CONDITION

Mesenteric artery ischemia

Mesenteric artery ischemia is reduced blood flow through arteries that supply the intestines.

WHAT IT IS
Reduced blood flow through arteries supplying the intestines

BODY SYSTEM
Digestive, heart and circulation

MAIN SYMPTOMS
Abdominal pain, nausea, diarrhea, unintended weight loss

WHAT CAUSES IT
Artery clots, plaque buildup, or severely reduced blood flow

HOW IT IS DIAGNOSED
CT angiography, sometimes catheter angiography

MAIN TREATMENT
Restoring blood flow and treating the cause

CAN IT BE CURED?
Sometimes - restoring blood flow resolves ischemia

IS IT AN EMERGENCY?
Sometimes - sudden severe abdominal pain needs emergency care

LONG-TERM OUTLOOK
Often good early; delayed acute ischemia can be fatal

Overview

Mesenteric artery ischemia means that part of the intestine is not receiving enough oxygen-rich blood. The mesenteric arteries are blood vessels that supply the small and large intestines.

The condition can be acute or chronic.

Acute mesenteric ischemia begins suddenly, often because an artery becomes blocked or blood flow drops sharply. Without prompt treatment, intestinal tissue can become permanently damaged. This is a medical emergency.

Chronic mesenteric ischemia develops more gradually. It is usually caused by fatty deposits, called plaque, narrowing one or more arteries. Pain often occurs after eating because digestion

increases the intestine's need for blood. Over time, you may eat less to avoid pain and lose weight.

Mesenteric artery ischemia is different from mesenteric venous thrombosis, which is a clot in a vein draining blood from the intestine. Both can reduce intestinal circulation, but their causes and treatment may differ.

Symptoms

Symptoms depend on whether blood flow falls suddenly or slowly.

Acute mesenteric ischemia may cause:

Early in the condition, the pain may feel much worse than expected from an abdominal examination. This pattern can be an important clue, but it is not always present. As intestinal injury progresses, the abdomen may become very tender, firm, or swollen.

Chronic mesenteric ischemia commonly causes pain in the middle or upper abdomen after meals. It may start within an hour of eating and continue for some time. Larger meals may cause more pain.

Other chronic symptoms can include unintended weight loss, diarrhea, nausea, bloating, or avoiding food because eating triggers pain. These symptoms have many possible causes, so testing is needed to find out what is happening.

- Sudden, severe, or constant abdominal pain
- Nausea, vomiting, or diarrhea
- Blood in the stool
- A swollen or tender abdomen

Causes and risk factors

A sudden artery blockage may be caused by an embolus. This is a clot or other material that forms elsewhere in the body and travels through the bloodstream. The clot may come from the heart, particularly in someone with an irregular heartbeat called atrial fibrillation.

A clot can also form directly inside a mesenteric artery. This is more likely when the artery has already been narrowed by atherosclerosis, which is the buildup of fatty plaque inside artery walls.

In some critically ill people, intestinal blood flow becomes dangerously low without a complete

blockage. This is called non-occlusive mesenteric ischemia. It can happen during severe heart failure, shock, overwhelming infection, or another condition that lowers blood pressure and circulation. Some medicines that strongly narrow blood vessels may contribute in these settings.

Chronic mesenteric ischemia is most often linked to atherosclerosis. Risk factors include:

Less common causes include inflammation of blood vessels, called vasculitis; a tear within an artery wall, called dissection; and injury to an artery. Some clotting disorders can also increase the risk of a blockage.

Having a risk factor does not mean that you have or will develop mesenteric artery ischemia.

- Smoking
- High blood pressure
- High cholesterol
- Diabetes
- Older age
- A history of artery disease elsewhere in the body

Diagnosis

Diagnosis begins with your symptoms, medical history, medicines, heart rhythm, and an examination. Because the symptoms can resemble other abdominal conditions, imaging is usually essential.

CT angiography is the main test for suspected acute mesenteric ischemia. It uses a CT scanner and injected contrast material to show the intestinal arteries, blood flow, and signs of injured bowel. It can also identify many other causes of abdominal pain.

A catheter angiogram may be used when the diagnosis remains uncertain or when an artery procedure is planned. A thin tube is guided through a blood vessel, and contrast is injected directly into the arteries. In some cases, treatment can be performed during the same procedure.

Doppler ultrasound can measure blood flow through abdominal arteries. It may help assess suspected chronic ischemia, although bowel gas, body shape, and the operator's experience can affect the images.

Blood tests may show inflammation, dehydration, or tissue injury, but they cannot confirm or safely rule out mesenteric ischemia by themselves. A normal lactate level, which measures a

substance that may rise when tissues lack oxygen, does not exclude early acute ischemia.

Treatment and management

Acute mesenteric ischemia requires immediate hospital treatment. The priorities are to support circulation, restore intestinal blood flow, and identify bowel that has been permanently damaged.

Initial care may include intravenous fluids, pain relief, and antibiotics like amoxicillin or doxycycline . A blood thinner like warfarin or apixaban may be used for some types of clot, depending on the cause and bleeding risk.

Blood flow may be restored with an endovascular procedure performed from inside the artery. Options include removing or dissolving a clot, widening the artery with a balloon, or placing a stent to hold it open.

Open surgery may be needed to remove a clot, bypass a blockage, or examine the bowel directly. Any section of intestine that has died must be removed. A second operation may sometimes be needed to check whether the remaining intestine has recovered.

For chronic mesenteric ischemia that is causing symptoms, treatment usually focuses on restoring blood flow. Angioplasty and stenting are commonly used. Open bypass surgery may be more suitable for some patterns of artery disease or when an endovascular procedure is unsuccessful.

Care also addresses the underlying cause. This may involve managing cholesterol, blood pressure, diabetes, smoking, heart rhythm problems, or a tendency to form clots. Medicines after a procedure are chosen according to the cause and the type of repair. Do not start aspirin or another blood thinner solely for abdominal symptoms without medical advice.

Nutritional support may be helpful if pain has led to weight loss. It does not replace restoring blood flow when an important artery narrowing is causing symptoms.

Complications

Severely reduced blood flow can cause intestinal infarction, meaning that part of the bowel dies. This can lead to a hole in the bowel, inflammation of the abdominal lining, or a serious body-wide response to infection.

Removing a large amount of small intestine can cause short bowel syndrome. In this condition, the remaining bowel has difficulty absorbing enough fluids and nutrients. Long-term nutrition

support may be needed.

Chronic ischemia can lead to malnutrition and continued weight loss. After treatment, an artery or stent can narrow again, and symptoms may return.

Prevention

Mesenteric artery ischemia cannot always be prevented. Sudden embolic clots, artery dissections, and low blood flow during critical illness may occur despite appropriate care.

You may be able to lower the risk related to atherosclerosis by not smoking and by working with your healthcare team to manage blood pressure, cholesterol, and diabetes. Regular activity and a heart-healthy eating pattern can support overall artery health when these are safe for you.

If you have atrial fibrillation or a known clotting condition, take prescribed medicines as directed. Do not stop a blood thinner without speaking with the clinician who manages it.

These steps reduce risk but cannot guarantee prevention.

Living with it and what to expect

Recovery after acute mesenteric ischemia depends on how quickly blood flow was restored and whether any intestine had to be removed. Some people recover after an artery procedure and a hospital stay. Others need longer rehabilitation, changes in eating, or ongoing nutrition support.

After treatment for chronic ischemia, meal-related pain may improve as blood flow returns. Appetite and weight can recover gradually. Improvement is not always immediate, especially after a period of significant weight loss.

The underlying artery disease does not disappear when a blockage is repaired. Follow-up may include symptom reviews and imaging to check the treated artery or stent. Managing smoking, cholesterol, blood pressure, diabetes, and heart conditions remains important.

Contact your healthcare team promptly if meal-related pain, food avoidance, diarrhea, or weight loss returns. Recurrent symptoms can mean that an artery has narrowed again, although other digestive conditions can cause similar problems.

Many people return to regular activities after successful treatment. The long-term course is less predictable when there has been extensive bowel damage or widespread artery disease.

When to get medical help

Call emergency services for sudden severe or rapidly worsening abdominal pain, especially when it is constant or accompanied by vomiting, bloody stool, fainting, confusion, cold or clammy skin, or a swollen and rigid abdomen.

Do not wait for the pain to settle if you have been told you are at increased risk of intestinal ischemia. Acute damage can progress even when early examination findings seem mild.

Arrange a prompt medical assessment for repeated pain after meals, unexplained food avoidance, ongoing diarrhea, or unintended weight loss. These are not always emergencies, but they should not be ignored.

If you already have chronic mesenteric ischemia, report returning symptoms promptly. Treat sudden severe pain as an emergency rather than waiting for a routine appointment.

Common questions

Is mesenteric artery ischemia the same as intestinal ischemia?

Mesenteric artery ischemia is one type of intestinal ischemia. Intestinal ischemia can also result from a clot in a mesenteric vein or from severely reduced circulation without a fully blocked artery.

Can mesenteric artery ischemia go away on its own?

A significant artery blockage or narrowing should not be expected to resolve without assessment. Symptoms may briefly improve even while the intestine remains at risk. Sudden severe abdominal pain needs emergency care.

How quickly does it develop?

Acute ischemia can develop over minutes or hours. Chronic ischemia usually develops over months or years as arteries gradually narrow. A chronic narrowing can sometimes clot suddenly and become an acute emergency.

Will I need surgery?

Not everyone needs open surgery. Some blockages can be treated through a catheter with clot removal, angioplasty, or a stent. Open surgery is more likely when bowel damage is suspected, the artery cannot be treated from inside, or a bypass is needed.

What can I eat if meals cause pain?

Changing food does not remove an artery blockage. Smaller meals may cause less discomfort for some people, but repeatedly restricting food can worsen weight loss and malnutrition.

Persistent meal-related pain needs medical assessment rather than diet changes alone.

Can mesenteric artery ischemia come back after treatment?

Yes. A treated artery or stent can narrow again, and atherosclerosis can affect other arteries. Follow-up and attention to returning symptoms help identify problems earlier.

Sources

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