

## Other sources of information and support

There are a number of organisations that provide support and advice for people and their families with acute kidney injury.

### NHS

<https://www.nhs.uk>

### Think Kidneys

<https://www.thinkkidneys.nhs.uk>

### Kidney Care UK

<https://www.kidneycareuk.org>

### The National Kidney Federation

<https://kidney.org.uk>

### Kidney Research UK

<https://www.kidneyresearchuk.org>

### Kidney Dialysis Information Centre

<http://www.kidneydialysis.org.uk>

### Whiston Hospital

Warrington Road  
Prescot, Merseyside, L35 5DR  
Telephone: 0151 426 1600



/sthknhs



@sthk.nhs

[www.sthk.nhs.uk](http://www.sthk.nhs.uk)



St Helens and Knowsley  
Teaching Hospitals  
NHS Trust

# Acute Kidney Injury (AKI) Patient / Carer Information Leaflet

This leaflet can be made available  
in alternative languages / formats on request.

如有需要，本传单可提供其他语言/版式  
此單張的其他語言/格式版本可按要求提供  
Na żądanie ta ulotka może zostać udostępniona  
w innych językach/formatkach.

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You have been given this information leaflet because you or someone you care for has/ had an Acute Kidney Injury (AKI).

This information leaflet will explain what AKI is, what can be done whilst in hospital and how you can prevent an AKI.

## What is Acute Kidney Injury?

**Acute** is a term used to describe an illness that has occurred over a few hours or days (as *opposed to a chronic illness which has occurred over months or years*).

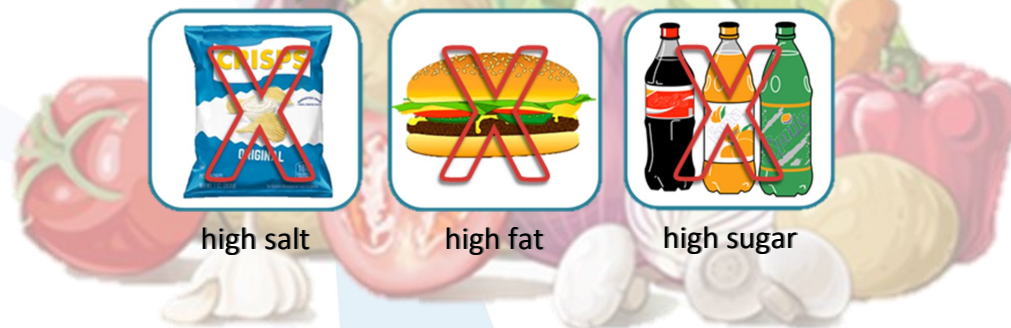
**Kidney Injury** describes evidence of damage to the kidneys and how well they are functioning. This is usually seen as a change in kidney function tests (*bloods*) or changes in the amount of urine you pass. Kidney function is usually assessed by taking a blood sample and examining the waste products found in the blood. This includes creatinine; a breakdown product of our muscles that is transported through the bloodstream and filtered out by the kidneys. Creatinine can therefore be a fairly reliable indicator of kidney function. If the kidneys become impaired then we could see a rise in creatinine levels as the kidneys struggle to filter it through. It is also important to test your urine for evidence of kidney damage.

AKI is not to be confused with chronic kidney disease (CKD). CKD describes the gradual loss of kidney function over a longer period of time (usually weeks to months). CKD is a progressive illness where the kidney function usually gets worse over time.

It is very important that AKI is detected and treated promptly as in some cases it can be very serious. In the large majority of cases early detection and treatment will lead to resolution of AKI.

## 2. Eat healthily

Eating a healthy diet ensures that you get all the vitamins and minerals that your body needs to function. Try to avoid eating foods that are high in salt, fat or sugar.



## 3. Watch your blood pressure

High blood pressure doesn't have any symptoms but can increase the risk of kidney or heart problems. Having your blood pressure checked can help to see how you are doing.

Your GP and/or pharmacy may be able to offer blood pressure checks and give you advice on lifestyle changes that can help to manage high blood pressure.

## 4. Stop smoking and/or reducing alcohol intake

Trying to stop smoking completely and limiting the amount of alcohol that you drink can help to keep your kidneys healthy.

## 5. Watch your weight

Keeping to a healthy weight and staying active can help keep your kidneys healthy. Having too high a body weight can cause a rise in your blood pressure which can affect how well your kidneys are working.

## Keeping your kidneys healthy

There are 5 simple steps that you can take to try and keep your kidneys healthy.

### 1. Stay hydrated

Drinking plenty of water can help to keep your kidneys functioning properly. Your urine should be straw coloured; if it is darker in colour it may be a sign that you are dehydrated.

1	2	3	4	5	6	7	8
1-3 = <b>Healthy Pee</b>			4-8 = <b>Need to Hydrate</b>				

During warmer weather or if you are travelling in hot countries where you are likely to sweat more, try to increase your fluid intake to compensate for what you may have lost.



**Water** - water is a good choice throughout the day because it hydrates you without providing extra calories or harming teeth **(drink plenty)**

**Tea, Coffee, Hot drinks** - Provide some nutrients (if milk or fortified plant-based alternatives are added) and some caffeine. To limit calories, drink without sugar, sugary syrups and with low fat milks **(drink to suit)**



**Milk** - is a useful source of nutrients including calcium, iodine, B vitamins and protein. Adults and older children should choose lower fat varieties **(have regularly)**

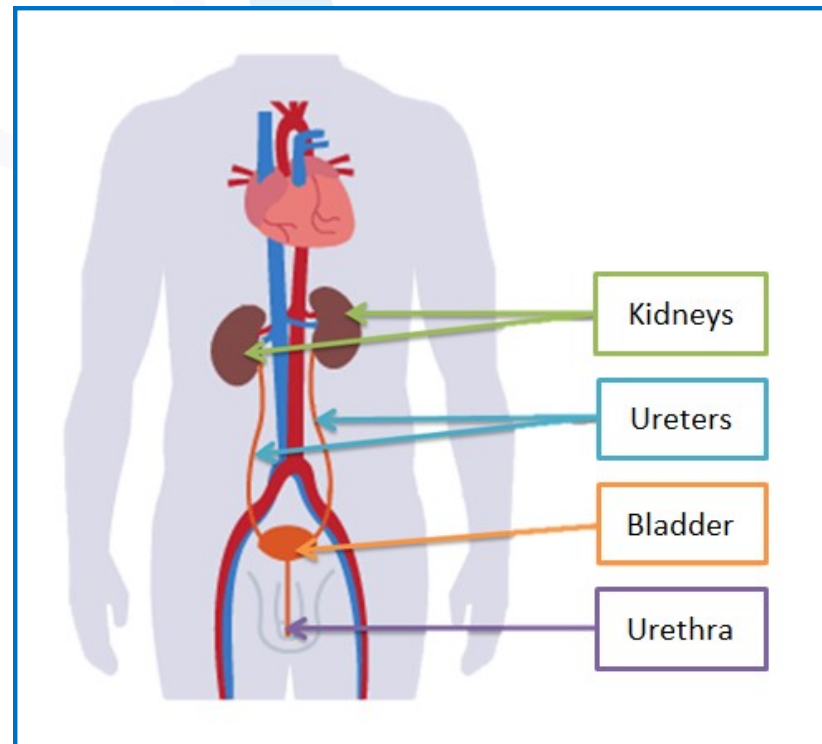
**Fruit & Vegetable Juice & Smoothies** - Provide some vitamins and minerals. One small glass (150ml) counts as a maximum of one portion of your 5 A DAY. However, juices can be acidic, which can harm teeth so it's best to drink with a meal. **(Can have once a day)**



(Taken from British Nutrition Foundation—Healthy hydration for adults and teenagers.)

## Where are my kidneys and what do they do?

Most people have two kidneys that lie on either side of their back just below their ribs. The kidneys are bean shaped and about the size of an orange. Each kidney is connected to the bladder in the pelvis by ureters that drain the urine from the kidneys to the bladder.



The kidneys are responsible for:



Filtering blood and removing waste & toxins



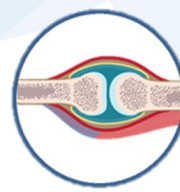
Helping to regulate blood pressure



Balancing water within the body



Helping to produce red blood cells



Making vitamin D to keep bones healthy

## Who is at risk of Acute Kidney Injury?

We are all at risk of Acute Kidney Injury. It is very common when people become seriously unwell, and affects 1 in 5 people admitted as an emergency to hospital.

AKI can be caused by individual factors or a combination of factors. You are more likely to develop an AKI in these situations:

- Chronic kidney disease
- Having an illness like diabetes, heart failure or liver disease
- Some medication (e.g. anti-inflammatory medications, blood pressure medications and diuretics, also called 'water tablets')
- Being dehydrated
- Having had an AKI in the past
- Being frail or elderly; in particular patients with dementia

## What can cause an AKI?

There are many things that can cause the kidneys to stop working properly. Some of the causes of AKI can be:

- Severe infection (particularly sepsis)
- Blockage in urinary system or difficulty in passing urine
- Dehydration; either you have been unable to drink enough to keep yourself hydrated, or you have had a severe case of diarrhoea or vomiting
- Heavy bleeding
- Low blood pressure
- Some medications
- Sometimes the dye used in some X-ray or CT scans
- Some surgical operations carried out in hospital

## Medication which may be stopped to prevent AKI

**If you are under the care of a specialist team e.g. heart failure team or kidney/ renal unit or diabetes team, please contact them before making any changes to your medication.**

If you are not under a specialist team, you may temporarily stop taking the medications listed below until your symptoms settle. If this takes more than 48 hours please consult your GP or out of hours GP service for advice.

**ACE inhibitors:** given for blood pressure and heart and kidney problems e.g. ramipril, lisinopril, perindopril and others ending with "*pril*"

**Angiotensin receptor blockers:** given for blood pressure and heart or kidney problems e.g. losartan, candesartan, irbesartan, valsartan and others ending with "*sartan*"

**NSAIDs:** anti-inflammatory medications e.g. ibuprofen, naproxen, diclofenac, celecoxib, eoricoxib, meloxicam

**Diuretics:** sometimes called water tablets e.g. furosemide, bumetanide, spironolactone, eplerenone, bendroflumethiazide

**Metformin or Metformin combinations:** medications for diabetes

**This list is not exhaustive.**

If you are not sure whether your medicines belong to these categories, please talk to your doctor or pharmacist. If it takes more than 48 hours for symptoms to settle please consult your GP or the 'out of hours service' for advice.



## If you become unwell you should:

1. Drink plenty of fluid to make sure that you have enough fluid in your body.

This is likely to be at least 8 cups of fluid a day (one cup = 200mLs) unless you have other instructions from your doctor. Water is one of the healthiest choices to keep your kidneys working effectively. Water does not contain sugar which can damage teeth.

If you are vomiting. Take small sips of water/fluid frequently, until your symptoms have settled.

2. Avoid drinking alcoholic drinks when you are unwell, as alcohol can contribute to dehydration.
3. Speak to your GP or specialist team if you have passed much less urine than you normally do OR if you are unable to keep fluids down and/or have continuing diarrhoea or vomiting.
4. Inform your pharmacist regarding previous AKI when obtaining any medications including those that do not require a prescription.



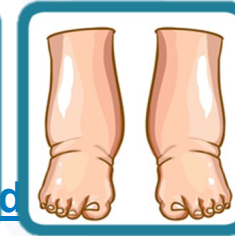
## What are the symptoms of AKI?

There are no specific symptoms of AKI, in the early stages you may not have any symptoms at all.

Often symptoms will be related to the illness that has caused the AKI. However you may experience some of the following:



Less than normal amounts of urine



Build up of fluid (oedema)



Changes in blood pressure



Dark coloured urine



Thirst



Muscle cramps



Tiredness



Confusion

You will most likely have had a blood test taken or have had the amount of urine you have passed measured.

In patients with AKI their blood test will show a rise in their creatinine. Higher levels of creatinine in the blood indicate that the kidneys are struggling to get rid of your body's waste products. We can also perform a urine test, which will check for any protein, blood or sugar in the urine. Results of this test will also indicate how well the kidneys are working.

## How is AKI treated?

There isn't a specific treatment for AKI. The treatment is usually dependent on what has caused the AKI in the first place.

Whilst you are in hospital you may notice that you have blood taken and urine tests done. These tests will be used to identify the cause and complications associated with AKI. An ultrasound scan of your kidneys may be performed in certain situations.

We measure how much fluid you have taken in and how much fluid you lose or pass out. You may need to have a catheter inserted (a tube that sits in the bladder and drains your urine). You may also have additional fluids given through a drip into your arm. You might see that some of your medications are stopped or the dose or frequency adjusted—this helps to give your kidneys time to get better.

## What is dialysis?

Dialysis is a procedure that helps to remove waste products from the body which have accumulated whilst the kidneys have been struggling to work properly.

How often dialysis takes place will depend on how poorly the kidneys are working and the symptoms the patient is experiencing. # There are two types of dialysis; hemodialysis and peritoneal dialysis. In hemodialysis, blood is passed through a tube connected to a machine which filters your blood removing the waste products before passing blood back to you.

Peritoneal dialysis uses the lining of your abdomen to filter the blood rather than a machine. Dialysis fluid is put into the abdomen using a catheter. This fluid passes through the blood vessels in the lining of the abdomen removing waste products and excessive fluid before being drained back out via the catheter.

## What will happen after an AKI?

The recovery period after an AKI will depend on how bad the kidney function became and what initially caused the AKI.

Many people who recover from an AKI return to their normal kidney function afterwards. Some people however may go on to develop chronic kidney disease and some may need to continue to have dialysis.

If your blood tests show that your kidney function is less than 60% efficient at least 3 months after your illness (known as eGFR less than 60), then this is known as chronic kidney disease (CKD). Your GP will identify this and you will be included on a register at your GP practice.

If you have had an AKI once you are at an increased risk of developing AKI again in the future.

## How can I prevent an AKI?

Approximately 30% of AKIs are preventable. Knowing your risk factors for AKI and raising awareness of AKI can prevent some cases occurring.

Patients in hospital should have blood tests carried out during their admission and some may need to have their urine volume measured. Medications which are prescribed for you may be reviewed by a doctor or pharmacist to reduce risks which are associated with some medications, when you have an AKI.

Some people having scans that involve needing a dye should have their kidney function checked and medication reviewed to reduce risk of AKI after their scan.