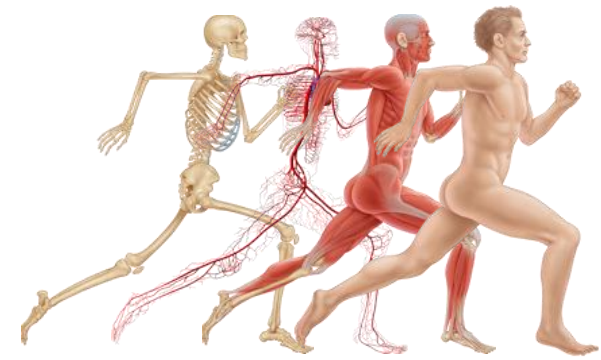


ASPIRE

Leading Advancements

in Autologous Cell Therapy



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ASPIRE

MEDICAL
INNOVATION

Marrow Cellution™

*Autologous Bone Marrow Aspiration &
Cancellous Bone Graft Harvesting*



Heparin Flush Protocol

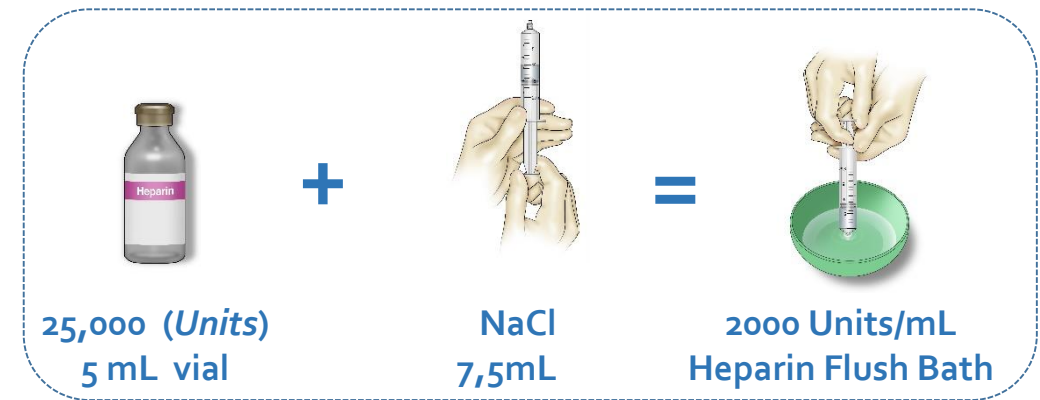
ASPIRE

MEDICAL
INNOVATION

Heparin Flush Protocol

Preparation of a Heparin Flush Bath

- Obtain a 5 mL vial of 5,000 units Heparin per mL (25,000 units in total).
- Using syringe, empty the 5mL into a sterile bowl.
- Add 7,5 mL of sterile saline to bowl.
- Bowl contains 12,5 mL of 2,000 units Heparin per mL
- Summary: $25,000 \text{ (Units)} / 12,5 \text{ (mL)} = 2000 \text{ Units/mL}$



Alternate Preparation

- Obtain 10mL of 1,000 unit per mL Heparin (10,000 units in total).
- No dilution required.

Note: It is important that the strength per mL of the heparin rinse is at least 1,000 but preferably 2,000 and that you have adequate volume to rinse all of the needles and syringes.

Marrow Cellution Component Flush Protocol

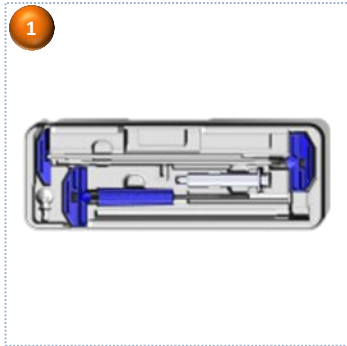
Component Flushing (Rinsing) Instructions

- Withdraw approximately 5-7mL of Heparin Solution (2,000 units/mL) into 10mL syringe
- Remove Stylets from Introducer Needle and Aspiration Cannula with distal end of needle inside sterile bowl
- Connect Heparin-filled syringe to the shorter Introducer needle and inject Heparin until needle is fully rinsed.
- Aspirate Heparin back into syringe and disconnect from needle.
- Repeat for the longer aspiration needle.
- Rinse each stylet, short introducer sharp and blunt, longer aspiration stylet.
- With needle guards in place, rinse the outside of each needle by injecting Heparin into the open end of the guard.

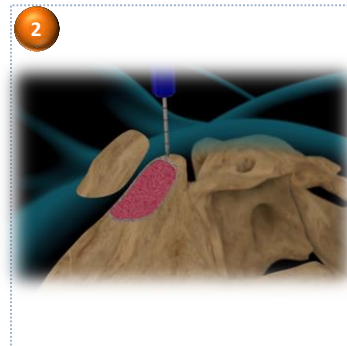


Marrow Cellution Overview

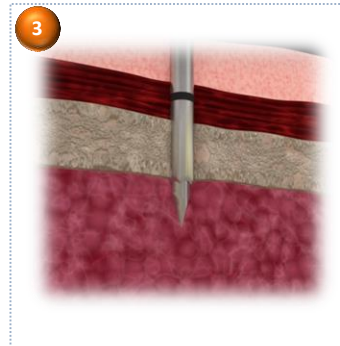
Heparin Flush
(2000 Units/ml)



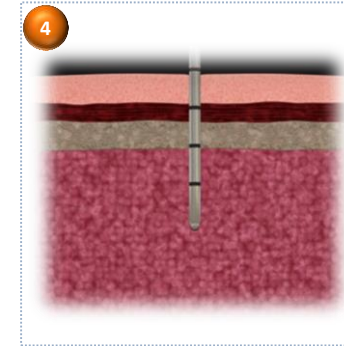
Proximation
Posterior/Anterior



Insert
Sharp Stylet



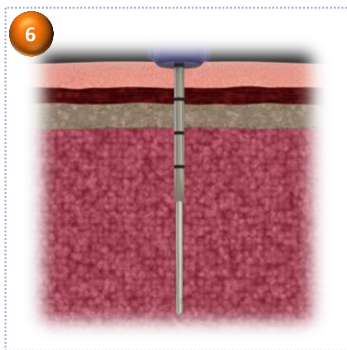
Insert
Blunt Stylet



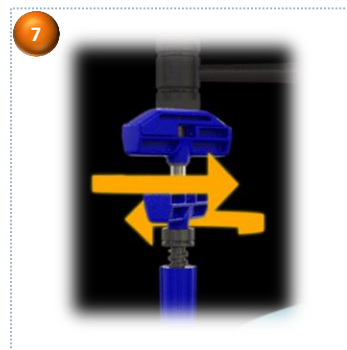
Rotate Collar to
Skin Level



Insert Aspiration
Cannula through Trocar



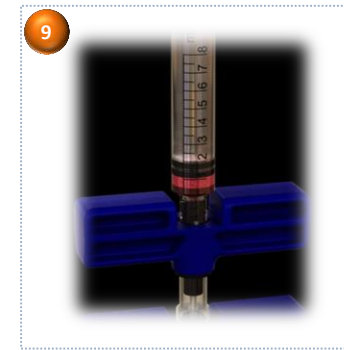
Proximate Handles
& Secure



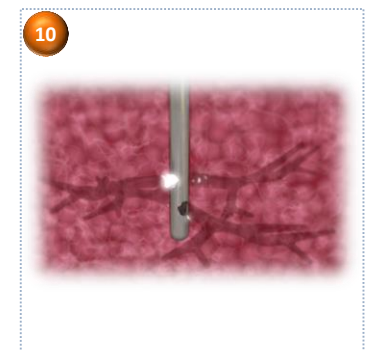
Syringe Connection
1ml Heparin



Aspirate
1ml Marrow



Peripheral
Aspiration View



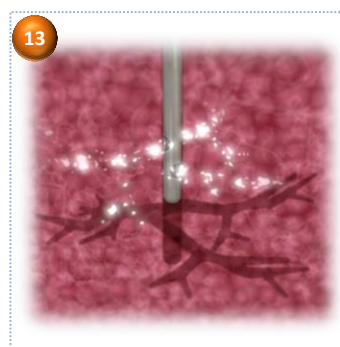
Rotate Handles
360°



Repeat Aspiration
1ml



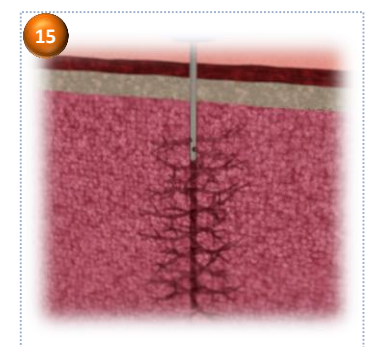
Peripheral
Aspirate Collection



Aspiration
1ml Marrow



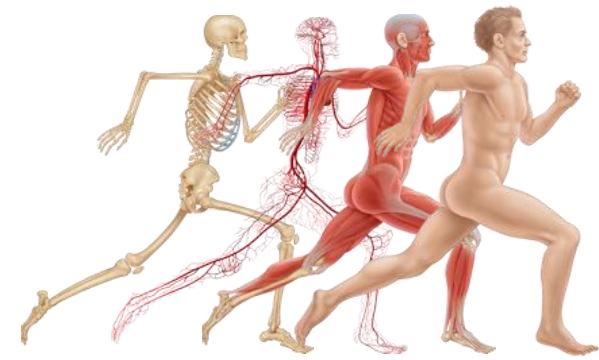
Repeat
Aspiration Steps



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