A microalbumin test checks urine for the presence of a protein called albumin. Albumin is normally found in the blood and filtered by the kidneys. When the kidneys are working properly, albumin is not present in the urine. However, when the kidneys are damaged, small amounts of albumin leak into the urine. This condition is called microalbuminuria.

Microalbuminuria is most often caused by kidney damage from diabetes. However, many other conditions can lead to kidney damage, such as high blood pressure, heart failure, cirrhosis, or systemic lupus erythematosus (SLE). If early kidney damage is not treated, larger amounts of albumin and protein may leak into the urine. This condition is called macroalbuminuria or proteinuria. When the kidneys spill protein, it can mean serious kidney damage is present. This can lead to chronic kidney disease. A microalbumin urine test can be done on a sample of urine collected randomly (usually after the first time you urinate in the morning), a sample collected over a 24-hour period, or a sample collected over a specific period of time, such as 4 hours or overnight.

Why It Is Done

A microalbumin urine test is done to check for protein (albumin) in the urine. Early detection may change treatment in an effort to preserve as much kidney function as possible.

How To Prepare

You do not need to do anything before having this test.

How It Is Done

For a random urine test, you will provide a clean-catch midstream urine sample. A morning urine sample gives the best information about microalbumin levels.
Clean-catch midstream one-time urine collection

This collection method prevents contamination of the sample.

- Wash your hands to make sure they are clean before collecting the urine.

- If the collection cup has a lid, remove it carefully and set it down with the inner surface up. Do not touch the inside of the cup with your fingers.

- Clean the area around your genitals.

- A man should pull back the foreskin, if present, and clean the head of his penis thoroughly with medicated towelettes or swabs.

- A woman should spread open the folds of skin around her vagina with one hand, then use her other hand to clean the area around her vagina and urethra thoroughly with medicated towelettes or swabs. She should wipe the area from front to back to avoid contaminating the urethra with bacteria from the anus.

- Begin urinating into the toilet or urinal. A woman should continue to hold apart the folds of skin around the vagina while she urinates.

- After the urine has flowed for several seconds, place the collection cup into the stream and collect about 2 fl oz (59 mL) of this "midstream" urine without interrupting the flow.

- Do not touch the rim of the cup to your genital area, and do not get toilet paper, pubic hair, stool (feces), menstrual blood, or other foreign matter in the urine sample.

- Finish urinating into the toilet or urinal.

- Carefully replace the lid on the cup and return it to the lab. If you are collecting the urine at home and cannot get it to the lab in an hour, refrigerate it.
A urine sample collected over time, such as over 4 or 24 hours, gives the most accurate results so you may be asked to collect your urine over a specific time period.

**Timed urine collection (such as 4 hours or 24 hours)**

- You start collecting your urine in the morning. When you first get up, empty your bladder but do not save this urine. Write down the time that you urinated to mark the beginning of your 24-hour collection period.

- For the next 24 hours, collect all your urine. Your doctor or lab will usually provide you with a large container that holds about 1 gal (4 L). The container has a small amount of preservative in it. Urinate into a small, clean container and then pour the urine into the large container. Do not touch the inside of either container with your fingers.

- Keep the large container in the refrigerator for the 24 hours.

- Empty your bladder for the final time at or just before the end of the 24-hour period. Add this urine to the large container and record the time.

- Do not get toilet paper, pubic hair, stool (feces), menstrual blood, or other foreign matter in the urine sample.

**How It Feels**

There is no discomfort while collecting a urine sample.

**Risks**

There is no chance of problems while collecting a urine sample.

**Results**

A microalbumin test checks urine for the presence of a protein called **albumin**.

Microalbuminuria is most often caused by kidney damage from **diabetes**. Normal results may vary depending on:

- The laboratory.
The type (random versus timed) of urine sample collected.

The time of day of the sample.

Whether you are male or female.

Whether you are on bed rest or able to move about normally.

**Albumin in urine**

| Normal:       | Less than 30 milligrams (mg) of albumin in 24 hours |

**Abnormal values**

You may need more than one test to find out how well your kidneys are working.

- When your kidneys do not work well and leak between 165 and 300 mg of albumin in 24 hours, your doctor may check your urine more often to watch for kidney damage.

- If your kidneys leak 300 mg or more of albumin in 24 hours (macroalbuminuria), you may have chronic kidney disease.

- If you have 2 or 3 high results in a 3- to 6-month period and you have diabetes, your doctor may find kidney damage (diabetic nephropathy). Even though diabetes is the most common reason for high results, there are many other kidney problems that can cause high results.

Pregnant women with diabetes may have their urine checked to watch for high amounts of albumin.

**What Affects the Test**

Reasons you may not be able to have the test or why the results may not be helpful include:

- Having high blood sugar levels, urinary tract infections, high blood pressure, heart failure, or a high fever during an infection.

- Exercising just before the test.
• Taking medicines, such as aspirin, corticosteroids, and some antibiotics, such as amoxicillin.

• Having menstrual bleeding or vaginal discharge, which may temporarily affect the urine sample.

What To Think About

• The American Diabetes Association recommends a microalbumin urine test for people with:

  • **Type 2 diabetes:** first at diagnosis and then yearly for diabetic nephropathy.

  • **Type 1 diabetes:** yearly screening for diabetic nephropathy should begin 5 years after diagnosis.

• If a microalbumin urine test shows that kidney damage may be present, a test to check creatinine levels may be done. A blood test for creatinine is done along with a 24-hour creatinine clearance urine test to check kidney function. For more information, see the medical test Creatinine and Creatinine Clearance.

• A less precise test, the urine dipstick test, can be used to check for microalbuminuria in a single sample of urine. However, the dipstick test does not accurately detect microalbuminuria and is not recommended in place of a microalbumin urine test.

References

Other Works Consulted


Credits

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