LACTOSE IS THE SUGAR NATURALLY FOUND IN DAIRY

**Milk**
- regular
- 12 g of lactose
  - (1 cup - 8 oz - 250 mL)

**Yogurt**
- regular
- 5 g of lactose
  - (4.4 oz - 125 g)

**Low-fat hard cheeses**
- like cheddar
- traces of lactose
  - (1.6 oz - 45 g)

LACTASE, AN ENZYME, USUALLY SPLITS LACTOSE INTO 2 SUGARS: GLUCOSE AND GALACTOSE

In the small intestine...

Lactose → Lactase → Glucose → the body’s main source of energy
Lactose → Galactose → is involved in neural and immunological processes

LACTOSE MALDIGESTION IS THE DIFFICULTY IN DIGESTING LACTOSE

In the small intestine...

Lactose → Non-digested Lactose

In the colon...

Bacterial fermentation → Gas

Short chains fatty acids

LACTOSE MALDIGESTION IS DUE TO THE NORMAL REDUCTION IN THE ACTIVITY/AMOUNT OF LACTASE

It's a physiological phenomenon

75% of the world population

LACTOSE INTOLERANCE IS LACTOSE MALDIGESTION THAT RESULTS IN SYMPTOMS

In the small intestine...

Lactose → Non-digested Lactose → Bacterial fermentation

In the colon...

→ Flatulence
→ Diarrhea
→ Bloating

LACTOSE INTOLERANCE CONCERNS VERY FEW PEOPLE

2% OF THE WORLD POPULATION

HOW TO BE SURE YOU ARE LACTOSE INTOLERANT?

CONTACT YOUR DOCTOR; THE DIAGNOSIS CAN ONLY BE PERFORMED UNDER MEDICAL CONTROL, THANKS TO THE HYDROGEN BREATH TEST

[Diagram showing oral challenge with lactose, graph of detection of hydrogen, and occurrence of symptoms.]

Follow up

The detection of hydrogen + The occurrence of symptoms


CAREFUL OF LACTOSE INTOLERANCE SELF-DIAGNOSIS

MOST OF 50% ARE FALSE!

Self-diagnosis is associated with more symptoms and poor perceived quality of life

IT’S NOT POSSIBLE TO SELF-DIAGNOSE LACTOSE INTOLERANCE

Lactose intolerance symptoms are not specific to lactose intolerance

- Psychological factors (somatic anxiety, stress and depression)
  - Flatulence
- Digestive Issues (Crohn’s disease and ulcerative colitis)
  - Diarrhea
  - Bloating

LACTOSE INTOLERANCE IS NOT TO BE CONFUSED WITH COW’S MILK PROTEIN ALLERGY

Allergy is a **hypersensitivity of the immune system**, whereas lactose intolerance is the inability to digest lactose that results in bloating, diarrhea, and gas.

LACTOSE MALDIGESTERS AND LACTOSE INTOLERANTS, YOU DON’T NEED TO AVOID DAIRY FOOD

Limiting or avoiding dairy food → Risk of Nutrient deficiency

Sources: Black RE et al., Children who avoid drinking cow milk have low dietary calcium intakes and poor bone health. Am J Clin Nutr 2002;76:675-80.
LACTOSE MALDIGESTERS AND LACTOSE INTOLERANTS, YOU JUST NEED TO ADAPT YOUR EATING HABITS

Avoid excess is a golden rule which remains valid for lactose mal_digesters and intolerants.

- **Live bacteria in yogurt help to digest lactose.**
- **Hard cheeses contain low or no lactose**
  - like cheddar, provolone, mozzarella, etc.
- **Consume food containing lactose in small amounts through the day.**

Sources:
- EFSA Panel on Dietetic Products N. Allergies. Scientific Opinion on lactose thresholds in lactose intolerance and galactosaemia. EFSA Journal 2010;8:n/a-n/a.
EFSA CONFIRMED: YOGURT IMPROVES DIGESTION OF LACTOSE

Live cultures in yogurt improve digestion of lactose in yogurt in individuals with lactose maldigestion

At least $10^8$ bacteria per gram!

Efsa Panel on Dietetic Products N. Allergies. Scientific Opinion on lactose thresholds in lactose intolerance and galactosaemia. EFSA Journal 2010;8:n/a-n/a.
Efsa Panel on Dietetic Products N. Allergies. Scientific Opinion on the substantiation of health claims related to live yoghurt cultures and improved lactose digestion (ID 1143, 2976) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. EFSA Journal 2010;8:n/a-n/a.
BENEFIT OF YOGURT FOR LACTOSE DIGESTION

In the small intestine...

Yogurt Live bacteria

Lactose  →  Glucose  Galactose

Yogurt improves digestion of lactose

Sources: EFSA Panel on Dietetic Products N. Allergies. Scientific Opinion on lactose thresholds in lactose intolerance and galactosaemia. EFSA Journal 2010;8:n/a-n/a.
EFSA Panel on Dietetic Products N. Allergies. Scientific Opinion on the substantiation of health claims related to live yoghurt cultures and improved lactose digestion (ID 1143, 2976) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. EFSA Journal 2010;8:n/a-n/a.
NUTRITIONAL GUIDELINES FOR LACTOSE INTOLERANTS

Several medical organizations (NMA, NIH, EFSA, FAO*)... recommend that lactose maldigesters and people with lactose intolerance consume yogurt.

WGO* has put forth a similar statement, to consume fermented dairy products containing probiotics, with proven benefits on digestive health.

*WGO (the World Gastroenterology Organization), NMA (National Medical Association), NIH (the National Institutes of Health, a part of the U.S. Department of Health and Human Services), EFSA (the European Food Safety Agency) and FAO (the Food and Agriculture Organization of the United Nations)


EFSA Panel on Dietetic Products N. Allergies. Scientific Opinion on the substantiation of health claims related to live yoghurt cultures and improved lactose digestion (ID 1143, 2975) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. EFSA Journal 2010;8:n/a-n/a.


YOGURT IS A NUTRIENT-DENSE FOOD

Calcium → Helps to build stronger bones and teeth

High-quality proteins → Helps to build and repair muscles

Vitamins + Minerals → Essential for body functioning

Conjugated linoleic acids → Stimulates immune system & has anticarcinogenic properties

$10^8$ Live bacteria with lactase per g of yogurt → Improve the digestion of the lactose contained in yogurt

Yogurt is a convenient food for all, and it represents a good alternative to keep a balanced diet.

Sources: