

Patient information from BMJ

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Acute kidney injury

Acute kidney injury is sudden damage to the kidneys so that they stop working as well as they should. It can cause lasting damage and even death. Many people recover much or all of their kidney function with treatment, but it's important to get treatment as quickly as possible.

What is acute kidney injury?

The main job of your kidneys is to filter waste products from your blood. This stops your blood from becoming toxic and from poisoning you. If your kidneys stop working properly it can be dangerous and even life threatening.

Acute kidney injury (AKI) used to be known as 'acute renal failure'. But the name was changed because, in most people with the condition, the kidneys don't actually 'fail' completely: they just suddenly work less well than they did before. This reduced kidney function can vary from a small amount to complete failure.

The word 'injury' in this case doesn't mean that your kidneys have been physically wounded, but rather that something has stopped them from working properly.

AKI is most common in people aged over 65. Other things that can increase your chance of AKI include:

- Having chronic kidney disease
- Having sepsis (infection of the blood)
- Other health conditions that can affect the kidneys, such as diabetes, severe pancreatitis, or a urinary infection that spreads to the kidneys
- Severe dehydration
- Some heart and blood vessel problems, including heart failure
- Physical blockages of the kidneys, such as an enlarged prostate, a kidney stone, or a tumour in your bladder
- Long-term use of some medications, such as non-steroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen

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- Use of some recreational drugs.

What are the symptoms?

The main symptoms of AKI are:

- Urinating a lot less than usual
- Nausea and vomiting
- Extreme thirst
- Dizziness
- Shortness of breath when you lie down
- Attacks of shortness of breath and coughing during the night
- Increased heart rate.

If you have any of these symptoms, seek medical help. And always get urgent medical help if you have trouble breathing or your heart beats in a way that is not usual.

Nausea and vomiting can also be symptoms of AKI. On their own they don't usually suggest anything serious. But if they happen alongside any of the other symptoms, get medical help straight away.

Your doctor will need to test your blood and urine to confirm whether you have AKI. You may also need other tests, such as a scan to show whether your kidneys are swollen or if there is a physical blockage in one or both of your kidneys.

What treatments work?

Fluids

AKI can be caused by many different things, and the treatment you have will depend on what your doctor thinks has caused it in your case. But whatever the cause of your AKI, the first thing that your doctor is likely to look at is whether you are dehydrated, in which case you will be given intravenous (IV) fluids through a drip.

It's also possible to be over-hydrated when you have AKI. So you might need to take medication to make you urinate more (a diuretic).

Or you may need a treatment called renal replacement therapy (also known as dialysis), which means that your blood is filtered so that it contains the right balance of fluids and nutrients. Having dialysis at this time doesn't mean that you'll need to keep having dialysis regularly. You might just need it once.

Drug treatments

If you are severely dehydrated because of AKI it can reduce how much blood you have in your veins and arteries. This can cause your blood pressure to fall too low. You may need to be given medication to raise your blood pressure until your blood level is back to normal.

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In some people with AKI the body's immune system can start to attack the kidneys. If this has happened to you, you will be given drugs that help stop the immune system from reacting in this way.

You may also need drugs called steroids (the full name is corticosteroids) to help reduce swelling in your kidneys. (These are not the same as the anabolic steroids used by some bodybuilders and athletes.) And you may need drugs to treat any infection that might have caused the AKI.

Stopping or reducing existing medicines

AKI often happens as a complication of another medical condition. If you are taking medicines to treat another illness your doctor should make sure that you adjust how much of your medicines that you take while your kidneys are not working properly.

You may need to stop taking some medicines for a time while your kidneys recover. For example, you will need to stop taking any medicines that contain sodium (salt).

Treatments for a blockage in the kidneys or bladder

AKI can be caused by something blocking the flow of urine from a kidney to the bladder, or at the bladder outlet, such as a tumour, kidney stone, blood clot, or scar tissue.

If your doctor suspects that you have a blockage in a kidney, you will need to have a tube called a catheter inserted to help drain the build-up of urine caused by the blockage.

The catheter is passed through the urethra (the tube that carries urine from your kidneys out of your body). So you don't need to have surgery to have it fitted.

This will happen even before the doctor knows for sure that you have a blockage, because it's important that a kidney that contains a build-up of urine is drained quickly. If a blockage is then found you will then need surgery or another procedure to remove it.

Dialysis

Dialysis is a treatment where a machine takes over the job of cleaning the blood that the kidneys normally do. You may need this treatment if your kidney function has dropped to a very low level. You will need to be connected to the machine by a tube in one of your veins.

What will happen?

Some people recover most or all of their kidney function after treatment. If this happens you won't need any more treatment. But you will need to talk to a kidney specialist (a nephrologist or renal physician) before having any treatment in the future that might cause another episode of AKI.

Some people do not recover all their kidney function and go on to develop chronic kidney disease or kidney failure. If this happens to you, your doctor will talk to you about the treatment you will need in the future, which could include regular dialysis.

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Some people die from AKI, although the cause of death is often an underlying condition that caused the kidney problems, rather than AKI itself. Death is more likely in people whose AKI is more severe.

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