

# Lactose Intolerance

Dairy products like milk, yogurt, and cheese contain the sugar lactose. An enzyme called lactase breaks down this sugar. If you don't produce enough lactase, gut bacteria can convert lactose into gas, causing indigestion.

Erin, you likely do not produce the lactase enzyme.



## How To Use This Test

This test does not diagnose any health conditions or provide medical advice. Consult with a healthcare professional before making any major lifestyle changes or if you have any other concerns about your results.

[Review the Wellness tutorial](#)

[See Scientific Details](#)

## + Intended Uses

- To test for the C/T-13910 variant near the LCT gene.

## - Limitations

- Does **not** test for all possible variants related to lactose digestion.
- Does **not** account for lifestyle or other factors that may affect lactose digestion.

## 🌐 Important Ethnicities

- The variant in this report is primarily found in people of non-European descent.

## About Lactose Intolerance

Some people can digest dairy products without a problem, while others experience indigestion after consuming dairy products. These differences are largely due to a person's lactase enzyme levels.



### Biology

Lactase is made by infants so that they can digest their mother's milk. Most people lose the ability to produce lactase during childhood and may experience symptoms of lactose intolerance. But some people who don't make much lactase can still enjoy dairy products without a problem.

Milk

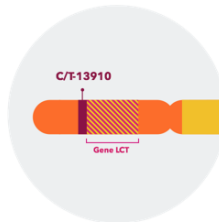
Ice cream

Cheese



### Genetics

The LCT gene contains instructions for making the lactase enzyme. A nearby region of DNA helps determine whether the LCT gene keeps producing lactase or not. People who inherit two copies of a variant in this region don't make lactase as adults and are typically lactose intolerant.



### Other factors

Other factors can influence your ability to digest dairy products.



Other variants



Age

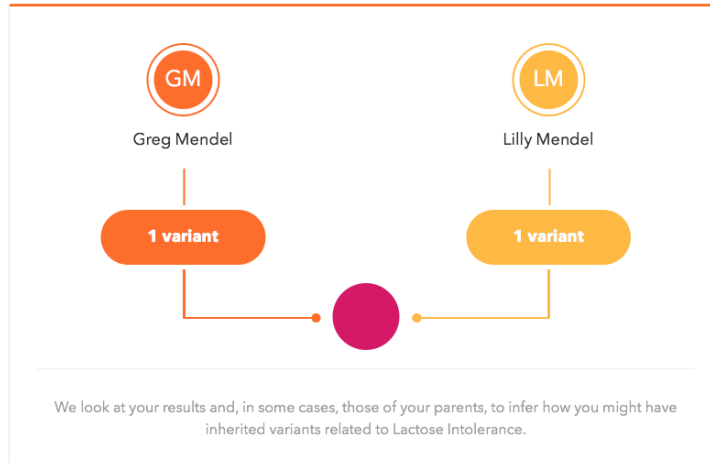


Ancestry



## You inherited two variants from your parents.

Because you have two copies of the variant that we tested, you almost certainly inherited one from each of your parents.



## Keep exploring your Wellness results.



Learn more about lactose intolerance.

[Learn more](#)



Talk to your healthcare professional about lactose intolerance.

[Print report](#)



Compare your results to your family and friends.

[Compare](#)

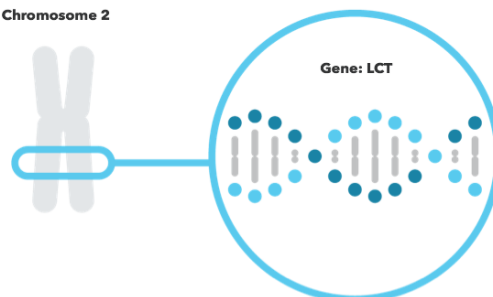
## Lactose intolerance is influenced by variants near the LCT gene.

LCT


The LCT gene contains instructions for making an enzyme called lactase. This enzyme is made by the digestive system to help break down lactose found in dairy products. Reduced levels of lactase can lead to symptoms of lactose intolerance.

[Read more at Genetics Home Reference](#)

Chromosome 2



## You have two variants included in this report.

Marker Tested	Your Genotype*	Additional Information
<b>C/T-13910</b> Gene: Near LCT Marker: <b>rs4988235</b>	<b>G</b> Variant copy from one of your parents	<b>G</b> Variant copy from your other parent
		<ul style="list-style-type: none"><li>&gt; <b>Biological explanation</b></li><li>&gt; <b>Typical vs. variant DNA sequence(s)</b></li><li>&gt; <b>Percent of 23andMe customers with variant</b></li><li>&gt; <b>References [ 1, 3, 6 ]   ClinVar</b></li></ul>

\*This test cannot distinguish which copy you received from which parent. This test also cannot determine whether multiple variants, if detected, were inherited from only one parent or from both parents. This may impact how these variants are passed down.

23andMe always reports genotypes based on the 'positive' strand of the human genome reference sequence (build 37). Other sources sometimes report genotypes using the opposite strand.

## We estimate how you inherited your variants using basic principles of genetics.

We look at your results and, in some cases, those of your parents, to infer how you might have inherited these variants.

### A. If you have one copy of a variant, and:

- **You don't have any parents connected:**

1. There is not enough information to determine which parent you inherited the variant from. You might have inherited the variant from either parent.

- **You have one parent connected, and if your connected parent:**

1. **Doesn't have the trait variant:** You likely inherited the variant from your other parent.
2. **Has one copy of the trait variant:** There is not enough information to determine which parent you inherited the variant from. You might have inherited the variant from either parent.
3. **Has two copies of the trait variant:** You likely inherited the variant from your connected parent.

- **You have both parents connected, and:**

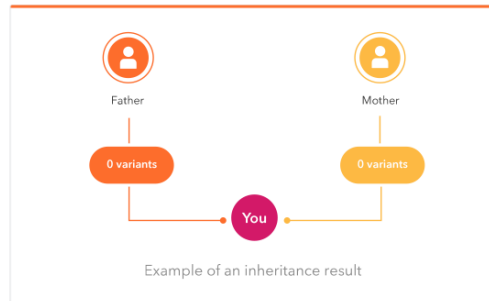
1. **Only one parent has the trait variant:** You likely inherited the variant from this parent.
2. **Both parents have one copy of the trait variant:** There is not enough information to determine which parent you inherited the variant from. You might have inherited the variant from either parent.
3. **One parent has two copies of the variant:** You likely inherited the variant from this parent.

### B. If you have two copies of a trait variant:

- **You likely received one copy of the variant from each parent.**

### C. If you do not have any copies of a trait variant:

- **You didn't inherit any copies of this variant from either parent. However, this does not mean that they didn't have any variants to pass on to you.**



## References

1. Enattah NS et al. (2002). "Identification of a variant associated with adult-type hypolactasia." *Nat Genet.* 30(2):233-7. [↗](#)
2. Heyman MB. (2006). "Lactose intolerance in infants, children, and adolescents." *Pediatrics.* 118(3):1279-86. [↗](#)
3. Lewinsky RH et al. (2005). "T-13910 DNA variant associated with lactase persistence interacts with Oct-1 and stimulates lactase promoter activity in vitro." *Hum Mol Genet.* 14(24):3945-53. [↗](#)
4. Lomer MC et al. (2008). "Review article: lactose intolerance in clinical practice--myths and realities." *Aliment Pharmacol Ther.* 27(2):93-103. [↗](#)
5. Mulcare CA et al. (2004). "The T allele of a single-nucleotide polymorphism 13.9 kb upstream of the lactase gene (LCT) (C-13.9kbT) does not predict or cause the lactase-persistence phenotype in Africans." *Am J Hum Genet.* 74(6):1102-10. [↗](#)
6. Poulter M et al. (2003). "The causal element for the lactase persistence/non-persistence polymorphism is located in a 1 Mb region of linkage disequilibrium in Europeans." *Ann Hum Genet.* 67(Pt 4):298-311. [↗](#)
7. Sun HM et al. (2007). "The lactase gene -13910T allele can not predict the lactase-persistence phenotype in north China." *Asia Pac J Clin Nutr.* 16(4):598-601. [↗](#)