

## Kidney Diseases

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### Annotation:

This article describes the anatomical location, physiological importance, and diseases of the kidneys. It discusses the challenges of late diagnosis, the link between kidney diseases and cardiovascular complications, and the economic difficulties of treatment such as hemodialysis. The main causes of kidney diseases are identified as obesity, diabetes mellitus, high blood pressure, harmful habits, and metabolic disorders. The article also highlights symptoms of kidney dysfunction and kidney stone disease (nephrolithiasis).

### Keywords:

Kidney anatomy, kidney diseases, nephrology, hemodialysis, obesity, diabetes mellitus, hypertension, kidney stone disease, nephrolithiasis, prevention.

**Anatomy:** The kidneys are a paired parenchymal organ, from Latin (ren) and Greek -nephros. The kidneys are located behind the peritoneum (the head of the peritoneum) behind the abdominal cavity. The location of the kidneys in the head of the abdomen is different, that is, the right kidney is located lower than the left kidney. The reason for this location is that the liver is located above the right kidney. The upper end of the left kidney corresponds to the middle of the eleventh thoracic vertebra, and the lower end to the upper edge of the third lumbar vertebra. The upper end of the right kidney corresponds to the lower edge of the eleventh thoracic vertebra, and the lower edge to the upper edge of the third lumbar vertebra. The lower edges of the quadratus abdominalis muscles are located on the posterior surface of both kidneys. The liver touches 2/3 of the right kidney, and the right turn of the colon touches 1/3 of the right kidney. The pancreas touches the upper 1/3 of the left kidney, and the small intestine loops touch the lower 1/3. The spleen touches the lower 1/3 of the spleen. The left turn of the large intestine touches it. The right kidney is close to the inferior vena cava, and the left kidney is close to the abdominal aorta. There are 3 capsules in the kidney: 1 renal capsule, 2 fatty capsules, 3 para renal capsules. The kidneys are more likely to get colds than those who have studied the head of the abdomen, because the parietal sheet of the peritoneum is only on the front side. It touches the back side, and it touches the back muscles. That is, the kidneys are not completely covered by the peritoneum. There are segments like the lungs and liver in the kidneys, that is, there are 5 segments in each kidney, for a total of 10 segments. Global significance: often patients accidentally find out that they have a stage of kidney disease, they come to the doctor complaining of a completely different problem, the doctor even confuses the kidneys with each other (mutes - organs), because the initial symptoms of the disease in some cases only appear when the kidney fails appears. Of course, the doctor can do a blood test to determine the presence of the disease during the examination, but for this, this analysis must fall into the hands of a nephrologist, which is very rare. Most patients find out about the existence of such a doctor when they are first admitted to the hospital with a diagnosis of myocardial infarction. The fact is that when the kidneys do not function normally, the amount of calcium in the blood increases sharply, and calcium tends to settle on the walls of blood vessels. As a result, the blood vessels narrow. Most patients with kidney failure due to this cause die at the age of 30-40. In this case, the main cause is cardiovascular disease. Treatment of patients with kidney disease is very expensive for the budget of any country. For example, the cost of hemodialysis treatment in different places is equivalent to 50-100 US dollars, and the patient must undergo this treatment three times a week. Therefore, not every patient can afford treatment, so only 212 out of every million people is provided by reliable hemodialysis. In addition, the treatment can be obtained in sufficient quantities in budget areas. The same is true for kidney transplantation. In patients with kidney pathology, if the disease is detected in a timely manner, the treatment is both effective and cheaper. Therefore, it is recommended to conduct an ultrasound examination of the

kidneys once a year and pass the appropriate tests. Especially people in the risk group, especially hypertensive patients, diabetics, those suffering from obesity and atherosclerosis, should strictly adhere to this.

Factors that cause kidney disease.

1 A sharp decrease in the amount of sunlight causes this, which serves to reduce the fatty capsule surrounding the kidney.

2 Obesity Excess fat puts pressure on the kidney and worsens its function, in addition, obesity worsens the tone of blood vessels.

3 Diabetes

Harmful habits Smoking and alcohol lead to dehydration, which thickens the blood. And body smoke is the strongest carcinogen, all of these negatively affects the functioning of the kidneys.

5 High blood pressure damages the renal vessels and causes them to malfunction.

Symptoms of kidney dysfunction.

Swelling of the face with the appearance of bags under the eyes, swelling of the legs. Recurrence of edema in the evening. The skin becomes dry, pale, possibly dry.

Pain in the lower back may indicate kidney failure and hydronephrosis.

Rapid fatigue, weakness, fever, headache - all these symptoms suggest kidney disease.

A serious reason to go to the doctor is a change in the smell, color, and quantity of urine.

Pressure coming from the kidneys. Multiple Patients who are older than 2 years complain of high blood pressure and doctors diagnose the patient with renal hypertension, but this is not always correct.

That is, it is said that blood pressure increases not due to the heart but due to the kidneys. Renal hypertension is a rare disease, that is, when the kidneys work, they produce urine on their own and this urine flows out.

If we have diseases such as stones or salts in our kidneys and these stones get stuck in the urinary tract, it becomes difficult for urine to flow out and as a result, our kidneys swell and the pressure in our kidneys increases. After the blood coming to the kidneys decreases, the body's protective reduction is activated, that is, the body thinks that the kidneys are not getting enough blood, so the blood does not reach the kidneys, so the pressure in the body increases. The second disease is kidney cancer or kidney cysts, due to which the blood vessels in the kidneys become blocked and a protective reaction is triggered. The body thinks that the kidneys are not getting enough blood and that the pressure needs to be increased. As a result, in order to supply the kidneys with blood, the diagnostic pressure of the blood increases and more blood reaches the kidneys, and in this case, the pressure drops, which is not observed in other cases. Often, if the pressure increases, patients should first see a cardiologist or therapist. If there is pain in the kidneys, the color of the urine changes, only in such cases can they see a urologist.

Kidney stone disease, nephrolithiasis is a disease accompanied by the formation of stones in the kidneys and urinary tract. It can be one-sided or bilateral. Adults are more likely than children to have vitamin deficiencies, anemia, protein deficiency, gastrointestinal diseases, hyperthyroidism, pyelonephritis, and other diseases that cause difficulty in passing urine from the kidneys. The cause is a metabolic disorder. Hereditary factors are of little importance.

## Conclusion

The kidneys are an important parenchymal paired organ in the human body, located in the posterior abdominal cavity. Their location varies according to the anatomical structure: the right kidney is located lower than the left kidney. Since the kidneys are not completely covered by the peritoneum, they are at higher risk of catching a cold. The functional importance of the kidneys is very great, and their diseases are often detected at a late stage, which can lead to diseases of the cardiovascular system.

Kidney diseases are a serious problem on a global scale, and the treatment process is very expensive and not always available to patients. In particular, procedures such as hemodialysis and transplantation require significant economic costs. Prevention and early diagnosis of diseases are very important. Especially patients in the risk group - hypertensive, diabetic, obese and suffering from atherosclerosis - should have their kidneys examined at least once a year.

Various factors cause impaired kidney function: reduced body fat, obesity, diabetes, bad habits (smoking and alcohol), and high blood pressure. Kidney dysfunction is manifested by edema, fatigue, back pain, and changes in urine. Kidney stones, nephrolithiasis, occur as a result of metabolic disorders. Timely detection and

treatment of diseases increases efficiency and plays an important role in maintaining the quality of life of patients.

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