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What is exocrine pancreatic insufficiency?

Exocrine pancreatic insufficiency is caused by a problem with the pancreas, an organ that plays an important role in digestion.

Normally, the pancreas produces enzymes (substances that trigger chemical reactions in the body) that break down food and allow it to be absorbed. If the pancreas can't provide these enzymes or they don't work normally, digestion and absorption cannot happen as they should. This can lead to troublesome symptoms, even malnutrition.

Symptoms of EPI are similar to other digestive problems, so the condition can be difficult to recognize. Once it is identified, though, it can be treated.

After a diagnosis has been made, you and your health care provider can discuss a treatment plan that will help you feel better. This plan may include taking enzymes to replace those that the pancreas is no longer providing. These enzymes allow food to be digested and nutrients to be absorbed into the body. Eating a nutritious diet and taking supplements may also be advised.

Causes

EPI often results from damage to the pancreas from diseases such as chronic pancreatitis, pancreatic cancer or cystic fibrosis. Removal of some or all of the pancreas or surgery to other parts of the digestive tract (such as the intestines or stomach) may also cause it.

Read AGA's full guide for patients with exocrine pancreatic insufficieny

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Signs and symptoms of exocrine pancreatic insufficiency

EPI symptoms can range from mild to severe.

The most common symptoms include:

- Gas and bloating.
- Abdominal pain.
- Greasy, oily bowel movements (stools).
- Diarrhea (very loose stools).
- Foul-smelling stools.
- Unexplained weight loss.

Tests for exocrine pancreatic insufficiency

If EPI is suspected, certain tests may be done to help diagnose it. You and your health care provider can discuss which tests are needed and in what order.

If you take any medications, you may be asked to stop using them for a time before these tests. For tests that require stool samples, you will be given instructions for how best to collect them. You will likely be given a device to collect the sample and a special container to put the sample in. Be sure not to get any toilet paper, toilet water or urine in the stool sample.

— Fecal elastase tests

This test is done to look for an enzyme called elastase that is released from the pancreas during digestion. Normally, this enzyme will be found in stool. If little or none is found, it can be a sign of EPI.

For this test, you will be asked to collect one sample of formed stool to send to a lab. The amount of elastase in the stool is then measured. Only formed stool should be used (no liquid stool). If liquid stool is submitted, this test may not be accurate, because dilution can cause the result to appear falsely abnormal.

+ Fecal fat test

Too much fat in the stool is a sign that food is not being broken down and absorbed properly. There are two kinds of fecal fat tests.

Qualitative test: For this test, one sample of stool is collected and sent to a lab. This sample is studied under a microscope and the amount of fat is assessed.

Quantitative fecal fat: For this test, you are asked to eat a specific amount of fat over several days. Then, stool samples are collected for two to four days. These samples are then studied and measured in a lab for fat.

+ Secretin stimulation test (also called pancreatic function test)

When food enters the duodenum from the stomach, a hormone called secretin is released. This hormone triggers the pancreas to send digestive enzymes into the duodenum. The secretin stimulation test checks whether the pancreas has a normal response to secretin.

During the test, secretin is given by intravenous (IV) line. Then, fluid from the duodenum is collected and tested. The fluid is most commonly collected during a procedure called endoscopy. If you have this test, your health care provider can tell you more about how it will be done.

Treatments for exocrine pancreatic insufficiency

The main treatment for EPI is replacing the enzymes that are no longer provided by the pancreas. This is called pancreatic enzyme replacement therapy (PERT).

Pancreatic enzyme replacement therapy

PERT involves taking pancreatic enzymes with every meal and snack. These digest the food you eat so you no longer experience symptoms.

To get the most out of PERT, follow all the instructions you are given, including the following:

- Take all the capsules at the start of the meal, with the first mouthful of food. For a large or long meal, you can take half at the start and half at the end.
- Swallow the capsules with a cold (not hot) drink.
- Do not take capsules on an empty stomach.
- If you have any side effects from the enzymes (such as constipation or stomach upset), tell your health care provider. An adjustment in dosage may help. Side effects also often lessen

or go away with time.

- Aim to eat a nutritious diet. A diet high in vegetables, fruits, whole grains and healthy proteins is best.
- Do not avoid eating fat. Fat is needed for absorption of many essential vitamins. For some diseases (such as cystic fibrosis), a higher-fat diet is helpful. Work with your health care provider to determine the level of fat in your diet that is best for you.
- Some patients have better results eating smaller meals more often. Pay attention to your body and make adjustments that work for you.
- Talk to your health care provider before taking any new medications, supplements or herbal remedies. In some cases, these may affect your pancreas.

This medication is made by using extracts from the pancreas glands of pigs. If you have reservations related to religious or dietary concerns, please discuss this with your health care provider.

> Even with treatment, the body may still have trouble absorbing certain nutrients, causing vitamin and mineral deficiencies. In these cases, vitamin and mineral supplements may be needed. Talk with your health care provider about whether you need supplements.

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