

GUNSHOT WOUNDS

FIRST AID

TCCC

CLOSE PROTECTION

TAC SIM TRAINING

REFERENCE MATERIAL

M KENT 2022

Gunshot Wounds

Gunshot wounds (GSWs) can cause severe and life-threatening trauma, depending on factors like the type of firearm, the bullet's calibre, its speed, and the location of the injury. Here's a breakdown of the damage and trauma caused by gunshot wounds:

1. Tissue Damage

- **Direct Damage:** Bullets create a permanent cavity by destroying tissue along their path. The tissue directly in the bullet's trajectory is often crushed or torn, leading to severe damage to muscles, nerves, organs, and bones.
- **Temporary Cavitation:** High-velocity bullets, especially from rifles, create a temporary cavity by displacing tissue at high speed, which can expand beyond the bullet's path, causing additional damage to surrounding tissues. This stretching can rupture organs, blood vessels, and nerves even if they are not directly hit by the bullet.
- **Fragmentation:** Some bullets are designed to fragment upon impact, spreading small pieces throughout the body, leading to multiple injuries and making the damage more difficult to treat.

2. Damage to Specific Body Areas

- **Head Injuries:** A gunshot wound to the head is often fatal due to severe damage to the brain tissue, causing either immediate death or irreversible brain injury. The skull may fracture, and brain swelling, haemorrhage, and tissue destruction often follow.
- **Thoracic (Chest) Injuries:** Wounds to the chest can damage critical structures like the heart, lungs, and major blood vessels (e.g., aorta). This can result in immediate life-threatening complications such as haemorrhaging, pneumothorax (collapsed lung), or cardiac tamponade (fluid buildup around the heart).
- **Abdominal Injuries:** GSWs to the abdomen can damage the liver, kidneys, intestines, and spleen, leading to internal bleeding, infection, or organ failure. The presence of bowel perforation increases the risk of sepsis.
- **Extremities:** While gunshot wounds to the arms or legs may not be immediately fatal, they can cause severe complications like bone fractures, damage to major blood vessels (leading to haemorrhage or amputation), and nerve injury, which may result in long-term disability.

3. Bleeding (Haemorrhage)

- **External Bleeding:** If the bullet exits the body, there will be both an entry and exit wound, potentially leading to significant blood loss.
- **Internal Bleeding:** Damage to major blood vessels or internal organs can lead to internal haemorrhaging, which can be fatal if not treated quickly.

- **Haemorrhagic Shock:** Large blood loss can lead to shock, where the body's organs do not receive enough oxygen due to decreased blood flow. This can be fatal if untreated.

4. Neurological Damage

- **Nerve Injury:** Bullets can sever or damage nerves, leading to paralysis, loss of sensation, or motor function in affected areas.
- **Spinal Cord Injury:** A GSW to the spine can cause complete or partial paralysis below the level of injury, depending on whether the bullet severs or damages the spinal cord.

5. Secondary Trauma and Infections

- **Infection:** Bullets carry debris, bacteria, and fragments of clothing into the body, increasing the risk of infection. This is especially a concern if the wound is not properly treated.
- **Sepsis:** In cases of severe infection, especially if the bullet damages the intestines, sepsis can occur, a life-threatening condition where the body's response to infection causes systemic inflammation, organ failure, or death.

6. Psychological Trauma

Survivors of gunshot wounds often experience psychological trauma, including post-traumatic stress disorder (PTSD), depression, and anxiety. The emotional toll can be long-lasting, particularly if the individual has been involved in a violent incident.

7. Long-term Consequences

- **Disability:** Survivors may suffer from permanent disabilities, including loss of limb function, chronic pain, or neurological deficits, depending on the injury's severity and location.
- **Chronic Pain:** Nerve damage and other complications can lead to long-term pain, requiring ongoing medical treatment and rehabilitation.
- **Rehabilitation:** Extensive physical therapy is often needed, especially in cases where limbs are damaged or amputated.

Gunshot wounds are complex injuries that require immediate and often extensive medical intervention. The extent of damage depends on the wound's location, the bullet's characteristics, and how quickly medical help is provided.

Emergency First Aid for Gunshot Wounds

Emergency first aid for gunshot wounds (GSWs) focuses on controlling bleeding, preventing shock, and keeping the victim stable until professional medical help arrives. The key principles of care depend on the location and severity of the wound. Here are the essential steps:

1. Ensure Safety

- Before approaching the victim, ensure the scene is safe. If the shooter is still active or the area is dangerous, move to safety and wait for authorities to secure the area.
- Call emergency services (911 or the local equivalent) as soon as possible.

2. Assess the Situation

- **Consciousness:** Check if the victim is conscious and responsive.
- **Breathing:** Ensure the victim is breathing. If not, initiate rescue breathing or CPR.
- **Bleeding:** Identify the source(s) of bleeding. Gunshot wounds can cause both external and internal bleeding.

3. Control Bleeding

Major bleeding is life-threatening and should be controlled immediately.

- **Apply Direct Pressure:** Use a clean cloth, gauze, or any available fabric (a shirt, towel) to apply firm, direct pressure to the wound. Use gloves if available to reduce the risk of infection. Maintain constant pressure to stop bleeding.
- **Use a Tourniquet** (for severe limb bleeding):
 - If bleeding is uncontrollable with direct pressure, and the wound is on a limb, apply a tourniquet above the wound (closer to the body).
 - If a tourniquet is unavailable, you can make one using a belt, piece of fabric, or a bandage. Tighten until the bleeding slows or stops.
 - **Important:** Note the time the tourniquet is applied and inform emergency personnel.
- **Pack the Wound** (for deep wounds): For severe, deep wounds (especially in areas like the abdomen, chest, or neck), you can pack the wound with gauze or clean cloth and continue applying pressure.

4. Position the Victim

- **Keep the Victim Still:** Movement can worsen internal bleeding and injuries.

- **Position for Comfort and to Reduce Shock:**
 - If the victim is conscious and breathing well, position them in a way that feels most comfortable.
 - If the victim is unresponsive but breathing, lay them on their back and elevate their legs slightly to improve blood flow to vital organs (unless they have a chest or abdominal injury).
 - **Recovery Position:** If unconscious and breathing normally, place the victim on their side (recovery position) to keep their airway open and prevent choking if they vomit.
- **Position for Chest or Breathing Wounds:** If the wound is in the chest and the victim is struggling to breathe, consider placing them in a sitting or semi-sitting position to help with breathing.

5. Seal Chest Wounds (for Sucking Chest Wounds)

- Gunshot wounds to the chest can cause air to enter the chest cavity, leading to a collapsed lung (pneumothorax). These wounds may produce a “sucking” sound as the person breathes.
- **Seal the Wound:** Use an airtight seal over the wound to prevent air from entering. A piece of plastic wrap, sterile dressing, or even a credit card can be used to cover the wound. Tape it down on three sides, leaving one side slightly open to allow air to escape (preventing a tension pneumothorax).

6. Treat for Shock

- Shock occurs when the body’s organs do not get enough blood and oxygen, which can be fatal. Symptoms include pale or cool skin, weakness, confusion, rapid breathing, or loss of consciousness.
- **Keep the Victim Warm:** Cover the person with a blanket, jacket, or anything available to keep them warm.
- **Elevate the Legs:** If there are no suspected injuries to the chest, head, or spine, raise their legs to help blood flow to the vital organs.
- **Reassure the Victim:** Stay calm and reassure the person. Panic can increase shock symptoms.

7. Do Not Move the Victim (Unless Necessary)

- **Spinal or Head Injuries:** If the gunshot wound involves the head, neck, or back, avoid moving the victim unless they are in immediate danger (e.g., from fire or further violence). Moving them could cause further injury.
- **Transport to Medical Care:** Once the bleeding is controlled and the victim is stable, wait for professional medical personnel to transport them to a hospital. Avoid moving the person

unless absolutely necessary.

8. Monitor Vital Signs

- Continuously monitor the victim's breathing, consciousness, and pulse until medical professionals arrive. Be prepared to perform CPR if they stop breathing.

9. Do Not Remove the Bullet

- Do not attempt to remove the bullet or any foreign objects from the wound. Leave this to medical professionals. Removing the bullet could cause more damage and worsen bleeding.

10. Provide Information to Medical Personnel

- When paramedics arrive, provide any information you have about the injury, such as:
 - Time of the injury.
 - Location of the entry and exit wounds (if visible).
 - If a tourniquet was applied, tell them when it was applied.

Summary of Key Points

- Ensure your own safety first.
- Call for emergency medical help immediately.
- Apply direct pressure to control bleeding.
- Use a tourniquet if necessary for severe limb bleeding.
- Seal sucking chest wounds with an airtight material.
- Treat for shock by keeping the victim warm and elevating their legs.
- Monitor the victim's condition and stay with them until help arrives.

These first-aid steps can help stabilise a gunshot victim until professional medical assistance arrives.

Tactical Combat Casualty Care – Gunshot Wounds

Tactical Combat Casualty Care (TCCC) is a set of trauma care guidelines for combat or tactical environments. Its primary focus is on managing severe injuries, like gunshot wounds (GSWs), in settings where access to advanced medical care may be delayed. TCCC prioritises care based on the tactical situation, emphasising lifesaving interventions while considering ongoing combat threats. There are three phases in TCCC:

1. **Care Under Fire**
2. **Tactical Field Care**
3. **Tactical Evacuation Care (TACEVAC)**

1. Care Under Fire (CUF)

This phase occurs while under hostile fire. The primary focus is **returning fire** and **gaining tactical control** of the situation. Medical interventions are limited due to the dangerous environment.

Key Considerations:

- **Return Fire and Take Cover:** The first priority is to eliminate the threat to prevent further injuries.
- **Encourage the Casualty to Move to Cover:** If the casualty is conscious and able to move, encourage them to reach cover and provide self-aid if possible (e.g., apply a tourniquet).
- **Apply a Tourniquet:** If the casualty has severe bleeding from a limb, apply a tourniquet **high and tight** on the injured limb, over the uniform if necessary. This can be done before moving the casualty to safety.
 - **Time permitting:** If the situation allows, place the tourniquet proximal (above) the wound to control bleeding.
- **Minimal Care for Non-Limb Injuries:** In this phase, care is focused only on life-threatening injuries. Non-life-threatening injuries are not treated at this stage due to the tactical environment.
- **Keep the Casualty Engaged:** If the casualty can still fight, provide them with the means to continue defending themselves.

Priorities in Care Under Fire:

- Suppress the enemy.
- Use a tourniquet for life-threatening extremity bleeding.
- Move to a safer area for further treatment (if possible).

2. Tactical Field Care

This phase begins when the casualty and caregiver are no longer under direct fire or have some level of cover. More comprehensive medical care can be provided, but it is still limited by available supplies and the environment.

Key Interventions:

- **Reassess Tourniquet Placement:** Once in a safer environment, reassess the tourniquet. If it was applied over clothing or too high on the limb, consider loosening it temporarily to place it directly on the skin 2-3 inches above the wound (if the wound is visible and accessible). Avoid loosening the tourniquet if in doubt about bleeding control.

- **Airway Management:**
 - If the casualty is unconscious but breathing, use the **recovery position**.
 - If they are not breathing or are struggling to breathe, consider using an airway adjunct like a **nasopharyngeal airway (NPA)**.
 - For penetrating chest wounds, treat **sucking chest wounds** with a **chest seal** (vented if available) to prevent tension pneumothorax.
 - **Needle decompression:** If the casualty shows signs of tension pneumothorax (respiratory distress, deviated trachea, absent breath sounds on one side), perform needle decompression with a 14-gauge needle in the second intercostal space, midclavicular line.

- **Control Major Bleeding:**
 - **Direct pressure:** Apply direct pressure to wounds not suitable for a tourniquet.
 - **Haemostatic dressings:** For severe bleeding that cannot be controlled with a tourniquet (e.g., junctional areas like the groin, armpit, or neck), use haemostatic dressings (such as Combat Gauze) to pack the wound.
 - **Junctional tourniquets:** For junctional wounds (areas where traditional tourniquets can't be applied), specialized junctional tourniquets may be used if available.

- **Treat for Shock:**
 - Lay the casualty flat, keep them warm (with a space blanket or jacket), and elevate their legs if possible.
 - Fluid resuscitation (if available and necessary): If the casualty shows signs of haemorrhagic shock (weak pulse, altered mental state), administer intravenous or intraosseous fluids, typically **Hextend** or **lactated Ringer's solution** if blood products are unavailable.

- **Combat Gauze** (or other haemostatic agents): For wounds in areas that are difficult to tourniquet (e.g., neck, groin), use haemostatic gauze to control bleeding. Insert the gauze into the wound and apply direct pressure.

- **Burns and Eye Injuries:** For burn injuries, cover the affected area with sterile dressings and keep the casualty warm. For eye injuries, cover the injured eye with a rigid shield (not pressure dressings).

Key Interventions (MARCH Algorithm):

TCCC uses the **MARCH algorithm** to guide care:

- **M - Massive Haemorrhage:** Stop life-threatening bleeding with a tourniquet or haemostatic dressing.
- **A - Airway:** Ensure a patent airway. Use NPAs or perform cricothyroidotomy if necessary.

- **R - Respiration:** Treat chest wounds with chest seals, perform needle decompression for tension pneumothorax, and support breathing.
- **C - Circulation:** Treat shock by controlling bleeding and administering fluids.
- **H - Hypothermia/Head Injury:** Prevent hypothermia and monitor for signs of head injury.

3. Tactical Evacuation Care (TACEVAC)

This phase occurs during the evacuation process, such as when the casualty is transported by vehicle or aircraft to a higher level of medical care. Medical care can be more advanced if trained personnel and equipment are available.

Key Interventions:

- Continue to monitor and reassess interventions (tourniquets, airway, chest seals).
- Provide additional fluids, pain management, or antibiotics as necessary.
- Communicate with medical personnel during the evacuation, giving detailed information about the casualty's injuries and treatments provided.

Additional Considerations for TCCC

- **Pain Management:** If feasible, administer pain relief (e.g., **fentanyl lozenges** or **morphine**). However, pain management must be done with caution, especially if the casualty has respiratory issues.
- **Antibiotics:** If the casualty is not in shock, consider giving oral antibiotics (such as **moxifloxacin**) to prevent infection from open wounds.
- **Documentation:** Throughout the process, document the care given using a **TCCC card** to ensure proper communication during handoff to advanced medical personnel.

Key Takeaways from TCCC:

- **Tourniquets save lives:** Use them early and reassess them during field care.
- **Airway management:** Simple interventions like positioning and NPAs can make a big difference.
- **Haemorrhage control:** Immediate control of severe bleeding, especially from junctional areas, is critical.
- **Fluid resuscitation and preventing shock:** These steps are vital but must be done based on the tactical situation and casualty's condition.

- **Prioritize the mission and casualty safety:** Always balance medical care with the tactical environment.

TCCC emphasizes improvisation, using available materials, and prioritizing interventions that save lives on the battlefield while balancing the need for tactical control.

Emergency Procedures for Gunshot Wounds in Close Protection

When dealing with gunshot wounds in **Close Protection**, the primary focus is not only on managing the injury but also on ensuring the safety of the principal (VIP) and the rest of the protection team. The goal is to maintain operational security while administering critical medical care to those injured.

1. Immediate Response and Security

Team members are to provide body cover to the principal. Other team members to engage the threat and if possible return fire (hostile environments). Assess an escape route to cover – action the emergency evac. Team medic to provide emergency aid.

- **Neutralize the Threat:** The first priority is always to eliminate or avoid the threat. If under attack, the protection team should first secure the principal by removing them from danger. Returning fire, if possible and legal, is crucial to prevent further injuries.
- **Get to Cover:** The protection team must move the principal to a secure area as quickly as possible. Ensure that the immediate environment is safe before addressing the injury.
- **Ensure the Safety of the Principal:** While treating any injured team members or bystanders is important, the primary role of a CP operative is to protect the principal. The injured party should be moved to a safer location if possible, but if that's not an option, position yourself to both provide cover and administer care.

2. Initial Assessment (MARCH Algorithm)

Use the **MARCH** algorithm, which is commonly adopted from **Tactical Combat Casualty Care (TCCC)**, to assess and treat the injured party in a high-threat environment:

- **M - Massive Haemorrhage:**
 - **Apply a Tourniquet:** If there's life-threatening bleeding from an extremity, immediately apply a tourniquet **high and tight**. This is the quickest way to control severe bleeding in limbs. If there is non-compressible bleeding in areas such as the neck, armpit, or groin, use haemostatic dressings (e.g., Combat Gauze) and direct pressure.
 - **Direct Pressure:** For bleeding that cannot be controlled with a tourniquet (e.g., abdominal, chest, or head injuries), apply direct pressure using gauze or a pressure bandage.

- **A - Airway:**
 - **Ensure an Open Airway:** If the injured person is unconscious or has difficulty breathing, ensure their airway is open. If they are conscious, have them remain in a position that helps them breathe (usually sitting up for chest wounds).
 - **Airway Adjuncts:** Use a **nasopharyngeal airway (NPA)** if necessary to maintain a clear airway, especially if the casualty is unresponsive.
 - **Suction or Remove Obstructions:** Be prepared to clear the airway if there is blood or debris obstructing breathing.
-
- R - Respiration:**
 - **Seal Chest Wounds:** For penetrating chest wounds (e.g., sucking chest wounds), use a **chest seal** to prevent air from entering the chest cavity. This will help avoid tension pneumothorax (collapsed lung). If a chest seal is not available, improvise with plastic or other airtight material, taping it on three sides to allow air to escape.
 - **Decompress Tension Pneumothorax:** If you suspect a tension pneumothorax (difficulty breathing, asymmetric chest rise, or absent breath sounds), a needle decompression with a 14-gauge needle may be necessary, provided the CP team is trained to do so.
-
- C - Circulation:**
 - **Assess for Shock:** Look for signs of shock, such as pale skin, confusion, weak pulse, or rapid breathing. Treat for shock by keeping the casualty warm, elevating their legs (if there are no head or chest injuries), and providing fluids if possible.
 - **Prevent Hypothermia:** Use a space blanket or other insulating materials to prevent heat loss.
-
- H - Hypothermia/Head Injury:**
 - **Head Injuries:** For gunshot wounds to the head, minimise movement and provide basic airway support if needed. Do not elevate legs if there is a head injury.
 - **Hypothermia Prevention:** Even in warm environments, blood loss can cause hypothermia, which can exacerbate shock. Keep the casualty warm with any available materials.

3. Communication and Evacuation

- **Call for Backup/Emergency Medical Services (EMS):** Immediately alert team members and local law enforcement or emergency services. Relay the severity of the injury, location, and any tactical threats to coordinate a safe and efficient evacuation.
- **Secure an Evacuation Route:** Identify and secure the safest and quickest evacuation route for both the principal and the injured party. If possible, plan for extraction before entering

the area.

- **Assign Roles:** While one team member treats the injured, another should focus on communication with emergency responders and providing continued protection for the principal.
- **Tactical Medical Evacuation:** Depending on the situation, you may need to move the casualty to a safer area before evacuation. In extreme cases, the CP team may have to conduct a medical evacuation themselves if emergency services are delayed or unavailable.

4. Ongoing Care and Monitoring

- **Reassess Interventions:** Continuously monitor the casualty's condition. Check for the effectiveness of interventions like the tourniquet, chest seal, or airway management. If the tourniquet is no longer effective or bleed worsens, apply additional measures.
- **Monitor Vital Signs:** Observe the casualty's breathing, level of consciousness, pulse, and skin colour. Be prepared to perform CPR if breathing stops or the heart stops beating.

5. Operational Priorities and Threat Management

- **Maintain Situational Awareness:** Continue scanning the environment for additional threats. Remember that the primary role of a CP operative is protection, not medical care, so while providing life-saving measures, you must remain aware of tactical risks.
- **Balance Care with Protection:** Always prioritize the safety of the principal over medical intervention if the situation escalates. If you are in a hostile environment, providing care may take second place to remove the principal from danger.

6. Legal and Operational Considerations

- **Legal Responsibilities:** Be aware of local laws regarding medical treatment, use of force, and first aid provision. This is especially important in international operations where laws may differ.
- **Documentation:** If possible, document the injury and the care provided, especially when professional medical help arrives. This information will be critical for handover to emergency responders and legal proceedings if needed.

7. Post-Incident Care

- **Handover to Medical Personnel:** When EMS or paramedics arrive, provide a clear and concise handover, including the nature of the injury, the treatments given, and any relevant information (e.g., time of tourniquet application, loss of consciousness).
- **Monitor the Principal:** After the incident, ensure the principal is safe and provide them with any necessary emotional or psychological support. Gunshot incidents can be highly

traumatic.

- **Debriefing and Aftercare:** Following the incident, conduct a debrief with the CP team to assess the response, review actions, and identify any areas for improvement.

Key Equipment for Close Protection Teams:

- **Tourniquets:** Always carry at least one tourniquet for each team member.
- **Haemostatic Dressings:** These are essential for controlling bleeding in areas where a tourniquet cannot be applied.
- **Chest Seals:** For treating sucking chest wounds.
- **Airway Management Tools:** Nasopharyngeal airways (NPAs) should be part of your kit.
- **Trauma Shears:** To quickly cut clothing and expose wounds for treatment.
- **Medical Gloves:** For personal protection and preventing infection.
- **Space Blankets:** For preventing hypothermia in casualties.

Conclusion

In close protection, managing gunshot wounds is a critical skill that involves balancing medical care with the need to protect the principal. The focus should be on stopping life-threatening bleeding, ensuring airway and breathing, and securing rapid evacuation while maintaining situational awareness and operational security. Having proper training, equipment, and a well-coordinated response plan is essential to successfully handling such incidents in high-threat environments.