Urinary tract infections (UTIs) and dementia

Alzheimer's Society
It will take a society to beat dementia

It's common for people with dementia to get a urinary tract infection (UTI). This factsheet will help you understand the different types of UTI and recognise their symptoms. It also covers treatments, as well as ways to prevent UTIs.

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1 What is a UTI?

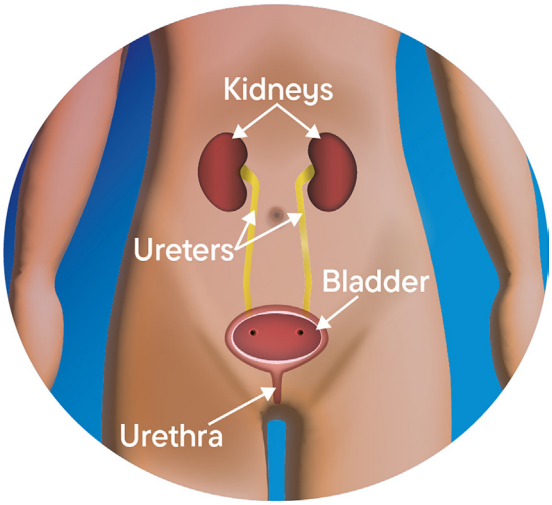
Urinary tract infections (UTIs) are infections that affect one or more parts of a person's urinary tract – see diagram below. They are normally caused by bacteria that get into the urinary tract and start to spread. See page 11 for advice on preventing UTIs.

Many healthy older people have some bacteria in their urine. However, if the bacteria doesn't cause symptoms of an infection, they won't normally need treatment. For symptoms of an infection, see 'What are the symptoms of a UTI?' on page 2.

The urinary tract

The urinary tract includes two kidneys, two ureters, the bladder and the urethra (as shown in the diagram).

The kidneys make pee (urine) out of waste from the blood. The pee then flows down to the bladder through tubes called ureters. The bladder stores pee until the person is ready to get rid of it. A tube called the urethra carries the pee out of the body.



The urinary tract

Most UTIs start as an infection in the urethra, which is the tube that carries pee from the bladder out of the body. Although these infections can sometimes get better by themselves, they can also get worse and spread into the bladder. This is known as 'cystitis'.

A person has an upper UTI when the infection spreads from their bladder up into their kidneys. An upper UTI is more serious than a lower UTI. If it's not treated promptly, it can lead to kidney damage and cause bacteria to get into the blood. This can be life-threatening. For this reason, it is important to be aware of the symptoms of UTIs and speak to the GP or call NHS 111 as soon as symptoms appear. See 'What are the symptoms of a UTI?' on page 2.

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2 What are the symptoms of a UTI?

UTIs cause a range of symptoms, including:

- pain or a burning sensation when peeing
- pain in and around the lower tummy
- needing to pee immediately or more often than usual
- not being able to hold on to get to the toilet for as long as usual, and leaking pee
- not being able to empty the bladder fully
- blood in the person's pee
- a high temperature between 37–38°C or 98.6–101.0°F
- a sudden change or worsening in the person's mental state, such as confusion or disorientation.

Upper UTIs

If the person has an upper UTI, they may have some of the following symptoms as well:

- a higher fever – a temperature over 38°C or 101.0°F
- sickness – nausea or vomiting
- shaking or chills (known as 'rigors')
- pain down their lower back – sometimes only on one side
- pain on the side of their body between the ribs and hip (known as 'flank tenderness').

If you are concerned about any of these symptoms, speak to the GP or call NHS 111 straightaway.

Recognising a UTI in someone with dementia

It can be very difficult to spot that the person with dementia has a UTI if they aren't able to understand or tell people they are in pain or discomfort. It's also common for an older or frail person not to have a fever when they get an infection. This can happen when their immune system is not strong enough.

Family, friends and carers who know the person well may often be able to spot subtle changes in their appearance or behaviour.

It can be easy to think a person's mood or behaviour has changed due to dementia, rather than an infection. Because of this, the person may not receive treatment as promptly as they would if they didn't have dementia.

The person may be less able to recognise or let someone know that they have a problem with peeing. It may look as though they are going to the toilet more often because they have memory problems, rather than because they have an infection.

It's important to look out for any signs and symptoms of possible infection. For example, if the person seems to be touching their lower tummy more than usual, this could be a sign of pain there.

Often, the first sign that a person with dementia has a UTI may be a sudden change in their mental state, such as becoming very confused or disoriented. Although it's normal for the symptoms of dementia to vary from day to day, a sudden and severe change can sometimes be a sign of delirium. This is a serious condition. It happens when a person's brain is less able to function properly because of a recent change or illness, such as an infection.

If a person shows any of these signs, they should see a doctor as soon as possible.

UTIs are a common cause of delirium in people with dementia, although there are lots of other potential causes to be considered too. Delirium can make a person's dementia symptoms worse in the long term – particularly if left untreated. See 'What is delirium?' on page 10 for more about delirium.

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3 What can cause a UTI?

A person can develop a UTI if:

- they are dehydrated, usually from not drinking enough
- harmful bacteria get into their body through their urethra
- bacteria aren't flushed out of their urethra.

The best way to prevent a UTI is to avoid these as much as possible, through good hygiene and medical care. See 'Tips to prevent UTIs' on page 11.

Poor personal hygiene

A common way for bacteria to get into a person's urethra is from their bottom. The type of bacteria found in poo (faeces) can cause an infection if it gets into the urethra. This is more likely to happen in the vagina as it is closer to the anus than the end of a penis. This is why it's important to wipe from front to back after going to the toilet.

If a person uses absorbent pads or other continence aids, it's important to change these frequently. This will help to reduce the risk of infection.

As a person's dementia gets worse, they may find it more difficult to maintain good personal hygiene. Due to memory problems or confusion, they may not wash or change their clothes regularly. This can make them more likely to develop a UTI. It can also be difficult to stay clean and free of germs if a person has diarrhoea or bowel incontinence. Continence aids should be changed as soon as they become soiled, and the area around the bottom and genitals should be kept as clean and dry as possible.

Organisations such as Bladder & Bowel UK can provide more information on how to manage incontinence safely. See 'Other useful organisations' on page 12.

Going to the toilet – problems with peeing and pooing

Older people are more likely to have a weaker stream of pee. This means they may not empty their bladder fully when they go to the toilet. This can cause bacteria that would usually be flushed out in their pee to remain in their urinary tract. Often, this happens without causing any health problems, but for some people, it can lead to a UTI.

A person may also struggle to empty their bladder if their urinary tract is affected by abnormal changes – for example, if they have an enlarged prostate gland, or a prolapse. The prostate is a gland located between the penis and the bladder. If the prostate becomes enlarged, it can place pressure on the bladder. This can affect how the person pees. A prolapse happens when the womb, the bladder or the bowel drops down from its normal position and bulges into the vagina.

People who have had a brain injury, such as a stroke, may also struggle to empty their bladder.

Having severe constipation can make it much more difficult for a person to pee. If they have a very hard poo trapped in their rectum (back passage), it can put pressure on their bladder and block the pee from getting out. Constipation can also cause pee to flow back up a person's urethra into their bladder, which may make the infection worse.

Catheters

Catheters are a common cause of infections in hospitals. They are often fitted when the person:

- needs to empty their bladder before and after surgery
- has a blocked urethra
- is unable to go to the toilet, even with help from nursing staff.

What is a catheter?

A catheter is a flexible tube which is inserted into a person's urethra and allows pee to flow into a drainage (collection) bag.

Catheters increase a person's chances of getting a UTI and of the infection spreading more quickly into the bladder. It can be very difficult to know if a person with a catheter has a UTI. The first signs are likely to be changes in their mental state, or blood in their urine.

A health professional, usually a nurse, will fit the catheter. It's important that they do this correctly. They should change collection bags frequently to prevent the pee from travelling back up the catheter. Sometimes, a doctor will prescribe antibiotics as a precaution when a catheter is changed.

Because catheters collect pee automatically, the person won't show some of the more obvious symptoms of a UTI. These include going to the toilet more often or leaking pee.

Catheters should only be used to treat incontinence when all other options have been tried. These include using continence aids and helping the person go to the toilet.

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Having sex

For some people, having sex (and sometimes other sexual activity) can cause a UTI. Sex can lead to cystitis – a bladder infection. In particular, harmful bacteria are more likely to spread to the urethra from the vagina than the penis. However, peeing soon after sex can help prevent this.

Other health conditions

People with a weakened immune system also have a higher risk of getting a UTI. This includes people who have diabetes or who are receiving chemotherapy. If a person has diabetes that is not well-managed, it can cause their pee to contain sugar, which encourages harmful bacteria to grow. Diabetes can also damage the nerves that control a person's bladder. This makes it harder for them to empty their bladder properly.

4 How are UTIs diagnosed?

UTIs are common in people with dementia. However, getting an accurate diagnosis can be challenging. The person may be treated for a UTI they don't have, or a UTI may be missed and go untreated.

To help a doctor get the diagnosis right, it's important to tell them how any symptoms and behaviours have changed over the last few days. Family, friends and carers can often recognise and describe changes because they know the person best. Understanding more about a person can help the doctor to tell whether they have a UTI, or if something else may be causing their symptoms. This can include knowing how the person communicates without speaking, such as their facial expressions and body language, or communicating with the person in their preferred language.

Getting a pee sample to test for a UTI

The doctor will sometimes ask for a pee sample when they think a person has a UTI. They will usually then check the sample with a 'dipstick test', which involves dipping a paper strip into the pee sample. The paper strip changes colour if the amount of bacteria in a person's pee is above typical levels.

However, dipstick tests are not very accurate for diagnosing a UTI in older people. Instead, a 'urine culture test' is more useful. This shows the type of bacteria that may be causing the infection, enabling the doctor to prescribe the most effective antibiotics. Urine culture tests usually take one to two days to get a result.

A doctor may recommend a urine culture test if:

- the person has had two or more UTIs within the past three months
- the person has symptoms that might be caused by a UTI
- there are signs that the person's urinary tract isn't working properly – for example, if they are incontinent or they can't empty their bladder fully.

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It can be hard for a person with dementia to provide a pee sample. They may need support from you or someone else who is close to them. It's important to wash hands thoroughly before starting, and again afterwards. The following tips may help.

- It's best to take the sample in the morning – the first time the person pees in the day.
- It helps to get any skin out of the way of the urethra, such as the foreskin or labia, as these may pass their own bacteria into the collection pot.
- Doctors generally ask for a 'mid-stream' sample, where collection starts once the person has already peed a little into the toilet.

If the person with dementia wears absorbent pads or other continence aids, a 'urine collection pack' can be used to get a pee sample from the pad. These packs usually have two collection pads, a 5ml syringe and a urine specimen container. The sample will then be sent off to the hospital to see which antibiotic, if needed, will treat the infection most effectively. Results of these tests normally take a few days to come back to the GP.

A GP or local NHS continence service can give people advice about how to get a urine collection pack. Bladder & Bowel UK and the Bladder & Bowel Community can also help people find the nearest continence service (see 'Other useful organisations' on page 12).

Seeing a urologist

Sometimes, the person may need to see a urologist, who is a doctor that specialises in conditions affecting the urinary tract. This is to rule out other health problems, such as problems with their prostate gland.

The urologist will try to work out what is causing the infection. It could be caused by some other condition that is stopping the bladder from emptying fully, such as nerve damage, a bladder stone or a tumour. To rule these out, the urologist may suggest the person has:

- a rectal examination – to assess the size of their prostate gland
- blood tests
- an ultrasound scan of their kidneys and bladder
- a look inside their lower urinary tract with a camera (cystoscopy).

5 Treatments for UTIs

Antibiotics can often help to improve UTI symptoms, but sometimes they can make things worse. A doctor will use their judgement to choose the most appropriate treatment for each person, based on their symptoms and medical history.

Treatment for lower UTIs

Treatment for lower UTIs is mainly aimed at relieving the symptoms and stopping the infection becoming more serious. The infection can normally clear up with a three-day course of antibiotics. These can sometimes cause unpleasant side effects, such as feeling sick (nausea) or diarrhoea. People can also take over-the-counter pain relief, such as paracetamol.

It's important to contact the person's doctor if:

- their symptoms don't improve after two days
- they start to feel much worse
- they are having bad side effects from the antibiotics.

The doctor may prescribe a different antibiotic that is more effective for the specific type of infection. They may also recommend a urine culture if one hasn't been done (see page 7).

Side effects of antibiotics

When taking antibiotics, it's common to develop a yeast infection known as 'thrush'. This can cause an itchy and sore vagina, particularly when peeing, and a thick, white discharge. It can also cause a sore mouth, with cracked lips and a bad taste. Medicines from a pharmacy can relieve most people's symptoms.

Treatment for upper UTIs

People with an upper UTI are usually treated with a seven- or 14-day course of antibiotics. If the person has a serious infection, they will need to go to hospital for more tests. They may need to be given antibiotics directly into their vein through a needle.

Treatment for recurrent UTIs

'Recurrent' means more than two UTIs within three months. People who have recurrent UTIs are sometimes given long-term, low-dose antibiotics to help prevent future infections. However, there is not much evidence that this is effective. If it is likely that the infection was caused by a catheter, a healthcare professional would normally remove it and give the person antibiotics. The healthcare professional should then refer them to a urologist for further investigation.

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6 What is delirium?

When a person has a UTI, it can cause delirium. This is a change in a person's mental state that happens suddenly, over one to two days. It is a serious medical condition. However, there are lots of possible reasons for delirium. It's important not to assume that it's always caused by a UTI.

You, and other people close to the person, may notice a sudden change in their behaviour. If this happens, you should encourage and support them to get medical help.

Symptoms of delirium

There are different types of delirium. Symptoms can include:

- agitation or restlessness
- increased difficulty concentrating
- hallucinations (seeing or hearing things that aren't there)
- delusions (strongly believing things that aren't true)
- becoming unusually sleepy or withdrawn.

If a person has delirium, their symptoms may come and go over the course of the day.

Treatment for delirium

If delirium has been caused by a UTI, the person should become less confused as the infection is treated.

The person should have a full assessment to find all the potential causes of the delirium. For more information about delirium, go to **alzheimers.org.uk/delirium**

If delirium causes hallucinations or delusions, the person may become very distressed or agitated. They will need support and reassurance while medical staff try to find and treat the causes of the delirium.

If this treatment doesn't work, the doctor may suggest that the person takes a short course of antipsychotic drugs at low doses. These medicines can cause serious side effects, so this should only happen if there is a serious risk that the person will harm themselves or others. The doctor may prescribe very low doses to help keep the person calm or sedated. For more information, see factsheet 408 **Antipsychotic drugs and other approaches in dementia care**.

7 Tips to prevent UTIs

Someone with dementia, especially in the later stages, may need help and support with reducing their risk of UTIs. The following tips can help a person stay healthy.

Stay hydrated

- Ideally, the person should be drinking enough that they pee several times a day. If their pee is very yellow or dark, this may be a sign that they are dehydrated.
- An older person with dementia may not feel thirsty when they get dehydrated. They may also be less able or likely to get themselves a drink. Try to encourage them regularly throughout the day to have liquids or hydrating foods, such as:
  - tea, coffee, or hot and cold milky drinks
  - fruit juice, lassi or smoothies
  - squash and water
  - soup, yogurts or fresh fruit.
- It can help to give the person a drink whenever they are eating. Use a clear glass so they can see what's inside, or try a brightly coloured cup that might attract their attention.
- If the person is having difficulty with swallowing or choking, ask for a referral to a speech and language therapist.
- For more information, see factsheet 511 **Eating and drinking**.

Go to the toilet regularly

- A person with dementia may need to be regularly reminded to use the toilet.
- The toilet should be easy to find – putting a sign on the door with a picture of a toilet can help. Contrasting colours (for example, a black seat on a white base) can make it easier for the person to identify the toilet. For more information, see factsheet 502 **Continence and using the toilet**.

Try to prevent constipation

- Constipation can prevent the bladder from emptying properly. People can avoid constipation by eating foods that are high in fibre, drinking plenty of liquids and staying as physically active as possible.
- Some medicines, such as strong painkillers, can cause constipation as a side effect. If the person is taking these, ask their doctor to see if they can also prescribe something to reduce constipation.

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Always go for a pee after sex and avoid certain types of contraception

- The person should avoid using a diaphragm for contraception as they can prevent the bladder from emptying fully.
- If they use condoms, they should use ones without a spermicidal lubricant (a coating that stops sperm).

Maintain good personal hygiene

- Washing the genitals at least once a day using unperfumed soap is important. Avoid using talcum powder.
- Wiping front to back after using the toilet can minimise the spread of harmful bacteria.
- Making wet wipes easily available in the bathroom can encourage good hygiene.

Other useful organisations

Bladder & Bowel Community
help@bladderandbowel.org
www.bladderandbowel.org

Bladder & Bowel Community gives information and support for all types of bladder- and bowel-related problems.

Bladder & Bowel UK
0161 214 4591 (helpline)
bbuk@disabledliving.co.uk
www.bbuk.org.uk

Bladder & Bowel UK provides practical advice and product information for people who have bladder and bowel problems.

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Reviewed by: Dr Emma Vardy, Consultant Geriatrician and Clinical Dementia and Delirium Lead, Northern Care Alliance NHS Foundation Trust and Rachel Thompson, Consultant Admiral Nurse

This factsheet has been reviewed by people affected by dementia.

To give feedback on this factsheet, or for a list of sources, please email **publications@alzheimers.org.uk**

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We have more information on **Adjusting to caring for someone with dementia**.

For advice and support on this, or any other aspect of dementia, call us on **0333 150 3456** or visit **alzheimers.org.uk**

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Alzheimer's Society
43–44 Crutched Friars
London EC3N 2AE

0330 333 0804
enquiries@alzheimers.org.uk
alzheimers.org.uk

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