



# Your Guide To: Renal Angiogram



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## What is a renal angiogram?

An angiogram, also called an arteriogram, is an x-ray image of the blood vessels. It is performed to evaluate various vascular conditions, such as an aneurysm (ballooning of a blood vessel), stenosis (narrowing of a blood vessel), or blockages.

A renal angiogram is an angiogram of the blood vessels of the kidneys. A renal angiogram may be used to assess the blood flow to the kidneys.

## How is a renal angiogram performed?

In order to obtain an x-ray image of a blood vessel, an intravenous (IV) access is necessary so that a contrast dye can be injected into the body's circulatory system. This contrast dye causes the blood vessels to appear opaque on the x-ray image, thus allowing the physician to better visualize the structure of the vessel(s) under examination.

Many arteries can be examined by an angiogram, including the arterial systems of the legs, kidneys, brain, and heart. For a renal angiogram, IV access may be obtained through a large artery such as the femoral artery in the groin. Once IV access is obtained, the contrast dye is injected and a series of x-ray pictures is made. These x-ray images show the arterial, venous, and capillary blood vessel structures and blood flow in the kidneys.

## What are the reasons for the procedure?

A renal angiogram may be performed to detect abnormalities of the blood vessels of the kidneys. Such abnormalities may include, but are not limited to, the following:

- aneurysms
- stenosis or vasospasm (spasm of the blood vessel)
- arteriovenous malformation (an abnormal connection between the arteries and veins)
- thrombosis (a blood clot within a blood vessel) or occlusion (blockage of a blood vessel)
- renovascular hypertension (high blood pressure in the kidneys' blood vessels)

Other conditions that may be detected by a renal angiogram include tumors, hemorrhage (bleeding), complications of kidney transplantation, and the invasion of a tumor into the blood vessels. Kidney failure and other chronic kidney diseases may be evaluated by a renal angiogram. A renal angiogram may be recommended after a previous procedure,

such as a CT scan, indicates the need for further information.

## What is renal vascular disease?

Renal vascular disease is the name given to a variety of complications that affect the arteries and veins of the kidneys. These complications affect the blood circulation of the kidneys, and may cause damage to the tissues of the kidneys, kidney failure, and/or high blood pressure.

Vascular conditions affecting the renal arteries and veins include the following:

- **Renal artery stenosis:** Renal artery stenosis is a blockage of an artery to the kidneys. It may cause kidney failure and hypertension (high blood pressure).
- **Renal artery thrombosis:** Renal artery thrombosis is the formation of a clot in a renal artery. A thrombosis of a renal artery may cause kidney failure because of blocked blood flow to the kidney.
- **Renal artery aneurysm:** A renal artery aneurysm is a bulging, weakened area in the wall of an artery to the kidney. Most of these aneurysms are small (less than two centimeters, or about three-quarters of an inch) and without symptoms. Renal artery aneurysms are uncommon and are generally discovered during diagnostic procedures performed in relation to other conditions.
- **Atheroembolic renal disease:** Atheroembolic renal disease occurs when a piece of plaque from the aorta and/or other large arteries breaks off and travels through the bloodstream, blocking small arteries such as the renal arteries. Atheroembolic renal disease is becoming a common cause of renal insufficiency (poor kidney function) in the elderly.
- **Renal vein thrombosis:** A renal vein thrombosis is the formation of a clot in a vein to the kidney.

## What are the risk factors for renal vascular disease?

- age
- female gender
- atherosclerosis
- hypertension, particularly new onset of hypertension in an older person
- smoking



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- high cholesterol
- diabetes

A risk factor is anything that may increase a person's chance of developing a disease. It may be an activity, such as smoking, diet, family history, or many other things. Different diseases have different risk factors.

Although these risk factors increase a person's risk, they do not necessarily cause the disease. Some people with one or more risk factors never develop the disease, while others develop disease and have no known risk factors. Knowing your risk factors to any disease can help to guide you into the appropriate actions, including changing behaviors and being clinically monitored for the disease.