

Patient information from BMJ

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Intravenous catheter (cannula) insertion

People who need hospital treatment, even just for a short stay, sometimes need to be given fluids and medicines directly into a vein. This is done using a thin tube called a cannula.

Having a cannula fitted is usually a quick and relatively painless procedure. Here we explain what happens and how it can help you.

What is a cannula?

A cannula is a thin, flexible tube that delivers fluids and medicines directly into a vein. It's usually placed in a vein on the back of your hand. The veins here are very near to the surface, so the needle doesn't have far to go.

It's put in place using a needle, which fits inside the cannula. When the cannula is in place, the needle is removed so that the fluids can flow through the cannula.

When a bag of fluid or medication is attached to the cannula, you might hear this treatment called an intravenous or IV drip.

Why might I need a cannula?

A cannula can deliver fluids, medicines, and blood, as needed, steadily and directly into your bloodstream, for as long as needed.

It's useful in a number of situations, including when someone:

- is dehydrated but can't drink anything. This could be for many reasons, such as not being conscious, having an injury that makes moving difficult, feeling too ill or frail to drink or swallow, or having a bowel obstruction
- needs to be given medicine in a slow, regular way, over several hours or days. For example, cannulas are often used to deliver a steady flow or "drip" of antibiotics when someone has a serious infection.

What will happen?

The first thing the doctor or nurse will do is to put a strap, or tourniquet, around your upper arm - a bit like when you have a blood test. He or she will then tighten the tourniquet slightly, so that your veins fill up with blood and are easier to see.

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The doctor or nurse will then:

- find the vein that is to be used, and clean the area around it with an antiseptic wipe
- gently insert the cannula into the vein. This is done using the needle that runs through the middle of the cannula
- slowly withdraw the needle when the cannula is in place
- gently feed the cannula into the vein, until the base of the cannula sits snugly on the skin and the cannula can't fall out
- remove the tourniquet from your upper arm
- attach a special connector to the free end of the cannula (the base). Fluid and medicine bags can now be attached to the cannula
- secure the cannula in place with a special plaster called a cannula dressing.

The doctor or nurse might need to try a different vein if it's not possible to insert the cannula the first time.

What are the risks?

Inserting a cannula is one of the most common hospital procedures. It's usually quick and problem free. But complications can happen. For example:

- there can be bruising where the cannula is inserted
- the place where the cannula is inserted can become infected. In some people this can become serious and will need treatment with antibiotics
- despite the secure dressing, cannulas do sometimes fall out. If this happens, a new one will probably have to be put in
- in some people the cannula can irritate the vein and needs to be removed
- cannulas can sometimes become blocked. This can often be flushed out. But sometimes they need to be replaced
- a cannula can cause damage to blood vessels near to the vein where it was inserted. This can be painful. The cannula will need to be removed, and the doctor will assess what damage has been done before deciding whether to insert another
- cannulas can cause nerve damage. This is rare but it can cause numbness or tingling.

What can I expect afterwards?

A cannula can stay in place for several days if needed. But you might only need it for a few hours. Once you don't need it anymore, it is easily removed.

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