



**COMBAT MEDIC/CORPSMAN**  
**TACTICAL COMBAT CASUALTY CARE**

**MODULE 08:**  
**RESPIRATION**  
**ASSESSMENT**  
**AND MANAGEMENT**  
**IN TFC**  
**SKILL INSTRUCTIONS**

**23 JAN 21**



**Committee on  
Tactical Combat  
Casualty Care  
(CoTCCC)**

## CHEST SEAL INSTRUCTION

<b>TASK:</b>	Apply an occlusive dressing/vented chest seal to an open/sucking chest wound
<b>CONDITION:</b>	Given a scenario where casualty and responder are in combat gear in the Tactical Field Care phases and the casualty has an open chest injury and you have a vented chest seal (preferred) or a non-vented chest seal to cover the defect, and the casualty's Joint First Aid Kit (JFAK)
<b>STANDARD:</b>	Demonstrate proper application of a vented chest seal following all steps and meeting performance measures without causing further injury to the casualty
<b>EQUIPMENT:</b>	Casualty's JFAK with a vented chest seal

## PERFORMANCE MEASURES: step-by-step instructions

**NOTE:** Consider body substance isolation.

**NOTE:** If a Combat Lifesaver is available, direct them to assist.

- 01** Expose and uncover any anterior, posterior or axillary chest wounds.  
**NOTE:** If multiple wounds are found, treat them in the order in which you found them.
- 02** Check for signs of an open and/or sucking chest wound.  
**NOTE:** If you are not sure if the wound has penetrated the chest wall completely, treat the wound as though it were an open chest wound.
- 03** Place hand or back of hand over open chest wound to create a temporary seal.
- 04** Fully open the outer wrapper of the commercial vented chest seal or other airtight material from the casualty's JFAK.  
**NOTE:** If a vented chest seal is not available, use a non-vented chest seal.
- 05** Remove and use the 4X4 gauze from the commercial vented chest seal package (or other gauze) to wipe away any dirt, blood, or other fluid.
- 06** Peel off the protective liner, exposing the adhesive portion of the vented chest seal.
- 07** As the casualty exhales, place the adhesive side directly over the open/sucking chest wound, while pressing firmly to create a seal.  
**NOTE:** Ensure edges of the chest seal extend 2 inches beyond the edges of the wound.
- 08** Ensure that the adhesive surface of the chest seal is adhering to the skin.  
**NOTE:** Tape may be used to secure the edges of the vented chest seal if needed.
- 09** Assess the effectiveness of the vented chest seal when the casualty breathes.  
**NOTE:** When the casualty inhales, the plastic should be sucked against the wound, preventing air entry.  
**NOTE:** When the casualty exhales, trapped air should be able to escape from the wound and out the commercial chest seal valve.
- 10** Check/feel for additional open/sucking chest wounds (anterior, axillary, and posterior) by using a raking motion and treat them the same way with additional vented chest seals (repeat steps 3–9), if needed.
- 11** Place a **conscious** casualty in a sitting position or a position of comfort that best allows the casualty to breathe; place an **unconscious** casualty with their injured side down in the recovery position.
- 12** Monitor for signs of a tension pneumothorax.  
**NOTE:** Signs include significant torso trauma or primary blast injury followed by severe/progressive respiratory distress (a respiratory rate less than 8 or greater than 20 breaths per minute, or an oxygen saturation <90%).
- 13** If signs of a tension pneumothorax develop, lift one edge of the vented chest seal and allow the tension pneumothorax to decompress ("burping" the seal).  
**NOTE:** Alternatively, remove the chest seal for a few seconds to decompress and then reapply or replace it with a new commercial vented chest seal.
- 14** If the signs of a tension pneumothorax persist despite burping the vented chest seal, perform a Needle Decompression of the Chest (see Needle Decompression of the Chest Instruction).
- 15** Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

## NEEDLE DECOMPRESSION OF THE CHEST (NDC) INSTRUCTION

**TASK:** Perform NDC

**CONDITION:** Given a scenario where the casualty and responder are in combat gear in the Tactical Field Care phase and the casualty has significant torso trauma followed by severe/progressive respiratory distress, and you have NDC equipment in your Combat Lifesaver (CLS) or medic aid bag

**STANDARD:** Perform NDC in 3 minutes or less

**EQUIPMENT:** CLS/medic aid bag, exam gloves, 14- or 10-gauge, 3.25 in needle/catheter unit, and a sharps container

### PERFORMANCE MEASURES: step-by-step instructions

**NOTE:** Consider body substance isolation.

**NOTE:** If a CLS is available, direct them to assist.

**01** Assess the casualty for signs of suspected tension pneumothorax.

**NOTE:** Signs of a tension pneumothorax include significant torso trauma or primary blast injury followed by severe/progressive respiratory distress (respiratory rate of less than 8 or greater than 20 breaths per minute, or an oxygen saturation <90%).

**02** If a vented chest seal has been previously applied, burp or remove the vented chest seal (if improperly applied, replace the vented chest seal) and reassess the casualty (see Chest Seal Instruction).

**03** Identify site placement for needle insertion on the side of the injury.

**NOTE:** Either of two sites can be used (whichever one is more accessible):

(a) Fifth intercostal space (ICS) in the anterior axillary line on the side of the injury or decreased breath sounds.

(b) Second ICS at the midclavicular line on the side of the injury or decreased breath sounds.

**NOTE:** Do not insert the needle medial to the nipple line.

**04** Secure a 14-gauge or a 10-gauge, 3.25 in needle/catheter unit.

**NOTE:** Remove the Luer lock cap from the needle catheter (if applicable).

**05** If available, use an antiseptic solution or a pad to clean the site.

**06** Insert the needle/catheter just over the top of the lower rib at the insertion site, at a 90-degree angle (perpendicular) to the chest wall, advancing it to the hub.

**07** Leave the needle/catheter unit in place for 5–10 seconds to allow decompression to occur; then remove the needle, leaving the catheter in place.

**08** Assess for successful needle decompression. Signs of success include:

(a) Respiratory distress improves.

(b) There is an obvious hissing sound as air escapes from the chest when NDC is performed.

**NOTE:** This may be difficult to appreciate in high-noise environments.

(c) Hemoglobin oxygen saturation increases to 90% or greater (respiratory distress should improve).

**NOTE:** This may take several minutes and may not happen at altitude.

**09** If the first NDC fails to improve the casualty's signs/symptoms, then perform a second NDC on the same side of the chest at whichever of the two recommended sites was not previously used.

**NOTE:** Use a new needle/catheter unit for the second decompression attempt.

**10** Place the casualty in a position of comfort or recovery position with the injured side down.

**11** Continue reassessing the casualty for the reoccurrence of progressive respiratory distress.

**12** If the initial NDC was successful, but symptoms later recur, then perform another NDC at the same site that was used previously. Use a new needle/catheter unit for the repeat NDC.

**13** If the second NDC is also not successful, then continue onto the Circulation section of the Massive bleeding, Airway, Respiration, Circulation, Hypothermia/Head injury sequence.

**14** Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

Developed by the

# **JOINT TRAUMA SYSTEM**

A Combat Support Division of



DEFENSE HEALTH AGENCY