



# Dialysis

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The main purpose of dialysis is to help impaired renal function. When kidneys are damaged, they are no longer able to remove wastes and excess fluid from the bloodstream efficiently. Wastes such as nitrogen and creatinine build up in the bloodstream.

There are different types of dialysis:

- Peritoneal dialysis
- Haemodialysis
- Haemofiltration
- Haemodiafiltration.

**Peritoneal dialysis** is where fluid is introduced into the peritoneal cavity via a Tenckhoff catheter. Uraemic solutes diffuse into it across the peritoneal membrane.

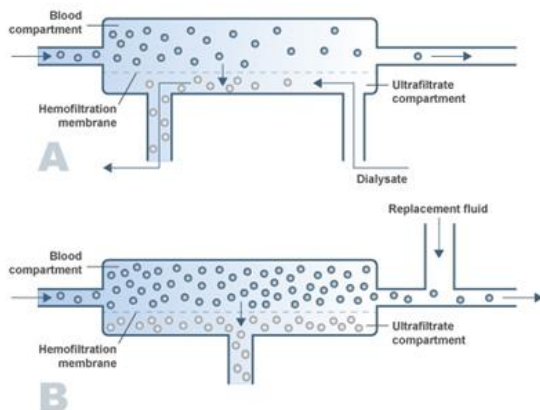


## What is the difference between haemodialysis, haemofiltration and haemodiafiltration?

Haemodialysis removes solutes (dissolved solids) by diffusion. As such, it is relatively inefficient for solutes of high molecular weight as clearance by diffusion is inversely related to the molecular weight of the solute.

Haemofiltration removes solutes by convection.<sup>1</sup>

The below diagram shows the difference between haemodialysis and haemofiltration.



**A:** Haemodialysis – solute is driven across a semipermeable membrane by diffusion.

**B:** Haemofiltration - fluid is driven across the semipermeable membrane by convection. The solute-containing plasma water is removed from the body and replaced with clean fluid.

<sup>1</sup> GP Notebook, 'Haemodialysis vs haemofiltration', retrieved 27 December 2020, <http://www.gpnotebook.co.uk/simplepage.cfm?ID=1671036973>

## So then what is haemodiafiltration?

Haemodiafiltration is a combination of haemodialysis and haemofiltration.

- Haemodialysis is used to diffuse molecular solutes that are relatively small in weight and size.
- Haemofiltration is used to remove bigger molecular waste products and substances.<sup>2</sup>



## What types of access are used for haemodialysis?

There are three different types of dialysis access used for hemodialysis:

- Central venous catheter (CVC)
- Arteriovenous fistula (AV Fistula)
- Arteriovenous graft (AV Graft).<sup>3</sup>

## Do you know your dialysis acronyms?



APD	Automated peritoneal dialysis
CAPD	Continuous ambulatory peritoneal dialysis
CCPD	Continuous cyclic peritoneal dialysis
CHF	Continuous hemofiltration
CRRT	Complete renal replacement therapy
CVVD	Continuous veno-venous haemofiltration
CVVHD	Continuous veno-venous haemodialysis
CVVHDF	Continuous veno-venous haemodiafiltration
EDD	Extended daily dialysis
EDDF	Extended daily diafiltration
HD	Haemodialysis
IHD	Intermittent haemodialysis
IHDF	Intermittent haemodiafiltration
IHF	intermittent haemofiltration
IPD	Intermittent peritoneal dialysis
ISO UF	Isolated Ultrafiltration
NHHD	Nocturnal home haemodialysis
PD	Peritoneal dialysis
SLED	Sustained low efficiency dialysis
SLEDD	Sustained low efficiency daily dialysis

<sup>2</sup> Up to Date, 'Technical aspects of hemodiafiltration' retrieved 27 December 2020, <https://www.uptodate.com/contents/technical-aspects-of-hemodiafiltration>

<sup>3</sup> Azura Vascular Care, 'The 4 types of dialysis access', retrieved 27 December 2020, <https://www.azuravascularcare.com/infodialysisaccess/types-of-dialysis-access/>