



SNS COLLEGE OF ALLIED HEALTH SCIENCES
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DEPARTMENT OF CARDIOPULMONARY PERFUSION CARE
TECHNOLOGY

COURSE NAME: Introduction to Surgery

TOPIC : IV Cannulation



IV CANNULATION



- Intravenous cannulation is a technique in which a cannula is placed inside a vein to provide venous access.
- Venous access allows sampling of blood as well as administration of fluids, medications, parenteral nutrition, chemotherapy, and blood products

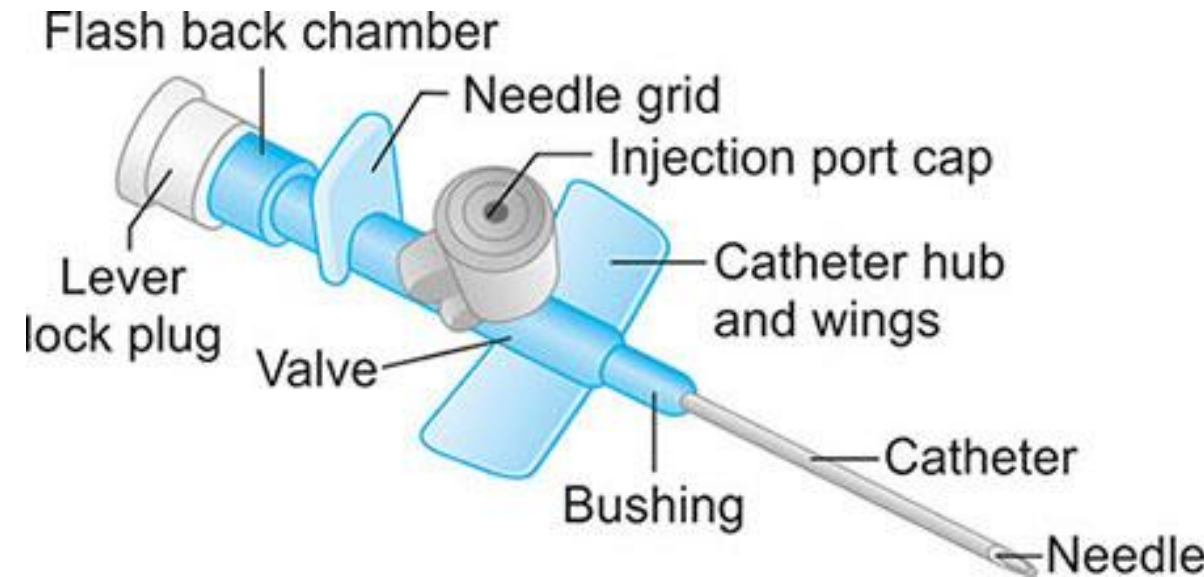




PARTS OF VENFLON



- **Lever Lock plug** – for attachment with an infusion
- **Flash back chamber** – it fills with blood when the vein is successfully cannulated.
- **Needle grid** – for better support
- **Injection port cap** – for adding drugs with infusion
- **Catheter hub and wings** – for easy cannulation
- **Valve** – for one direction flow
- **Bushing** – cannula is secured in the hub by bushing making a trapped end
- **Catheter** – continuation of needle till bushing
- **Needle** - to puncture the vein





COLOUR CODING OF VENFLON



14 Gauge – Orange Color IV Cannula

- Utilized for pre-adult and grown-up real **medical procedure and injury & massive trauma** mixture of extensive sum of liquids or colloids

16 Gauge – Grey Color IV Cannula

- Used in adolescent and adult **major surgery and trauma** infusion of large amount of fluids or colloids

18 Gauge – Green Color IV Cannula

- Used in adolescent and adult **blood infusion** and large amount of fluids or colloids infusion and commonly used.





COLOUR CODING OF VENFLON



20 Gauge – Pink Color IV Cannula

Used in Older children, adolescent and adult Ideal for **I.V. infusion and blood infusion Medication administration**

22 Gauge – Blue Color IV Cannula

Used in Older children, adolescent and elderly adult I.V. infusion with moderate flow rates for Medication administration, **Chemotherapy Infusions**

24 Gauge – Yellow Color IV Cannula

Infant toddler, older children and elderly with Major surgery and trauma among children

Can administer fluids and medication

26 Gauge – Violet Color – For pediatrics and Neonates





USAGE OF CANNULA



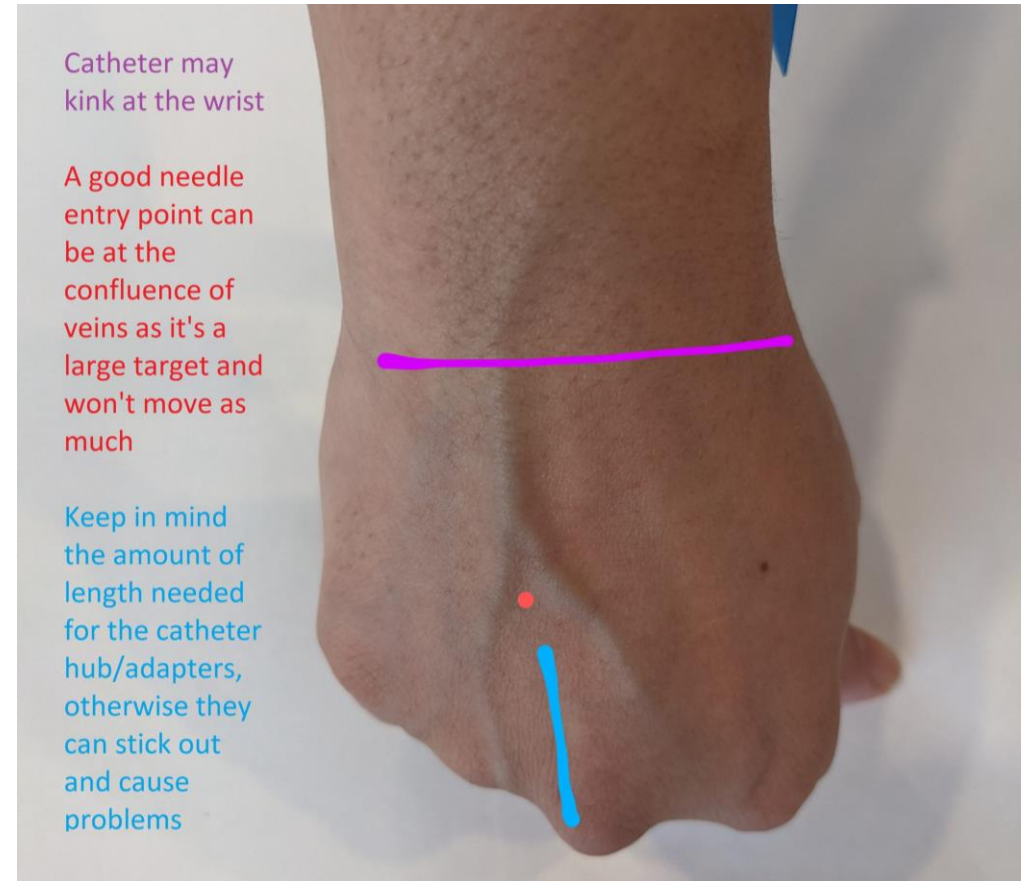
- Routinely, use the smallest gauge of catheter if possible to prevent damage to the vessel intima.
- In an emergency situation use a large gauge catheter to allow administration of large volumes of fluid.
- The superficial veins of the upper extremities are preferred to those of the lower extremities for peripheral venous access as they interfere less with patient mobility and pose a lower risk for phlebitis.



USAGE OF CANNULA



- **It is recommended to choose a straight portion of a vein to minimize the chance of hitting valves.**
- Use the patient's non-dominant arm (if possible)
- For prolonged courses of therapy, it is recommended to start distally





INDICATIONS



- Intravenous medications administration
- Intravenous chemotherapy administration
- Intravenous nutritional support
- Intravenous blood or blood products administration
- Intravenous administration of radiological contrast agents for computed tomography, magnetic resonance imaging, or nuclear imaging.



CONTRAINDICATIONS



- No absolute contraindications to intravenous cannulation exist.
- When peripheral venous access is in an injured, infected, or burned extremity, it should be avoided if possible
- Some irritant solutions can cause blistering and tissue necrosis if they leak into the tissue e.g. chemotherapeutic agents. These solutions are more safely infused into a central vein.

REQUIREMENTS FOR IV CANNULATION

- Gloves
- Gauze
- An alcohol wipe
- Alcohol cleanser
- Tourniquet
- An IV cannula
- A suitable plaster
- A syringe
- Saline
- A clinical waste bin





PRE PROCEDURE



- **Introduce yourself** to the patient
- Explain the procedure to the patient and gain informed **consent to continue**
- Make sure there is **adequate light** and that the room is warm enough to encourage vasodilation
- Make sure the patient is in a **comfortable position** and place a pillow or a rolled towel under the patient's extended arm
- The patient's skin should be washed with soap and water if visibly dirty.
- Provide privacy



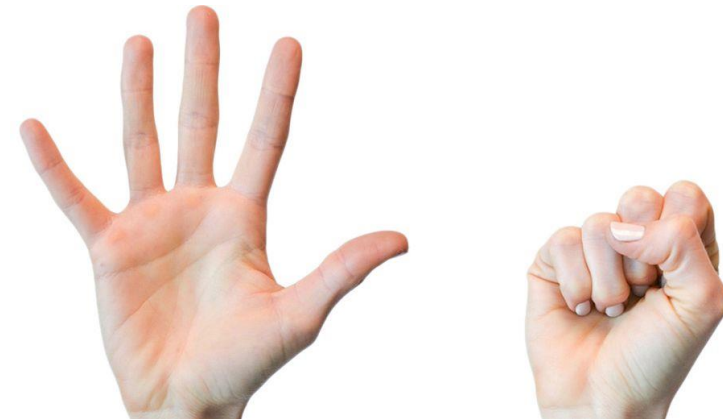


PRE PROCEDURE



If **difficulty is encountered** in finding an appropriate vein, one of the following techniques may be used:

- Inspection of the opposite extremity
- Opening and closing the fist
- Using gravity (holding the arm down)
- Gentle tapping or stroking of the site
- Applying heat (warm towel/pack)





DURING PROCEDURE



- Apply tourniquet (6" or 15cm) above and select the appropriate vein
- Apply an antiseptic solution with friction for seconds, allow to air dry for up.
- Once cleaned, do not touch or re-palpate the skin
- Remove the cannula from its packaging and remove the needle cover ensuring not to touch the needle.
- Stretch the skin distally and tell the patient to expect a sharp scratch.





DURING PROCEDURE



- **Insert the needle**, bevel upwards at about 30 degrees
- Advance the needle until a **flashback of blood** is seen in the hub at the back of the cannula
- Once this is seen, progress the entire cannula a further 2mm, then fix the needle, advancing the rest of the cannula into the vein.





DURING PROCEDURE



- **Release the tourniquet**, apply pressure to the vein at the tip of the cannula and **remove the needle fully**.
- Remove the cap from the needle and put this on the end of the cannula
- Carefully dispose of the needle into the sharps box.

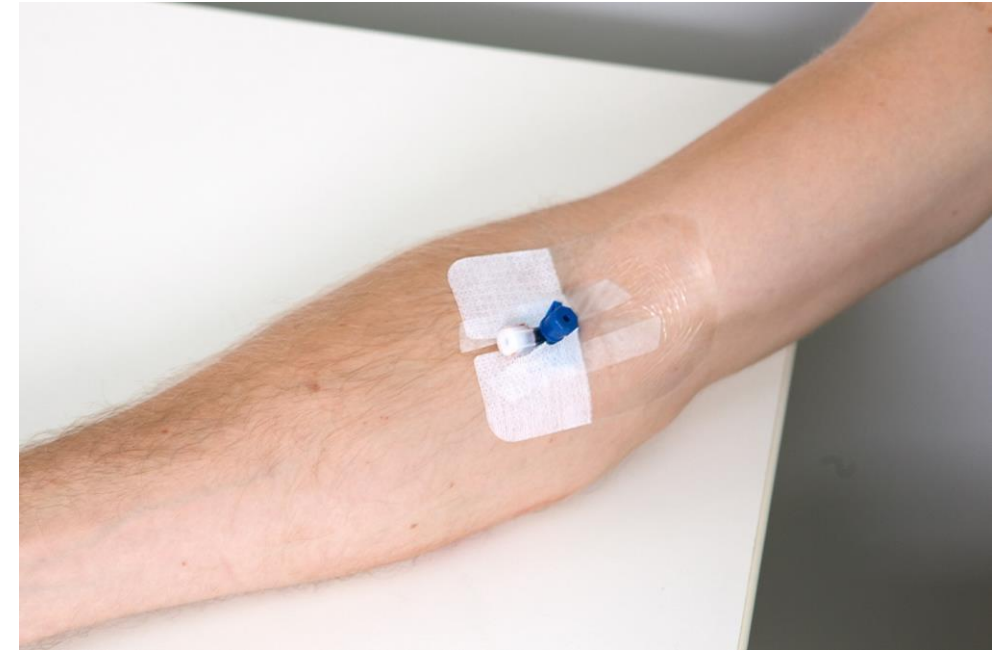




DURING PROCEDURE



- Check function by flushing with saline.
- If there is any resistance, if it causes any pain, or you notice any localized tissue swelling; immediately stop flushing, remove the cannula and start again
- **Apply the plaster** to the cannula to fix it in place





POST PROCEDURE



- Finally, ensure that the patient is comfortable
- Discard all the disposable items and sharps in appropriate bin.
- Wash hands





COMPLICATIONS



- Pain
- Failure to access the vein
- Blood stops flowing into the flashback chamber
- Arterial puncture
- Thrombophlebitis
- Peripheral nerve palsy
- Skin and soft tissue necrosis



ASSESSMENT



- Purpose of IV Cannulation
- Yellow color IV Catheter is used for -----
- Which is the commonly used IV Cannula -----
- What is flashback chamber?
- Degree of needle for insertion



THANK YOU



Reference:

- <https://www.openmed.co.in/2022/03/iv-cannula-gauge-sizes-color-code-flow.html>
- <https://www.medistudents.com/osce-skills/intravenous-cannulation>