LABOR RENNER

Gene test information

LACTOSE INTOLERANCE (LCT GENE TEST)

- **Background**

  Lactose intolerance (Adult type hypolactasia) is the inability to digest and absorb lactose (the sugar in milk), resulting in gastrointestinal symptoms when milk or products containing milk are drunk or eaten. In order for lactose to be absorbed from the intestine and into the body, it must first be split into glucose and galactose. The enzyme that splits lactose into glucose and galactose is called *lactase*, and it is located on the surface of the cells that line the small intestine. Lactose intolerance is caused by reduced or absent activity of *lactase* that prevents the splitting of lactose (lactase deficiency or hypolactasia).

- **Diagnosis of lactose intolerance**

  Usually, lactose intolerance was diagnosed by ingestion of pure lactose and measurement of hydrogen in the breath. Unfortunately, the hydrogen test lasts several hours and leads to strong abdominal symptoms in lactose intolerant patients.

  Recently, the genetic cause for the lactose intolerance was discovered. At the location -13910 before the lactase gene (LCT) there is a polymorphism, which determines the quantity of lactase produced. By testing the LCT genotype the genetic disposition for lactose intolerance can be determined.

- **LCT -13910 genotypes**

Genotype	Frequency	Commentary
LCT -13910 TT	40%	No genetic disposition to lactose intolerance
LCT -13910 TC	45%	No genetic disposition to lactose intolerance
LCT -13910 CC	15%	Genetic disposition for lactose intolerance

- **Indications for testing**

  Symptoms of lactose intolerance, such as abdominal pain, diarrhea, flatulence (passing gas), after ingestion of milk or dairy products.

References:

Hogenauer C, Hammer HF, Mellitzer K, Renner W, Krejs GJ, Toplak H. Evaluation of a new DNA test compared with the lactose hydrogen breath test for the diagnosis of lactase non-persistence. Eur J Gastroenterol Hepatol. 2005;17:371-6.

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