



COMBAT PARAMEDIC/PROVIDER
TACTICAL COMBAT CASUALTY CARE

MODULE 06

**MASSIVE
HEMORRHAGE
CONTROL IN TFC**
Skill Instructions

08 DEC 2023



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

TWO-HANDED (WINDLASS) TOURNIQUET APPLICATION IN TACTICAL FIELD CARE (TFC) INSTRUCTION

TASK:	Apply a windlass tourniquet using a two-handed technique in TFC
CONDITION:	Given a TFC scenario in which the casualty and responder are in combat gear and you encounter a casualty with life-threatening bleeding from an extremity, and given a Joint First Aid Kit (JFAK) with a windlass tourniquet
STANDARD:	Control life-threatening bleeding by applying a two-handed tourniquet within 1 minute and securing the tourniquet within 3 minutes
EQUIPMENT:	Committee on Tactical Combat Casualty Care-recommended windlass tourniquet

PERFORMANCE MEASURES: step-by-step instructions

NOTE: Reassess any tourniquet applied in Care Under Fire and, if ineffective, tighten (if possible) and apply a second tourniquet side-by-side with the first if bleeding is not controlled.

NOTE: Consider body substance isolation.

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

- 01** Expose the injury and assess the bleeding source.
- 02** Apply direct pressure to control the bleeding.
- 03** Remove the tourniquet from the casualty's JFAK and/or carrying pouch.
- 04** Insert the wounded extremity in the loop of the self-adhering band (looped) or route the band around the limb and pass the band tip through the slit of the buckle.
- 05** Position the tourniquet about 2–3 inches above the wound and directly on the skin.
- 06** Pull the self-adhering band **tightly**.
NOTE: Ensure all the slack in the self-adhering band is pulled through the routing buckle before the band is fastened back on itself and the windlass is twisted.
- 07** Fasten the band back on itself all the way around the limb (but not over the windlass rod clips).
- 08** Twist the windlass rod until the bleeding has stopped.
NOTE: Complete steps 1–6 within 1 minute.
- 09** Lock the windlass rod in place with the windlass clip.
NOTE: If bleeding is not controlled and/or a distal pulse is present, continue to twist the windlass rod or apply a second tourniquet above the original tourniquet.
- 10** Route the self-adhering band around the rod and between the clips.
- 11** Secure with the windlass safety strap.
- 12** Document the time of tourniquet application on the windlass safety strap (or the casualty's forehead), completing the process within 3 minutes.
- 13** Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

TWO-HANDED (RATCHET) TOURNIQUET APPLICATION IN TACTICAL FIELD CARE (TFC) INSTRUCTION

TASK:	Apply a ratchet tourniquet using a two-handed technique in TFC
CONDITION:	Given a scenario in which casualty and responder are in combat gear and you encounter a casualty with severe bleeding of an extremity while in the TFC phase, and given a Joint First Aid Kit (JFAK) with ratchet tourniquet
STANDARD:	Control life-threatening bleeding by applying a ratchet tourniquet with a two-handed technique within 1 minute and securing the tourniquet within 3 minutes
EQUIPMENT:	Committee on Tactical Combat Casualty Care-recommended ratchet tourniquet

PERFORMANCE MEASURES: step-by-step instructions

NOTE: Reassess any tourniquet applied in Care Under Fire and, if ineffective, tighten (if possible) and apply a second tourniquet side-by-side with the first if bleeding is not controlled.

NOTE: Consider body substance isolation.

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

- 01 Expose the injury and assess the bleeding source.
- 02 Apply direct pressure to control the bleeding.
- 03 Remove the tourniquet from the casualty's JFAK and/or carrying pouch.
- 04 Insert the wounded extremity in the loop of the tourniquet strap or route the strap around the limb, pass the tip through the routing buckle, and pull it back on itself.
- 05 Position the tourniquet about 2–3 inches above the wound and directly on the skin.
- 06 Pull the strap as **tightly** as possible, removing all excess slack.
NOTE: Ensure all the slack in the strap is pulled through the routing buckle before tightening with the ratchet device.
- 07 Ratchet the maneuver device as tightly as possible until the bleeding has stopped.
NOTE: Complete steps 1–6 within 1 minute.
- 08 Lock the ratchet on itself (it will click into place).
NOTE: If bleeding is not controlled, or a distal pulse is present, continue to tighten the ratchet tourniquet or apply a second tourniquet above the original tourniquet.
- 09 Wrap the excess strap around the ratchet device and secure it in place.
- 10 Document the time of tourniquet application on the safety strap (or the casualty's forehead), completing the process within 3 minutes.
- 11 Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

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IMPROVISED LIMB TOURNIQUET INSTRUCTION

TASK:	Apply an improvised limb tourniquet
CONDITION:	Given a Tactical Field Care scenario involving a casualty with life-threatening bleeding from an extremity wound where no Committee on Tactical Combat Casualty Care (CoTCCC)-recommended limb tourniquet is available
STANDARD:	Apply an improvised limb tourniquet within 90 seconds of encountering the casualty
EQUIPMENT:	Tape, two cravats, and a rigid object for a windlass rod

PERFORMANCE MEASURES: step-by-step instructions

CAUTION: An improvised tourniquet should be used **only** as a last resort when a CoTCCC-recommended tourniquet is NOT available.

NOTE: Consider body substance isolation.

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

- 01 Expose the injury and assess the bleeding source.
- 02 Apply direct pressure to control the bleeding.
- 03 Rapidly gather and prepare appropriate improvised tourniquet materials.
Appropriate materials:
 - (a) Strap, cloth, or flexible material greater than 40 inches in length and folded to at least 2 inches in width (cravat, bandana, strip of trouser leg or towel, necktie).
 - (b) Rigid object for windlass device 1/4–1 inch in diameter and 4–6 inches in length (wooden dowel/stick, broom/mop handle, weapons cleaning rod, freshly cut tree limb).
 - (c) Optional locking ring (keyring, ring seal of commercial liquid bottle, heavy rubber band, or hairband).

CAUTION: Inappropriate materials include electric cords, belts, wire, or material less than 2 inches wide; single pens/pencils, ground clutter wood, polished metal objects, boot/shoelaces, zip ties.
- 04 Identify application site 2–3 inches above the bleeding site unless bleeding is at a joint, in which case the application site is 2–3 inches above the joint.
- 05 Route the strap under the limb at the application site (if using an optional locking ring, then route the strap through the ring).
- 06 Tie the first half of a square knot tightly and evenly (if using optional locking ring, ensure the ring device is approximately 2 inches away from the knot).
- 07 Hold the windlass device over the center of the half knot and complete the square-knot tightening down over the windlass device.
- 08 Twist the windlass device in one direction until the bleeding has stopped and no distal pulse is palpable.
- 09 While holding the windlass device in place, tightly tie the tails of the original square knot to the windlass device to secure it in place (if using the optional ring, then insert the windlass device into the ring).
- 10 Use the second cravat, tape, or strip of cloth to further secure the tourniquet in place (if not using the optional ring).
- 11 Document the time of tourniquet application on the casualty's forehead.
- 12 Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

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WOUND PACKING AND PRESSURE BANDAGE INSTRUCTION

TASK:	Pack a wound with a hemostatic dressing and apply a pressure bandage
CONDITION:	Given a Tactical Field Care scenario where casualty and responder are in combat gear and a casualty has a non-life-threatening bleed in a location where a tourniquet cannot be applied or bleeding adequately controlled, and given a hemostatic dressing and an elastic or pressure bandage
STANDARD:	Apply a hemostatic dressing and an effective pressure bandage to control bleeding following all steps and performance measures without further injuring the casualty
EQUIPMENT:	A Joint First Aid Kit or materials for a hemostatic dressing and pressure bandage

PERFORMANCE MEASURES: step-by-step instructions

NOTE: Consider body substance isolation.

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

- 01** Expose the wound and assess the bleeding source.
NOTE: Remove clothing and equipment as required.
- 02** Locate the source of the most active bleeding and apply direct pressure.
- 03** Remove the hemostatic dressing from its sterile package.
NOTE: If a hemostatic dressing is not available, use gauze or clean, dry cloth material.
- 04** Pack the hemostatic dressing tightly into the wound directly over the site of the most active bleeding.
NOTE: Fill and pack the whole wound cavity tightly while keeping firm pressure on the wound.
NOTE: More than one hemostatic dressing or gauze may be required to stop the blood flow.
CAUTION: If a penetrating object is lodged in the casualty's body, bandage it in place. **Do not** remove the object.
- 05** Ensure the hemostatic dressing or gauze extends 1–2 inches above the skin.
NOTE: If the hemostatic dressing or gauze does not extend 1–2 inches above the skin, place additional hemostatic dressing or gauze.
- 06** After packing, continue to apply firm, manual pressure until the bleeding stops. Hold continuous direct pressure for a minimum of 3 minutes.
- 07** Reassess to ensure bleeding has been controlled while maintaining pressure.
NOTE: Ensure blood is not seeping through or around the gauze. If bleeding has stopped, leave the gauze in place while still maintaining pressure.
- 08** If bleeding has not been controlled:
 - (a) If packed with hemostatic dressing, remove prior packing material and repack starting at step 3.
 - (b) If packed with gauze or other materials, apply additional gauze/materials and pressure (for another 3 minutes) until bleeding has stopped.
- 09** Remove the pressure bandage from its package.
- 10** Place the pad (bandage) directly over the wound on previously applied hemostatic dressing while continuing to apply direct pressure.
- 11** Wrap the pressure/elastic bandage tightly around the extremity, focusing pressure over the wound and ensuring that the edges of the pad are covered.
NOTE: If the bandage has a pressure bar, insert the elastic wrap completely into the pressure bar, pull the bandage tight, and reverse it back over the top of the pressure bar forcing it down onto the pad.
- 12** Secure the hooking ends of the hook and loop straps or closure bar onto the last wrap of the bandage.
- 13** Check for circulation below the pressure bandage by feeling for distal pulse.
NOTE: If the skin below the pressure bandage becomes cool to the touch, bluish, or numb, or if the distal pulse is no longer present, the pressure bandage may be too tight and should be loosened and

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reapplied; if bleeding occurs you may need to apply a limb or junctional tourniquet.

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

XSTAT® INSTRUCTION

TASK:	Apply XSTAT
CONDITION:	Given a Tactical Field Care scenario involving a casualty with life-threatening bleeding from a deep and narrow track wound or junctional wound in the groin or axilla not amenable to tourniquet application
STANDARD:	Apply XSTAT to control bleeding without causing further harm to the casualty
EQUIPMENT:	XSTAT 30 (large) or XSTAT 12 (small), pressure bandage

PERFORMANCE MEASURES: step-by-step instructions

CAUTION: XSTAT is **not** indicated for use in the thorax, pleural cavity, mediastinum, abdomen, retroperitoneal space, sacral space, above the inguinal ligament, and tissues above the clavicle.

NOTE: Consider body substance isolation.

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

- 01** Expose the wound and assess the bleeding source.
- 02** Apply direct pressure to the wound while gathering and preparing the applicator.
- 03** If using the XSTAT 30, pull the handle out and away from the barrel until it stops and locks.
- 04** Insert the XSTAT 30 or XSTAT 12 applicator tip into the wound track as close to the bleeding source as possible.
- 05** If using XSTAT 12, insert plunger into the applicator.
- 06** Firmly depress the handle or plunger to deploy the mini-sponges into the wound tract or cavity.
NOTE: If resistance is met, pull the applicator back slightly to create additional packing space and then continue to depress the handle.
NOTE: Do not attempt to forcefully eject the material from the applicator.
- 07** Use additional applicators as needed to completely pack the wound with mini-sponges (to the same density as you would for a hemostatic dressing).
- 08** Ensure XSTAT packing reaches a level of 1–2 inches above the wound.
NOTE: The higher the sponge density in the wound cavity, the higher the pressure exerted on the damaged vessel.
- 09** Apply manual pressure for 3 minutes or longer or as needed until bleeding is controlled.
NOTE: Never attempt to remove the mini-sponges from the wound.
- 10** Apply a pressure bandage over the wound.
NOTE: Monitor casualty for hemorrhage control.
- 11** Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

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NECK JUNCTIONAL HEMORRHAGE CONTROL INSTRUCTION

TASK:	Apply a hemostatic dressing and pressure bandage to the neck
CONDITION:	Given a scenario in which casualty and responder are in combat gear and you encounter a casualty with a neck wound resulting in life-threatening bleeding while in the Tactical Field Care phase, and have a hemostatic dressing and pressure bandage from the casualty's Joint First Aid Kit (JFAK)
STANDARD:	Control life-threatening bleeding from a neck wound by packing with a hemostatic dressing within 90 seconds and applying a pressure bandage
EQUIPMENT:	Hemostatic dressing and pressure bandage (from casualty's JFAK)

PERFORMANCE MEASURES: step-by-step instructions

NOTE: Consider body substance isolation.

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

- 01** Expose the wound and assess the bleeding source.
NOTE: Clothing may need to be cut away to properly expose the wound.
- 02** If possible, apply direct pressure to the source of the most active bleeding.
- 03** Using the casualty's JFAK, remove the hemostatic dressing from its sterile package.
NOTE: If a hemostatic dressing is not available, use gauze or clean, dry cloth material.
- 04** Pack the hemostatic dressing tightly into the wound until the wound cavity is filled while keeping firm pressure on the wound (finishing the packing within 90 seconds).
NOTE: More than one hemostatic dressing may be required to stop the blood flow.
CAUTION: If a penetrating object is lodged into the casualty's body, bandage it in place.
Do not remove the object.
- 05** Ensure the hemostatic dressing or gauze extends 1–2 inches above the skin.
NOTE: If the hemostatic dressing or gauze does not extend 1–2 inches above the skin, place additional hemostatic dressing or gauze.
- 06** After packing, continue to apply firm, manual pressure until the bleeding stops. Hold continuous direct pressure for a minimum of 3 minutes.
- 07** Reassess to ensure bleeding has been controlled while maintaining pressure.
NOTE: Ensure blood is not seeping through or around the hemostatic dressing. If bleeding has stopped, leave the hemostatic dressing in place while still maintaining pressure.
- 08** If bleeding has not been controlled:
 - (a) If packed with hemostatic dressing, remove prior packing material and repack starting at step 3.
 - (b) If packed with gauze, apply additional gauze/materials and pressure (for another 3 minutes) until bleeding has stopped.
- 09** Place a 6-inch elastic bandage over the hemostatic dressing, leaving enough tail to tie it into a knot.
- 10** While maintaining pressure on the hemostatic dressing/gauze, wrap the pressure (or elastic) bandage (no less than 1½ times) over the packing material, ensuring it is covered completely. Wrap diagonally across the chest under the opposite axilla around the back to the neck and back over the wound.
- 11** Wrap around the neck and under the arm (on alternating sides of the tail, while maintaining tension/pressure), pulling the elastic bandage tightly for pressure, covering the packing material.
NOTE: **Do not** use pressure bar on the neck.
- 12** Secure the dressing by tying a non-slip knot with the end of the elastic bandage and its tail.
- 13** Secure elastic bandage tails with 3-inch tape, wrapping the tape a minimum of 1½ times around the knot.
- 14** Swath the upper arm (of the injured side) to the chest using a bandage.

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- 15** Continue to assess the wound for further bleeding.
- 16** Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

AXILLARY JUNCTIONAL HEMORRHAGE CONTROL INSTRUCTION

TASK:	Apply a hemostatic dressing and pressure bandage to an axillary wound
CONDITION:	Given a scenario in which casualty and responder are in combat gear and you encounter a casualty with an axillary wound resulting in life-threatening bleeding while in the Tactical Field Care phase, and have a hemostatic gauze and pressure bandage from the casualty's Joint First Aid Kit (JFAK)
STANDARD:	Control life-threatening bleeding from an axillary wound by packing with a hemostatic dressing within 90 seconds and applying a pressure bandage
EQUIPMENT:	A hemostatic dressing and pressure bandage (from casualty's JFAK)

PERFORMANCE MEASURES: step-by-step instructions

NOTE: Consider body substance isolation.

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

- 01 Lift the arm to expose the wound and assess the bleeding source.
NOTE: Clothing may need to be cut away to properly expose the wound.
NOTE: The best position to treat the casualty is the seated position. If the casualty cannot be treated in the seated position, you will need to sit the casualty up as much as possible to apply the elastic bandage.
- 02 If possible, apply direct pressure to the source of the most active bleeding.
- 03 Using the casualty's JFAK, remove the hemostatic dressing from its sterile package.
NOTE: If a hemostatic dressing is not available, use gauze or clean, dry cloth material.
- 04 Extend the casualty's arm at a 90-degree angle by placing it on your shoulder (to maintain elevation of the arm), while proceeding through steps 5–13.
- 05 Pack the axillary wound tightly with hemostatic dressing until the wound cavity is filled while keeping firm pressure on the wound (finishing the packing within 90 seconds).
NOTE: More than one hemostatic dressing or gauze may be required to stop the blood flow.
CAUTION: If a penetrating object is lodged into the casualty's body, bandage it in place.
Do not remove the object.
- 06 Ensure the hemostatic dressing or gauze extends 1–2 inches above the skin.
NOTE: If the hemostatic dressing or gauze does not extend 1–2 inches above the skin, place additional hemostatic dressing or gauze.
- 07 Hold pressure for a minimum of 3 minutes.
- 08 Reassess to ensure bleeding has been controlled while maintaining pressure.
NOTE: Ensure blood is not seeping through or around the hemostatic dressing. If bleeding has stopped, leave the hemostatic dressing in place while still maintaining pressure.
- 09 If bleeding has not been controlled:
 (a) If packed with hemostatic dressing, remove prior packing material, and repack starting at step 3.
 (b) If packed with gauze or other materials, apply additional gauze/materials and pressure (for another 3 minutes) until bleeding has stopped.
- 10 While maintaining pressure on the hemostatic dressing/gauze, wrap the pressure (or elastic) bandage around the injured shoulder twice, ensuring the hemostatic dressing underneath is completely covered.
NOTE: If using an elastic bandage without a closure bar, leave a tail on the posterior side of the casualty.
- 11 Wrap the elastic bandage across, back, and under the opposite axilla, anchoring around the opposite shoulder in a "Figure 8" pattern.
- 12 Depending on the bandage used, secure with the closure bar or tie the tails of the elastic bandage

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together with a non-slip knot.

- 13** Secure pressure (elastic) bandage tails and knot using 3-inch tape, wrapping the tape a minimum of 1½ times around the knot.
- 14** Swath the upper arm on the injured side to the chest using a cravat.
- 15** Continue to assess the wound for further bleeding.
- 16** Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

INGUINAL HEMORRHAGE CONTROL WITH IMPROVISED JUNCTIONAL PRESSURE DELIVERY DEVICE (PDD) INSTRUCTION

TASK:	Apply a hemostatic dressing and pressure bandage with a PDD to an inguinal wound
CONDITION:	Given a scenario in which casualty and responder are in combat gear and a casualty has sustained a wound to the groin resulting in life-threatening hemorrhage that is not amenable to an extremity tourniquet while in the Tactical Field Care phase, and a hemostatic dressing and pressure bandage from the casualty's Joint First Aid Kit (JFAK) with an improvised PDD
STANDARD:	Control life-threatening bleeding from an inguinal wound by effectively applying an improvised junctional PDD without causing further injury to the casualty
EQUIPMENT:	A hemostatic dressing, pressure bandage, tourniquet (from casualty's JFAK), and PDD

PERFORMANCE MEASURES: step-by-step instructions

NOTE: Consider body substance isolation.

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

01 Expose the wound and assess the bleeding source.

NOTE: Clothing may need to be cut away to properly expose the wound.

02 Apply direct pressure to the source of most active bleeding; if not visible, place a fist squarely in the inguinal gutter on the injured side.

NOTE: The inguinal gutter is the crevice between the top of the thigh and the lower abdomen where heavy blood flow structures are located. Location is halfway between the pubic bone and the anterior iliac spine.

03 Using the casualty's JFAK, remove the hemostatic dressing from its sterile package.

NOTE: If a hemostatic dressing is not available, use gauze or clean, dry cloth material.

04 Remove the fist, if used for initial bleeding control, and immediately apply direct pressure while tightly packing the inguinal wound with hemostatic dressing until the wound cavity is filled (finishing the packing within 90 seconds).

NOTE: More than one hemostatic dressing or gauze may be required to stop the blood flow.

CAUTION: If a penetrating object is lodged in the casualty's body, bandage it in place. **Do not** remove the object.

05 Ensure the hemostatic dressing or gauze extends 1–2 inches above the skin.

NOTE: If the hemostatic dressing or gauze does not extend 1–2 inches above the skin, place additional hemostatic dressing or gauze.

06 Hold pressure for a minimum of 3 minutes.

07 Reassess to ensure bleeding has been controlled while maintaining pressure.

NOTE: Ensure blood is not seeping through or around the hemostatic dressing. If bleeding has stopped, leave the hemostatic dressing in place while still maintaining pressure.

08 If bleeding has not been controlled:

(a) If packed with hemostatic dressing, remove prior packing material and repack starting at step 3.

(b) If packed with gauze, apply additional gauze and pressure (for 3 minutes) until bleeding has stopped.

09 Select a cylindrical or spherical PDD and position into the inguinal gutter while continuously maintaining pressure to the hemostatic dressing.

NOTE: PDD examples: shoe/boot, full water bottle, canteen.

10 Select a tourniquet that can wrap around the casualty's waist/hip area or connect two tourniquets.

11 Place the windlass or ratchet tourniquet directly over the middle of the PDD; ensure that the routing buckle is located toward the medial aspect of the body.

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- 12 Remove all slack from the self-adhering band or strap using a pushing motion across the casualty's body before tightening the tourniquet.
- 13 Tighten the tourniquet until bleeding has stopped and the distal pulse has been checked and is absent.
NOTE: If bleeding is not controlled and a distal pulse below the tourniquet is present, remove any remaining slack in the strapping (if possible) and twist or ratchet the tourniquet device until bleeding is controlled and the distal pulse is absent.
- 14 Visually inspect placement of equipment, ensuring the PDD is in place and the windlass/ratchet is properly positioned over the device.
- 15 Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

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SAM® JUNCTIONAL TOURNIQUET INSTRUCTION

TASK:	Apply a Committee on Tactical Combat Casualty Care (CoTCCC)-recommended Inguinal Junctional Tourniquet
CONDITION:	Given a Tactical Field Care scenario involving a casualty with life-threatening bleeding from an inguinal wound not amenable to a limb tourniquet that requires a junctional tourniquet
STANDARD:	Apply a CoTCCC-recommended junctional tourniquet and control bleeding in 90 seconds or less
EQUIPMENT:	SAM Junctional Tourniquet, gauze, hemostatic dressing

PERFORMANCE MEASURES: step-by-step instructions

NOTE: CoTCCC-recommended junctional tourniquets should be applied after proper wound packing of any open wounds, following steps 1–5 in the Wound Packing and Pressure Bandage Skill Instruction.

NOTE: Consider body substance isolation.

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

- 01** Expose the injury and assess the bleeding source.
NOTE: Clothing may need to be cut away to properly expose the injury.
- 02** If possible, apply direct pressure to the source of the most active bleeding.
- 03** Empty the casualty's pockets and remove items (e.g., equipment, weapons) from around the hip area.
- 04** Place the casualty in the supine position.
- 05** Continue to apply direct pressure over the femoral pulse just below the inguinal ligament while gathering and preparing the junctional tourniquet.
- 06** Pass the belt of the junctional tourniquet behind the thighs and slide it upward positioning the Target Compression Device (TCD) over the area to be compressed.
 - (a) Over the femoral pulse just below the inguinal ligament.
NOTE: If wound was not previously packed, use gauze or hemostatic dressing if targeting the TCD directly over an open wound.
 - (b) Place just below the midpoint of the imaginary line between the anterior superior iliac spine and pubic tubercle, if femoral pulse is not palpable.
- 07** Hold the TCD in place and connect the belt by snapping the buckle together.
- 08** Pull the brown handles away from each other firmly until the buckle is secured, ensuring that all slack is removed from the belt before TCD inflation.
NOTE: You will hear an audible click.
- 09** Fasten excess belt in place by pressing it down on the hook and loop fastener.
NOTE: You may hear a second click once the belt is secure.
- 10** Use the hand pump to inflate the TCD(s) until the hemorrhage stops and a distal pulse is no longer present.
NOTE: When treating bilateral junctional injuries, use a second TCD following the same procedure.
NOTE: Monitor casualty for hemorrhage control and adjust device as necessary.
- 11** Document time of tourniquet placement on the casualty's forehead.
- 12** Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

COMBAT READY CLAMP (CROC®) INSTRUCTION

TASK:	Apply a Committee on Tactical Combat Casualty Care (CoTCCC)-recommended junctional tourniquet
CONDITION:	Given a Tactical Field Care scenario involving a casualty with life-threatening bleeding from an inguinal wound not amenable to a limb tourniquet that requires a junctional tourniquet
STANDARD:	Apply a CoTCCC-recommended junctional tourniquet to control bleeding in 90 seconds or less
EQUIPMENT:	CRoC, gauze and hemostatic dressing

PERFORMANCE MEASURES: step-by-step instructions

NOTE: CoTCCC-recommended junctional tourniquets should be applied after proper wound packing of any open wounds, following steps 1–5 in the Wound Packing and Pressure Bandage Skill Instruction.

NOTE: Consider body substance isolation.

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

- 01** Expose the injury and assess the bleeding source.
NOTE: Clothing may need to be cut away to properly expose the injury.
- 02** If possible, apply direct pressure to the source of the most active bleeding.
- 03** Empty the casualty's pockets and remove items (e.g., equipment, weapons) from around the hip area.
- 04** Place the casualty in the supine position.
- 05** Continue to apply direct pressure over the femoral pulse just below the inguinal ligament while gathering and preparing the junctional tourniquet device.
- 06** Remove the CRoC junctional tourniquet from the package and assemble.
- 07** Raise the vertical arm up until it locks into place while simultaneously rotating it 90 degrees until the locking pin engages.
- 08** Pull up on the vertical arm detent (retaining pin) and insert the horizontal arm. Release the retaining pin and advance the horizontal arm until the locking pin engages.
- 09** Insert the T handle into the horizontal arm and turn clockwise until it is threaded far enough to be stable and expose the end below the horizontal arm.
- 10** Firmly press the pressure disk onto the T handle until the disk clicks into place.
- 11** Identify the precise area to be compressed:
 - (a) Over the femoral pulse just below the inguinal ligament
NOTE: If the wound was not previously packed, use gauze or hemostatic dressing if targeting the compression disc over an open wound.
 - (b) Place just below the midpoint of the imaginary line between the anterior superior iliac spine and pubic tubercle, if the femoral pulse is not palpable.
- 12** Position the baseplate under the casualty, beneath the desired pressure point.
NOTE: If possible, route the baseplate strap under the buttocks/pelvis of the casualty for later use.
- 13** Ensure the vertical arm is in contact with the casualty on the wounded side in close proximity to the wound location.
- 14** Adjust the horizontal arm to position over the femoral pressure point.
- 15** Adjust the vertical arm downward to ensure the disc head contacts the casualty.
- 16** Apply pressure to the hemostatic dressing by turning the T handle clockwise. Apply pressure until the bleeding stops.

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NOTE: If hemostasis is not achieved in 20 full turns of the device, consider releasing and repositioning the disc head.

17 Attach the securing strap.

NOTE: Monitor the casualty for hemorrhage control and adjust the device as needed.

18 Document time of tourniquet placement on the casualty's forehead.

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

JUNCTIONAL EMERGENCY TREATMENT TOOL (JETT®) TOURNIQUET INSTRUCTION

TASK:	Apply a JETT Tourniquet
CONDITION:	Given a Tactical Field Care scenario involving a casualty with life-threatening bleeding from an inguinal wound not amenable to a limb tourniquet that requires a junctional tourniquet
STANDARD:	Apply a Committee on Tactical Combat Casualty Care (CoTCCC)-recommended junctional tourniquet and control bleeding in 90 seconds or less
EQUIPMENT:	JETT

PERFORMANCE MEASURES: step-by-step instructions

NOTE: CoTCCC-recommended junctional tourniquets should be applied after proper wound packing of any open wounds, following steps 1–5 in the Wound Packing and Pressure Bandage Skill Instruction.

NOTE: Consider body substance isolation.

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

- 01 Expose the injury and assess the bleeding source.
NOTE: Clothing may need to be cut away to properly expose the injury.
- 02 If possible, apply direct pressure to the source of the most active bleeding.
- 03 Empty the casualty's pockets and remove items (e.g., equipment, weapons) from around the hip area.
- 04 Place the casualty in a supine position.
- 05 Continue to apply direct pressure over the femoral pulse just below the inguinal ligament while preparing the junctional tourniquet.
- 06 Open and unroll the device and prepare for application.
NOTE: Ensure the "This Side Toward Casualty" label is facing up and toward the casualty.
- 07 Slide the belt under the small of the casualty's back or buttocks.
- 08 Locate the femoral pulse, just below the inguinal ligament running from the superior iliac crest to the pubic bone to guide the proper placement of the device.
- 09 Using a back-and-forth motion, slide the belt under the buttocks so that the buttocks pad is centered behind the casualty, allowing alignment of the pressure pads just below the inguinal ligament.
- 10 Adjust the two junctional pressure pads on the straps to position them in the area over the femoral pulse just below the inguinal ligament.
- 11 Angle the junctional pressure pads so that their long axis is lined up with (parallel to) the inguinal ligament or gutter (the distal part of the pad will be pointed somewhat medially at approximately a 30-degree angle), ensuring the casualty's genitals are clear of the area to be compressed.
- 12 Slide the female end into the male end of the buckle; you should hear an audible "click."
- 13 Firmly pull the free-running end of the strap with the loop handle to tighten up the device and remove all slack.
NOTE: Stabilize the belt with your other hand while tightening.
- 14 Reassess pad placement to ensure the pressure pads are correctly positioned over the femoral pulse and below and parallel (~30-degree angle) to the inguinal ligament.
- 15 Tighten the threaded T handle on the injured side by turning it in a clockwise direction while using your other hand to stabilize the base plate until the bleeding has stopped.
NOTE: If the extremity is intact, check to confirm that the distal pulse has been occluded.
- 16 Insert the toggle into the opening on the threaded handle and cinch it tight at the base plate to secure the device.
NOTE: Repeat the same procedure on the other side if bilateral junctional injuries are present.
NOTE: Monitor the casualty often during movement and transport to ensure the device remains properly

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positioned, and adjust the device as needed to maintain hemorrhage control.

- 17** Document the time of application on the designated space on the loop handle.
- 18** Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

APPLICATION OF A WOUND CLOSURE DEVICE INSTRUCTION

TASK:	Apply a wound closure device
CONDITION:	Given a Tactical Field Care scenario involving a casualty with life-threatening bleeding
STANDARD:	Apply a wound closure device following all steps and meeting all performance measures without causing further injury to the casualty
EQUIPMENT:	A wound closure device (for example, the iTClamp®)

PERFORMANCE MEASURES: step-by-step instructions

- NOTE:** The wound closure device can be used in conjunction with other hemorrhage control interventions:
- (a) Wound packing: If desired, wound packing may be done before the wound closure device is placed on a wound.
 - (b) Hemostatic agents: The wound closure device may be placed on a wound that has a hemostatic agent applied. The hemostatic agent does not have to be removed.
 - (c) Binding/wrapping: If desired, additional compression binding/wrapping may be placed over the wound closure device after it has been applied on a wound. This action will protect the clamp and may provide additional compression to the wound, limiting hematoma formation.

NOTE: Consider body substance isolation.

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

- 01** Expose the injury and assess the bleeding source.
NOTE: Clothing may need to be cut away to properly expose the injury.
- 02** If possible, apply direct pressure to the source of the most active bleeding.
- 03** Open the sterile package by flipping up one or both tabs on the top half of the package.
- 04** With one hand, remove the device from the package by lifting it straight up out of the package.
- 05** Align the needle tips of the wound closure device parallel to (or alongside) the edges of the wound.
- 06** Position the needles about 1–2 cm (0.5–1 in) from the wound edge on either side.
- 07** Gently insert needles; close the wound closure device by squeezing together the gripping bars/arms.
NOTE: The device seal will break once the pressure is applied to the arms.
- 08** Once closed, the device will automatically lock into place (the pressure bars on the wound closure device ensure a fluid-tight seal).
- 09** Ensure the wound is sealed, that there are no gaps in the skin, and that there is no continued bleeding.
- 10** If bleeding continues: close the device more firmly; remove, reposition, and reapply the device; use more than one device (for larger wounds), or pack the wound with hemostatic dressing or XSTAT® and then reapply the device.
CAUTION: Do not use near the eye.
- 11** Document all findings and treatments on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

TO REMOVE DEVICE

- NOTE:** The release buttons on either side of the wound closure device may be used to open the device.
- 01** Grasp the top arms of the device with one hand.
 - 02** Press the red buttons on the side of the device to release the locking mechanism and press the top arms together to open the device.
NOTE: This is a two-handed process.
NOTE: Holding the device by the buttons during removal minimizes accidental contact with needles.
 - 03** While maintaining pressure on the buttons, pull one of the gripping bars open, rotate the needles out of the wound, and then rotate the needles on the other side. Only one arm will freely rotate at a time.
 - 04** Close the device to prevent accidental sharps injury by pressing the bottom arms together until fully closed.
 - 05** Dispose of the device in accordance with local guidelines for biohazard sharps.

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

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