CONDITION

Tropical sprue

Tropical sprue is a long-lasting intestinal condition that causes poor nutrient absorption after living in or visiting some tropical regions.

WHAT IT IS
Intestinal inflammation causing poor nutrient absorption

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Ongoing diarrhoea, weight loss, tiredness, abdominal discomfort

WHAT CAUSES IT
Likely intestinal infection; exact cause unknown

HOW IT IS DIAGNOSED
Small-bowel biopsy after excluding similar conditions

MAIN TREATMENT
Antibiotics and replacement of missing nutrients

CAN IT BE CURED?
Yes - treatment usually works, though relapse can occur

IS IT AN EMERGENCY?
Sometimes - with severe dehydration or fainting

LONG-TERM OUTLOOK
Most people recover with complete treatment

Overview

Tropical sprue is a condition in which the lining of the small intestine becomes inflamed and cannot absorb nutrients properly. This is called malabsorption .

The small intestine normally absorbs vitamins, minerals, fats, carbohydrates, and protein from food. In tropical sprue, its surface may become flatter and less effective. This can lead to diarrhoea, weight loss, and shortages of nutrients such as folate and vitamin B12.

The condition is linked to living in or spending time in certain tropical areas, particularly parts of South and Southeast Asia and the Caribbean. It has become less common in some places. It usually occurs after a longer stay, but symptoms may begin during travel or after returning home.

Tropical sprue matters because untreated malabsorption can cause anaemia, poor nutrition, and nerve or bone problems. It can usually be treated with antibiotics and replacement of missing nutrients.

Symptoms

Symptoms may develop gradually. They can continue for weeks or months and may remain after you leave the tropical region.

Common symptoms include:

Greasy stools may float, smell unusually strong, or be difficult to flush. This can happen when the intestine does not absorb fat properly.

Nutrient shortages can cause additional symptoms. Folate or vitamin B12 deficiency may lead to anaemia, which can cause pale skin, breathlessness, headaches, or a racing heartbeat. Vitamin B12 deficiency may also cause numbness, tingling, balance problems, or difficulty thinking clearly.

Children with prolonged malabsorption may not gain weight or grow as expected.

These symptoms have many possible causes. Having them after tropical travel does not mean that you have tropical sprue.

- Frequent loose, pale, or greasy stools
- Abdominal cramps, bloating, or excess wind
- Loss of appetite and unplanned weight loss
- Tiredness, weakness, or reduced stamina
- Nausea or general abdominal discomfort

Causes and risk factors

The exact cause of tropical sprue is not fully understood. Evidence suggests that an intestinal infection, followed by continuing changes in gut bacteria and inflammation, may be involved. No single bacterium, virus, or parasite has been shown to cause every case.

The inflammation damages the tiny finger-like projections lining the small intestine. These projections are called villi . They create a large surface for absorbing nutrients. When they become shortened or flattened, absorption becomes less effective.

Tropical sprue is associated with residence in certain tropical regions. Longer exposure

appears to matter, so it has historically been more closely linked to local residents, expatriates, and long-term visitors than to brief holidays. However, travel history alone cannot establish the diagnosis.

It is not considered an inherited condition. It also does not appear to spread directly from person to person in the way that a typical stomach virus does.

Other intestinal conditions are more common causes of persistent diarrhoea after travel. These include parasitic infections, ongoing bacterial infection, lactose intolerance after gastroenteritis, and coeliac disease.

Diagnosis

There is no single test that proves tropical sprue by itself. Diagnosis depends on the overall pattern: compatible symptoms and travel or residence history, evidence of malabsorption, changes in the small intestine, and careful exclusion of other causes.

A healthcare professional may ask where you have lived or travelled, how long symptoms have lasted, whether you have lost weight, and whether you recently took antibiotics like amoxicillin or doxycycline . They may check for dehydration, mouth sores, weight loss, abdominal tenderness, or signs of anaemia.

Blood tests may look for:

Stool samples are important because persistent diarrhoea after travel is often caused by an infection. Testing may look for bacteria and parasites, including Giardia . More than one sample may sometimes be needed.

Testing for coeliac disease is usually considered. Coeliac disease is an immune reaction to gluten that can produce similar symptoms and intestinal changes. Testing is most reliable while you are still eating gluten, so it is best not to start a gluten-free diet before discussing testing.

An upper endoscopy may be needed. During this procedure, a thin flexible camera passes through the mouth into the first part of the small intestine. Small tissue samples, called biopsies, are taken. Tropical sprue can cause shortened villi and inflammatory cells, but these findings are not unique to this condition.

Doctors may also consider inflammatory bowel conditions, medication effects, pancreatic problems, bacterial overgrowth, HIV-related conditions, or Whipple's disease. Improvement after appropriate treatment can provide further support for the diagnosis.

- Anaemia and changes in blood cell size

- Low folate, vitamin B12, iron, or protein levels
- Salt and mineral disturbances caused by diarrhoea
- Signs of inflammation or another medical condition

Treatment and management

Treatment usually combines antibiotics with nutritional support. The goals are to control the suspected bacterial component, restore the intestinal lining, correct nutrient shortages, and prevent dehydration.

Antibiotic choice and treatment length are based on factors such as where the condition was acquired, previous treatment, pregnancy, allergies, and local antibiotic resistance. Treatment may be longer than a standard course used for short-term travellers' diarrhoea. It is important to complete the course provided unless a healthcare professional advises otherwise.

Folate is commonly replaced because deficiency is frequent and may contribute to intestinal changes. Vitamin B12, iron, and other vitamins or minerals may also be needed when tests show that they are low. Folate can improve anaemia while an untreated vitamin B12 deficiency continues to harm the nerves, so both need to be assessed.

Severe diarrhoea may require oral rehydration solution, which replaces water and salts in suitable proportions. People who cannot drink enough or who have major salt disturbances may need treatment in hospital.

Food can usually be continued as tolerated. Smaller meals may be easier while symptoms are active. Temporary lactose intolerance can occur when the intestinal lining is damaged, so dairy products may worsen bloating or diarrhoea for some people. A restrictive diet does not cure tropical sprue and can make poor nutrition worse.

Follow-up may include repeat blood tests, weight checks, and a review of stool frequency. Persistent symptoms may mean that the original diagnosis needs to be reconsidered, treatment was incomplete, or another condition is present.

Complications

Without treatment, continuing malabsorption can lead to significant nutritional problems.

Possible complications include:

Severe vitamin B12 deficiency can sometimes cause lasting nerve damage if treatment is delayed. Early recognition and appropriate replacement reduce this risk.

- Anaemia from folate, vitamin B12, or iron deficiency
- Numbness, tingling, or balance problems from vitamin B12 deficiency
- Muscle weakness and loss of body weight
- Reduced bone strength from calcium or vitamin D deficiency
- Dehydration and abnormal levels of body salts
- Poor growth or delayed development in children

Prevention

There is no proven vaccine or specific measure that reliably prevents tropical sprue. The condition is not inherited, so genetic testing or family screening does not prevent it.

Because an intestinal infection may help trigger it, careful food, water, and hand hygiene in areas with limited sanitation may reduce exposure to organisms that cause diarrhoea. This includes using safe drinking water and avoiding food that has not been cooked or stored safely. These precautions prevent many travel-related infections, but they have not been shown to prevent every case of tropical sprue.

Preventive antibiotics are not routinely used for tropical sprue. Unnecessary antibiotics can cause side effects and encourage antibiotic-resistant bacteria.

Living with it and what to expect

Many people begin to feel better after treatment starts, but recovery of the intestinal lining and nutritional stores may take longer than improvement in diarrhoea. Energy, appetite, and weight often return over weeks or months rather than all at once.

Blood tests may remain abnormal after bowel symptoms improve. Follow-up is therefore important until anaemia and vitamin levels have recovered. Vitamin B12 replacement may need to continue for a period determined by the severity of the deficiency and how well absorption returns.

Relapse can occur, especially after incomplete treatment or continued residence in an affected region. If diarrhoea or weight loss returns, another assessment is needed rather than automatically repeating old medication. A new infection or a different intestinal condition may be responsible.

Most people can return to their usual diet and activities after recovery. Tropical sprue does not

usually require lifelong dietary restriction. There is generally no need to avoid contact with family, friends, or colleagues.

When to get medical help

Arrange a routine medical appointment if you have diarrhoea that continues after tropical travel or residence, especially with weight loss, tiredness, greasy stools, or reduced appetite. Mention all recent and past travel, even if symptoms began after you returned.

Seek prompt medical advice if you have:

Get emergency help for fainting, confusion, severe weakness, difficulty breathing, chest pain, or signs of severe dehydration. A child who is unusually sleepy, has sunken eyes, produces very little urine, or cannot keep fluids down also needs urgent assessment.

- Diarrhoea that is worsening or prevents normal eating and drinking
- Very little urine, a dry mouth, or dizziness when standing
- Blood in the stool or black, tar-like stool
- Fever with continuing diarrhoea
- New numbness, tingling, weakness, or balance problems
- Noticeable weight loss or symptoms of anaemia

Common questions

Is tropical sprue the same as coeliac disease?

No. Both can flatten the lining of the small intestine and cause malabsorption, but their causes and treatment are different. Coeliac disease is an immune reaction to gluten and usually requires a lifelong gluten-free diet. Tropical sprue is linked to exposure in certain tropical regions and is generally treated with antibiotics and nutrient replacement.

Can I get tropical sprue after a short holiday?

It is more strongly linked to living in or spending a long period in an affected area, but symptoms following shorter travel still need assessment. In short-term travellers, an ongoing bacterial or parasitic infection is often a more likely explanation.

Is tropical sprue contagious?

It is not considered directly contagious. Although an infection may help trigger the condition, there is no single confirmed organism, and people living with someone who has tropical sprue

do not usually need testing unless they have symptoms.

How long does recovery take?

Diarrhoea may improve before weight, energy, blood counts, and vitamin levels return to normal. Full recovery can take weeks or months. The timing is influenced by how long symptoms were present and the severity of nutrient deficiencies.

Can tropical sprue come back?

Yes. Relapse is possible, particularly if treatment was not completed or exposure continues. Recurrent symptoms should be investigated because another infection or condition can look similar.

Do I need a special diet?

There is no specific diet that cures tropical sprue. A balanced, nourishing diet supports recovery. Some people temporarily tolerate lactose or fatty foods poorly, but long-term restriction should not be assumed unless there is another reason for it.

Sources

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