B|BRAUN
SHARING EXPERTISE

QUICK
REFERENCE
GUIDE

PERIPHERAL IV CANNULATION TRAINING PROGRAMME

INTRODUCTION

Welcome to the B. Braun Peripheral IV Cannulation Quick Reference Guide. The purpose of this booklet is to support the knowledge and training you received at the B. Braun peripheral IV cannulation training session.

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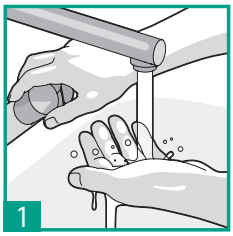
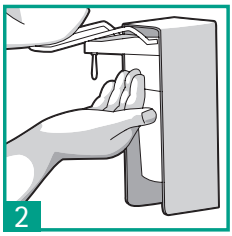
1. HAND HYGIENE

Wash hands when visibly soiled. Otherwise, use alcohol based handrub.

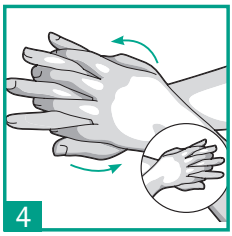


Wet hands with water



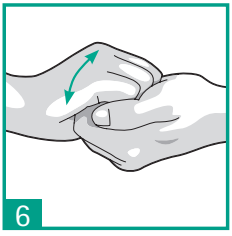
Apply enough soap to completely cover your hands

Rub hands palm to palm



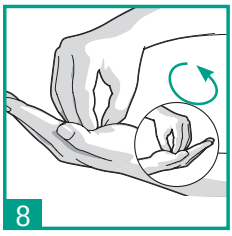
Right palm over back of left hand with interlaced fingers and vice versa

Palm to palm with fingers interlaced



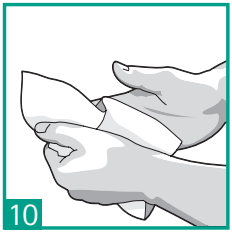
Backs of fingers to opposing palms with fingers interlocked

Rotational rubbing of left thumb clasped in right palm and vice versa



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa

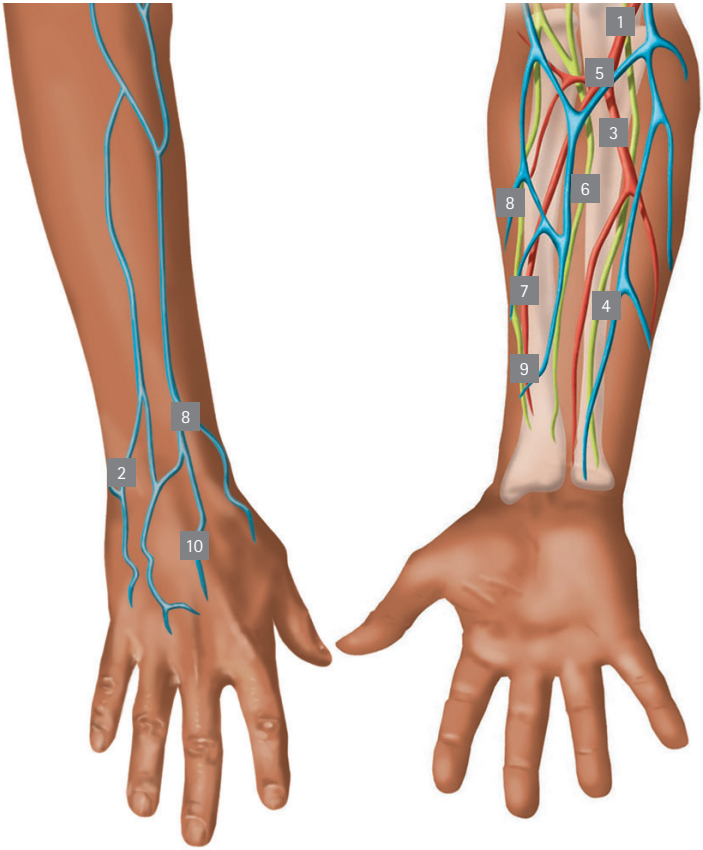
Rinse hands with water



Dry hands thoroughly

Your hands are now clean

2. VEIN SELECTION



1 = Brachial Artery
2 = Basilic Vein
3 = Ulnar Artery
4 = Ulnar Nerve
5 = Median Cubital Vein
6 = Median Nerve
7 = Radial Artery
8 = Cephalic Vein
9 = Radial Nerve
10 = Metacarpal Vein

3. IV CANNULA SELECTION

The smallest gauge and the shortest length to accommodate the prescribed therapy

14G

CRYSTALLOID GRAVITY FLOW RATE
343 ml/min - 345 ml/min

GENERAL USE
- For rapid transfusion of whole blood, blood components or viscous fluids
- Often used in theatres or emergency interventions

SUITABLE ANATOMICAL LOCATION FOR INSERTION
- Antecubital fossa
- Median cephalic (radial side)
- Median basilic (ulnar side)
- Median cubital (in front of elbow joint)

16G

CRYSTALLOID GRAVITY FLOW RATE
196 ml/min - 210 ml/min

GENERAL USE
- For rapid transfusion of blood components or viscous fluids
- Often used in theatres or emergency interventions

SUITABLE ANATOMICAL LOCATION FOR INSERTION
- Antecubital fossa
- Median cephalic (radial side)
- Median basilic (ulnar side)
- Median cubital (in front of elbow joint)

18G

CRYSTALLOID GRAVITY FLOW RATE
96 ml/min - 100 ml/min

GENERAL USE
- For infusing blood components quickly
- Parenteral nutrition
- Stem cell harvesting and cell separation
- Large volumes of fluids

SUITABLE ANATOMICAL LOCATION FOR INSERTION
- Median cubital (radial aspect of forearm)
- Median basilic (ulnar aspect of forearm)
- Median antebrachial

20G

CRYSTALLOID GRAVITY FLOW RATE
60 ml/min - 61 ml/min

GENERAL USE
- For routine infusion therapies and infusing blood components or large volumes of fluid
- Patients on long term medication
- Patients receiving up to 2-3 litres of fluid per day

SUITABLE ANATOMICAL LOCATION FOR INSERTION
- Accessory cephalic (branches off cephalic vein along the ulna bone)
- Basilic (ulnar aspect of the lower arm along ulna bone)
- Cephalic (radial aspect of lower arm along radius bone of forearm)
- Metacarpal (on dorsum of hand)

22G

CRYSTALLOID GRAVITY FLOW RATE
35 ml/min - 36 ml/min

GENERAL USE
- Appropriate for most infusion therapies
- Standard for paediatrics
- For infusing blood components quickly

SUITABLE ANATOMICAL LOCATION FOR INSERTION
- Used in adults, adolescents, children, infants and geriatric patients
- Commonly used in the acute and chronic care setting
- May be more difficult to pierce through

24G

CRYSTALLOID GRAVITY FLOW RATE
22 ml/min

GENERAL USE
- For elderly, paediatric and neonatal patients
- Oncology patients undergoing chemotherapy
- Medications, short term infusions
- Patients with fragile veins

SUITABLE ANATOMICAL LOCATION FOR INSERTION
- Digital veins (along lateral-distal portion of fingers)
- Accessory cephalic (branches off cephalic vein along the ulna bone)
- Basilic (ulnar aspect of the lower arm along ulna bone)
- Cephalic (radial aspect of lower arm along radius bone of forearm)
- Metacarpal (on dorsum of hand)

4. ASEPTIC TECHNIQUE

Cannulation Guideline Procedure using an aseptic non touch method

Patient Preparation

- Patient education
- Patient consent
- Check patient identity

Handwashing

Personal Protective Equipment

Tourniquet Application and Vein Selection

- Palms width (approx 10 cm) above insertion site
- Place two fingers on patient side prior to tightening
- Should be able to palpate arterial pulse distal to tourniquet
- Should not be in situ for longer than sixty seconds
- Remove once vein is located, prior to preparation of equipment

Preparation of Equipment

- Cannula - various gauges
- Disposable tourniquet
- Alcohol based hand scrub
- Skin cleaning preparation (2% Chlorhexidine in 70% Isopropyl Alcohol)
- Needlefree access device
- Sterile dressing
- Clean hypoallergenic tape
- Saline flush

Check integrity and dates of all packaging

Skin Cleaning

- Cleanse with skin cleaning agent (2% Chlorhexidine in 70% Isopropyl Alcohol) for 30 seconds
- Allow to fully air dry
- Do not touch the cleansed site again

Aseptic Technique

- The cleansed site should not come into contact with any item that is not sterile
- Key-Parts of equipment should not be touched or come into contact with any item that is not sterile
- Do not re-palpate the vein once site is clean

Insert Cannula

- Reapply tourniquet
- Insert cannula bevel up
- Maintain skin traction
- Observe for first and second flashbacks
- Advance into vein
- Release tourniquet
- Stabilise and occlude while removing stylet
- Attach white cap or primed needlefree access device

Dress and Secure

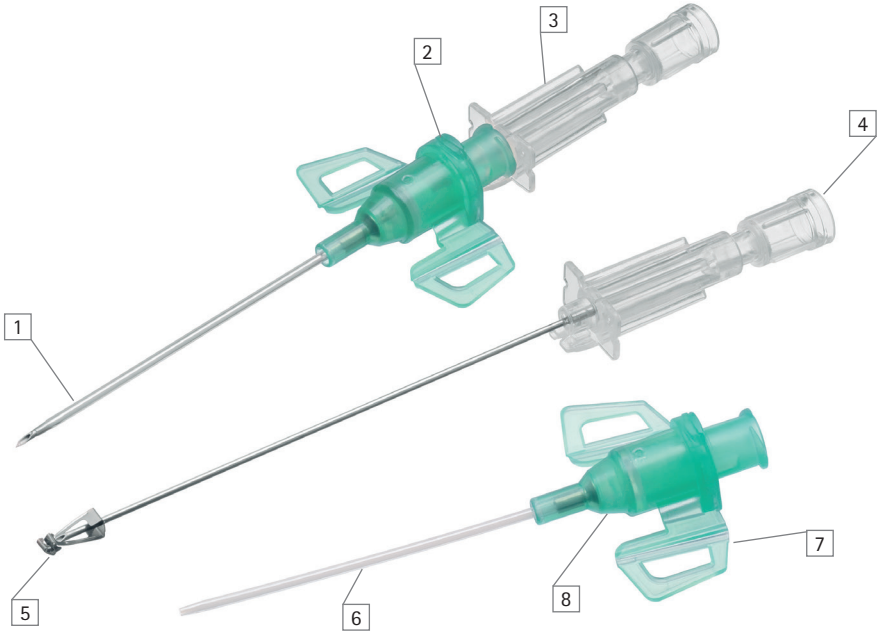
Apply a transparent occlusive IV dressing

Check Patency

- Flush using 0.9 NaCl in 10 ml syringe
- If resistance is felt, stop
- Observe for infiltration

5. Introcan Safety® 3

PRODUCT SPECIFICATION



PRIOR TO USE

- Ensure push plate is at top indicating needle bevel is in correct position

DURING CANNULATION

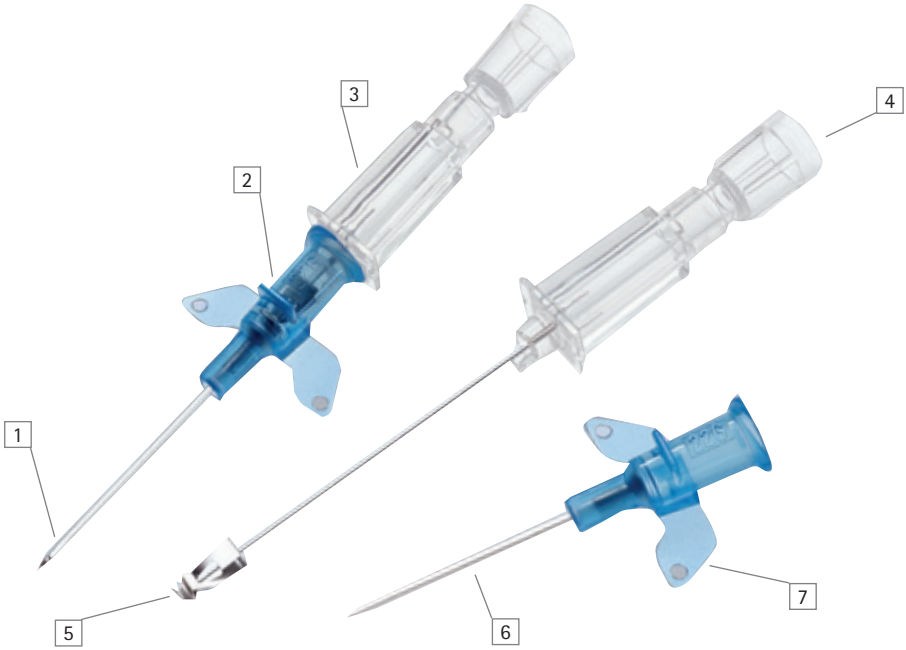
- Ensure needle is withdrawn slowly from cannula parallel to vein
- Multi use septum minimises blood back flow on every manipulation

1. Needle
2. Push Plate
3. Magnified Flashback Chamber
4. Stopper
5. Safety Clip
6. Catheter
7. Wings
8. Multi Use Septum

Scan the QR code to see an Introcan Safety® 3 Peripheral Cannulation Training video

6. Introcan Safety®

PRODUCT SPECIFICATION



PRIOR TO USE

- Ensure push plate is at top indicating needle bevel is in correct position

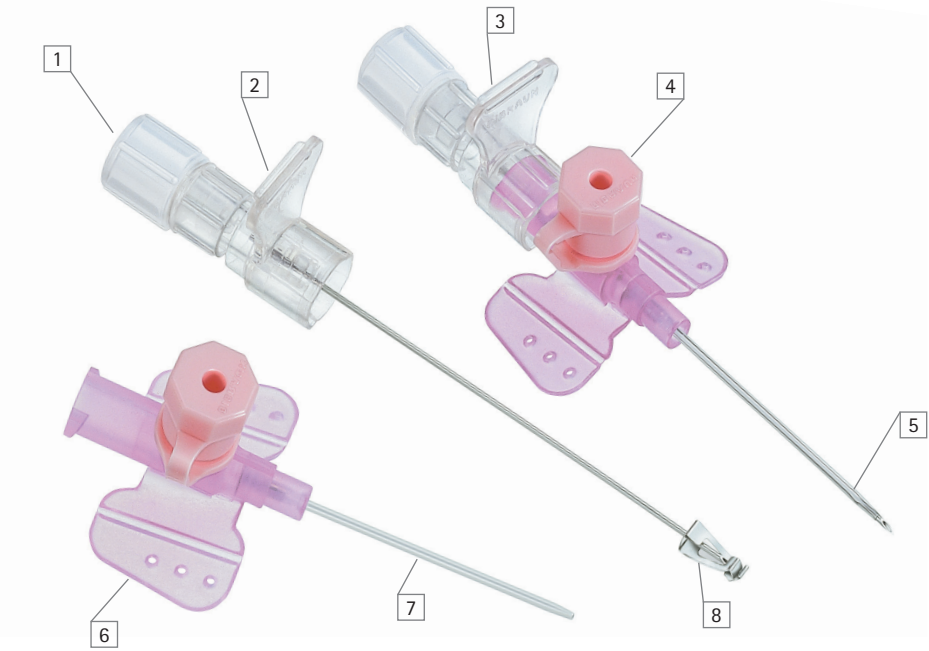
DURING CANNULATION

- Ensure needle is withdrawn slowly from cannula parallel to vein

1. Needle
2. Push Plate
3. Magnified Flashback Chamber
4. Stopper
5. Safety Clip
6. Catheter
7. Wings

7. Vasofix® Safety

PRODUCT SPECIFICATION



PRIOR TO USE

- Ensure wings are flattened at hinges
- Loosen white cap prior to use

DURING CANNULATION

- Ensure needle is withdrawn slowly from cannula parallel to vein

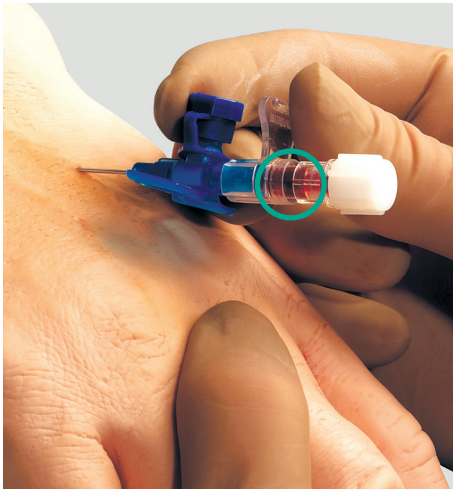
1. White Cap
2. Hydrophobic Membrane
3. Grip Plate
4. Injection Port
5. Needle
6. Wings
7. Catheter
8. Safety Clip

Scan the QR code to see a Vasofix® Safety Peripheral Cannulation Training video

8. FLASHBACK VISUALISATION

FIRST FLASHBACK

Visual of first flashback - blood in flashback chamber of stylet



SECOND FLASHBACK

Visual of second flashback - blood in catheter shaft

KEY STEPS AFTER INSERTION

- Connect white cap, primed needlefree access device or infusion line
- Secure cannula with transparent occlusive dressing
- Flush to check patency and observe for signs of infiltration (0.9 NaCl in 10 ml syringe)
- Remove personal protective equipment and wash hands
- Record - as per local policy
- Plan future care - check site and patency at regular intervals and document as per local policy

9. NEEDLEFREE ACCESS DEVICE

PRIOR TO USE WHEN CONNECTED

1. Open clamp

2. Disinfect and dry
   - Disinfect the device in accordance with your hospital/department protocol
   - Clean the device rigorously for at least 15 seconds in accordance with epic3* guidelines or in accordance with your local policy guidelines (Epic 3, 2013)
   - Allow the device to air dry

3. Connect and inject
   - Attach syringe or luer connection straight onto swabable membrane and secure with a clockwise twist

4. Flush

5. Detach syringe and close the clamp in accordance with manufacturers' guidelines depending on the displacement type of the device

6. Wipe and allow to dry

10. COMPLICATIONS

COMPLICATION	RECOMMENDATION
PUNCTURING ARTERY When the needle has entered the artery instead of the vein	Release tourniquet
	Remove the device immediately
	Apply pressure until bleeding stops
	Provide explanation to patient
	Do not reapply a tourniquet to the limb
	Document in patient's notes
INFILTRATION OR EXTRAVASATION When the vein is transfixed any fluid or medication placed down the cannula will leak into surrounding tissue. Depending on the properties of the fluid/medication this leads to either infiltration or extravasation.	Assess the area distal to the cannula site for capillary refill, sensation, and motor function.
	Aspirate for a blood return (according to local policy)
	Do not flush the cannula, as this would inject additional medication into the tissue
	Disconnect the administration set from the cannula hub, and aspirate from the cannula (according to local policy) and administer antidote, steroid, antihistamine and/or analgesia if prescribed
	Remove the cannula as appropriate only once management plan established
	Apply hot/cold pack as appropriate but do not apply pressure
	Using a skin marker outline the area with visible signs of infiltration/ extravasation to allow for assessing changes.
	Document in patient notes, complete incident form and alert medical staff. The RCN recommend the use of a standard infiltration scale
	Estimate the volume of solution that has escaped into the tissue based on the original amount of solution in the container, the amount remaining when stopped, and rate of injection or infusion. The need for surgical consultation is based on the clinical signs and symptoms and their progression.
	Elevate the extremity to encourage lymphatic reabsorption of the solution/medication
	Use a different extremity for subsequent cannulations.
HAEMATOMA When blood has leaked from a vein/ artery into the surrounding tissue	Remove the device immediately
	Apply pressure until bleeding stops
	If appropriate, elevate limb
	Apply ice pack if necessary
	Do not reapply tourniquet to affected limb
	Document in patient's notes

10. COMPLICATIONS CONTINUED

COMPLICATION	RECOMMENDATION
VASOVAGAL REACTION Syncope or fainting	Call for assistance
	If conscious but feeling faint, ask patient to place head between their knees or lie patient down
	Document in patient's notes
MISSED VEIN	If appropriate withdraw needle slightly and realign
PHLEBITIS Acute inflammation of the vein May be: ■ mechanical ■ chemical ■ infective	Perform visual inspection of cannula for signs of phlebitis, documenting VIP score at least once per shift
	VIP score 2 or greater remove cannula
	Subsequent management of phlebitis depends on cause and severity
CANNULA EMBOLUS	Apply tourniquet to limb immediately
	Care should be taken on placement to ensure vein dilation does not cause embolus to travel
	X-ray and/or chest radiography
	Locate
	Salvage
	Document in patient's notes

11. REFERENCES AND FURTHER READING

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