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Application of Rotary Sensor in Haemodialysis machine

Haemodialysis is a way of replacing some of the functions of your kidney, if your kidneys have failed, by using a machine to filter and clean your blood. Blood is pumped out of your body to the machine where it is passed through a series of tiny tubes, in an 'artificial kidney' or 'dialyser'

PRINCIPLE: The principle of Haemodialysis is the same as other methods of dialysis; it involves diffusion of solutes across a semi permeable membrane.

• Haemodialysis 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.

• It involves diffusion, osmosis and ultra filtration.

Rotary sensors are typically used in equipment to regulate blood flow to and from the patient during the dialysis procedure.

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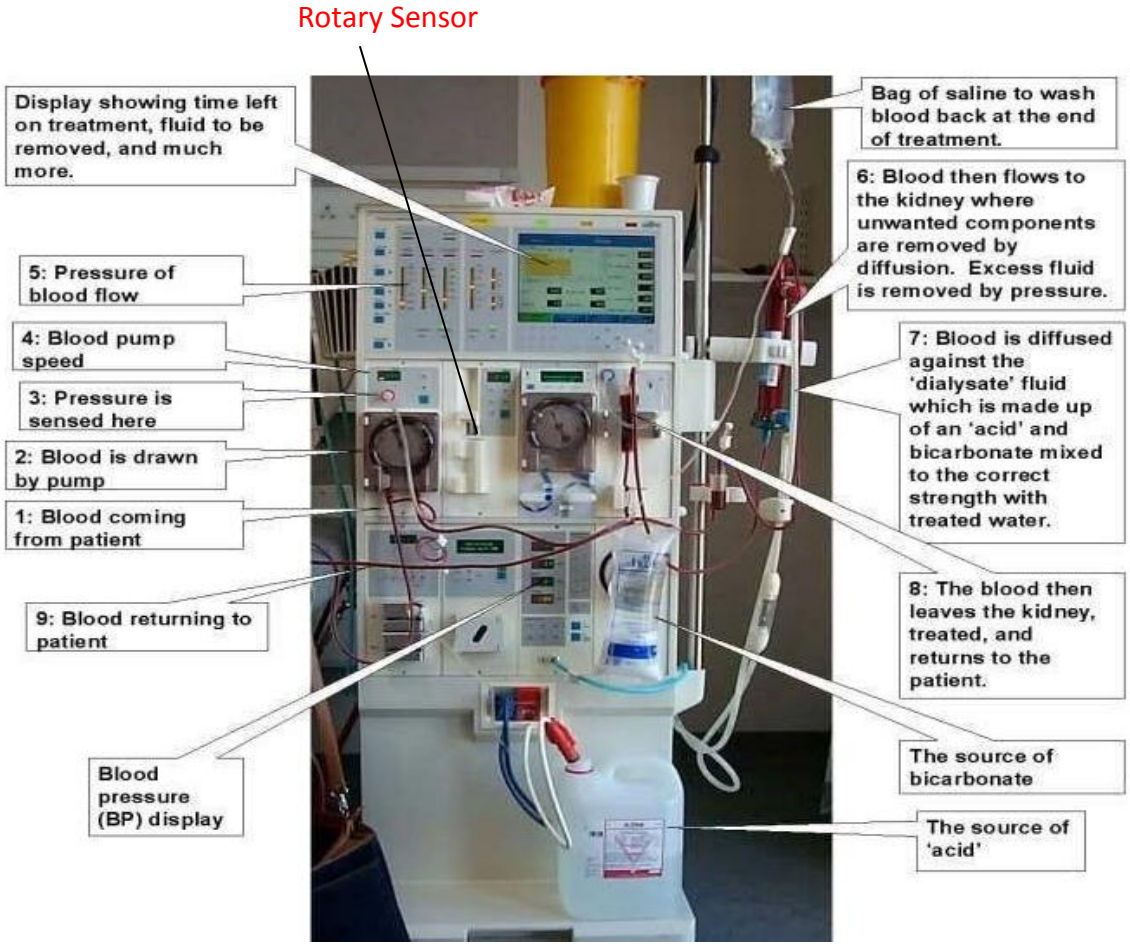
Rotary Sensor
Display showing time left on treatment, fluid to be removed, and much more.
Bag of saline to wash blood back at the end of treatment.
6: Blood then flows to the kidney where unwanted components are removed by diffusion. Excess fluid is removed by pressure.
5: Pressure of blood flow
4: Blood pump speed
7: Blood is diffused against the 'dialysate' fluid which is made up of an 'acid' and bicarbonate mixed to the correct strength with treated water.
3: Pressure is sensed here
2: Blood is drawn by pump
1: Blood coming from patient
8: The blood then leaves the kidney, treated, and returns to the patient.
9: Blood returning to patient
The source of bicarbonate
Blood pressure (BP) display
The source of 'acid'