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Physical Assessment in the Field

Primary Care Paramedicine

Module: 09

Section: 03b

Lecture Outline

- Introduction
- Scene assessment
- Primary assessment
- Medical versus trauma assessments
- Focused secondary assessment
- Ongoing care
- Handover of care

Introduction

- Patient assessment
  - A problem-oriented evaluation establishing priorities of care
  - Based on existing and potential threats
- Rule in and out assessments
- If assessment does not reveal patient problems the consequences can be dire

Components of Patient Assessment

- Primary assessment
- Focused history and secondary assessment
- Ongoing assessment
- Detailed secondary assessment

Patient Assessment

SCENE ASSESSMENT

Scene Assessment

- Body substance isolation
- Scene safety
- Location of all patients
- Mechanism of injury
- Nature of the illness

Scene Assessment

- Always stop to assess the scene before going in

Body Substance Isolation

- The best defense against bloodborne, body fluid, and airborne agents is to take appropriate body substance isolation precautions.

Body Substance Isolation

- Always wear the appropriate personal protective equipment (PPE) to prevent exposure to contagious diseases

Personal Protection

- Gloves
- Eyewear
- Vests
- Helmets
- Boots
- Isolation gown
- Ear plugs

Priorities of Scene Safety

- You
- Your crew
- Other responding personnel
- Patient
- Bystanders

Scene Safety

- Look for potential hazards during scene size-up
- Correct any hazards if possible
- Other resources may be needed to make the scene safe:
  - Power company
  - Fire department
  - Police

Rescue Situations

- Never enter a specialized rescue situation without proper training and equipment

Rescue Situations

- Follow local protocols when you respond to a mass-casualty incident

Mechanism of Injury

- The physical forces applied to the body and how they react
  - Strength
  - Direction
  - Nature of forces

Mechanism of Injury

- Try to determine the mechanism of injury during scene assessment

Nature of Illness

- To determine the nature of illness:
  - Use bystanders, family members, or the patient.
  - Use the scene to give clues to the patient's condition.
  - Remember that the patient's illness may be very different from the chief complaint.

Patient Assessment

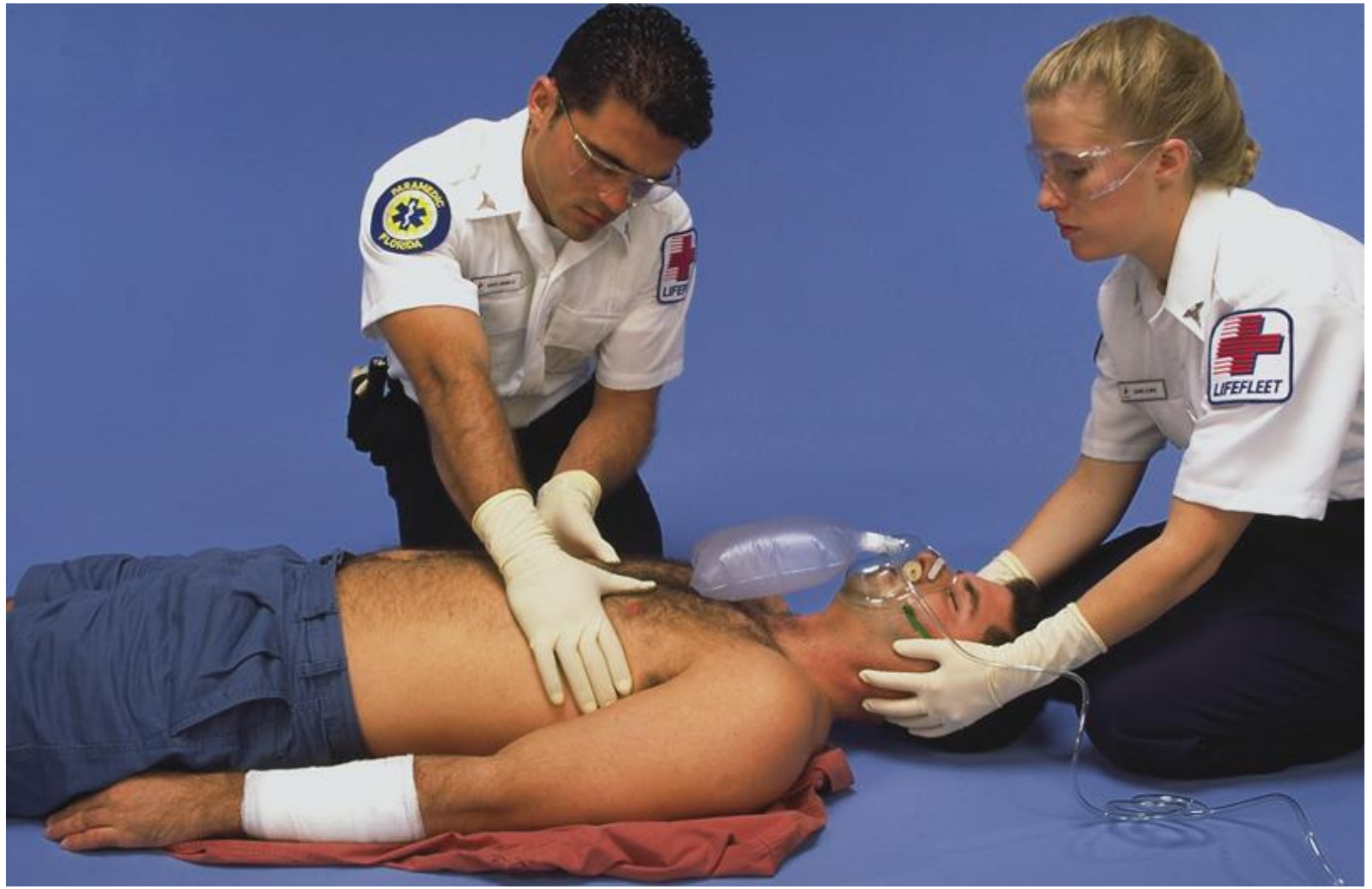
ASSESSMENT TECHNIQUES

Assessment Techniques

- The foundation of the physical assessment is based upon:
  - Inspection
  - Palpation
  - Auscultation
  - Percussion

Inspection

Palpation



Auscultation

Percussion

Percussion

- Listen to each sound and evaluate its meaning.

Table 6-1 Percussion Sounds

Sound	Description	Intensity	Pitch	Duration	Location
Tympany	Drum-like	Loud	High	Medium	Stomach
Hyperresonance	Booming	Loud	Low	Long	Hyperinflated lung
Resonance	Hollow	Loud	Low	Long	Normal lung
Dull	Thud	Medium	Medium	Medium	Solid organs—liver
Flat	Extremely dull	Soft	High	Short	Muscle, atelectasis

Patient Assessment

PRIMARY ASSESSMENT

Primary Assessment

- Form a general impression
- Stabilize cervical spine as needed
- Assess baseline level of response
- Assess airway
- Assess breathing
- Assess circulation
  - Rapid Body Survey
- Determine priority

The General Impression

- The general impression is the initial, intuitive evaluation of the patient to determine the general clinical status and priority for transport.

Cervical Spine

- Manual stabilization of the head may be required
- This decision is based on:
  - MOI/NOI
  - History of the event
  - General impression

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C-Spine Clearance

The Canadian C-Spine Rule

Please check off all choices within applicable boxes:

1. Any One High-Risk Factor Which Mandates Immobilization?

No	Yes	
O	O	Age ≥ 65 years
		OR
O	O	Dangerous mechanism *
		OR
O	O	Numbness or tingling in extremities

O Yes → O C-Spine Immobilization

O No

2. Any One Low-Risk Factor Which Allows Safe Assessment of Range of Motion?

No	Yes	
O	O	Simple rearend MVC **
		OR
O	O	Ambulatory at any time at scene
		OR
O	O	No neck pain at scene when asked
		OR (answer "yes" if no pain)
O	O	No pain during midline c-spine palpation (answer "yes" if no pain)

O No → O C-Spine Immobilization

O Yes

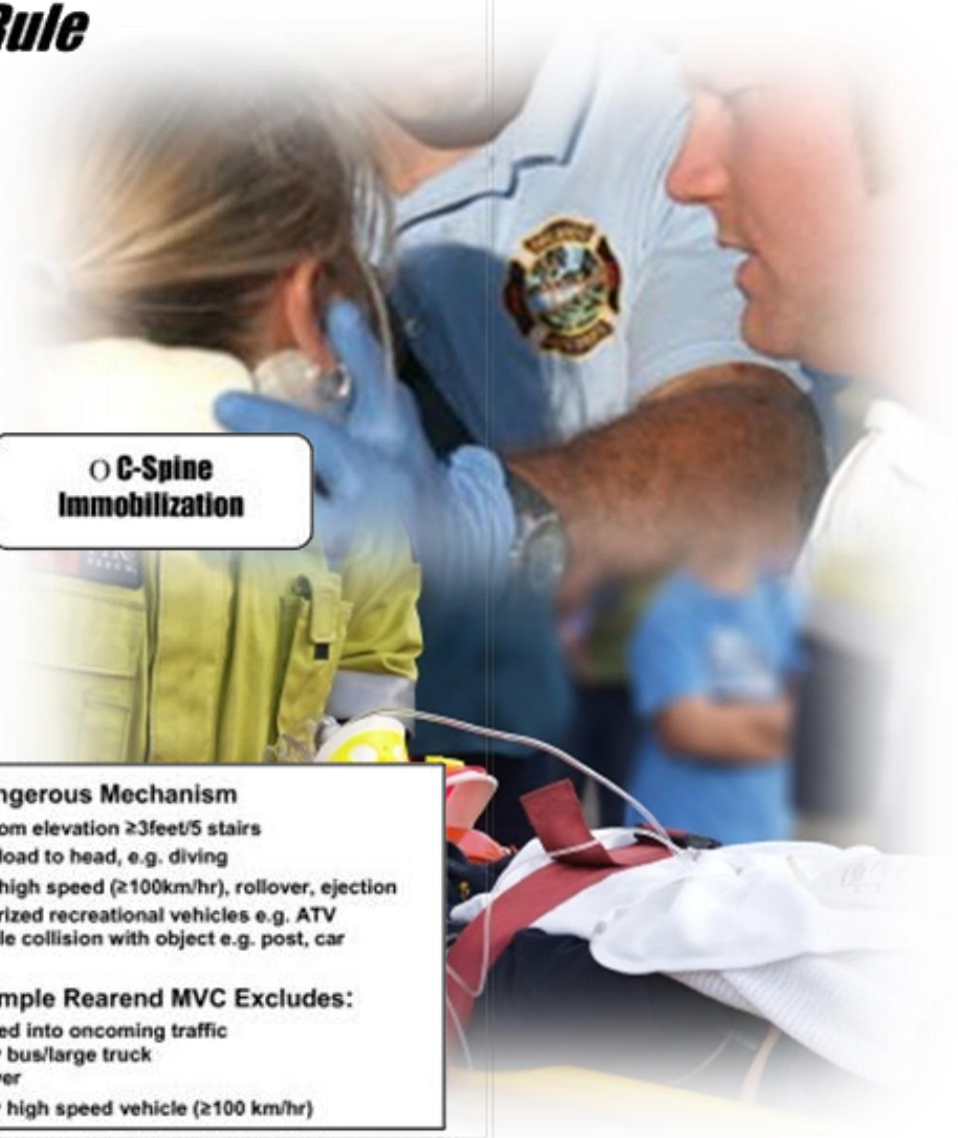
3. Patient Voluntarily Able to Actively Rotate Neck 45° Left and Right When Requested, Regardless of Pain?

No	Yes
O	O

O Unable → O C-Spine Immobilization

O Able

O No C-Spine Immobilization ***



*** Dangerous Mechanism**

- -fall from elevation ≥3feet/5 stairs
- -axial load to head, e.g. diving
- -MVC high speed (≥100km/hr), rollover, ejection
- -motorized recreational vehicles e.g. ATV
- -bicycle collision with object e.g. post, car

**** Simple Rearend MVC Excludes:**

- -pushed into oncoming traffic
- -hit by bus/large truck
- -rollover
- -hit by high speed vehicle (≥100 km/hr)

Appearance

- Level of consciousness
- Signs of distress
- Apparent state of health
- Sexual development
- Unkempt
- Skin color and obvious lesions
- Posture, gait, and motor activity
- Dress, grooming, and personal hygiene
- Facial expression

Mental Status

- Reassess the patients
  - Level of consciousness (AVPU, GCS)
  - Level of alertness and orientation

Airway

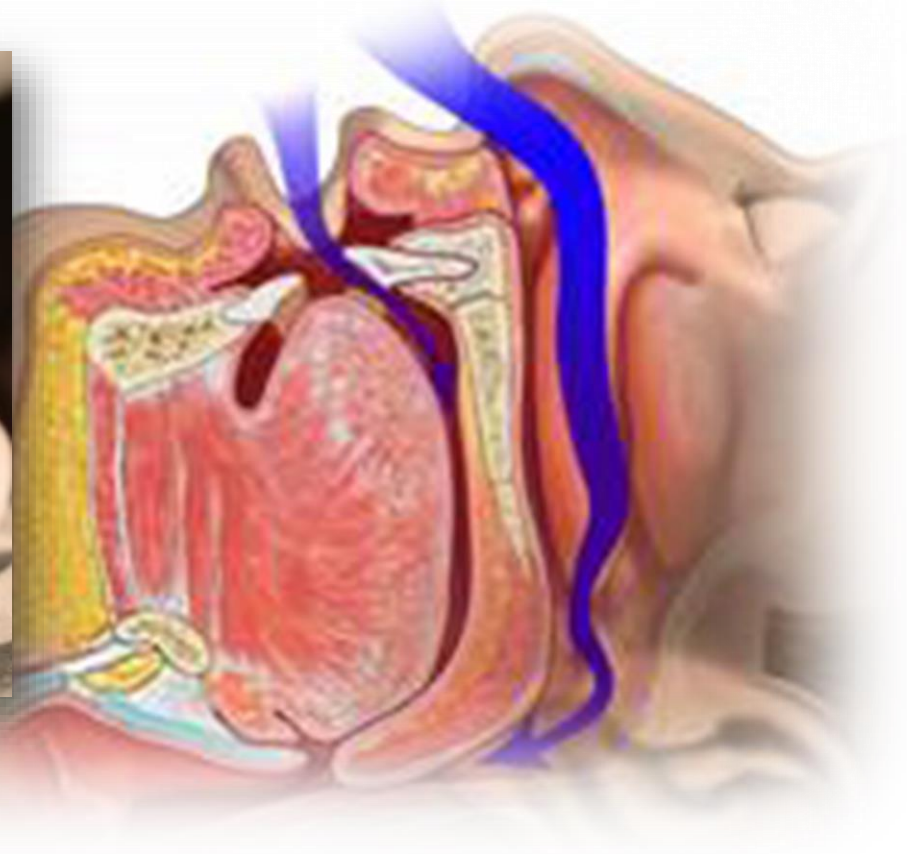
- Determine if the airway is patent or obstructed
- Assess patency by:
  - Determining if the patient can speak
  - Note signs of airway obstruction or respiratory insufficiency (stridor, wheezing, gurgling)
  - Inspecting the oral cavity for foreign objects
- Any condition that compromises the delivery of oxygen to body tissues is potentially life threatening and must be managed immediately

Airway Assessment

- If the airway is obstructed (not patent) then correction is required
- To attempt correction of the obstruction:
  - Airway positioning may be used
    - Head-tilt/chin lift
    - Jaw thrust
  - Suctioning may be required
  - Use of airway adjuncts

Airway Assessment

- Unconscious patient's tongue may fall and close the upper airway



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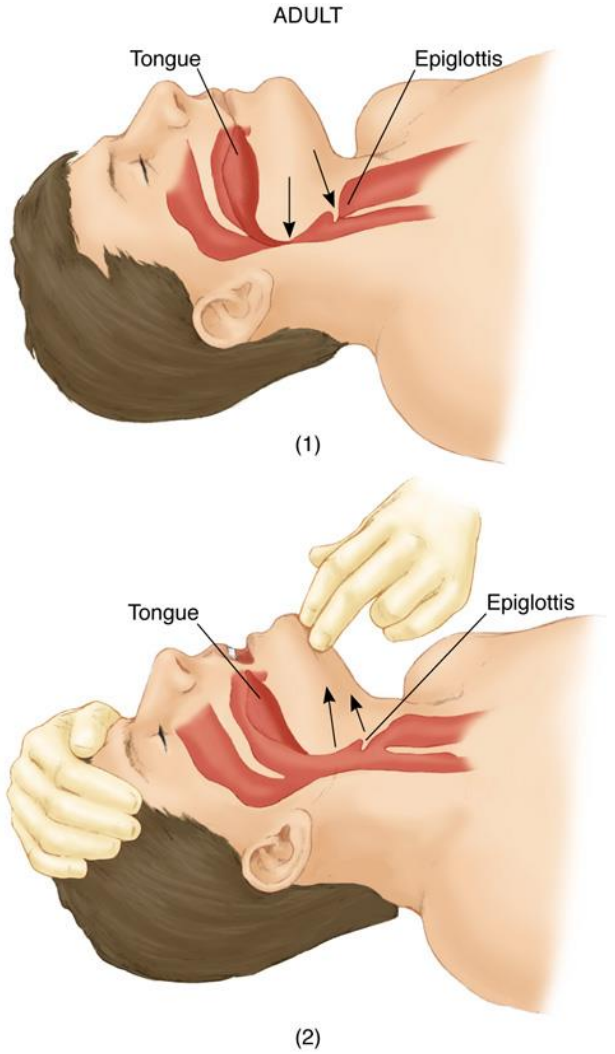
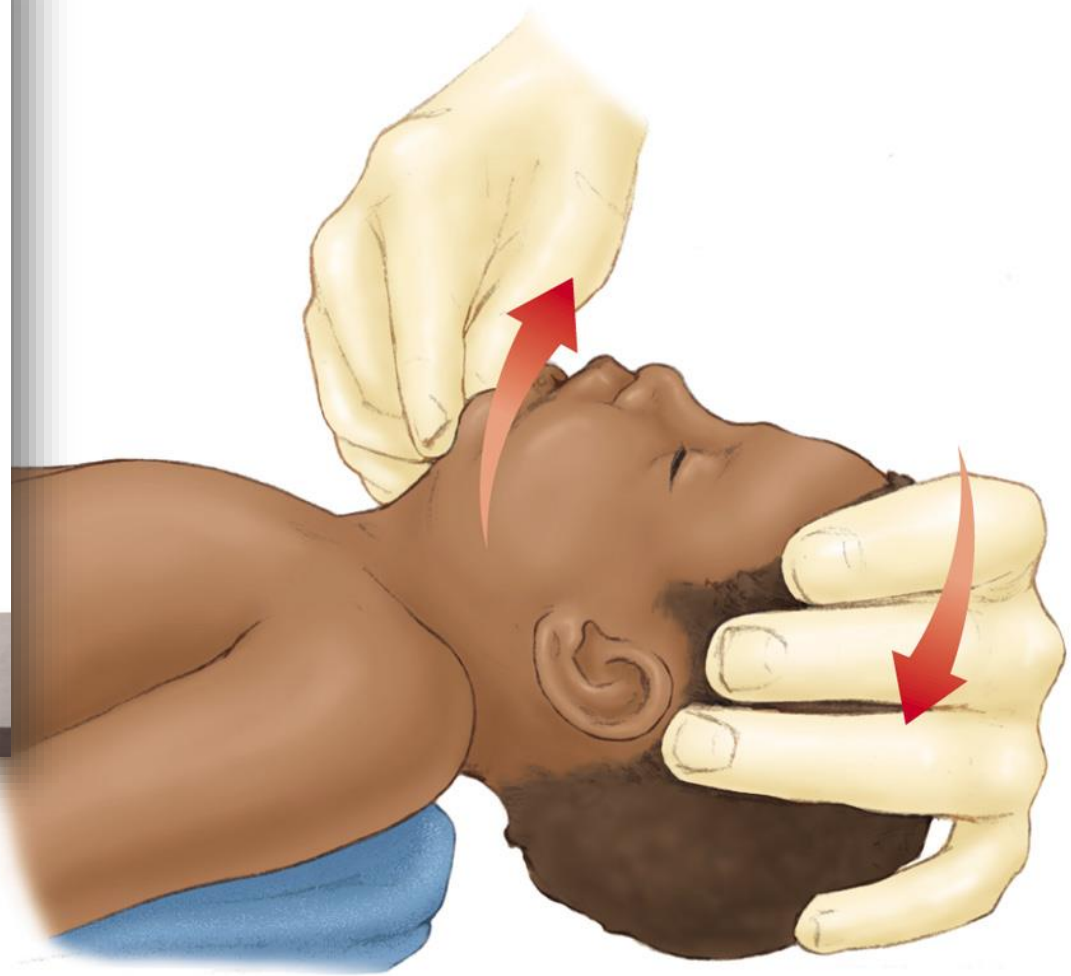
The head-tilt/chin lift

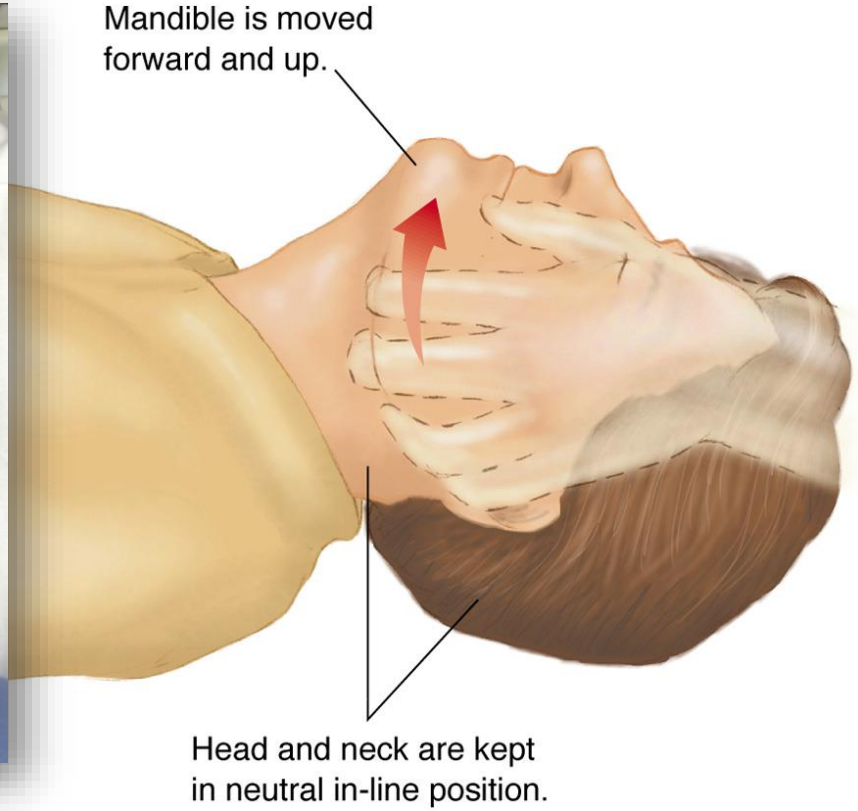


The head-tilt/chin lift maneuver in an infant



Jaw Thrust

- Use the jaw thrust to open airway if you suspect a cervical spine injury



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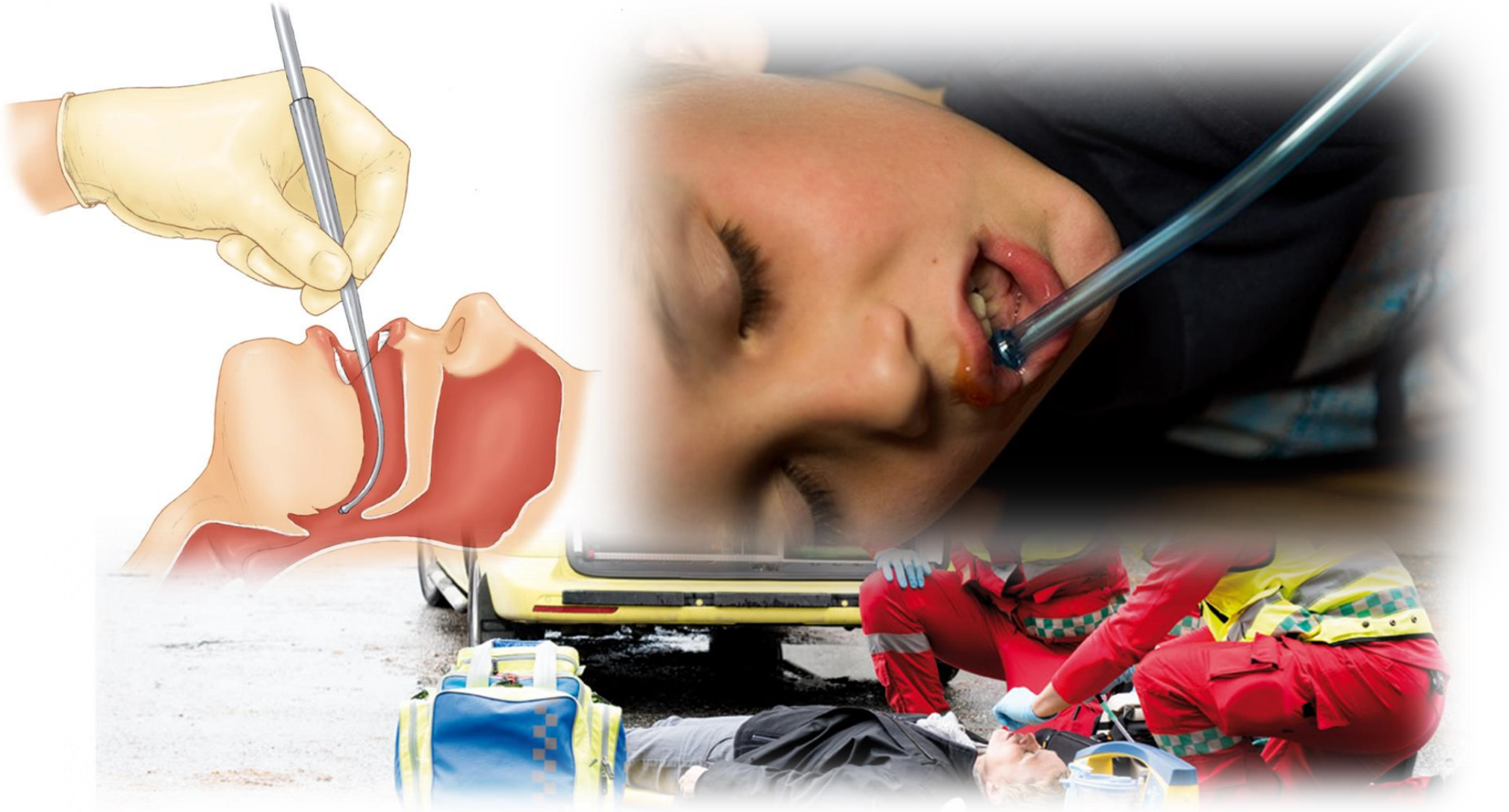
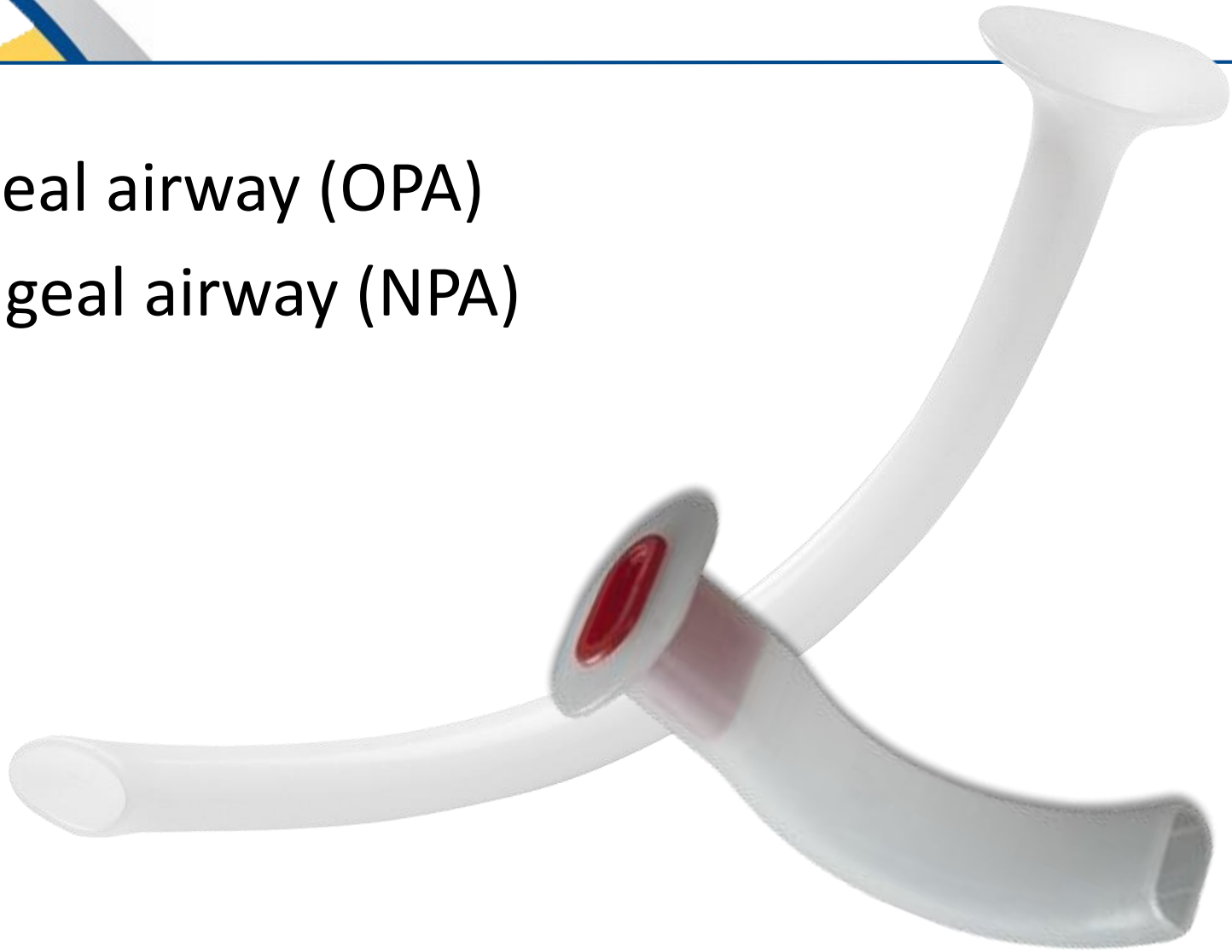
Suctioning



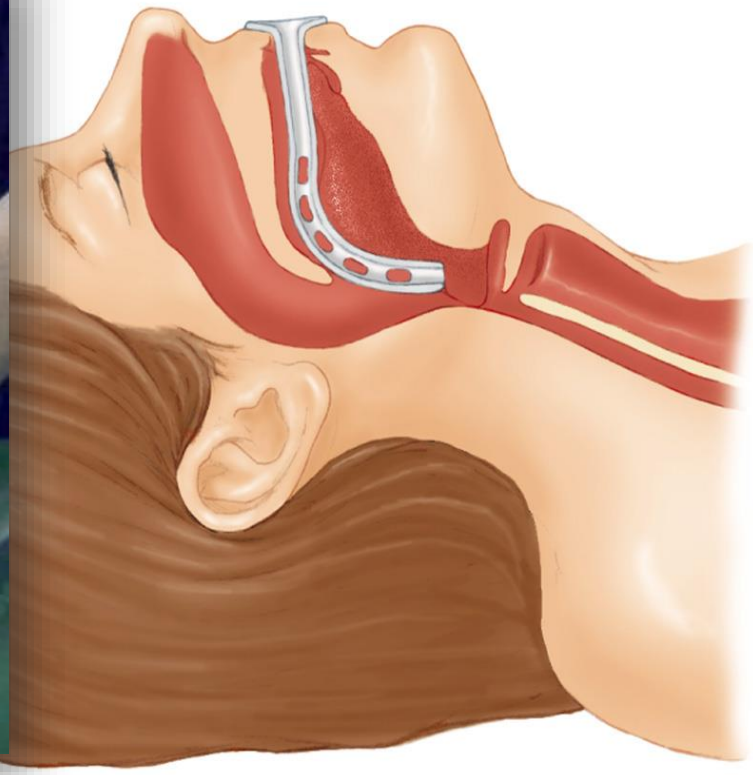
Airway Adjuncts

- Oropharyngeal airway (OPA)
- Nasopharyngeal airway (NPA)



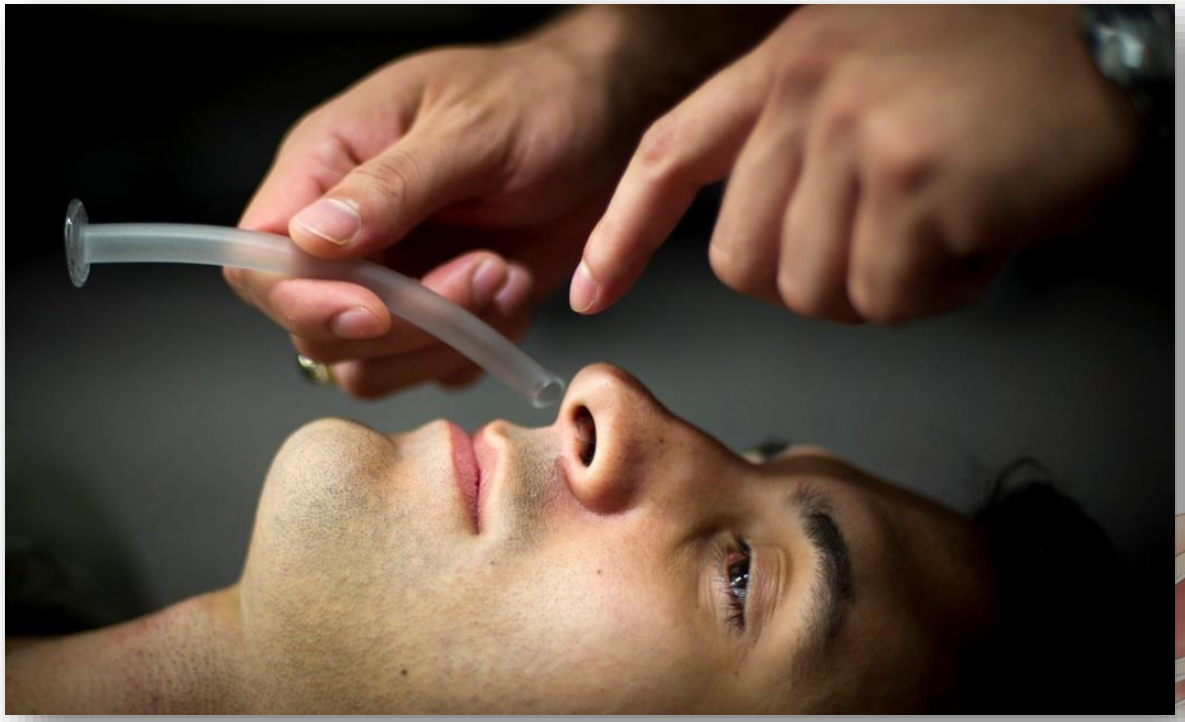
Airway Adjuncts

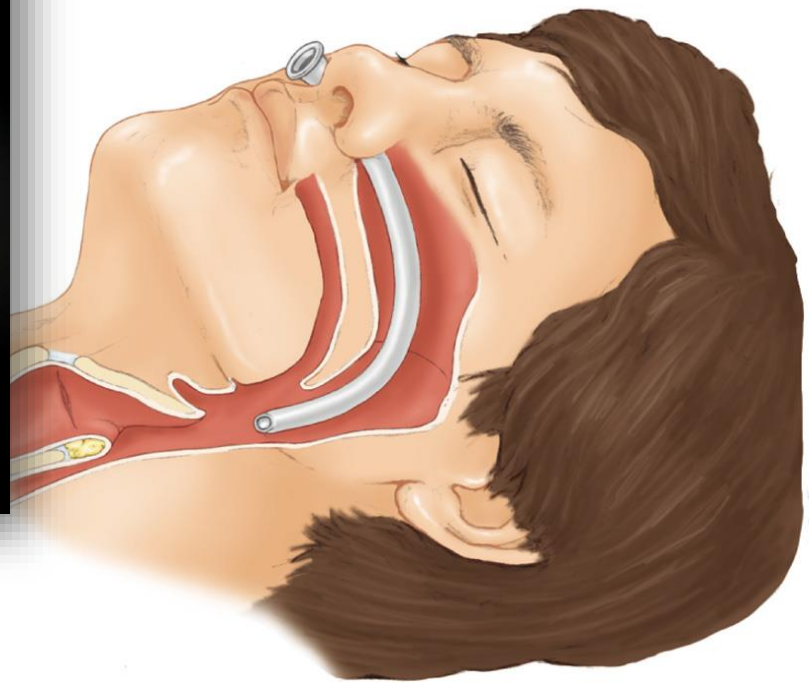
- Oropharyngeal airway for unconscious patient without a gag reflex



Airway Adjuncts

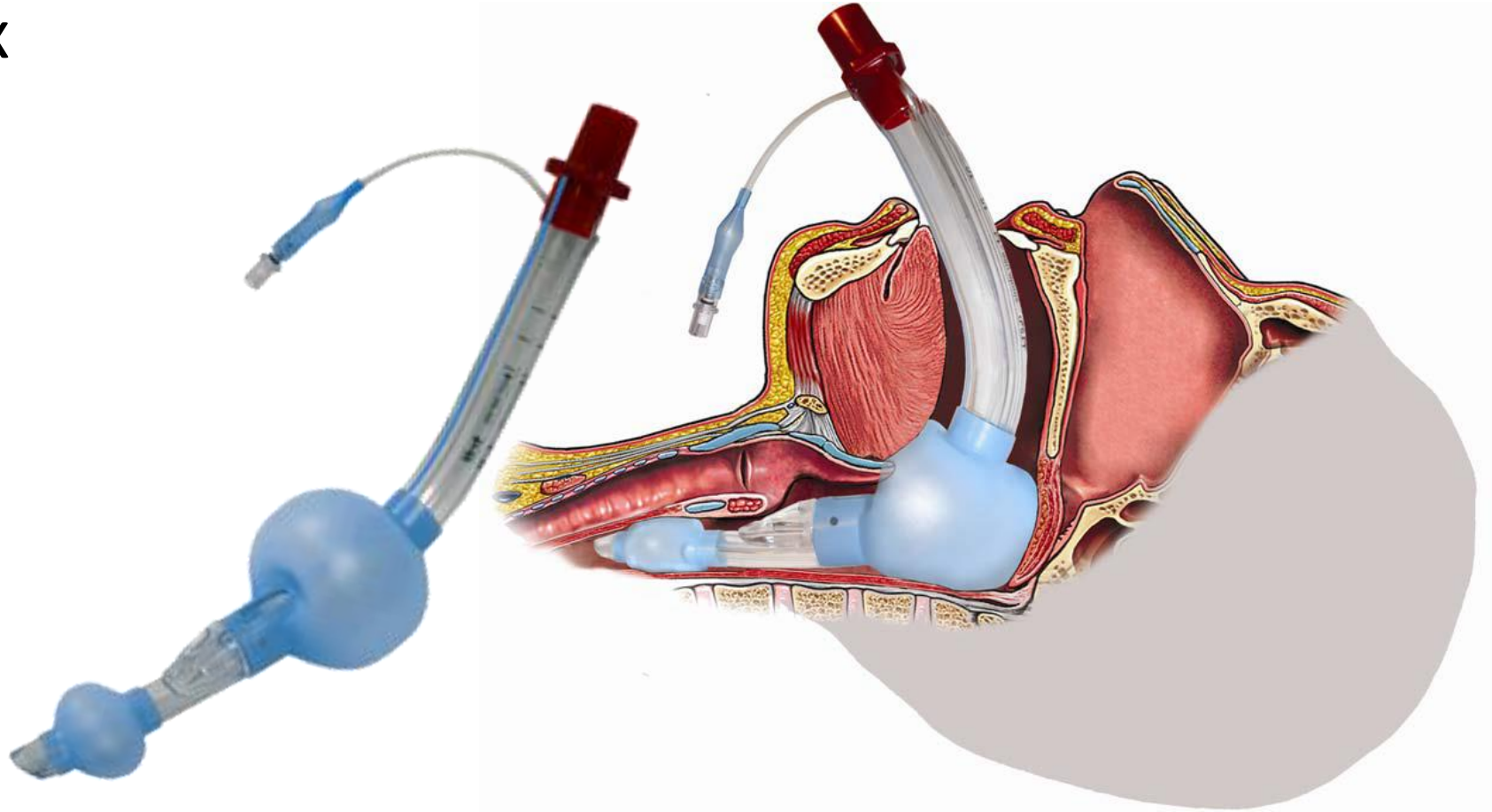
- Nasopharyngeal airway





Airway Adjuncts

- King LTS-D could be used for the unconscious patient without a gag reflex



Breathing Assessment

- Once the airway patency has been confirmed or corrected evaluation of the effectiveness of air movement needs to be assessed
  - Are they breathing?
  - If so, is it too fast or slow?
  - Is there appropriate chest rise with ventilation?
  - Are their signs of respiratory insufficiency?

Signs of Respiratory Insufficiency

- Altered mental status
- Shortness of breath
- Retractions
- Asymmetric chest wall movement
- Word dyspnea
- Positioning
- Head bobbing
- Accessory muscle use (AMU)
- Cyanosis or discolouration
- Audible sounds
- Abnormal rate or pattern
- Nasal flaring
- Pursed lip breathing
- Orthopnea

Circulation Assessment

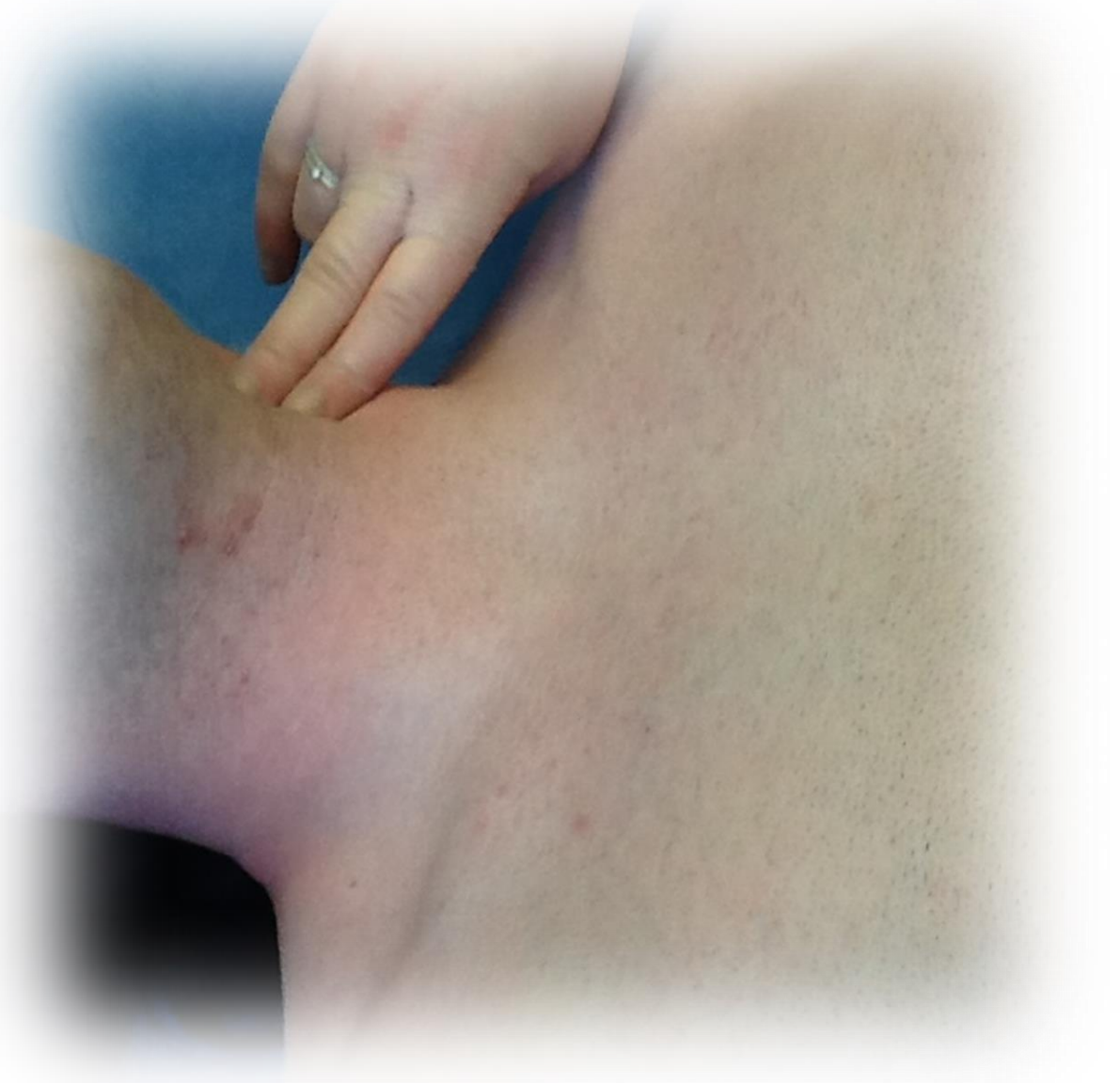
- The circulation assessment consists of evaluating the pulse and skin and controlling hemorrhage.
- Evaluate:
  - Rate (tachycardic or bradycardic)
  - Force (strong, bounding, weak)
  - Compare carotid and radial

Radial Pulse

- The radial pulse is the preferred location of pulse assessment in the conscious patient

Carotid Pulse

- The carotid pulse is assessed in the unconscious patient



Compare

Brachial Pulse

- To assess an infant's circulation, palpate the brachial pulse

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Control Major Bleeding

Assess the Skin

- The skin can be assessed by identifying:
  - Temperature to the touch
  - Color
  - Moisture
  - Turgor

Capillary Refill Time

- Capillary refill time refers to the amount of time it takes blood to return to the site
- Pressing down on the area causes the blood to be pushed out of the capillaries producing a blanched area
- Releasing the pressure allows the blood to return
- A return time of 2 seconds or less is considered with in normal limits

Trendelenburg Position

- Elevate your patient's feet if you suspect circulatory compromise

Rapid Body Survey (RBS)

- Also referred to as the “quick bleed check”
- Traditionally done for a trauma patient
- A quick hands on assessment of the patient from head to toe looking for:
  - Major external bleeding
  - Signs of internal bleeding
  - Fractures

Priority Determination

- Once the initial assessment is completed, determine the patient's priority
  - Urgent/emergent
  - Non urgent

Top Priority Patient Examples

- Poor general impression
- Unresponsive
- Responsive but cannot follow commands
- Difficulty breathing
- Hypoperfusion
- complicated childbirth
- Chest pain and BP below 100 systolic
- Uncontrolled bleeding
- Severe pain
- Multiple injuries

Transport Decision

- Expedite transport for high priority patient and continue assessment/care enroute

Patient Assessment

MEDICAL VERSUS TRAUMA ASSESSMENTS

Components of Patient Assessment

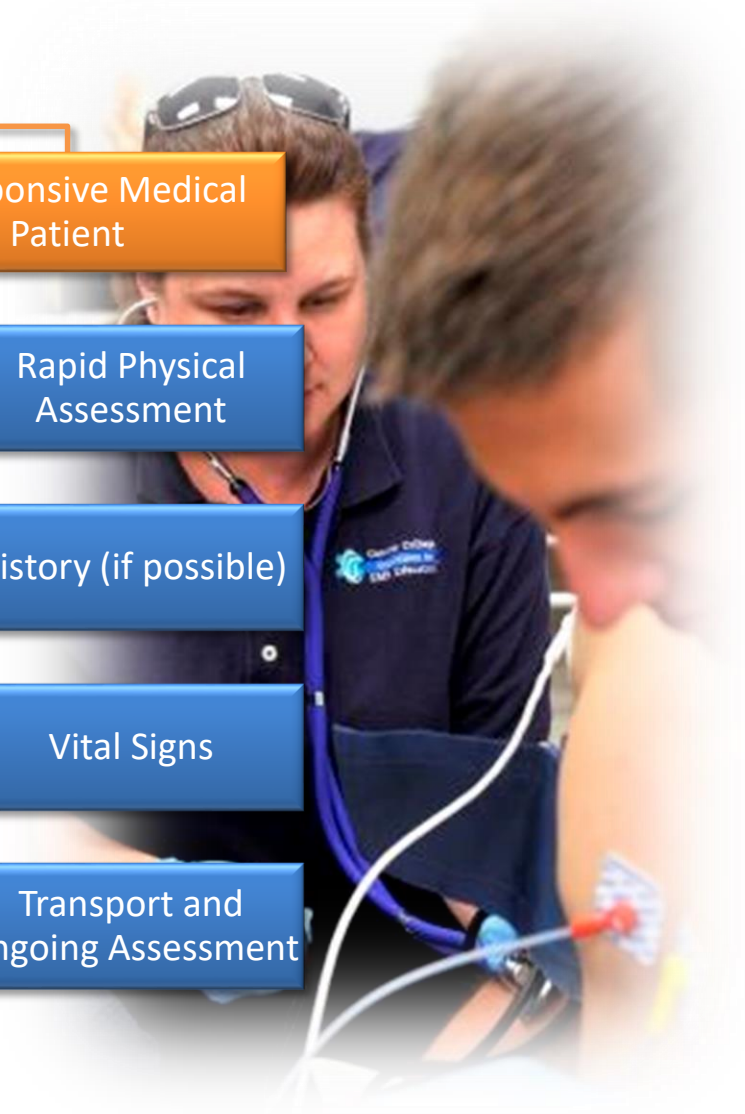
- Primary assessment
- Focused history and secondary assessment
- Ongoing assessment
- Detailed secondary assessment

Types of Patients

- Trauma patient with significant mechanism of injury.
- Trauma patient with isolated injury.
- Responsive medical patient.
- Unresponsive medical patient.

Decision Tree

- Scene Assessment
  - Primary Assessment
    - Trauma Patient with significant MOI
      - Rapid Trauma Assessment
      - Vital Signs
      - History
      - Packaging
      - Transport and Ongoing Assessment
    - Trauma Patient with isolated injury
      - Focused Trauma Assessment
      - Vital Signs
      - History
      - Transport and Ongoing Assessment
    - Responsive Medical Patient
      - History
      - Vital Signs
      - Focused Physical Exam
      - Transport and Ongoing Assessment
    - Unresponsive Medical Patient
      - Rapid Physical Assessment
      - History (if possible)
      - Vital Signs
      - Transport and Ongoing Assessment



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Significant Injury (Major Trauma)

TRAUMA PATIENT

Major Trauma Patients

- Focused History and Secondary Assessment for Major trauma Patients
  - Primary assessment
  - Rapid trauma assessment
  - Packaging
  - Rapid transport and ongoing assessment

Major Trauma Patient

- Sustained significant mechanism of injury.
- Exhibits altered mental status from the incident.

Predictors of Serious Internal Injury

- Ejection from vehicle
- Death in same passenger compartment
- Fall from higher than 6 m
- Rollover of vehicle
- High-speed motor vehicle collision
- Vehicle-passenger collision
- Motorcycle crash
- Penetration of the head, chest, or abdomen

Additional Predictors for Infants/Children

- Fall from higher than 3 m
- Bicycle collision
- Medium-speed vehicle collision with resulting severe vehicle deformity

- Evaluate the trauma scene to determine the mechanism of injury

Rapid Trauma Assessment

- Not a detailed physical exam
- Fast, systematic assessment for other life-threatening injuries

DCAP-BTLS

- Deformity
- Contusion
- Abrasion
- Penetration
- Burns
- Tenderness
- Lacerations
- Swelling

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Rapid Trauma Assessment

HEAD AND NECK

Rapid Trauma Assessment
Head and Neck

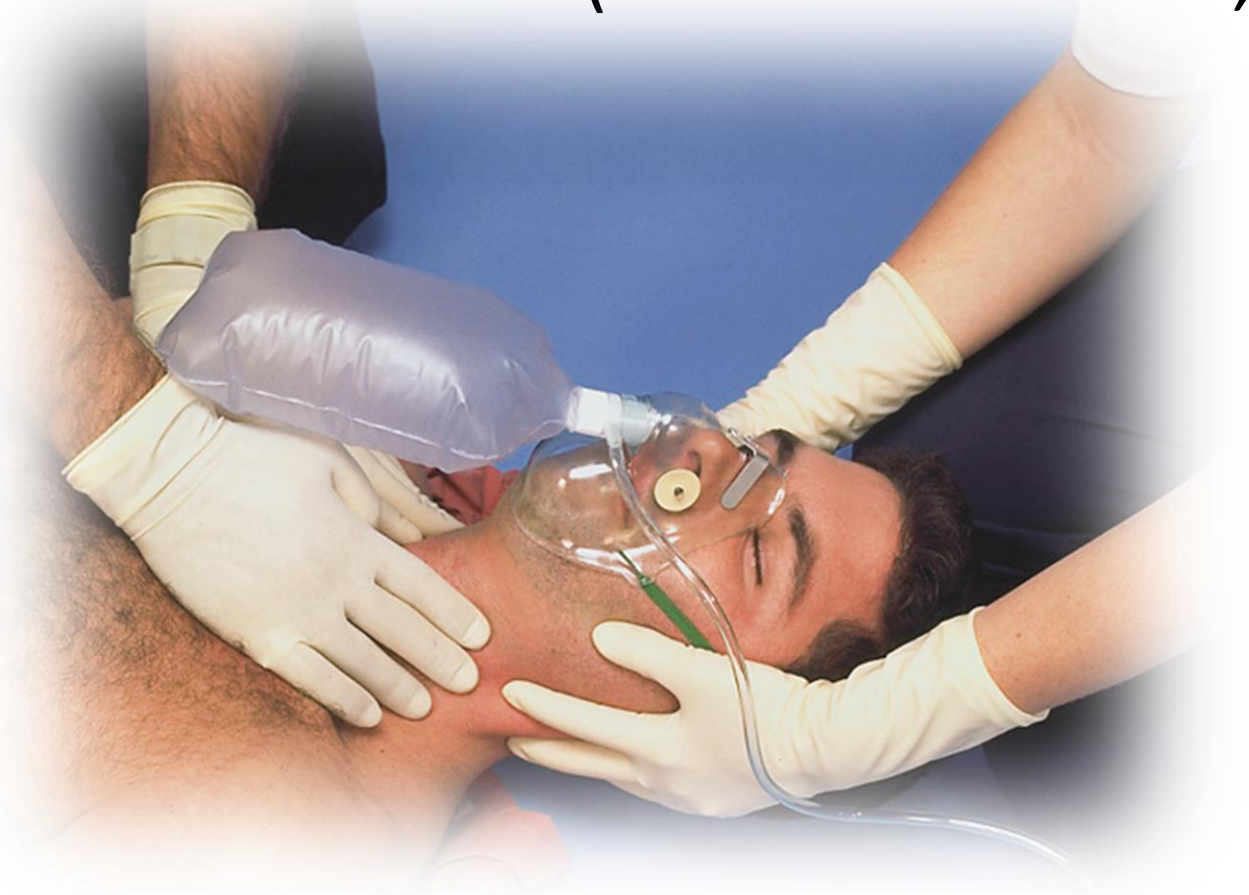
- The first step in the rapid trauma assessment is to inspect and palpate the head

Rapid Trauma Assessment
Head and Neck

- Periodically examine your gloves for blood

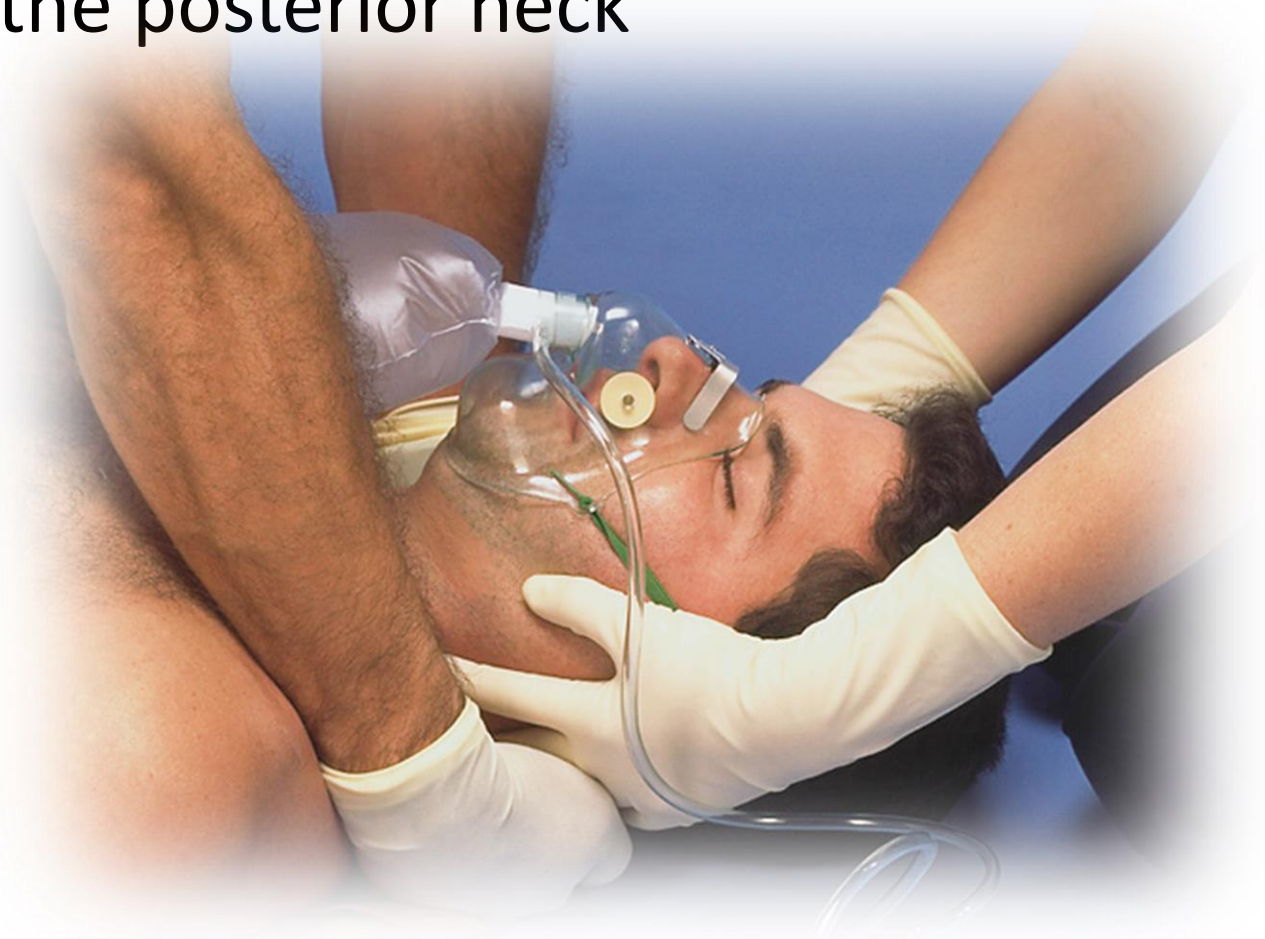
Rapid Trauma Assessment
Head and Neck

- Inspect and palpate the anterior neck (tracheal deviation, JVD)



Rapid Trauma Assessment
Head and Neck

- Inspect and palpate the posterior neck



Rapid Trauma Assessment

CHEST

Rapid Trauma Assessment
Chest

- Inspect and palpate the clavicles

Rapid Trauma Assessment
Chest

- Stabilize the flail chest

Rapid Trauma Assessment
Chest

- Seal any sucking chest wound with tape on three sides

Rapid Trauma Assessment

ABDOMEN

Rapid Trauma Assessment
Torso

- Inspect and palpate the abdomen by quadrants
- Note any areas of bruising or guarding

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Rapid Trauma Assessment

PELVIS AND EXTREMITIES

Rapid Trauma Assessment
Pelvis and Extremities

- Assess the integrity by gently pressing medially on the pelvic ring

Rapid Trauma Assessment
Pelvis and Extremities

- Compress pelvis posteriorly

Rapid Trauma Assessment
Pelvis and Extremities

- Inspect and palpate the legs

Rapid Trauma Assessment
Pelvis and Extremities

- Palpate the dorsalis pedis pulse to evaluate distal circulation in the leg

Rapid Trauma Assessment
Pelvis and Extremities

- Assess distal sensation and motor function

Rapid Trauma Assessment
Pelvis and Extremities

- Inspect and palpate the arms
- Repeat radial pulse assessment
- Assess distal sensation and motor function

Rapid Trauma Assessment
Pelvis and Extremities

- Medic alert tags can give important information about the patient

Rapid Trauma Assessment
Pelvis and Extremities

- Inspect and palpate the posterior body

Vital Signs

- Obtain vital signs
  - Pulse rate, rhythm and quality
  - Respiration rate, rhythm and quality
  - Blood pressure
  - Skin condition
  - Pain
- Useful Diagnostics
  - Pulse oximetry

History

SAMPLE	OPQRST-ASPN
Signs and **S**ymptoms **A**llergies **M**edications **P**ast medical history **L**ast oral intake **E**vents preceding the incident	**O**nset **P**rovokes or **P**alliates **Q**uality **R**egion, **R**adiation, **R**eferral **S**everity **T**reatment **A**ssociated **S**ymptoms **P**ertinent **N**egatives

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Isolated Injury (Minor Trauma)

TRAUMA PATIENT

The Isolated-Injury Trauma Patient

- No significant mechanism of injury
- Shows no signs of systemic involvement
- Does not require an extensive history
- Does not require a comprehensive physical exam

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Responsive

MEDICAL PATIENT

Medical Patient Responsive

- The history takes precedence over the physical exam.
- The physical exam is aimed at identifying medical complications rather than signs of injury.

Medical Patient Responsive

- Begin treatment while you assess your responsive medical patient

The History

- Chief complaint
- History of the present illness
- Past history
- Current health status

Focused Physical Exam

- HEENT
  - Lip and oral mucosa color
  - Sputum and color
  - Swelling, hives, redness
  - Symmetry
- Neck
  - Accessory muscle use and retractions
  - Carotid arteries
  - JVD
  - Trachea position

Focused Physical Exam

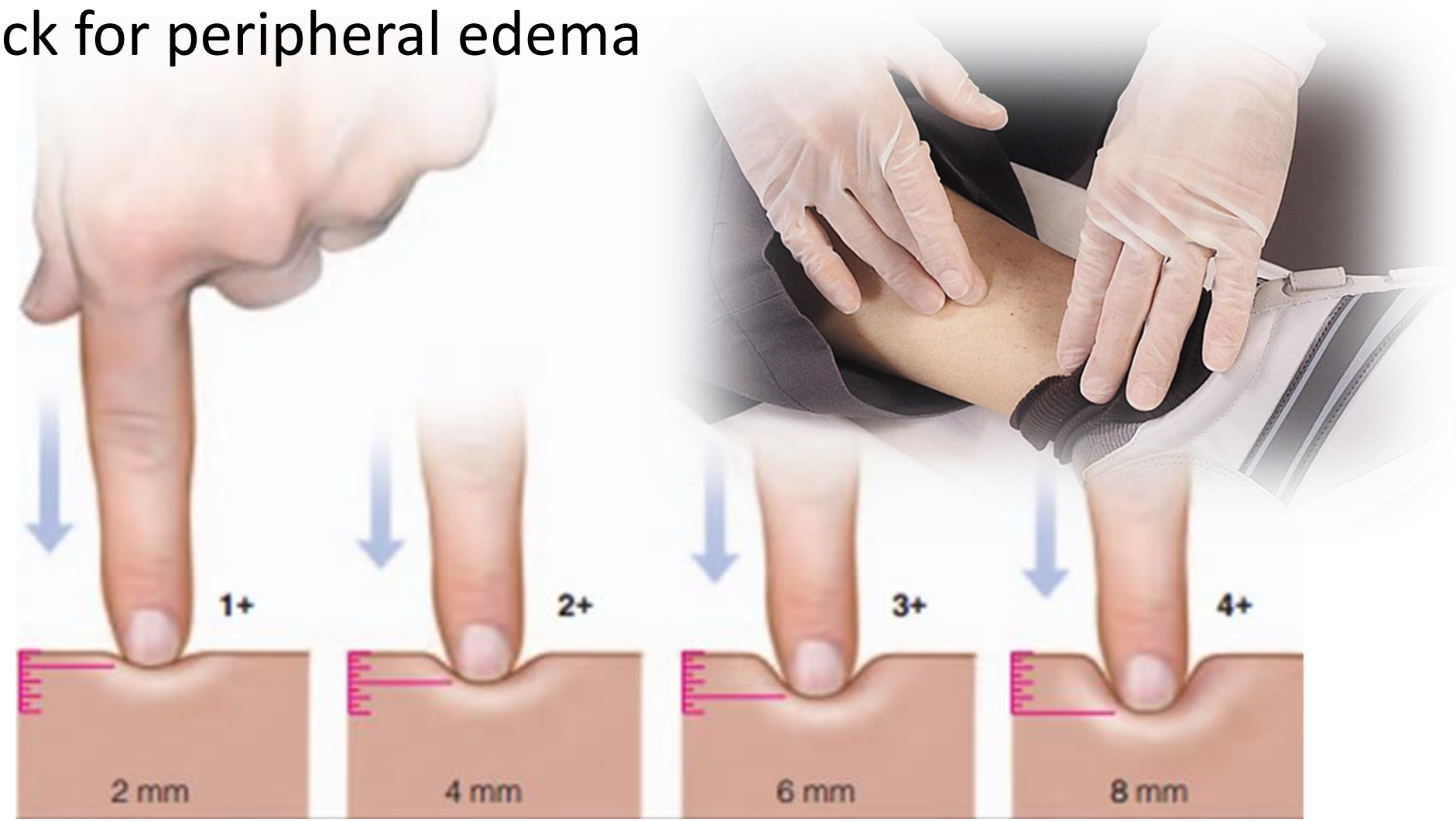
- Chest
  - Respiratory rate and pattern
  - Symmetry of chest wall
  - Scars
  - Lung sounds
  - Percussion
- Cardiovascular
  - Signs of arterial insufficiency
  - Peripheral pulses
  - Heart sounds

Focused Physical Exam

- Extremities
  - Pulses, sensation, movement
  - Edema/pitting edema
- Abdomen
  - Abdominal muscle use
  - Distension
  - Edema
  - Pulsation of descending aorta
  - No palpation required, a good history will reveal all the information you need

Focused Physical Exam

- Check for peripheral edema



Baseline Vital Signs

- Pulse
- Respiration
- Blood pressure
- Pain
- Temperature
- Pupils
- Orthostatic vitals (if possibly hypovolemic)

Additional Assessments (Diagnostics)

- Pulse oximetry
- Cardiac monitoring
- Blood glucose determination

Unresponsive

MEDICAL PATIENT

Medical Patient Unresponsive

- Assessing the unresponsive patient
  - Initial assessment
  - Rapid medical assessment
  - Brief history

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Detailed Secondary Assessment

HEAD AND NECK

Detailed Secondary Assessment
Head and Neck

- Inspect and palpate the cranium from front to back
- Inspect and palpate the facial bones

Detailed Secondary Assessment
Head and Neck

- Inspect around the eye sockets for raccoon eyes (periorbital ecchymosis)

Detailed Secondary Assessment
Head and Neck

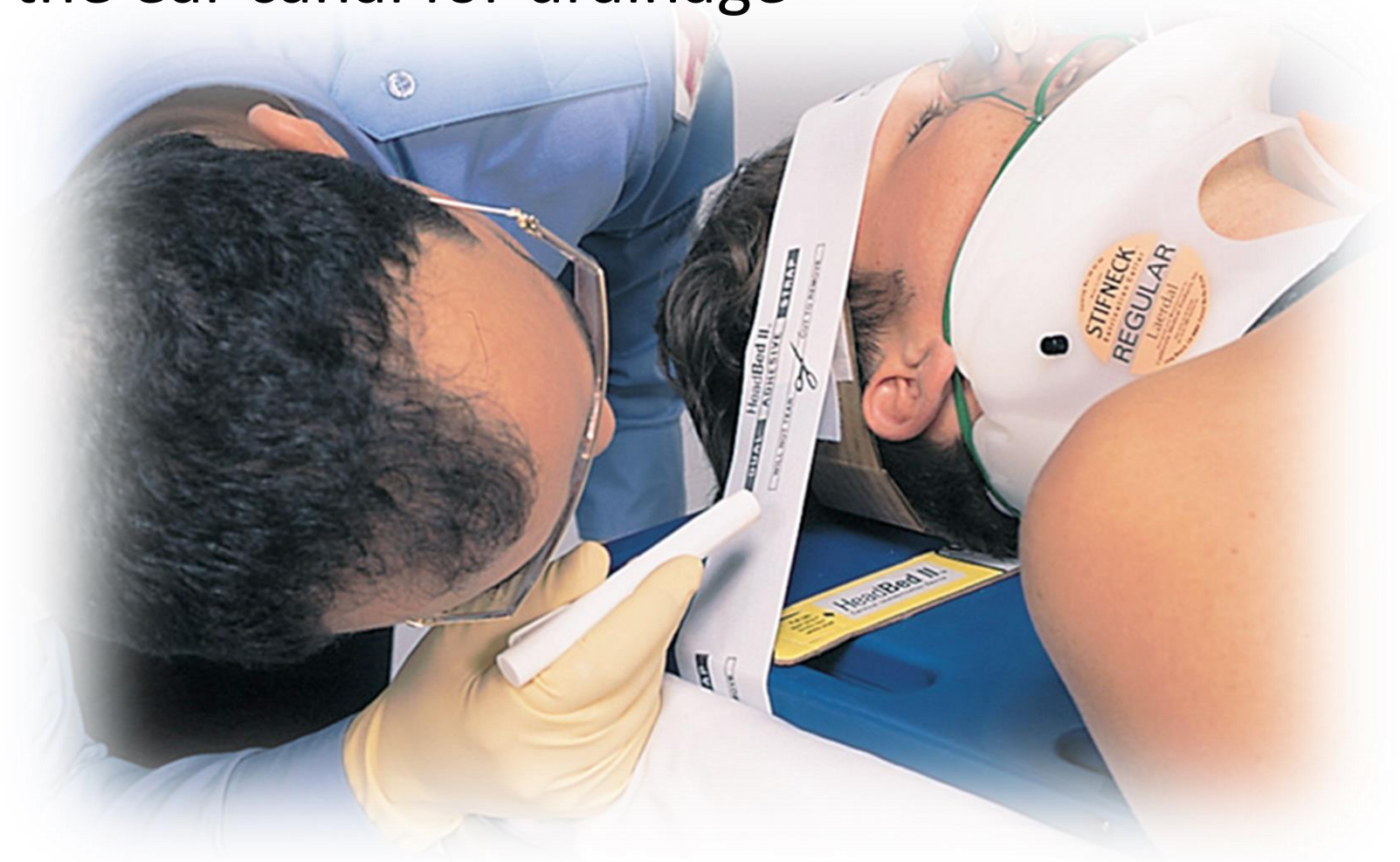
- Check the pupils for reaction to light

Detailed Secondary Assessment
Head and Neck

- Check for extraocular movement

Detailed Secondary Assessment
Head and Neck

- Inspect the ear canal for drainage



Detailed Secondary Assessment
Head and Neck

- Inspect the mastoid process for Battle's sign (retroarticular ecchymosis)

Detailed Secondary Assessment
Head and Neck

- Examine the nasal mucosa for drainage

Detailed Secondary Assessment
Head and Neck

- Examine the oral mucosa for pallor

Detailed Secondary Assessment
Head and Neck

- Inspect and palpate the trachea for midline position

Detailed Secondary Assessment

TORSO

Detailed Secondary Assessment
Torso

- Palpate the ribcage

Detailed Secondary Assessment
Torso

- Auscultate the lungs for air movement

Detailed Secondary Assessment
Torso

- Inspect and palpate the abdomen by quadrants

Detailed Secondary Assessment
Torso

- Evaluate the pelvis

Detailed Secondary Assessment
Extremities

- Inspect and palpate the legs

Detailed Secondary Assessment
Extremities

- Palpate the dorsalis pedis pulse to evaluate distal circulation in the leg
- Assess for edema and/or signs of circulatory issues

Detailed Secondary Assessment
Extremities

- Assess distal sensation and motor function

Detailed Secondary Assessment
Extremities

- Inspect and palpate the arms
- Repeat radial pulse assessment
- Assess distal sensation and motor function

Patient Assessment

ONGOING ASSESSMENT

Ongoing Assessment

- Detects trends
- Determines changes
- Assesses intervention’s effects

Ongoing Assessment

- Mental status
- Airway patency
- Breathing rate and quality
- Pulse rate and quality
- Skin condition
- Transport priorities
- Vital signs
- Focused assessment
- Effects of interventions
- Management plans

Ongoing Assessment

- Re-evaluate the ABCs

Ongoing Assessment

- Repeat vital signs

Ongoing Assessment

- Repeat focused assessment if time allows

Ongoing Assessment

- Evaluate your interventions' effectiveness

Radio report to the Hospital

- Your report to the receiving hospital must be clear, concise and to the point.
- Include all pertinent information:
  - Unit Identification and provider
  - Pertinent MOI
  - Patient's age and gender
  - Chief complaint
  - LOC/GCS
  - Pertinent assessment and findings
  - Treatment initiated and response to treatment
  - Estimated Time of Arrival (ETA)

Transfer of Care (TOC)

- Hand over of care of your patient requires a verbal report.
  - Provide the pt's age, gender and name
  - Provide MOI
  - Provide all pertinent assessment, interventions, treatments and response to treatments
  - Provide a complete list of the pt's medical history, medications and allergies
  - Provide a copy of your chart, including EKGs

Summary

- Scene assessment
- Primary assessment
- Medical versus trauma assessments
- Focused secondary assessment
- Ongoing care
- Handover of care