

MODULE 17 – FRACTURES

SLIDE 1 – TITLE SLIDE



SLIDE 2 – TCCC ROLES

Tactical Combat Casualty Care is broken up into four roles of care. The most basic is taught to All Service Members (ASM), which is designed to instruct in the absolute basics of hemorrhage control and to recognize more serious injuries.

You are in the Combat Lifesaver (CLS) role.

This teaches you more advanced care to treat the most common causes of death on the battlefield, and to recognize, prevent, and communicate with medical personnel the life-threatening complications of these injuries.

The Combat Medic/Corpsman (CMC) role includes much more advanced and invasive care requiring significantly more medical knowledge and skills.

Finally, the last role, Combat Paramedic/Provider (CPP) is for Combat paramedics and advanced providers, to provide the most sophisticated care to keep our wounded warriors alive and get them to definitive care.

Your role as a CLS is to treat the most common causes of death on the battlefield, which are massive hemorrhage and airway/respiratory problems. Also, you are given the skills to prevent complications and treat other associated but not immediately life-threatening injuries.



SLIDE 3 – TLO/ELO

The fractures model has one cognitive learning objective and two performance learning objectives. The cognitive learning objective is to identify the signs of a suspected fracture, and the performance learning objectives are to demonstrate the basic care of fractures and proper splint application using a malleable rigid or improvised splint to a suspected fracture on a trauma casualty.

STUDENT LEARNING OBJECTIVES

TERMINAL LEARNING OBJECTIVE

19 Given a combat or noncombat scenario, perform assessment and initial treatment of fractures during Tactical Field Care in accordance with CoTCCC Guidelines

- 86 Identify signs of a suspected fracture (ASM T7:E29)
- 87 Demonstrate the basic care of fractures in accordance with CoTCCC Guidelines (ASM T7)
- 88 Demonstrate proper splint application using a malleable rigid or improvised splint to a suspected fracture in Tactical Field Care

3 ENABLING LEARNING OBJECTIVES (ELOs) • Cognitive ELOs • Performance ELOs

SPEAKER NOTES

The critical aspects are to recognize fractures and how to treat them, and then to perform the necessary skills to successfully care for a fracture in a trauma casualty by applying an appropriate splint.

SLIDE 4 – THREE PHASES OF TCCC

Remember, you are now in the Tactical Field Care (TFC) phase of care, so the focus has shifted from immediate life-threatening hemorrhage control while still under enemy fire in the Care Under Fire (CUF) phase, to the reassessment of all previous interventions, followed by the prevention and treatment of other injuries and complications such as fractures.

1 CARE UNDER FIRE
RETURN FIRE AND TAKE OVER
Quick decision-making:
• Consider scene safety
• Identify and control life-threatening bleeding
• Move casualty to safety

2 TACTICAL FIELD CARE
COVER AND CONCEALMENT
Basic Management Plan:
• Maintain tactical situational awareness
• Triage casualties as required
• MARCH-PAWS assessment

3 TACTICAL EVACUATION CARE
More deliberate assessment and treatment of unrecognized life-threatening injuries
• Pre-evacuation procedures
• Continuation of documentation

NOTE: This is covered in more advanced TCCC training!
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SLIDE 5 – MARCH PAWS

Fractures are the “S” in the MARCH PAWS sequence, which stands for splinting.

LIFE-THREATENING

- M** MASSIVE BLEEDING #1 Priority
- A** AIRWAY
- R** RESPIRATION (*Breathing*)
- C** CIRCULATION
- H** HYPOTHERMIA / HEAD INJURIES

AFTER LIFE-THREATENING

- P** PAIN
- A** ANTIBIOTICS
- W** WOUNDS
- S** SPLINTING

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SLIDE 6 – ASSESS FOR A FRACTURE

Fractures can be **open** or **closed**.

Closed fractures have no open wound (break in skin).

Open fractures have an open wound of the skin, sometimes with protruding bone, and this type of fracture is a major threat for serious infection.

The warning signs of a fracture are:

- Significant pain and swelling
- An audible or perceived “snap”
- Different length or shape of the casualty’s limb
- Loss of pulse or sensation in the injured arm or leg
- Crepitus, which is hearing a crackling or popping sound under the skin when the area is moved

All fractures may require administering pain medication, and an open fracture will also require antibiotics from the Combat Wound Medication Pack (CWMP).

CLOSED FRACTURE
No open wound (break in skin) for closed fracture

OPEN FRACTURE
Open fracture open wound (break in skin) major threat for infection

WARNING SIGNS OF A FRACTURE:

- Significant pain and swelling
- An audible or perceived “snap”
- Different length or shape of limb
- Loss of pulse or sensation in the injured arm or leg
- Crepitus (hearing a crackling or popping sound under the skin)

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SLIDE 7 – OBJECTIVES OF SPLINTING

Splints are used to prevent movement and hold an injured arm or leg in place:

1. Identify the location of the fracture.
NOTE: Have the casualty or someone else manually stabilize the area.
2. Check the **distal pulse** (pulse below the fracture) and capillary refill (color returning to the nail bed after pressing on it) on the injured extremity before applying the splint.
3. Prepare the splint materials for application.
NOTE: Measure and shape the splint on the opposing uninjured extremity.
4. Prepare securing materials (cravats, elastic wraps/bandages, etc.)
5. Apply the splint to the injured extremity with the limb, in the position of function (a normal resting position), if possible.
NOTE: If possible, lightly pad all voids within the splint to make it more comfortable.
6. Secure the splint in place with appropriate materials.
7. Ensure the joints above and below the fracture are immobilized in the splint whenever possible.
8. Recheck the distal pulse after applying the splint. If the pulse is not palpable, loosen the splint, reposition, and reapply the splint.
9. Administer the pain medications (from the CWMP) as needed and the antibiotic for any open fracture(s).
10. Document all treatment on a DD Form 1380 TCCC Casualty Card and attach it to the casualty.

Remember, if a wound is present near a fracture, it must be properly dressed before the splint is applied.

SLIDE 8 – PRINCIPLES OF SPLINTING

Splinting can be accomplished with rigid or malleable materials found in the JFAK/CLS Kit or improvised.

The joint above and below the fracture site should be immobilized with the splint.

It is critical to check pulses distal to the fracture before and after splinting.

CLS TCCC **FRACTURES** **OBJECTIVES OF SPLINTING** **DHA**
DEFENSE HEALTH AGENCY

A splint is used to prevent movement and hold an injured arm/leg in place:

- 1 Identify the location of the fracture.
NOTE: Have the casualty or someone else manually stabilize the area.
- 2 Check the distal pulse (pulse below the fracture) and capillary refill (color returning to the nail bed after pressing on it) on the injured extremity before applying the splint.
- 3 Prepare the splint materials for application.
NOTE: Measure and shape the splint on the opposing uninjured extremity.
- 4 Prepare securing materials (cravats, elastic wraps/bandages, etc.)
- 5 Apply the splint to the injured extremity with the limb, in the position of function (a normal resting position), if possible.
NOTE: If possible, lightly pad all voids within the splint to make it more comfortable.
- 6 Secure the splint in place with appropriate materials.
- 7 Ensure the joints above and below the fracture are immobilized in the splint whenever possible.
- 8 Recheck the distal pulse following application of the splint. If the pulse is not palpable, loosen the splint, reposition, and reapply the splint.
- 9 Administer the pain medications (from the Combat Wound Medication Pack) as needed and the antibiotic for any open fracture(s).
- 10 Document all treatment on a DD FORM 1380 TCCC Casualty Card and attach it to the casualty. #TCCC-CLS-PPT-17-30 DEC 19 7

CLS TCCC **FRACTURES** **PRINCIPLES OF SPLINTING** **DHA**
DEFENSE HEALTH AGENCY

- 1 Check for other associated injuries
- 2 Use malleable or rigid materials
- 3 Try to pad all voids or wrap if using rigid splint
- 4 Secure splint with elastic bandage, cravats, belts, tape
- 5 Try to splint before moving the casualty
- 6 Minimize manipulation of the extremity before splinting
- 7 Incorporate one joint above and below the fracture
- 8 Splint arm fractures to the shirt using the sleeve, if needed
- 9 Check distal pulse and skin color before and after splinting



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SPEAKER NOTES

SLIDE 9 – THINGS TO AVOID WHEN SPLINTING

- Manipulating the fracture site too much, resulting in pain, additional damage to blood vessels and nerves, etc.
- Securing too tightly and cutting off blood flow
- Failing to immobilize the joint above and below the fracture when possible
- Causing further injury
- Making the casualty uncomfortable during transport/evacuation
- Splinting near or over a wound that has not been properly treated



FRACTURES



THINGS TO AVOID WHEN SPLINTING



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SLIDE 10 – GUIDELINES FOR LEG SPLINTS

Be mindful of cravat placement. Do not apply a cravat on the fracture site, as the pressure from the cravat could cause additional injury to the fracture site.

Do not place the ends of the splint against the groin, as this could interfere with blood circulation. Use extra padding for joints or sensitive areas, such as the groin.

First, Identify the location of the fracture. Then, before applying the splint, CHECK the distal pulse, which is the pulse below the fracture. Also, CHECK capillary refill on the injured extremity. This can be done by seeing the color returning to the nail bed after pressing on it.



SPLINTING



GUIDELINES FOR LEG SPLINTS



Identify the location of the fracture

Before applying the splint, CHECK distal pulse (pulse below the fracture)

CHECK capillary refill (color returning to the nail bed after pressing on it) on the injured extremity before applying the splint.

! Have the casualty or someone else manually stabilize the area.

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SLIDE 11 – GUIDELINES FOR LEG SPLINTS (CONTINUED)

APPLY the splint to the injured extremity with the limb in the position of function or a normal resting position if possible.



SPLINTING



GUIDELINES FOR LEG SPLINTS



PREPARE the splint materials for application

PREPARE securing materials (cravats, elastic wraps/ bandages, etc.)

APPLY the splint to the injured extremity with the limb, in the position of function a normal resting position), if possible

! Measure and shape the splint on the opposing uninjured extremity.

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SLIDE 12 – GUIDELINES FOR LEG SPLINTS (CONTINUED)

SECURE the splint in place with appropriate materials.

ENSURE the joints above and below the fracture are immobilized in the splint whenever possible.

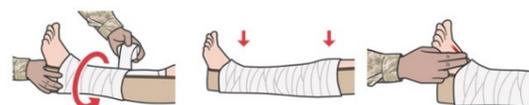
RECHECK the distal pulse after applying the splint.



SPLINTING



GUIDELINES FOR LEG SPLINTS



SECURE the splint in place with appropriate materials

ENSURE the joints above and below the fracture are immobilized in the splint whenever possible

RECHECK the distal pulse following application of the splint
If the pulse is not palpable, loosen the splint, reposition, and reapply the splint

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SPEAKER NOTES

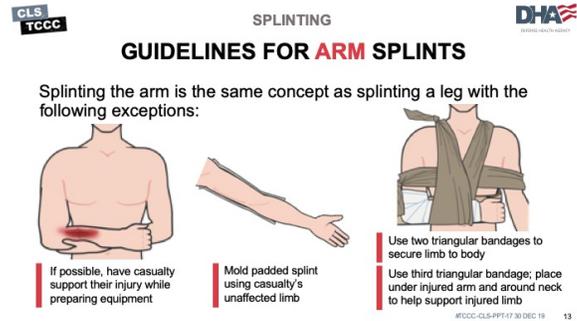
Watch for signs of poor circulation, including coolness, numbness, or lack of a pulse. Ensure the ends of the rigid objects are not interfering with blood circulation.

If there are any signs of poor circulation, loosen the splint, reposition, and reapply.

SLIDE 13 – GUIDELINES FOR ARM SPLINTS

Movement or manipulation of a fractured extremity results in increased pain:

- If possible, have the casualty support their injured arm while preparing the equipment
- Mold the padded splint using the casualty's **unaffected** limb to avoid unnecessary manipulation
- Use triangular bandages to immobilize the fracture and secure the limb to the body to minimize unnecessary movement during transport.



SLIDE 14 – GUIDELINES FOR ARM SPLINTS (CONTINUED)

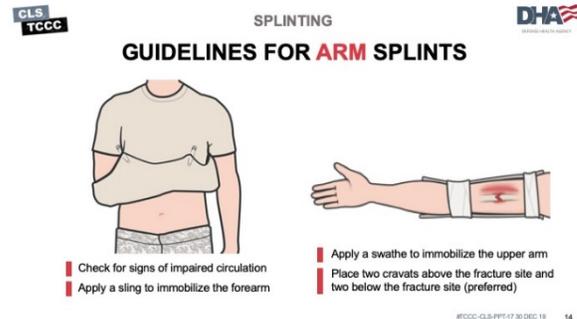
Place the rigid objects so that one is on each side of the injured arm or forearm.

When possible, position the rigid objects so that the joint above the fracture and the joint below the fracture will be immobilized.

Apply padding between the arm and the splints.

Secure the splints with cravats, strips of cloth, or other securing materials.

If possible, place two cravats above the fracture site and two below the fracture site.



SLIDE 15 – SPLINTING AN ARM (VIDEO)

Play video.

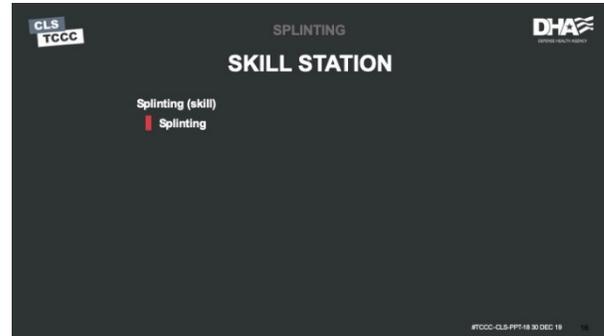


SPEAKER NOTES

SLIDE 16 – SKILL STATION

At this time, we will break into skill stations to practice the following skills:

- Splinting



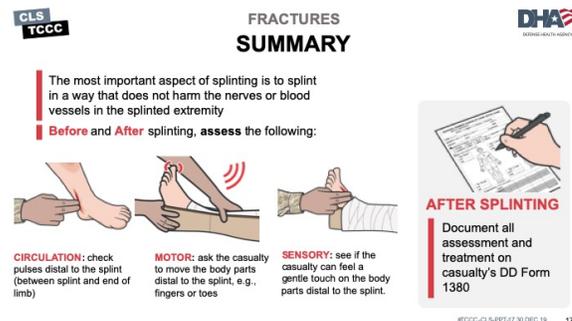
SLIDE 17 – FRACTURES, SUMMARY

The most important aspect of splinting is to splint in a way that does not harm the nerves or blood vessels in the splinted extremity.

Before and after splinting, assess the following:

1. **Circulation:** check the pulses distal to the splint (between the splint and the end of the arm or leg).
2. **Motor:** ask the casualty to move the body parts distal to the splint, e.g., the fingers or toes.
3. **Sensory:** see if the casualty can feel a gentle touch on the body parts distal to the splint.

After splinting, make sure to document all assessment and treatment on the casualty's DD Form 1380.

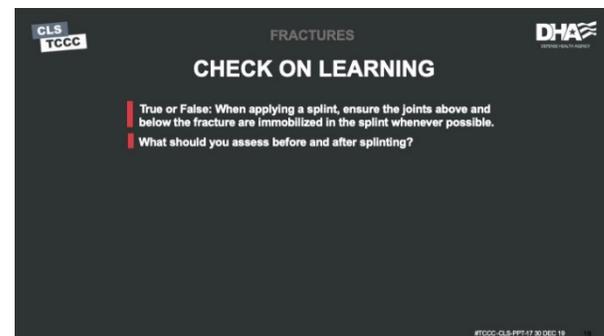


SLIDE 18 – CHECK ON LEARNING

Ask questions of the learners referring to key concepts from the module.

Now for a check on learning.

1. True or False: When applying a splint, ensure the joints above and below the fracture are immobilized in the splint whenever possible.
 - True
2. What should you assess before and after splinting?
 - Circulation – pulse check
 - Motor – movement
 - Sensory – feeling



SLIDE 19 – QUESTIONS

