

BLOOD COLLECTION

AREA of APPLICATION

ICS is used routinely in some areas of surgical practice. The technique involves aspirating blood lost within the surgical field into a collection reservoir. Blood is mixed with an anticoagulant solution containing either heparin or citrate to prevent clotting. Collection can be undertaken with or without further processing and reinfusion.

STAFF

All staff who operate or set up the cell salvage machine

PROCEDURE

Aspiration of blood and vacuum pressure

To reduce haemolysis the vacuum pressure should always be set as low as practicable. Typical values are between -100 and -150 mmHg (avoid excess pressures).

To optimize the yield and quality of salvaged blood a large bore suction tip (minimum 4mm; e.g. Yankauer sucker) should be used and surface skimming minimized (aspirating blood mixed with large quantities of air from the surgical field).

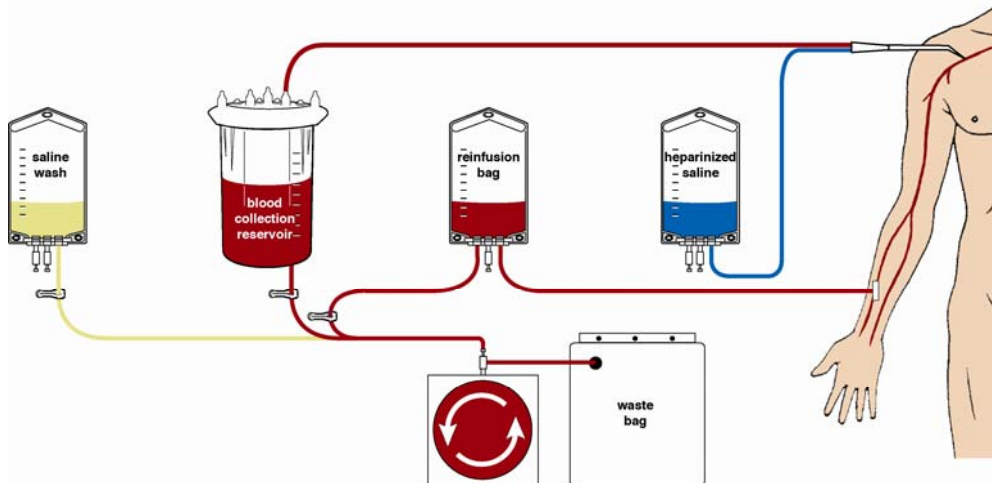
In the event of massive blood loss, the vacuum level can be temporarily raised to clear the field and then reduced to a lower level for lower flows.

Setting up the cell salvage equipment

Before setting up, check the mechanical integrity of the device by powering up to allow the "self-test" to be completed and any problems highlighted. When handling disposables maintain strict sterility at all times and always treat processed blood as being potentially infected.

A. Standby

In some circumstances it may be favourable to set up the equipment for cell salvage in advance, ensuring that it is available quickly when needed without unnecessary delay.



- The disposables are loaded “unprimed” on the device. Do not spike solution bags until actually needed (this will extend the useable time limit on the prepared machine).
- The dual lumen suction line can only be connected when the machine is used and it is passed from the sterile surgical field by the scrub nurse.
- To ensure a closed system, the caps protecting any unused port must remain in place.
- The time of set up and an expiry date and time should be recorded and the disposable set labelled accordingly. There is no definitive guidance for how long the equipment can be left. When reviewing what happens with apheresis machines it would appear that unprimed system could be used for up to 24 hours but once primed (in this case the saline bags spiked) these should be used within 8 hours or disposed of.
- If the device and disposables are not used within the allotted time-frame, the device is cleared down and all the consumables discarded.

B. Collect only

In some situations it may be advisable to collect the shed blood and wait to see if sufficient volume has been collected before progressing to the processing phase. Most cell salvage devices will allow this approach, using only the reservoir and aspiration line in the first instance. Once sufficient blood has been collected the processing set can then be loaded.

C. Collect and process

When it is likely that sufficient blood loss will be experienced to justify processing, the machine can be set up with the full disposable set at the beginning of the surgical procedure.