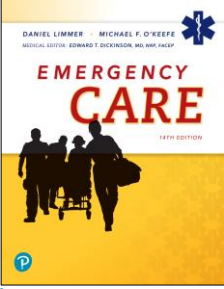



Emergency Care

Fourteenth Edition




Chapter 34
Multisystem Trauma

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Topics

- [Multisystem Trauma](#)
- [Managing the Multisystem-Trauma Patient](#)

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Multisystem Trauma

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Multisystem Trauma

- 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.

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Determining Patient Severity

- 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

- Altered mental status (GCS < 14)
 - Head injury
- Hypotension (systolic < 90 mmHg)
 - Shock, internal bleeding
- Abnormal respiratory rates
 - Head injury, later stages of shock

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Determining Severity: Anatomic Criteria (1 of 2)

- Amputation proximal to wrist or ankle
- Pelvic fractures
- Open or depressed skull fracture
- Paralysis



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Determining Severity: Anatomic Criteria (2 of 2)

- 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
- Crushed, degloved, mangled, or pulseless extremity



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Determining Severity: Mechanism of Injury

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



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Determining Severity: Special Patients and Considerations

- 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



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Managing the Multisystem-Trauma Patient

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A Typical Call (1 of 2)

- When does the EMT recognize that the patient has multiple injuries?
- What body systems would the EMT suspect have been affected by this patient's injuries?
- What is the EMT's first decision about managing those injuries, and why would you make it?



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A Typical Call (2 of 2)

- What actions would you take to support the affected body systems?
- What priorities would you set for this patient?



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Analysis of the Call

- The previous scenario shows an example of a patient who has critical injuries.
- The primary assessment revealed several immediate threats to life that the EMT could do something about.
- The EMT realized the seriousness of the patient's condition and did not delay transport.
- The EMT showed good judgment through the call.



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General Principles of Multisystem-Trauma Management (1 of 3)

- Determine roles for a multisystem-trauma patient beforehand.
- Follow priorities determined by primary assessment.
- Remember the golden hour.
 - Need for critical trauma patients to get to surgery within 1 hour of injury (not 1 hour from when you get to the patient).



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General Principles of Multisystem-Trauma Management (2 of 3)

- 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.
 - Restrict spinal motion.



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General Principles of Multisystem-Trauma Management (3 of 3)

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



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Pediatric Considerations

- Pediatric patients will need additional emotional support because younger patients may not understand what is occurring to them and around them.
- When deciding whether spinal motion restriction is necessary, many protocols add consideration of MOI.



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Trauma Scoring (1 of 2)

- 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 (2 of 2)

- 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.



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Sample RTS Form

REVISED TRAUMA SCORE		
Characteristic	Criterion	RTS Points
Glasgow Coma Scale	15-15	4
	13-14	
	9-12	
	3-8	
Systolic Blood Pressure	≥90mmHg	9
	70-89mmHg	
	50-69mmHg	
	<50mmHg	
Respiratory Rate	10-20/min	8
	5-9/min	
	1-4/min	
	0/min	
Revised Trauma Score (Total)		0

[For long description, see slide 30: Appendix 1](#)

Revised Trauma Score. Source: Data from Champion, H. R., Sacco, W. J., Copes, W.S., et al. "A Revision of the Trauma Score," *The Journal of Trauma* 29(5): 623-9, 1998. Published by The Williams & Wilkins Co.



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Chapter Review



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Chapter Review (1 of 2)

- 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 (2 of 2)

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



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Remember

- Your primary assessment should determine whether your patient is seriously injured or potentially seriously injured.
- Limit scene treatment to life-threatening conditions.
- Use patient severity (physiologic criteria, anatomic criteria, MOI) to decide whether to transport to a trauma center or local hospital.



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Questions to Consider

- 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?



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Critical Thinking (1 of 2)

- 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 (2 of 2)

- 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?



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Appendix 1 (1 of 2)

The table is as follows.

Characteristic	Criterion	RTS points
Glasgow Coma scale	13 to 15	4
Glasgow Coma scale	9 to 12	3
Glasgow Coma scale	6 to 8	2
Glasgow Coma scale	4 to 5	1
Glasgow Coma scale	3	0
Systolic blood pressure	Greater than 89 millimeters of Mercury	4
Systolic blood pressure	76 to 89 millimeters of Mercury	3
Systolic blood pressure	50 to 75 millimeters of Mercury	2
Systolic blood pressure	1 to 49 millimeters of Mercury	1
Systolic blood pressure	0	0



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Appendix 1 (2 of 2)

Characteristic	Criterion	RTS points
Respiratory rate	10 to 29 per minute	4
Respiratory rate	Greater than 29 per minute	3
Respiratory rate	6 to 9 per minute	2
Respiratory rate	1 to 5 per minute	1
Respiratory rate	0	0
Revised Trauma score, total		

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