

# EL DORADO COUNTY EMS AGENCY

## FIELD PROCEDURES

Effective: July 1, 2016

Reviewed: N/A

Revised: July 1, 2018

Scope: ALS – Adult and Pediatric



EMS Agency Medical Director

### NEEDLE CHEST DECOMPRESSION

#### PRECAUTION:

**One must be confident of the diagnosis before attempting this procedure. Introducing a needle into the chest will almost certainly cause a pneumothorax.**

#### INDICATION:

To relieve the intra-thoracic pressure caused by suspected Tension Pneumothorax under the following circumstances:

- **Traumatic Arrest**  
**OR**
- **Hypoxia & Hypotension**
  - **If there is a concern with decompensation towards a tension pneumothorax contact base if Hypotension is not present.**

With any of the following:

- Tachycardia
- Increasing dyspnea
- Decreased lung sounds, unilateral or bilateral
- Unequal expansion of the chest wall
- Agitation
- Cyanosis
- Subcutaneous emphysema
- Jugular venous distension
- Tracheal shift away from affected side (a late sign)

#### COMPLICATIONS:

- Creation of a pneumothorax if not already present
- Laceration of the lung,
- Laceration of liver or spleen (lateral sites)
- Infection from non-aseptic technique
- Laceration of intercostal vessels and nerves, which run **under** each rib
- Subcutaneous emphysema

#### PROCEDURE:

1. Administer high-flow oxygen. Assist ventilations if needed.
2. Locate either:
  - a. The 4th intercostal space (Lateral to nipple) in the anterior axillary line on the affected side. Pull the tissue up and away towards the chest and count the ribs. **(Preferred site)**
  - b. The 2nd intercostal space in the mid-clavicular line on the affected side
3. Prepare the area with a chlorahexadine swab/prep.
4. Insert an over the needle catheter, 10 gauge 3.25" (Adult); 14 gauge 2"-2.5" (Peds); over the rib of the chosen intercostal space (the lateral fifth rib or anterior third rib):
  - a. Until there is lack of resistance or a pop is heard or felt as needle enters pleural

space.

- b. Listen for air escaping.
5. Remove the needle. Insert the catheter through the parietal pleura until air escapes. It should exit under pressure.
6. Reassess level of consciousness, respiratory effort, chest/lung sounds, JVD, tracheal shift, skin signs, blood pressure, pulses, and NCD site frequently.
7. Secure catheter in place to prevent dislodging.