

Haemodialysis Overview

This infoKID topic is for parents and carers about children's kidney conditions.

This leaflet has the overview only.

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Haemodialysis is an effective dialysis treatment for removing excess water and waste products from the body. However, it is rarely the first choice of treatment in young babies with kidney failure, as it is technically much more difficult than other types of **dialysis**. Haemodialysis can become a necessary treatment for children with kidney failure – when the kidneys stop working properly. Using a special machine with an 'artificial kidney', haemodialysis removes extra water and waste products from the blood. This partly replaces the work of healthy kidneys.

Haemodialysis usually takes place three or more times a week at your child's paediatric nephrology unit – a specialised unit at the hospital that treats babies, children and young people with kidney conditions. The hospital can usually arrange transport so your child can travel to and from the hospital. Some families are able to do haemodialysis at home – and get equipment and training from the hospital.

A team of healthcare professionals will do regular assessments – the amount of time on dialysis and some other details will be adjusted especially for your child's needs. They will show you how to help manage your child's health while on dialysis, and will look out for any possible complications.

Haemodialysis is often shortened to HD. Another type of 'haemodialysis' performed in the hospital is 'haemodiafiltration', shortened to HDF. Another type of dialysis is **peritoneal dialysis**.

→ For a detailed overview of dialysis, and an introduction of both types, please read the topic **Dialysis**.



Preparing for haemodialysis

The haemodialysis machine will need to pump blood out of and back into your child's body. Your child will need a procedure to allow access to the bloodstream. There are two main options – creating a fistula and inserting a 'line'.

Fistula

An **arteriovenous fistula** (usually shortened to **fistula**) can be created. This joins two types of blood vessels to make one large, stronger **blood vessel** – usually at the wrist or elbow.

For regular dialysis sessions, the needle(s) are inserted into the fistula. A fistula needs to be made about 8 weeks

before dialysis starts, to allow time for it to develop and get strong enough.

For many children who are on dialysis long term, a fistula is the best option because there is much less risk of infection or blockage. Occasionally, a fistula fails to develop, or there is bleeding or other complications, and some children need to come back for a new procedure. With a good functioning fistula there is a 'buzzing' feeling in the area around the fistula, and your child will be shown how to take care of it.

» **Read more about creating and look after a fistula in the infoKID topic Haemodialysis fistula**

Central venous line

A **central venous line** is a soft, long, thin tube (**catheter**) that is placed into one of the large blood vessels in your child's body. This is usually in the neck or chest, or occasionally the groin. It is often called a '**line**'.

A **temporary line** can be placed for children who will need haemodialysis quickly or for a short time. For long-term use, a **permanent line** is placed by surgery. For each dialysis session, tubes are connected to the end(s) of the catheter.

A line may be more suitable for, or preferred by, some children – especially those who are too small for a fistula. It does, however, have a greater risk of infection or blockage, and needs to be looked after carefully.

What happens in haemodialysis

In **haemodialysis**, a machine with an 'artificial kidney' called the dialyser cleans the blood as it passes through the machine. Blood is pumped out of the body, through tubes, and passes through the artificial kidney before being returned to the body.

Each **dialysis session** usually lasts 3–4 hours and is normally done during the day, although if done at home, overnight is another option. Most children have sessions three times a week, though they may need it more often. Although children are connected to the machine, they can read, do school work, play with toys or sleep.

Changing dialysis

It may be possible – or sometimes necessary – to change the type of dialysis for your child. This may depend on your child's health and complications of dialysis, how he or she is responding to dialysis, or your family's situation. Speak with your child's healthcare team for more information.

Risks

Haemodialysis is a crucial, life-saving treatment for children in kidney failure. It removes toxins and excess water from their body which, if left untreated could reach dangerous levels and become life threatening. The vast majority of children with kidney failure are able to have this treatment. However it has side-effects, has an impact on your child's and family's lifestyle and carries risks.

Your healthcare team will speak to you about these risks, and what to look out for. They include the following.

- Blood clots (**thrombosis**) – when the blood clumps together. If this happens in a line, fistula or graft, it may stop working.
- Narrowing of blood vessels (**stenosis**) – this usually happens slowly and your child's dialysis team can look for early warning signs.
- Side-effects – including feeling tired during or after the dialysis session, muscle cramps or low blood pressure (**hypotension**), which may be sudden.

There are some other risks, depending on whether your child has a fistula or a line.

Supporting your child

Haemodialysis can be a difficult and stressful experience for your child and the whole family, including other children. You and your child will learn more over time about how to help live with dialysis.

Your child's healthcare team is there to help you. They can provide support with your child's education, accessing financial benefits and planning holidays around dialysis. There may also be help available from a team social worker and/or psychologist.

Speaking with other families of children on dialysis can also be a huge support.

→ If you have any concerns or need additional support, speak with your doctor or nurse.

» [More information about supporting your child and the future in Dialysis – an introduction](#)

Your notes and contact information

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