CONDITION

Malnutrition

Malnutrition happens when the body does not receive or use enough energy, protein, vitamins, or minerals.

WHAT IT IS
Inadequate or unbalanced energy, protein, vitamin, or mineral intake

BODY SYSTEM
Whole body

MAIN SYMPTOMS
Weight loss, weakness, tiredness, slow healing

WHAT CAUSES IT
Low intake, poor absorption, illness, or increased needs

HOW IT IS DIAGNOSED
Nutrition assessment, weight history, examination, and blood tests

MAIN TREATMENT
Nutrition support and treatment of underlying causes

CAN IT BE CURED?
Sometimes - nutrition treatment can restore health

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

LONG-TERM OUTLOOK
Often improves, but ongoing illness may require long-term support

Overview

Malnutrition means that your body is not getting, absorbing, or using the nutrients it needs. These nutrients include energy from food, protein, vitamins, and minerals.

This article focuses mainly on undernutrition. Undernutrition can involve weight loss, loss of muscle, or a shortage of specific nutrients. It can affect people of any body size. A person can have overweight or obesity and still be malnourished, especially if they have lost weight quickly or eat a very limited range of foods.

Malnutrition is a condition rather than one single disease. It may develop because there is not enough food available, but it can also happen when illness reduces appetite, changes how the body uses nutrients, or prevents the gut from absorbing food properly.

The condition matters because the body needs energy and protein to maintain muscles, fight infection, heal wounds, and keep organs working. Children also need enough nutrition for growth and development. Recognising malnutrition early can make treatment easier and reduce the risk of complications.

Symptoms

Symptoms may develop gradually and can be easy to mistake for ageing, stress, or another health problem. Unplanned weight loss is an important sign, even if your weight remains within a usual or higher range.

Possible symptoms include:

Vitamin or mineral shortages can cause more specific symptoms. For example, iron deficiency may cause tiredness and shortness of breath. Vitamin B12 deficiency can cause numbness, balance problems, or memory changes. These symptoms have many possible causes, so tests may be needed.

In babies and children, signs can include poor growth, low energy, changes in behaviour, or delayed development. A child may cross downward through expected growth lines rather than simply appearing thin.

Some people have swelling in the legs or abdomen because of illness or severe protein deficiency. This extra fluid can hide weight loss.

- Losing weight without intending to
- Clothing, rings, or dentures becoming loose
- Reduced appetite or little interest in food
- Tiredness, weakness, or reduced physical ability
- Loss of muscle or body fat
- Feeling cold much of the time
- Poor concentration, low mood, or irritability
- Wounds taking longer to heal
- Frequent infections or slow recovery from illness
- Dry skin, brittle nails, or changes to the hair

Causes and risk factors

Malnutrition often results from several problems happening together.

You may eat less because of nausea, pain, breathlessness, depression, dementia, medication side effects, or loss of taste and smell. Dental problems, difficulty swallowing, and trouble preparing or buying food can also reduce intake.

Conditions that affect digestion or absorption may prevent nutrients from entering the body properly. Examples include coeliac disease, inflammatory bowel disease, chronic pancreatitis, and some operations on the stomach or bowel. Persistent vomiting or diarrhoea can have a similar effect.

Serious or long-term illnesses may increase the body's need for energy and protein while reducing appetite. Cancer, severe infections, lung disease, kidney disease, liver disease, and heart failure can contribute. Inflammation caused by illness may also speed muscle loss.

Risk can be higher if you:

Older adults are at particular risk because illness, reduced mobility, dental problems, and social isolation may occur together. However, weight loss is not an inevitable part of ageing.

- Have recently lost weight without trying
- Have eaten very little for several days
- Have problems chewing or swallowing
- Misuse alcohol or other substances
- Have a highly restricted diet
- Depend on others for shopping, cooking, or eating
- Are socially isolated or have difficulty affording food
- Have recently had major surgery or a long hospital stay

Diagnosis

There is no single blood test that confirms all forms of malnutrition. Assessment usually combines your weight history, food intake, symptoms, physical examination, and the effects of any illness.

A healthcare professional may ask about recent weight loss and whether you have been eating less than usual. Your weight and height may be used to calculate body mass index, or BMI. BMI compares weight with height, but it cannot show muscle loss or identify every person who is

malnourished.

Your arms, legs, skin, mouth, and abdomen may be examined for muscle loss, reduced body fat, swelling, or signs of vitamin and mineral deficiency. Grip strength or your ability to carry out daily activities may also be assessed.

Blood tests can look for problems such as anaemia, inflammation, dehydration, and vitamin or mineral deficiencies. They may also help find an underlying cause. Blood protein levels can change because of inflammation, liver disease, or fluid balance, so they do not diagnose malnutrition by themselves.

Further tests depend on your symptoms. They might include tests for poor absorption, scans, a swallowing assessment, or an examination of the stomach or bowel.

Children are assessed using growth charts that compare weight, length or height, and head growth with expected patterns for age and sex.

Treatment and management

Treatment aims to improve nutrition safely and address the reason it developed. A doctor, dietitian, nurse, speech and language therapist, dentist, pharmacist, or other professional may be involved.

If you can eat safely, treatment often begins with food. This may involve more frequent meals and snacks, higher-energy or higher-protein foods, and changes that make eating easier. Advice should take account of your preferences, culture, budget, symptoms, and medical conditions.

Oral nutrition supplements are drinks, puddings, or powders that provide energy, protein, vitamins, and minerals. They may be offered when ordinary food is not enough. They are usually used alongside meals rather than automatically replacing them.

Specific vitamin or mineral deficiencies may need supplements. Treatment should be based on your needs because unnecessary high-dose supplements can be harmful or interact with medicines.

If swallowing is difficult, a specialist can assess which food textures and drink consistencies are safer. Changing food or fluid texture without an assessment may reduce intake or fail to address the actual swallowing problem.

Tube feeding may be considered when the gut works but eating does not provide enough nutrition. Nutrition can be delivered through a tube passing into the stomach or through an opening made through the abdomen. If the gut cannot absorb or handle nutrition, nutrients can

sometimes be given into a vein. These approaches require clinical monitoring.

People who have eaten very little for a prolonged period can develop refeeding syndrome if nutrition is restarted too quickly. This is a potentially serious shift in fluids and minerals. People at risk need a planned increase in nutrition, blood tests, and close monitoring. Do not try to manage severe or prolonged food restriction alone.

Treatment may also include managing pain, nausea, constipation, depression, dental problems, or the underlying medical condition. Practical support with shopping, meals, finances, or eating assistance can be just as important.

Complications

Without enough nutrition, the body begins to use stored fat and muscle for energy. This can reduce strength, mobility, and independence.

Malnutrition can weaken immune function, making infections more likely or recovery slower. Wounds may heal poorly, and the risk of pressure injuries can increase. Reduced muscle strength may contribute to falls and can weaken the muscles used for breathing.

In children, prolonged malnutrition can affect physical growth, learning, and development. The outcome depends on the severity, duration, age at which it occurs, and whether treatment is available.

Severe malnutrition can affect heart function, body temperature, fluid balance, and levels of important minerals in the blood. It can become life-threatening, especially when combined with infection or dehydration.

Prevention

Not every case can be prevented. Malnutrition caused by severe illness, poor absorption, or treatment side effects may occur even when someone is eating carefully.

Risk can sometimes be reduced by noticing unplanned weight loss or reduced intake early. If possible, track meaningful changes in weight, appetite, swallowing, and how well you manage daily activities. Seek advice rather than waiting for major weight loss.

A balanced diet usually supplies the nutrients most people need. If illness has changed how much or what you can eat, general healthy-eating advice may not be enough. For example, someone at risk of undernutrition may need foods with more energy and protein, not low-calorie alternatives.

Regular nutrition screening in hospitals, care settings, and some community services can identify people who need a fuller assessment. Children should have their growth monitored through routine health care.

Living with it and what to expect

Recovery can take weeks or months. Appetite may improve before lost muscle and strength return. Gradual gains in energy, function, wound healing, and ability to manage everyday tasks can be as important as a change on the scales.

You may be asked to monitor your weight, food intake, symptoms, or use of supplements. Follow-up may include reviewing blood tests, strength, mobility, and whether the treatment plan remains practical. Children may need repeated growth measurements.

Some people recover after a short-term problem, such as an infection or operation. Others need long-term support because they have an ongoing condition affecting appetite, swallowing, absorption, or nutrient needs. Tube feeding or supplements may be temporary or longer term.

Weight may not tell the whole story. Swelling can hide weight loss, while increased weight does not always mean that muscle has returned. A nutrition review should consider how you feel and function as well as measurements.

Eating difficulties can affect social life and emotional wellbeing. Meals may become tiring or stressful, especially when food causes symptoms. Support from family, carers, mental health services, or community food programmes may help alongside medical nutrition care.

When to get medical help

Arrange a routine appointment if you have lost weight without trying, your appetite has remained poor, or you are finding it difficult to shop, cook, chew, or swallow. You should also seek assessment if your clothes are becoming loose, your strength is declining, or a child is not growing as expected.

Contact a healthcare professional promptly if you have persistent vomiting or diarrhoea, increasing weakness, new swelling, repeated falls, or signs of a vitamin deficiency such as numbness or balance problems.

Seek urgent medical care if you:

Call emergency services for severe breathing difficulty, unresponsiveness, a seizure, chest

pain, or other immediately life-threatening symptoms.

- Cannot keep fluids down
- Pass very little urine or have other signs of severe dehydration
- Become confused, unusually drowsy, or faint
- Have severe weakness or cannot stand safely
- Cough, choke, or struggle to breathe while eating or drinking

Common questions

Can I be malnourished if I am overweight?

Yes. Body weight alone does not show whether you are receiving enough protein, vitamins, or minerals. Rapid weight loss and muscle loss can occur at any starting weight.

How much weight loss is concerning?

Any unplanned weight loss that continues or comes with reduced eating, weakness, or illness deserves attention. A clinician will consider how much weight you have lost, how quickly it happened, and your overall health.

Will eating more fix malnutrition?

Sometimes, but not always. Poor absorption, swallowing problems, inflammation, and other illnesses may continue to affect nutrition. People with severe malnutrition may also need intake increased slowly to reduce the risk of refeeding syndrome.

Are nutrition shakes the same as meal replacements?

Not necessarily. Medical oral nutrition supplements are designed to provide concentrated energy and nutrients for people who cannot meet their needs through food. Some commercial shakes have a different nutritional balance. A dietitian or other qualified professional can help identify an appropriate option.

How long does recovery take?

It may take weeks to months, depending on the severity, underlying cause, and whether eating or absorption problems continue. Strength and muscle often take longer to recover than appetite or weight.

Does malnutrition always mean there is not enough food?

No. Food insecurity is an important cause, but illness, medication effects, swallowing difficulty, poor absorption, disability, and increased nutrient needs can also lead to malnutrition.

Sources

- National Institute for Health and Care Excellence. Nutrition support for adults: oral nutrition support, enteral tube feeding and parenteral nutrition (CG32) . Updated 2017.
- World Health Organization. Malnutrition . Fact sheet.
- National Health Service. Malnutrition . Reviewed 2023.
- Cederholm T, Barazzoni R, Austin P, et al. ESPEN guidelines on definitions and terminology of clinical nutrition . Clinical Nutrition . 2017;36(1):49-64.
- Cederholm T, Jensen GL, Correia MITD, et al. GLIM criteria for the diagnosis of malnutrition: a consensus report from the global clinical nutrition community . Journal of Parenteral and Enteral Nutrition . 2019;43(1):32-40.
- da Silva JSV, Seres DS, Sabino K, et al. ASPEN consensus recommendations for refeeding syndrome . Nutrition in Clinical Practice . 2020;35(2):178-195.