

The Role of the Perfusionist

12. A perfusionist sets up and is responsible for the heart/lung machine in its complete assembly of sterile parts, together with its management during open heart surgery.
13. Pre-operatively, the perfusionist will need to know the weight of the patient, this is especially critical in babies. The weight will determine the flow rates of the heart/lung machine thereby the size of oxygenator to be selected for that operation. The perfusionist will also need to know the blood chemistry of the patient, so that the machine can be primed correctly.
14. The perfusionist will prime the machine with various solutions so that it is “bubble” free and therefore ready for connection by the surgeon to various parts of the body. It is the surgeon’s job to implant the various cannulae into the patient’s body to which lines from the machine will be connected.
15. The temperature of the fluid in the machine is lowered to around 3°C lower than normal body temperature before connection is made, so that the body does not receive a shock and remains stable when bypass is established.
16. Depending on the surgeon’s choice, an adult patient could either remain at normal temperature or cooled to 28°C and paediatrics being cooled to around 12°-14°C and brought into a state of circulatory arrest. The surgeon cross-clamps the aorta and snares the vena cava so that all circulation is, from that point, diverted to the heart/lung machine and the patient’s heart (and lungs) is blood free for operating.
17. It is then the perfusionist’s job to maintain circulation to the rest of the body and to keep the patient’s body at a temperature decided by the surgeon.
18. If the surgeon requests the patient’s body temperature be cooled, then the flow to and from the machine is also reduced accordingly. This ensures there will be less haemolysis, that is, reduced flow also reduces damage to the red blood cells.