



Multiple myeloma (MM) can take a toll on your kidneys. This article will help you understand the origins of these kidney problems, the resulting symptoms you may experience, and the steps that you can take to keep your kidneys as healthy as possible.

WHY IT'S HELPFUL

It's important to understand how MM impacts your kidneys, so you can be aware of possible complications that may arise and take appropriate steps to help reduce problems.

KEY POINTS

1. The primary causes of kidney damage in MM are excess M-protein and calcium in the blood
2. Patients with kidney problems may or may not have symptoms
3. Blood and urine tests can monitor how your kidneys are working
4. You can work with your healthcare provider to take steps to keep your kidneys healthy

MULTIPLE MYELOMA AND THE KIDNEYS

Abnormal plasma cells produce a large amount of M-protein. The excess M-protein can cause kidney damage.

MM can result in bone damage. When this happens, excess calcium gets released into the blood, which may cause kidney damage.

Excess M-protein and calcium in the blood make the kidneys work harder, which eventually damages the kidneys. When the kidneys do not work properly, they have a hard time getting rid of excess salt, fluid, and body waste. When this happens, you may feel certain symptoms.

SYMPTOMS OF KIDNEY DAMAGE

Some people who have kidney damage do not have any symptoms. Sometimes people find out that MM has damaged their kidneys when they have lab tests done for another medical reason.

If you recognize the potential symptoms of kidney damage, you should keep your nurse or doctor informed.

Some symptoms of kidney damage may include:

- Loss of appetite
- Fatigue
- Muscle weakness
- Restlessness
- Difficulty thinking



- Constipation
- Increased thirst
- Increased urine production
- Nausea and vomiting

MONITORING YOUR KIDNEYS

Your doctor may request certain blood or urine tests to monitor how well your kidneys are working. Your doctor or nurse can explain why these tests are needed.

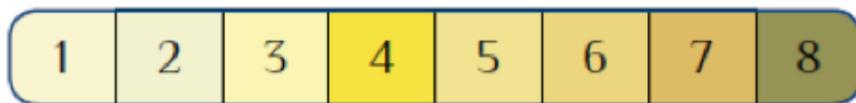
TAKE CARE OF YOURSELF

Below are some tips to keep your kidneys healthy. You may want to:

- Tell your doctor or nurse about any symptoms you may have
- Talk with your doctor, nurse, or pharmacist about any tests you may need to help monitor kidney function
- Make sure your doctor, nurse, or pharmacist knows about all the medicines you are taking, even over-the-counter medicines
 - Some medicines may affect how your kidneys work. If your kidneys do not work properly, you may have health problems
- Ask your doctor or nurse if you need to change your diet—for example, if you need to eat less protein or salt
- Drink enough fluids to stay hydrated. Use the urine color chart below to help assess your hydration level

URINE COLOR CHART

This chart may help to determine your hydration level. Talk to your doctor about the proper way to use it.



Try to keep your urine in the 1 to 3 range of colors by drinking enough fluids.

