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CT angiography - abdomen and pelvis

CT angiography combines a CT scan with the injection of dye. This technique is able to create pictures of the blood vessels in your belly (abdomen) or pelvis area. CT stands for computed tomography.

How the Test is Performed

You will lie on a narrow table that slides into the center of the CT scanner. Most often, you will lie on your back with your arms raised above your head.

Once you are inside the scanner, the machine's x-ray beam rotates around you. Modern "spiral" scanners can perform the exam without stopping.

A computer creates separate images of the belly area, called slices. These images can be stored, viewed on a monitor, or printed on film. Three-dimensional models of the belly area can be made by stacking the slices together.

You must be still during the exam, because movement causes blurred images. You may be told to hold your breath for short periods of time.

The scan should take less than 30 minutes.

How to Prepare for the Test

You need to have a special dye, called contrast, put into your body before some exams. Contrast helps certain areas show up better on the x-rays.

- Contrast can be given through a vein (IV) in your hand or forearm. If contrast is used, you also may be asked not to eat or drink anything for 4 to 6 hours before the test.
- You may also have to drink a different contrast before the exam. When you drink the contrast will depend on the type of exam being done. Contrast has a chalky taste, although some have flavors so that they taste a little better. The contrast will pass out of your body through your stools.
- Let your health care provider know if you have ever had a reaction to contrast. You may need to take medicines before the test in order to safely receive this substance.
- Before receiving the contrast, tell your provider if you take the diabetes medicine metformin (Glucophage). People taking this medicine may have to stop taking it for a while before the test.

The contrast can worsen kidney function problems in patients with poorly functioning kidneys. Talk to your provider if you have a history of kidney problems.

Too much weight can damage the scanner. If you weigh more than 300 pounds (135 kilograms), talk to your provider about the weight limit before the test.

You will need to take off your jewelry and wear a hospital gown during the study.

How the Test will Feel

Lying on the hard table may be a little bit uncomfortable.

If you have contrast through a vein, you may have a:

- Slight burning sensation
- Metallic taste in your mouth
- Warm flushing of your body

These feelings are normal and go away within a few seconds.

Why the Test is Performed

A CT angiography scan quickly makes detailed pictures of the blood vessels inside your belly or pelvis.

This test may be used to look for:

- Abnormal widening or ballooning of part of an artery (aneurysm)
- The source of bleeding that starts in the intestines or elsewhere in the belly or pelvis
- Masses and tumors in the abdomen or pelvis, including cancer, when needed to help plan treatment
- The cause of pain in the abdomen thought to be due to narrowing or blockage of one or more of the arteries that supply the small and large intestines
- Narrowing of blood vessels that supply the legs and feet that may cause pain in the legs
- Narrowing of the arteries that carry blood to the kidneys that can cause high blood pressure (renovascular hypertension)

The test also may be used before:

- Surgery on blood vessels of the liver
- Kidney transplant

Normal Results

Results are considered normal if no problems are seen.

What Abnormal Results Mean

The abnormal results may show:

- The source of bleeding inside the belly or pelvis
- Narrowing of the artery that supplies the kidneys
- Narrowing of arteries that supply the intestines

- Narrowing of arteries that supply the legs
- Ballooning or swelling of an artery (aneurysm), including the aorta
- A tear in the wall of the aorta

Risks

Risks of CT scans include:

- Allergy to contrast dye
- Exposure to radiation
- Damage to kidneys from contrast dye

CT scans expose you to more radiation than regular x-rays. Many x-rays or CT scans over time may increase your risk for cancer. However, the risk from any one scan is small. Talk to your provider about this risk and the benefit of the test for getting a correct diagnosis of your medical problem. Most modern scanners use techniques to use less radiation.

Some people have allergies to contrast dye. Let your provider know if you have ever had an allergic reaction to injected contrast dye.

The most common type of contrast given into a vein contains iodine. If you have an iodine allergy, you may have nausea or vomiting, sneezing, itching, or hives if you get this type of contrast.

If you must be given such contrast, your provider may give you antihistamines (such as Benadryl) or steroids before the test.

Your kidneys help remove iodine out of the body. You may need extra fluids after the test to help flush the iodine out of your body if you have kidney disease or diabetes.

Rarely, the dye may cause a life-threatening allergic response called anaphylaxis. Tell the scanner operator right away if you have any trouble breathing during the test. Scanners come with an intercom and speakers, so the operator can hear you at all times.

Alternative Names

Computed tomography angiography - abdomen and pelvis; CTA - abdomen and pelvis; Renal artery - CTA; Aortic - CTA; Mesenteric CTA; PAD - CTA; PVD - CTA; Peripheral vascular disease - CTA; Peripheral artery disease; CTA; Claudication - CTA

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