

# External Jugular Access

**Indication:** Patients aged 13 years or older who require an immediate prehospital intravenous intervention, in whom attempts at IV and IO access at conventional sites are impractical or have been unsuccessful.

## RELEVANT ANATOMY:

- The external jugular vein is a valveless vein that is normally collapsed in upright individuals.
- The external jugular vein is a **SUPERFICIAL** vein that courses **OVER** the sternocleidomastoid muscle (see picture below).  
*NOTE: Attempting to cannulate more deeply than this may result in inadvertent puncture of the carotid artery or internal jugular vein.*

## GENERAL CONSIDERATIONS:

- It is strongly recommended to **place the patient in a supine, head-down position** to perform the puncture.
  - This will help engorge the veins using gravity.
  - If air is introduced inadvertently the air is more likely to travel towards the feet rather than towards the head.
- Since a conventional tourniquet must not be used on the neck, it is recommended to **compress the vein between the needle insertion and the heart** with a finger to help keep the vein engorged (see picture below).
- Conscious patients may be able to assist you by performing a **Valsalva maneuver** to engorge the vein during puncture.
- If there are no cervical spinal precautions, it is advantageous to **turn the patient's head away from the side of puncture** to improve your approach.
- Extra attention should be paid to **prevent the introduction of air into the vein** during the procedure (e.g. maintain continuous venous tamponade until Luer lock attached, draw blood back into syringe before flushing). Air that is introduced into this vein has a risk of embolizing to the brain.
- **It is likely that a "flash" will not be seen** when puncturing the vein, as this is usually a very low-pressure vessel. Likewise, there is a high risk of backwall puncture. The provider should be attentive to how easily the catheter threads in, and should confirm placement by aspirating blood with a saline syringe before flushing.
- **Flush the vein slowly**, since it is inadvisable to extravasate a large volume of fluid into the neck.
- Reevaluate the line during transport. If a neck hematoma develops, remove the line and hold firm pressure.
- Lung apices rise all the way to the base of the neck (see picture below). Aggressive attempts at cannulation in the low part of the neck have a **risk of causing pneumothorax**. It is recommended to assess and document lung sounds before and after puncture.

