



## Methodology of Dialysis to Purify Kidney Functioning

Jonny Karunia Fajar\*

Department of Internal Medicine, Universities Brawijaya, Indonesia

### DESCRIPTION

Hemodialysis is a treatment to filter wastes and water from your blood, as your kidneys did when they were healthy. Hemodialysis helps control blood pressure and balance important minerals, such as potassium, sodium, and calcium, in your blood. Hemodialysis can help you feel better and live longer, but it's not a cure for kidney failure. Urging hemodialysis, your blood goes through a filter, called a dialyzer, outside your body. A dialyzer is sometimes called an "artificial kidney." At the start of a hemodialysis treatment, a dialysis nurse or technician places two needles into your arm. You may prefer to put in your own needles after you're trained by your health care team. A numbing cream or spray can be used if placing the needles bothers you. Each needle is attached to a soft tube connected to the dialysis machine. Hemodialysis, also spelled hemodialysis, or simply dialysis, is a process of purifying the blood of a person whose kidneys are not working normally. This type of dialysis achieves the extracorporeal removal of waste products such as creatinine and urea and free water from the blood when the kidneys are in a state of kidney failure. Hemodialysis is one of three renal replacement therapies (the other two being kidney transplant and peritoneal dialysis). An alternative method for extracorporeal separation of blood components such as plasma or cells is apheresis. Hemodialysis can be an outpatient or inpatient therapy. Routine hemodialysis is conducted in a dialysis outpatient facility, either a purpose-built room in a hospital or a dedicated, stand-alone clinic. Less frequently hemodialysis is done at home. Dialysis treatments in a clinic are initiated and managed by specialized staff made up of nurses and technicians; dialysis treatments at home can be

self-initiated and managed or done jointly with the assistance of a trained helper who is usually a family member. The principle of hemodialysis is the same as other methods of dialysis; it involves diffusion of solutes across a semipermeable membrane. Hemodialysis utilizes counter current flow, where the dialysate is flowing in the opposite direction to blood flow in the extracorporeal circuit. Counter-current flow maintains the concentration gradient across the membrane at a maximum and increases the efficiency of the dialysis. Fluid removal (ultrafiltration) is achieved by altering the hydrostatic pressure of the dialysate compartment, causing free water and some dissolved solutes to move across the membrane along a created pressure gradient. The dialysis solution that is used may be a sterilized solution of mineral ions and is called dialysate. Urea and other waste products including potassium, and phosphate diffuse into the dialysis solution. However, concentrations of sodium and chloride are similar to those of normal plasma to prevent loss. Sodium bicarbonate is added in a higher concentration than plasma to correct blood acidity. A small amount of glucose is also commonly used. The concentration of electrolytes in the dialysate is adjusted depending on the patient's status before the dialysis. If a high concentration of sodium is added to the dialysate, the patient can become thirsty and end up accumulating body fluids, which can lead to heart damage.

### ACKNOWLEDGEMENT

None

### CONFLICTS OF INTEREST

The authors declare no conflict of interest.

<b>Received:</b>	02-May-2022	<b>Manuscript No:</b>	ipacn-22-13714
<b>Editor assigned:</b>	04-May-2022	<b>PreQC No:</b>	ipacn-22-13714 (PQ)
<b>Reviewed:</b>	18-May-2022	<b>QC No:</b>	ipacn-22-13714
<b>Revised:</b>	23-May-2022	<b>Manuscript No:</b>	ipacn-22-13714 (R)
<b>Published:</b>	31-May-2022	<b>DOI:</b>	10.21767/ipacn-6.3.118

**Corresponding author** Jonny Karunia Fajar, Department of Internal Medicine, Universities Brawijaya, Indonesia; E-mail: gembyo@gmail.com

**Citation** Jonny Karunia Fajar (2022) Methodology of Dialysis to Purify Kidney Functioning. Ann Clin Nephrol.6:118.

**Copyright** © Jonny Karunia F. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.