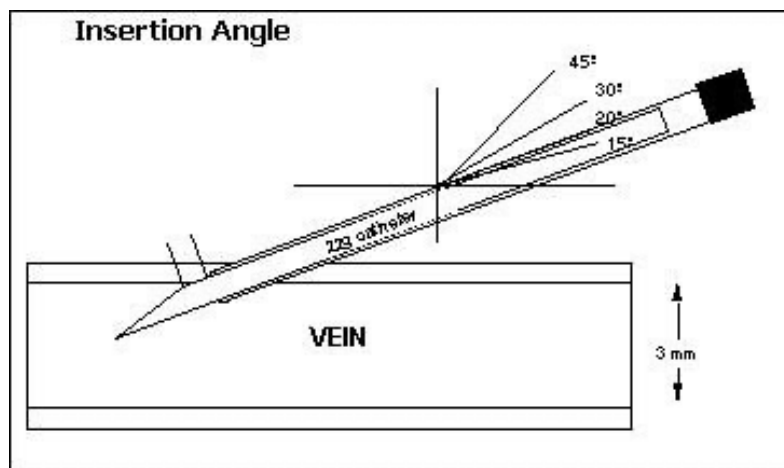


## Sites

- **Inner aspect of elbow**, typically 3 large veins in 'N' configuration – make sure to feel along several spots of the same vein to determine which direction it is going in
- **Top of the hand**, shallow, some people feel strongly against using this site, be sure to ask first.
- **Wrist**, ONLY the top of the wrist, **NEVER the inside of the wrist** – highly innervated and can cause nerve damage
- **Forearm**, follow the cephalic vein along the wrist up to where it connects with the antecubital sites.

## Step by Step

1. Sanitize hands, put on gloves, create a clean working field by opening up a blue pad on which to have your clean materials.
2. Prepare materials – Have sharps container close by to immediately dispose of needle as needed.
3. Tourniquet on and look for veins
  - Take your time, don't rush. If you're not 100% confident, look on both arms. Place the tourniquet on the forearm and assess the wrist and hand.
  - If the site has a pulsation/heartbeat (i.e., it's an artery), do not use this site.
4. Anchor the skin around your site.
5. Scrub your chosen location with an alcohol swab, let it air dry (will only take seconds). DO NOT wave your hand over the site, do not use a gauze pad to dry – this defeats the purpose of cleaning it.
6. Swiftly insert the needle BEVEL UP (15-20 degree angle MAX) and watch for flash (blood entering the tube) – no flash, no dice. Once you see flash make sure you continue to insert the needle at least another mm. Make sure this is in one swift motion.



7. Keep hold of the butterfly – do not let go of it or let it stick out of the participant's arm without being controlled.
  - If for some reason a tube drops or the patient moves, the needle will be at risk of getting yanked out/hurting the participant. Keep hold of the butterfly, stabilizing it in their arm until all tubes are filled. Handle tubes and all other materials using your non-needle hand.
8. Once the last tube is full, remove the tourniquet (using your non-needle hand).
9. Using your non-needle hand, place your gauze over the insertion site. Swiftly pull the needle out and place pressure on the insertion site.
10. Immediately dispose of sharps.
11. Hold pressure until participant stops bleeding. If they are on blood thinners, hold for longer.
12. Apply bandage on patient skin. Some participants have fragile skin or allergy to adhesives. In those cases, just hold pressure until bleeding stops and do not apply tape or bandage.

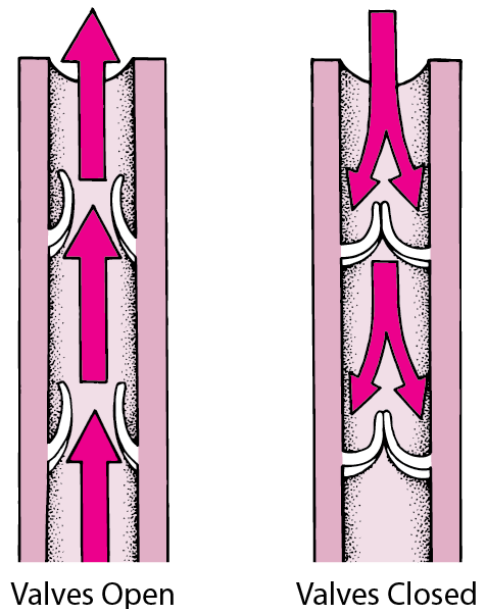
## Common Issues:

### Rolling

- Skin and tissues loosen with age, veins can thicken and become sclerosed making them difficult to penetrate = they dip, duck and dodge out of the way of your needle
- Solution: Strongly anchor the skin around the site.
  - Using your non-needle hand, pull the skin around the site down toward the hand.
  - Make sure you can still feel the vein after you anchor the skin as it will often move from the original location you first palpated.
  - Keep this anchored when inserting the needle
  - Once you insert the needle, place the palm of your needle hand down on the skin to maintain some of the anchoring that your other hand established. Your non-needle hand will then need to let go to handle tubes, tourniquet, gauze, etc.

### - Valves

- To keep blood flowing back up to heart despite lower pressure.
- With age: Increase in frequency, can be friable (make the vein burst), best to avoid inserting near or through them.
- Appear as: Bumps along the veins
- When needle is near one, they feel like a buzzing, starting/stopping of blood flow. The needle is likely pulling blood just outside of a valve causing it to flutter over the bevel of the needle = buzzing/vibration or occlusion.
- Solution: change the angle of the needle VERY slightly or pull back/anchor the skin more tightly.
- Do not advance the needle through the valve as it will rupture the vein. Can also slightly pull the needle out of the skin to pull it away from the valve.



### - Blood stops flowing

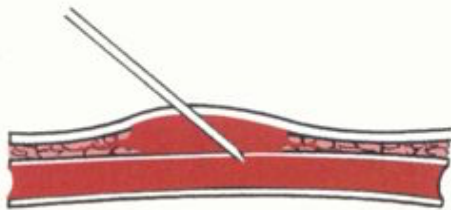
- Near a valve?
  - Adjust as directed^
- Start to see the insertion bubbling up in size?
  - Hematoma, the vein has ruptured, remove the needle and apply pressure for  $\geq 1$  min
- Try a new tube
  - Vacuum can expire or be drained from multiple attempts.
- Had flash with insertion but now no flow?
  - The bevel may be right against the wall of the vein, try adjusting your angle very slightly and gently.
  - OR you may have pierced right through the vein. Try pulling the needle out slightly and watch for restored flow.



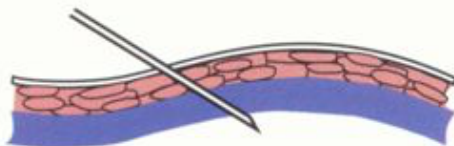
**A** Correct insertion technique; blood flows freely into needle



**C** Bevel on vein lower wall does not allow blood to flow



**E** Needle partially inserted and causes blood leakage into tissue



**F** When a vein rolls, the needle may slip to the side of the vein without penetrating it



**B** Bevel on vein upper wall does not allow blood to flow



**D** Needle inserted too far



**G** Collapsed