CONDITION

Malabsorption

Malabsorption is difficulty absorbing nutrients from food through the small intestine.

WHAT IT IS
Reduced absorption of nutrients from food

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Diarrhoea, greasy stools, weight loss, bloating

WHAT CAUSES IT
Intestinal disease, surgery, infection, or low digestive enzymes

HOW IT IS DIAGNOSED
Blood, stool, breath, imaging, or biopsy tests

MAIN TREATMENT
Treating the cause and replacing missing nutrients

CAN IT BE CURED?
Sometimes - when the underlying cause is treatable

IS IT AN EMERGENCY?
Sometimes - severe dehydration, bleeding, or confusion

LONG-TERM OUTLOOK
Often manageable when causes and deficiencies are treated

Overview

Malabsorption means that your digestive system is not absorbing enough nutrients from food. It usually involves the small intestine, where most nutrients enter the bloodstream.

Some conditions cause maldigestion , meaning food is not broken down properly before absorption. For example, the pancreas may not release enough digestive enzymes. Maldigestion and malabsorption often occur together, so both may be described as malabsorption.

The problem may affect one nutrient, such as lactose, iron, or vitamin B12. It can also affect fats, proteins, carbohydrates, vitamins, and minerals at the same time.

Malabsorption is a condition with many possible causes rather than one specific disease. It may be temporary, such as after some intestinal infections, or long-lasting because of an

ongoing condition such as coeliac disease, Crohn's disease, or pancreatic insufficiency.

It matters because untreated malabsorption can lead to weight loss, weakness, anaemia, bone loss, or other nutrient deficiencies. Finding the cause is important because treatment differs greatly from one cause to another.

Symptoms

Symptoms depend on what is not being absorbed and how severe the problem is. Mild malabsorption may cause few digestive symptoms. Sometimes a nutrient deficiency is the first sign.

Common symptoms include:

Fat malabsorption can cause steatorrhoea , meaning greasy or oily stools that may float and be difficult to flush.

Different nutrient deficiencies can cause other symptoms. Iron, folate, or vitamin B12 deficiency may lead to anaemia, which can cause tiredness, breathlessness, headaches, or pale skin. Low vitamin B12 may also cause numbness, tingling, balance problems, or memory changes.

Poor calcium or vitamin D absorption can weaken bones over time. Low protein levels may cause swelling in the legs or abdomen. Easy bruising or bleeding can occur when vitamin K absorption is severely reduced.

In children and teenagers, malabsorption may interfere with expected growth, weight gain, or puberty.

These symptoms are not specific to malabsorption. Many common digestive conditions can cause similar problems.

- Ongoing or repeated diarrhoea
- Pale, bulky, oily, or difficult-to-flush stools
- Strong-smelling stools
- Bloating, gas, or abdominal discomfort
- Unintentional weight loss
- Tiredness or weakness
- Reduced appetite

Causes and risk factors

Food must be broken down, mixed with digestive fluids, absorbed through the intestinal lining, and transported into the blood or lymphatic system. A problem at any stage can cause malabsorption.

Conditions that damage or inflame the small intestine include:

The pancreas makes enzymes that digest fats, proteins, and carbohydrates. Exocrine pancreatic insufficiency occurs when it does not release enough of these enzymes. This can develop with chronic pancreatitis, cystic fibrosis, pancreatic surgery, or other pancreatic conditions.

Bile, a digestive fluid made by the liver, helps the body absorb fat. Liver, bile duct, or intestinal conditions can interfere with this process. Bile acids may also reach the colon instead of being reabsorbed, causing watery diarrhoea known as bile acid diarrhoea.

Surgery that removes or bypasses part of the stomach or small intestine reduces the area available for digestion and absorption. Extensive loss of small intestine is called short bowel syndrome.

Other possible causes include lactose intolerance, bacterial overgrowth in the small intestine, parasites, and some medicines. Medicines can affect digestion or injure the intestinal lining, but you should not stop a prescribed medicine without medical advice.

Your risk is higher if you already have an intestinal, pancreatic, liver, or bile duct condition, or if you have had digestive surgery. A close family history can matter for inherited conditions, including coeliac disease and cystic fibrosis.

- Coeliac disease, an immune reaction to gluten
- Crohn's disease
- Some intestinal infections
- Certain immune or inflammatory disorders
- Injury from radiation treatment
- Rare inherited intestinal conditions

Diagnosis

There is no single test that confirms every form of malabsorption. Testing is chosen according to your symptoms, medical history, previous surgery, diet, medicines, and suspected cause.

Blood tests may check for anaemia, inflammation, protein levels, liver function, and

deficiencies of iron, folate, vitamin B12, vitamin D, calcium, or other nutrients. Abnormal results can show the effects of malabsorption, but they do not always identify its cause.

Stool tests may look for infection, inflammation, excess fat, or low levels of pancreatic elastase. Pancreatic elastase is an enzyme measured to help assess pancreatic function. Very watery stool can affect this result, so it must be interpreted in context.

Further tests may include:

If coeliac disease is being investigated, starting a gluten-free diet before testing can make blood tests or biopsies less reliable. Discuss testing before removing gluten from your diet.

Some people need several types of testing because more than one problem can contribute to their symptoms.

- Blood tests for antibodies linked to coeliac disease
- Breath tests for lactose intolerance or suspected bacterial overgrowth
- Endoscopy to examine the upper digestive tract
- Small-intestinal biopsies, which are tiny tissue samples
- CT, MRI, ultrasound, or other imaging
- Tests for bile acid diarrhoea, where available

Treatment and management

Treatment has two main goals: address the underlying cause and replace nutrients or fluids that are missing.

Cause-specific treatment may include a strict gluten-free diet for confirmed coeliac disease, pancreatic enzyme replacement for pancreatic insufficiency, or treatment for an identified infection. Selected cases of bacterial overgrowth may be treated with antibiotics like amoxicillin or doxycycline . Medicines that bind bile acids can help some people with bile acid diarrhoea.

Inflammatory bowel disease may require treatment to control intestinal inflammation. If a medicine is contributing, a clinician may adjust it or recommend an alternative.

Nutrient replacement may involve iron, vitamin B12, folate, calcium, vitamin D, or other vitamins and minerals. The type and amount should be guided by test results because taking unnecessary supplements can cause harm or hide another problem.

Dietary changes should match the cause. Broadly removing gluten, dairy products, fats, or several food groups without guidance may worsen weight loss or deficiencies. A registered

dietitian can help you maintain enough energy, protein, vitamins, and minerals while managing symptoms.

Small, frequent meals may be easier for some people, but this does not treat every cause. Severe malabsorption may require specialised liquid nutrition through a feeding tube. Nutrition delivered into a vein is sometimes needed when the intestine cannot absorb enough, particularly in severe short bowel syndrome.

Follow-up often includes checking symptoms, weight, blood results, and response to treatment.

Complications

Complications are more likely when malabsorption is severe, affects several nutrients, or continues untreated.

Possible problems include:

Some complications are related to the underlying cause rather than malabsorption itself. For example, ongoing inflammation from Crohn's disease or pancreatic damage may need separate monitoring.

Many deficiencies improve when the cause is controlled and nutrients are replaced. Nerve or bone problems may take longer to improve, and some changes may not fully reverse if they have been present for a long time.

- Anaemia and persistent tiredness
- Loss of muscle or body weight
- Osteoporosis and increased fracture risk
- Numbness or other nerve problems
- Easy bruising or bleeding
- Dehydration and salt imbalances
- Leg or abdominal swelling from low protein
- Delayed growth in children

Prevention

Malabsorption cannot always be prevented. Inherited conditions, autoimmune diseases such

as coeliac disease, and the effects of necessary intestinal surgery are not caused by something you did.

Prompt treatment of intestinal infections and good food and hand hygiene may reduce some infection-related causes. Avoiding heavy alcohol use can lower the risk of chronic pancreatitis, although pancreatitis has other causes as well.

If you have a condition or previous surgery that raises your risk, regular monitoring can identify deficiencies before they cause major symptoms. This does not prevent the underlying condition, but it can reduce complications.

Do not start restrictive diets or high-dose supplements simply to prevent malabsorption. They can create deficiencies or make diagnostic testing less accurate.

Living with it and what to expect

What happens over months and years depends mainly on the cause and how much of the intestine or digestive system is affected.

Temporary malabsorption after an infection may improve as the intestinal lining recovers. Conditions such as coeliac disease or pancreatic insufficiency usually require long-term management. Symptoms and nutritional test results often improve when treatment is followed, but ongoing monitoring may still be needed.

Some people have periods when symptoms are more noticeable, especially if an inflammatory condition becomes active. Others have few digestive symptoms but need continued checks for anaemia, vitamin deficiencies, or bone health.

You may be asked to track your weight, bowel pattern, diet, or response to treatment. Repeated blood tests can show whether nutrient levels are recovering. Children may need growth and development monitored.

Most people can continue work, school, travel, exercise, and family life while the cause is managed. Severe short bowel syndrome or complex pancreatic and intestinal disease may require more intensive nutrition support and specialist follow-up.

When to get medical help

Arrange a routine medical appointment if you have diarrhoea lasting more than a few weeks, repeated greasy stools, ongoing bloating, unexplained tiredness, or unintentional weight loss. You should also seek assessment if blood tests repeatedly show anaemia or nutrient

deficiencies.

Contact a healthcare professional promptly if symptoms are worsening, you are struggling to eat or drink, you develop new swelling, or a child is not growing or gaining weight as expected.

Seek urgent or emergency care for:

These symptoms do not always mean malabsorption, but they need prompt assessment.

- Signs of severe dehydration, such as confusion, fainting, or very little urine
- Black or bloody stools
- Vomiting blood
- Severe or rapidly worsening abdominal pain
- Repeated vomiting that prevents you keeping fluids down
- New severe weakness, difficulty walking, or marked confusion

Common questions

Can malabsorption go away?

Sometimes. Malabsorption caused by a treatable infection or temporary intestinal injury may resolve. Long-term conditions such as coeliac disease, pancreatic insufficiency, or short bowel syndrome usually need ongoing management. Symptoms may still improve greatly with appropriate treatment.

What does malabsorption stool look like?

Fat malabsorption may produce pale, bulky, greasy, floating, or difficult-to-flush stools. They may smell stronger than usual. Stool appearance alone cannot confirm malabsorption because infections, diet, and other digestive conditions can cause similar changes.

Can I have malabsorption without losing weight?

Yes. Mild or selective malabsorption may cause a deficiency without obvious weight loss. For example, iron or vitamin B12 levels may fall while body weight remains stable.

What foods should I avoid?

There is no single malabsorption diet. Foods to avoid depend on the confirmed cause. Removing gluten is essential for coeliac disease, while lactose restriction may help lactose intolerance. Unnecessary restriction can make nutrition worse, so testing and tailored advice are important.

Is malabsorption the same as irritable bowel syndrome?

No. Irritable bowel syndrome can cause diarrhoea, constipation, bloating, and pain, but it does not usually damage the intestine or cause broad nutrient malabsorption. Similar symptoms may require testing to tell the conditions apart.

Can malabsorption cause vitamin deficiencies?

Yes. It can reduce absorption of iron, folate, vitamin B12, calcium, and the fat-soluble vitamins A, D, E, and K. Which nutrients are affected depends on the cause and the part of the digestive system involved.

Sources

- Merck Manual Professional Edition: Overview of Malabsorption
- National Institute of Diabetes and Digestive and Kidney Diseases: Diagnosis of Celiac Disease
- National Institute of Diabetes and Digestive and Kidney Diseases: Treatment for Celiac Disease
- American Gastroenterological Association: Clinical Practice Update on Exocrine Pancreatic Insufficiency, 2023 04780-7/fulltext)
- British Society of Gastroenterology: Guidelines for the Investigation of Chronic Diarrhoea in Adults, 2018
- American College of Gastroenterology: Clinical Guideline on Small Intestinal Bacterial Overgrowth, 2020