



# Expanded Hemodialysis and Medium Cut-Off Dialyzers

## WHAT YOU NEED TO KNOW



### What is a dialyzer?

- A **dialyzer** is the “artificial kidney” or “filter” used for **hemodialysis** treatments.
- In hemodialysis, blood is taken from the body, cleaned in the dialyzer to remove waste and extra fluid, and then put back into the body.



### What is Expanded Hemodialysis (HDx)?

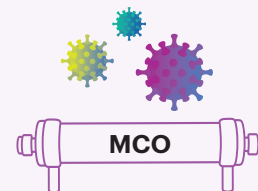
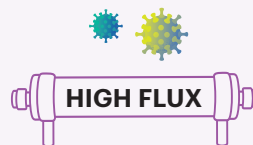
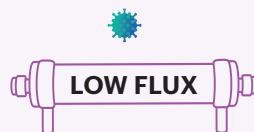
- HDx uses a new type of dialyzer during hemodialysis called a medium cut-off (MCO) dialyzer. It removes a wider or “expanded” range of waste products called uremic toxins that build up in the body due to kidney failure.
- HDx removes large waste products called **middle molecules** that build up in the body and cause **uremic symptoms** (itching, feeling very tired, muscle cramps, nausea, vomiting, loss of appetite, weight loss, restless legs, bone pain, shortness of breath).
- Removing these waste products with HDx has been linked to a person feeling better and having some better treatment results.
- Your doctor may be able to change your current dialyzer to an MCO dialyzer for HDx.
- The same machine used in your dialysis unit can be used for HDx. The staff does not need to do anything extra to use an MCO dialyzer for HDx.



### Types of dialyzers

- A high-flux dialyzer has a filter with holes big enough to remove waste products but it’s less able to remove large middle molecules. It’s the type of dialyzer used most often in dialysis units.
- An MCO dialyzer removes the large middle molecules but also keeps the proteins you need. Some studies show that MCO dialyzers remove more middle molecules than high-flux dialyzers. Some people say they have less uremic symptoms like itching, restless legs, poor sleep, and fatigue (feeling very tired) with an MCO dialyzer used for HDx.
- A low-flux dialyzer is also available but is not used a lot. It removes less waste products than high-flux hemodialysis or HDx.

Different types of dialyzers can filter out different sizes of toxins.



REMOVES SMALLER TOXINS

REMOVES LARGER TOXINS



## Questions to ask your dialysis team

What type of dialyzer is used for my dialysis treatments?

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How does my dialysis team decide which type of dialyzer is best for me?

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If I have symptoms like itching, restless legs, poor sleep, and fatigue, will you try another type of dialyzer?

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Will my doctor consider trying an MCO dialyzer to see if it may improve how I feel?

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### Glossary

**Hemodialysis** is a life-saving treatment for kidney failure that removes waste products and extra fluid from the body.

A **dialyzer** is the filter used for hemodialysis treatments. This filter is attached to the dialysis machine and works like the filters in the kidneys. It removes waste products (small and middle molecules) and extra fluid from the body, but holds back proteins and other nutrients that the body needs. There are different types of dialyzers such as low flux, high flux, and MCO dialyzers.

**Middle molecules** are waste products that are also called uremic toxins. When the kidneys fail, middle molecules build up in the body and cause uremic symptoms.

**Uremic symptoms** from buildup of middle molecules may include fatigue (feeling very tired), pruritus (itching), muscle cramps, nausea, vomiting, loss of appetite, weight loss, restless legs, bone pain, shortness of breath.

For more information, contact the National Kidney Foundation

Toll-free help line: **855.NKF.CARES** or email: **[nkfcare@kidney.org](mailto:nkfcare@kidney.org)**