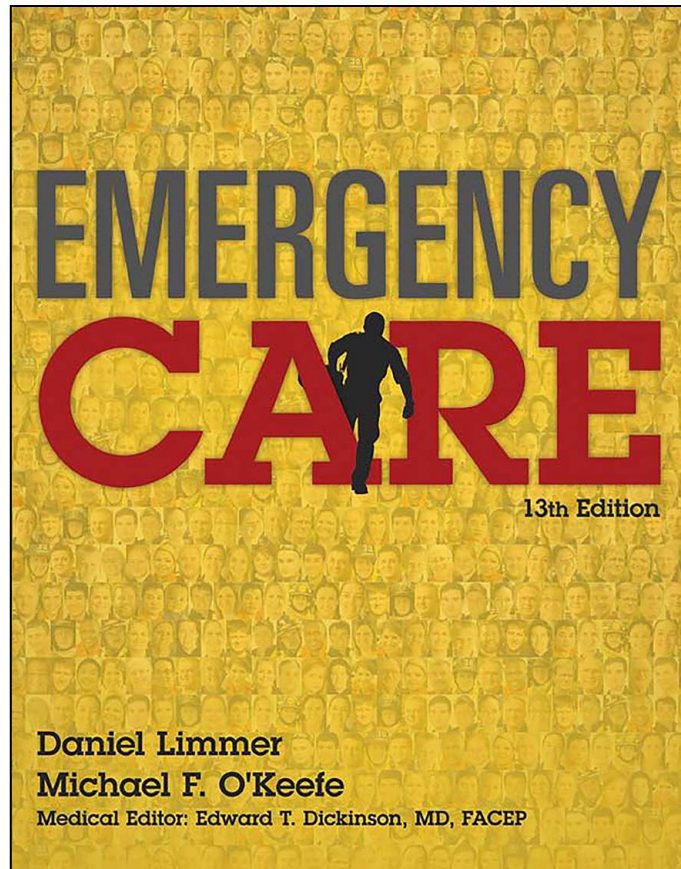


# Emergency Care

THIRTEENTH EDITION



## CHAPTER 30

### Multisystem Trauma

# Multimedia Directory

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[Slide 23      Emergency: Gunshot Wound Video](#)

[Slide 24      Multiple System Injuries in Front-end Collisions Video](#)

[Slide 25      Mechanism of Injuries in Vehicle Collisions Video](#)

# Topics

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- Multisystem Trauma
- Managing the Multisystem-Trauma Patient

# Multisystem Trauma

# Multisystem Trauma

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- Multiple-trauma patient
  - More than one serious injury
- Multisystem-trauma patient
  - One or more injuries serious enough to affect more than one body system
- Teamwork, timing, and transport decision are key to proper management.

# Determining Patient Severity

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- Most critical decisions
  - Patient priority/severity
  - Whether to limit scene time or not
  - Which hospital or transport method is best for your patient

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# Determining Severity: Physiologic Criteria

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- Altered mental status (GCS < 14)
  - Head injury
- Hypotension (systolic < 90 mm Hg)
  - Shock, internal bleeding
- Abnormally slow respiratory rate
  - Head injury, later stages of shock

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# Determining Severity: Anatomic Criteria

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- Penetrating injuries to head, neck, torso, and extremities proximal to elbow and knee
- Chest wall instability or deformity
- Two or more proximal long-bone fractures

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# Determining Severity: Anatomic Criteria

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- Crushed, degloved, mangled, or pulseless extremity
- Amputation proximal to wrist or ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis

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# Determining Severity: Mechanism of Injury

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- In absence of anatomic or physiologic signs, MOI is considered if severe.
- Falls
- Intrusion
- Ejection from automobile
- Death in same passenger compartment
- Vehicle telemetry data consistent with high risk of injury

# Determining Severity: Special Patients and Considerations

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- Older adults do not efficiently compensate for shock.
- Children may benefit by transport to a pediatric specialty facility.
- Patients with certain conditions
  - Taking anticoagulants
  - Pregnant

# Managing the Multisystem-Trauma Patient

# A Typical Call

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- Practice with crew.
  - Determine roles.
- En route to call, review roles each member of the crew will have.
- Ensure scene safety.
  - Auto crash will have passing traffic.
  - Penetrating trauma
    - Assailant may still be on the scene.

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# A Typical Call

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- Perform the primary assessment.
- Ensure an open airway.
- Perform urgent or emergency moves.
- Transport.
- Give a report to the trauma team at the emergency department during handover.

# Analysis of the Call

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- In a scenario with critical injuries
  - Follow priorities determined by assessments.
  - Do not delay transport by performing treatments that would waste time.
  - Show good judgment.
    - Postpone taking vital signs until en route when appropriate.
    - Give the hospital staff time to prepare.

# General Principles of Multisystem-Trauma Management

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- Follow priorities determined by primary assessment.
- Attend to immediate threats to life.
- Reassess what to treat on scene and what needs definitive care.
- Call hospital so they can prepare.



# General Principles of Multisystem-Trauma Management

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- Depending on your primary assessment, you may postpone taking vital signs until you are en route to the hospital.
- As you reassess your patient in the vehicle, call the hospital as necessary to update the vital signs.

# General Principles of Multisystem-Trauma Management

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- Limit scene treatment
  - Stabilize cervical spine.
  - Suction airway.
  - Insert oral or nasal airway.
  - Restore patent airway.
  - Ventilate with bag-valve mask.
  - Administer high-concentration oxygen.
  - Control bleeding.
  - Immobilize patient.

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# General Principles of Multisystem-Trauma Management

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- Scene safety is paramount.
- Ensure an open airway.
- Perform urgent or emergency moves as necessary.
- Adapt to the situation.

# Trauma Scoring

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- Numerical rating system for trauma
- Assigns number to certain patient characteristics to create a score
- Objectively describes severity
- Helps determine transport to a trauma center or local hospital
- Helps trauma centers evaluate the care of similar patients

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# Trauma Scoring

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- Revised Trauma Score (RTS)
  - Components
    - Glasgow Coma Scale (GCS)
    - Systolic blood pressure
    - Respiratory rate
  - Follow local protocol for use of the trauma scoring system.
  - Do not let it interfere with patient care.

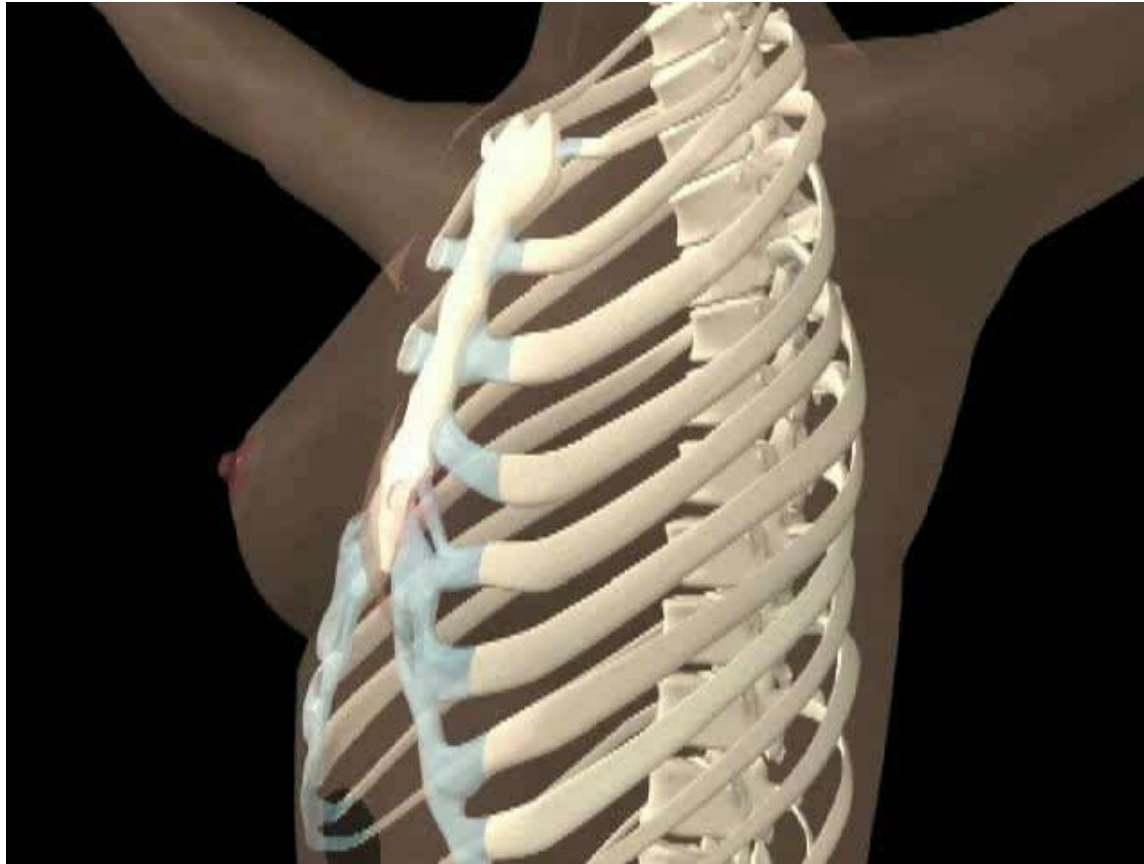
# Sample RTS Form

<b>REVISED TRAUMA SCORE</b>		
<b>Characteristic</b>	<b>Criterion</b>	<b>RTS Points</b>
<b>Glasgow Coma Scale</b>	13–15	<b>4</b>
	9–12	<b>3</b>
	6–8	<b>2</b>
	4–5	<b>1</b>
	3	<b>0</b>
<b>Systolic Blood Pressure</b>	> 89 mmHg	<b>4</b>
	76–89 MmHg	<b>3</b>
	50–75 MmHg	<b>2</b>
	1–49 MmHg	<b>1</b>
	0	<b>0</b>
<b>Respiratory Rate</b>	10–29/min	<b>4</b>
	> 29/min	<b>3</b>
	6–9/min	<b>2</b>
	1–5/min	<b>1</b>
	0	<b>0</b>
<b>Revised Trauma Score (Total)</b>		

Source: Champion H.R., Sacco W.J., Copes W.S., et al. A Revision of the Trauma Score. *J Trauma* 29 (5): 623–9, 1989

Revised Trauma Score. Source: *Champion, H. R., Sacco, W. J., Copes, W.S., et al. "A Revision of the Trauma Score," J Trauma 29(5): 623–9, 1998.*

# Emergency: Gunshot Wound Animation



Click on the screenshot to view an animation on the subject of treating gunshot wounds.

[Back to Directory](#)

# Multiple System Injuries in Front-end Collisions Animation



Click on the screenshot to view an animation on trauma due to front-end collisions.

[Back to Directory](#)



# Mechanism of Injuries in Vehicle Collisions Animation



Click on the screenshot to view a view an animation on the types of injuries in motor vehicle collisions.

[Back to Directory](#)

# Chapter Review

# Chapter Review

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- Multisystem trauma is a serious condition in which two or more major body systems are injured or affected.
- Recognizing multisystem trauma, triaging properly, transporting promptly, and choosing the correct destination are vital for the survival of your patient.

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# Chapter Review

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- The CDC has issued guidelines for trauma triage and transport. These are a guide and should be used in conjunction with your protocols.

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# Chapter Review

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- The Revised Trauma Score (RTS) is one method of classifying trauma patients by severity and includes the Glasgow Coma Score (GCS), systolic blood pressure, and respiratory rate.

# Remember

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- Your primary assessment should determine whether your patient is seriously injured or potentially seriously injured.
- Limit scene treatment to life-threatening conditions.

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# Remember

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- Use patient severity (physiologic criteria, anatomic criteria, MOI) to decide whether to transport to a trauma center or local hospital.

# Questions to Consider

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- Is my patient seriously injured or potentially seriously injured?
- Should I expedite my scene time?
- What is the most appropriate transport destination for my patient?



# Critical Thinking

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- A patient was involved in a car crash with significant intrusion into the area where the patient was sitting. The patient is alert and complains of pain in the ribs. Pulse: 96 and regular; respirations: 30 and adequate; blood pressure: 100/62; pupils: equal and reactive; skin: cool and dry.

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# Critical Thinking

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- Your partner says the patient is stable and could be easily transported to the community hospital nearby. You think the patient should be transported to the trauma center. How would you justify your decision to your partner?