the patient's ethnic origin and age, influence the severity of symptoms after lactose ingestion; older patients are more vulnerable. Lactose consumption in small to moderate amounts causes bloating, cramps, and flatulence but not diarrhoea. Increased lactose consumption, a faster gastric emptying time, and a faster intestinal transit time all contribute to more severe symptoms.

CONCLUSION

Increased lactase activity in the small intestine, on the other hand, alleviates symptoms. Other foods, as well as the presence of appropriate micro flora in the colon, can make patients more symptomatic. Symptoms appear about two hours after lactose ingestion and are directly related to the osmotic pressure of the substrate in the colon. Patients have typically learned to avoid milk products and frequently have a strong family history of similar issues.

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