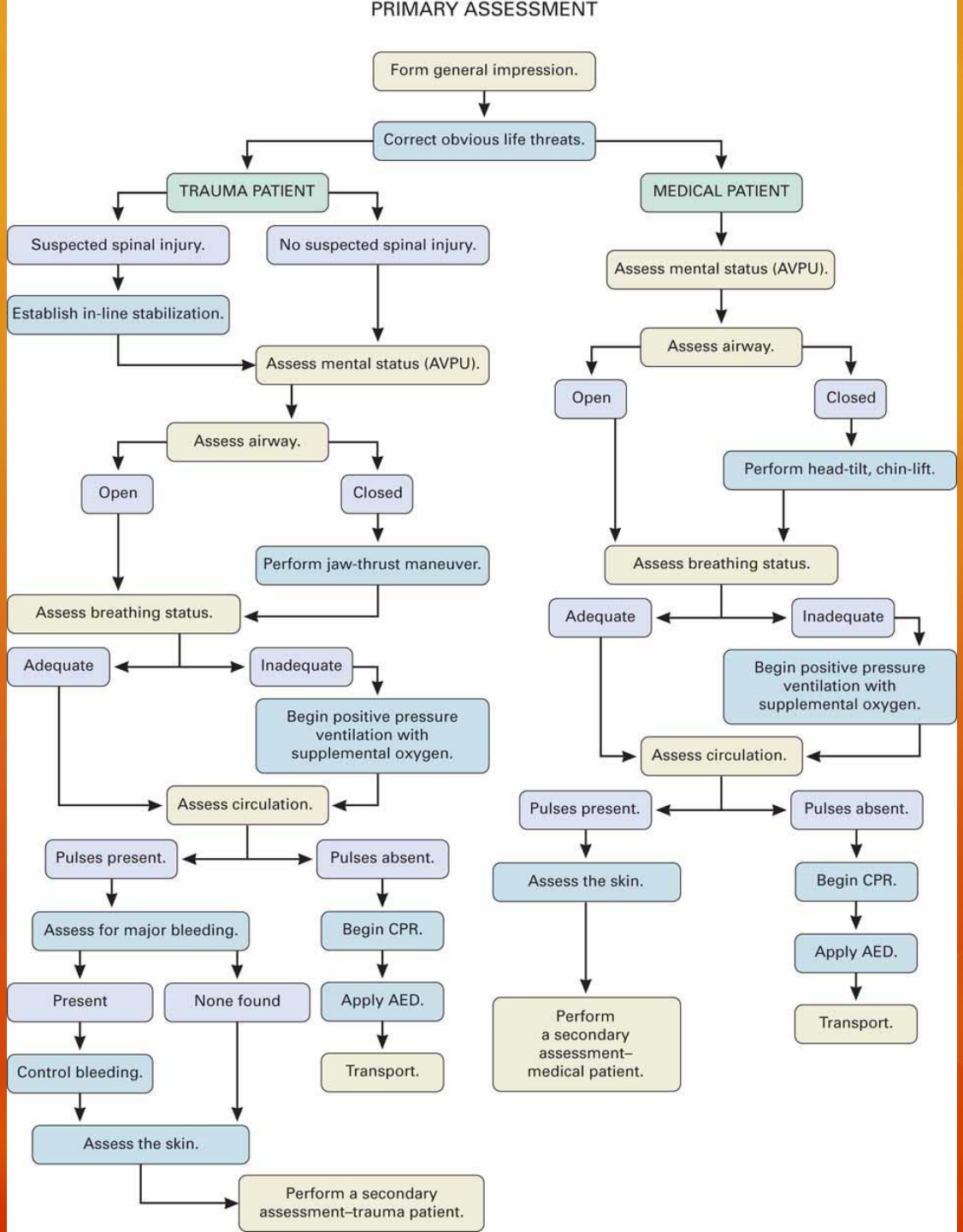
Patient Assessment

The First 10 Minutes

Patient Assessment

- The one skill that is performed on every patient.
- Good patient assessment is integral to quality patient care.
- Although patient assessment is taught in a modular format, you will develop your own system of patient assessment.


PRIMARY ASSESSMENT
Form general impression.
Correct obvious life threats.
TRAUMA PATIENT
MEDICAL PATIENT
Suspected spinal injury.
No suspected spinal injury.
Establish in-line stabilization.
Assess mental status (AVPU).
Assess airway.
Open
Closed
Perform jaw-thrust maneuver.
Assess breathing status.
Adequate
Inadequate
Begin positive pressure ventilation with supplemental oxygen.
Assess circulation.
Pulses present.
Pulses absent.
Assess for major bleeding.
Begin CPR.
Present
None found
Apply AED.
Control bleeding.
Transport.
Assess the skin.
Perform a secondary assessment–trauma patient.
Assess mental status (AVPU).
Assess airway.
Open
Closed
Perform head-tilt, chin-lift.
Assess breathing status.
Adequate
Inadequate
Begin positive pressure ventilation with supplemental oxygen.
Assess circulation.
Pulses present.
Pulses absent.
Assess the skin.
Begin CPR.
Apply AED.
Transport.
Perform a secondary assessment–medical patient.

Section 1 – Scene Size-Up

Steps of the Scene Size-Up

- Standard Precautions
- Scene safety
- Mechanism of injury or nature of illness
- Number of patients
- Need for additional resources

- Mechanism of injury (MOI)
- Kinetics of trauma

$KE = 1/2 \cdot m \cdot v^2$ **$1\ Joule = 1\ kg \cdot m^2/s^2$**

where **m** = mass of object
v = speed of object

Determine the kinetic energy of a 625-kg (1378Lbs) roller coaster car that is moving with a speed of 18.3 m/s (40.9mph).

$KE = ½ * m * v^2$ $KE = (0.5) * (625\ kg) * (18.3\ m/s)^2$

$KE = 1.05 \times 10^5$ Joules

What if we double the speed

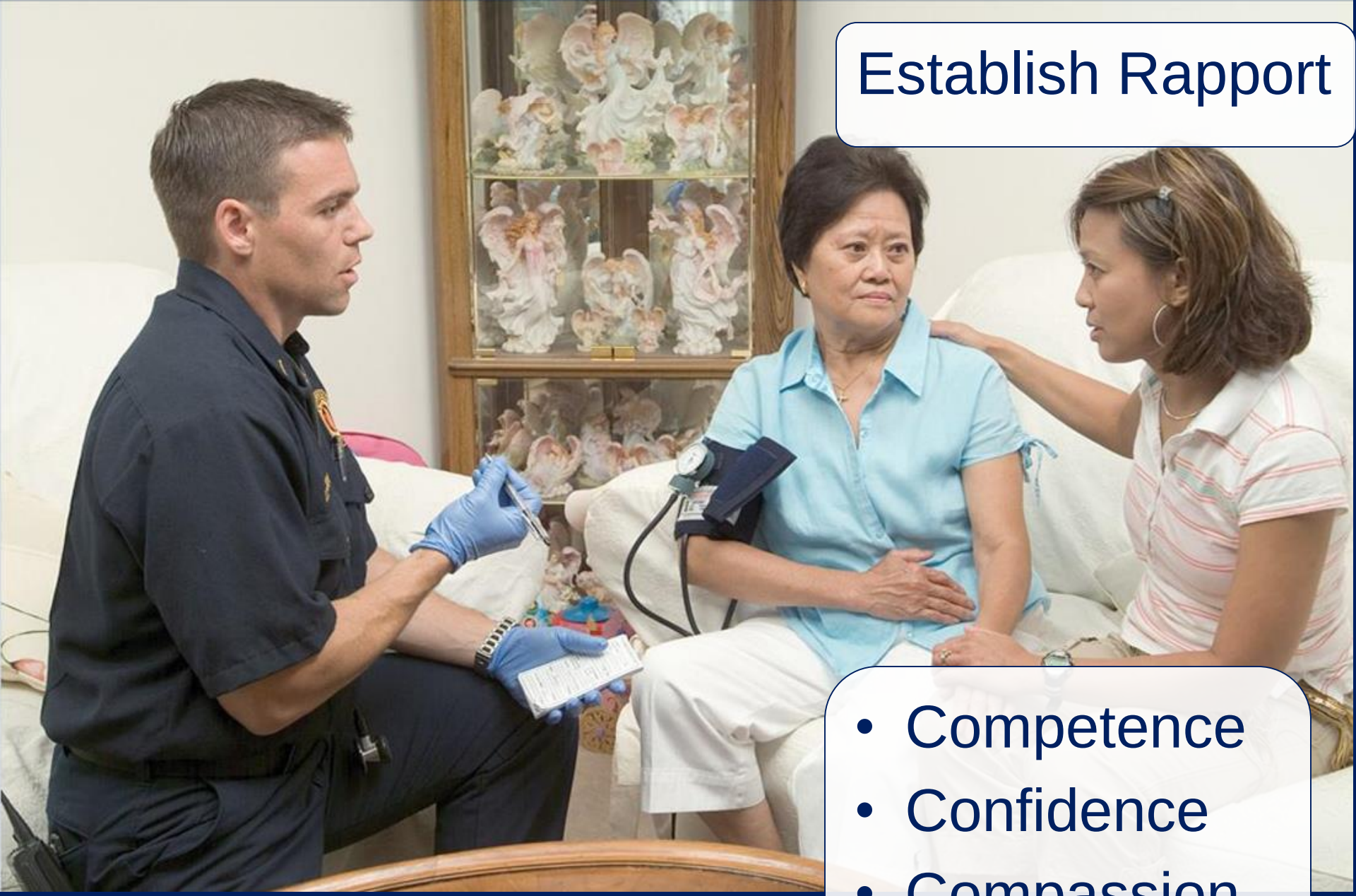
$KE = 0.5 * 625\ kg * (36.6\ m/s)^2$
(81.9mph)

$KE = 4.19 \times 10^5$ Joules

For reference: an AED/Defib puts out a max of 300 J

Section 2– Primary Assessment

Establish Rapport



- Competence
- Confidence
- Compassion

- Bring order
- Introduce yourself
- Gain consent
- Position yourself
- Use communication skills
- Be courteous
- Use touch when appropriate

REDUCE ANXIETY

Maintain Control

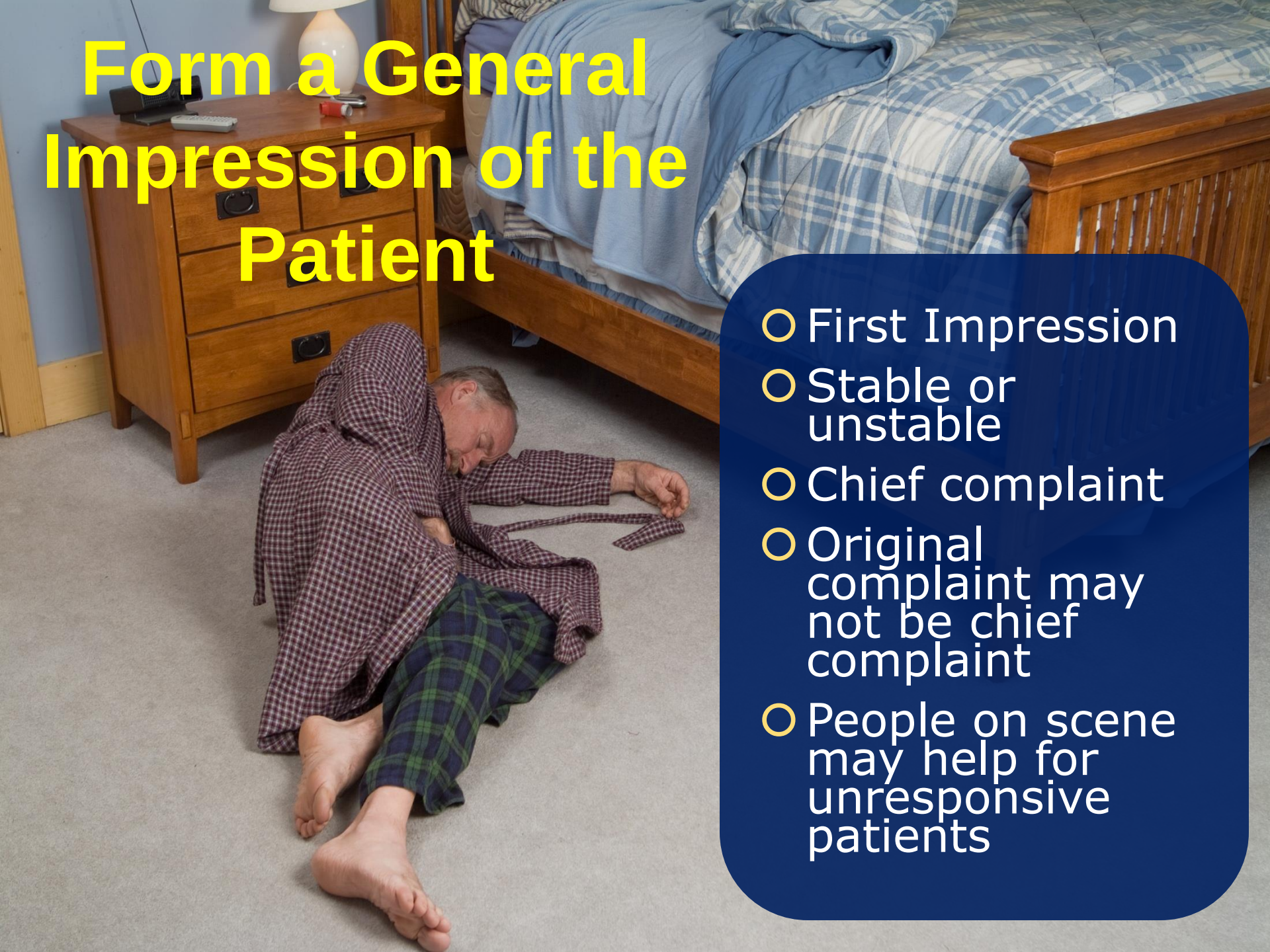
- Attempt to control the scene
- If it cannot be controlled, rapidly remove yourself and the patient

Steps of the Primary Assessment

- Form general impression of the patient
- Assess level of consciousness
- Assess the airway
- Assess breathing
- Assess circulation
- Establish patient priorities

Treat Immediate Life Threats at the time of detection as you progress through the Primary Assessment

Form a General Impression of the Patient



- First Impression
- Stable or unstable
- Chief complaint
- Original complaint may not be chief complaint
- People on scene may help for unresponsive patients


Control major bleeding only
Expose blood-soaked areas
Identify Major Bleeding

Establish In-Line Stabilization

- For suspected spine injury
- Neutral in-line position
- Maintain until EMS Arrives

Position the Patient for Assessment

- If the patient is prone, roll him to supine for better assessment
- Establish in-line stabilization first if spine injury is suspected

Assess the Level of Responsiveness

- A – Alert
- V – Verbal
- P – Pain
- U – Unresponsive

Mental Status

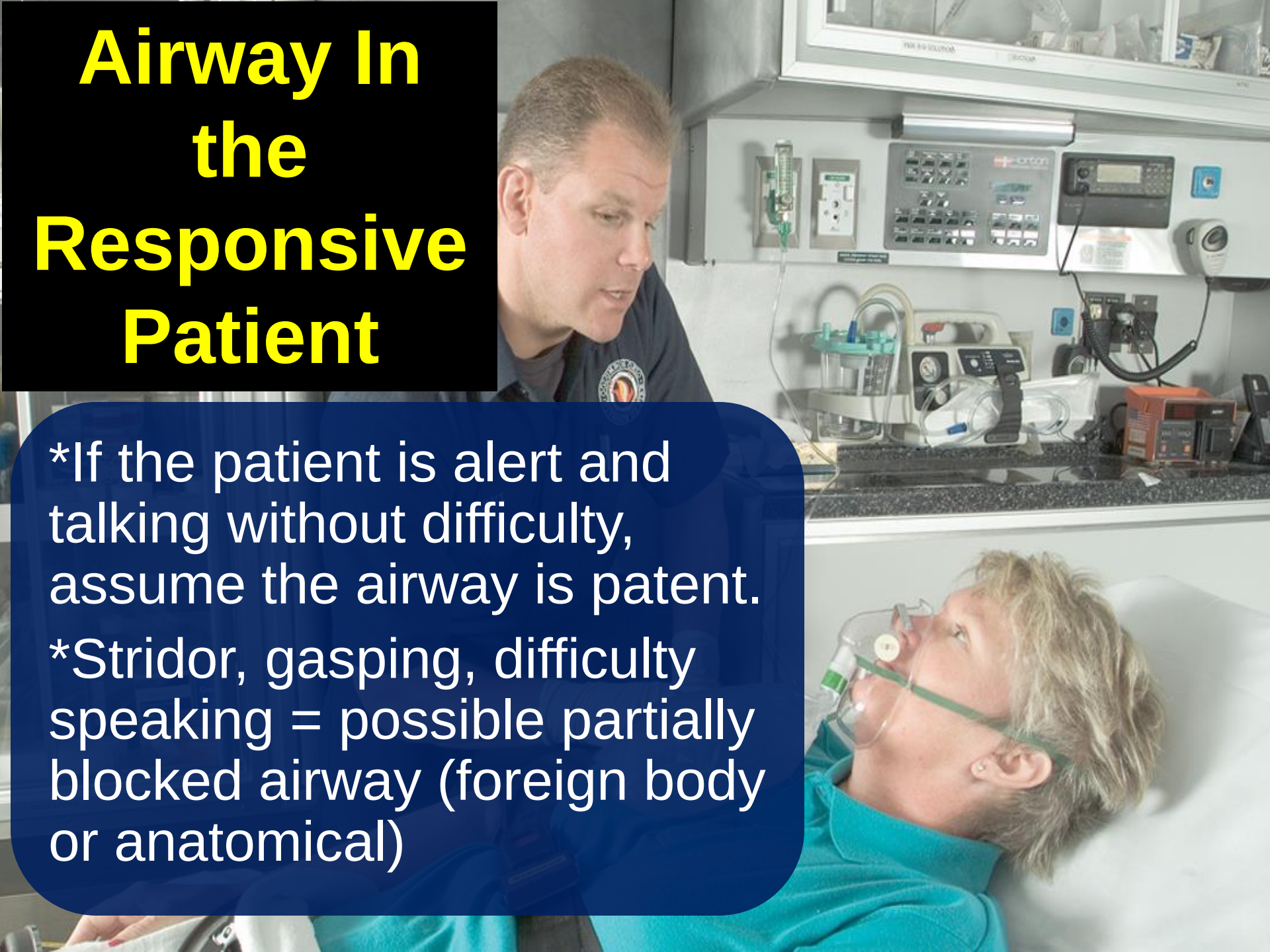
TABLE 10-2 *Glasgow Coma Scale*

Eye Opening	Points	Verbal Response	Points	Motor Response	Points
Spontaneous	4	Oriented	5	Obeys commands	6
To voice	3	Confused	4	Localizes pain	5
To pain	2	Inappropriate words	3	Withdraws	4
None	1	Incomprehensible sounds	2	Abnormal flexion	3*
		Silent	1	Abnormal extension	2**
				No movement	1


Flexion “Decorticate” posturing


Extension “Decerebrate” posturing

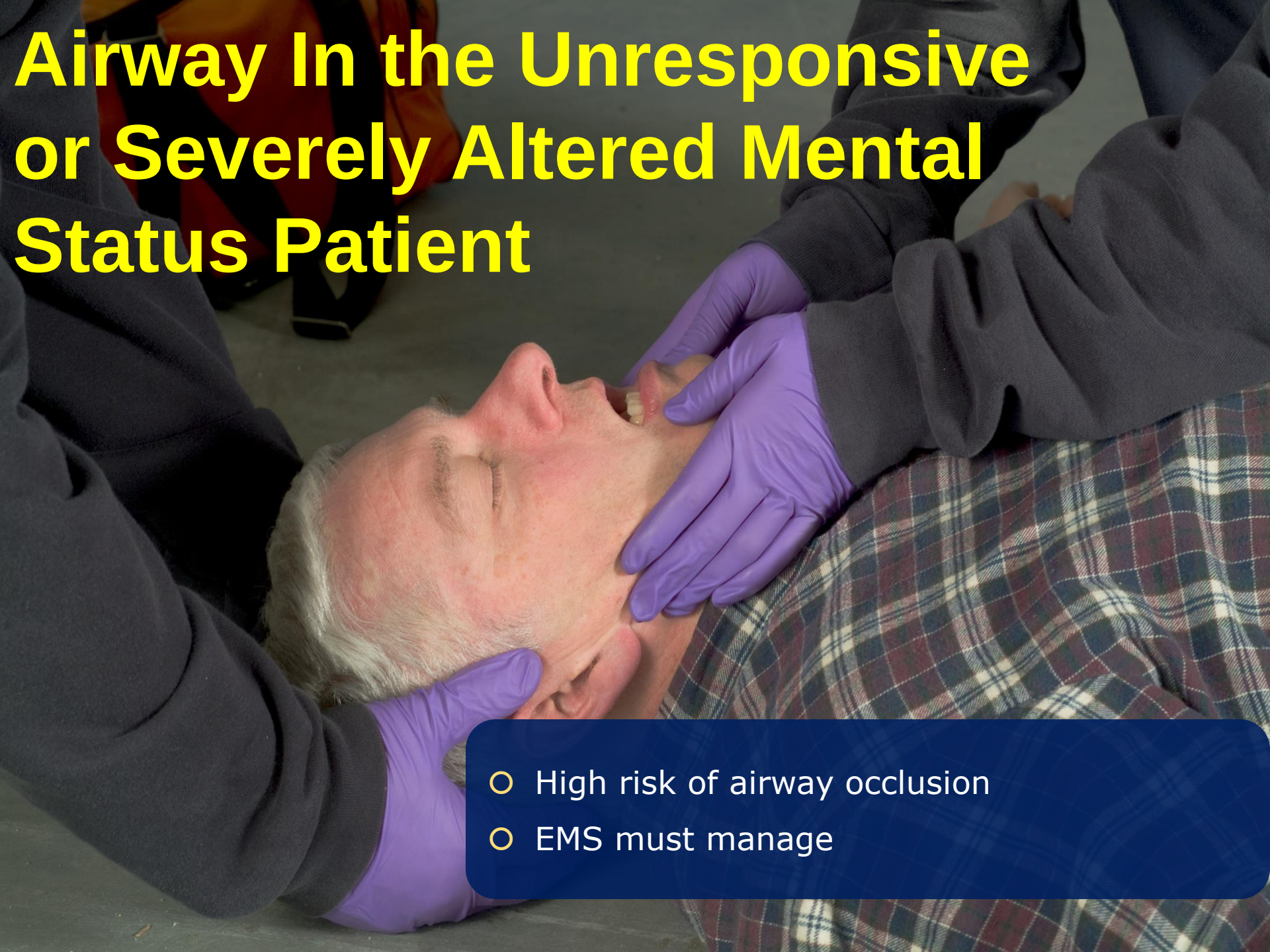
Airway In the Responsive Patient



*If the patient is alert and talking without difficulty, assume the airway is patent.

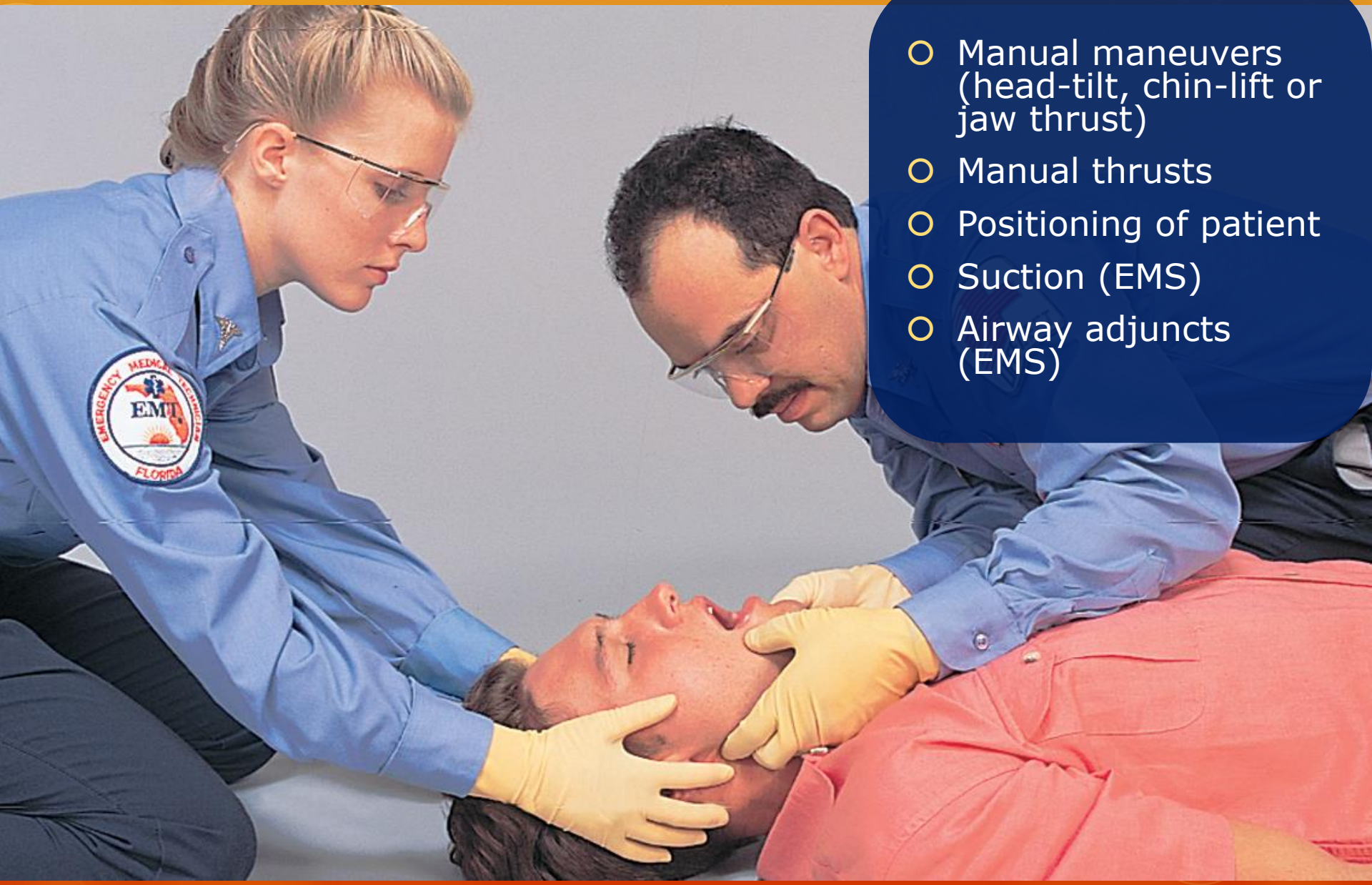
*Stridor, gasping, difficulty speaking = possible partially blocked airway (foreign body or anatomical)

Airway In the Unresponsive or Severely Altered Mental Status Patient



- High risk of airway occlusion
- EMS must manage

Open the Airway



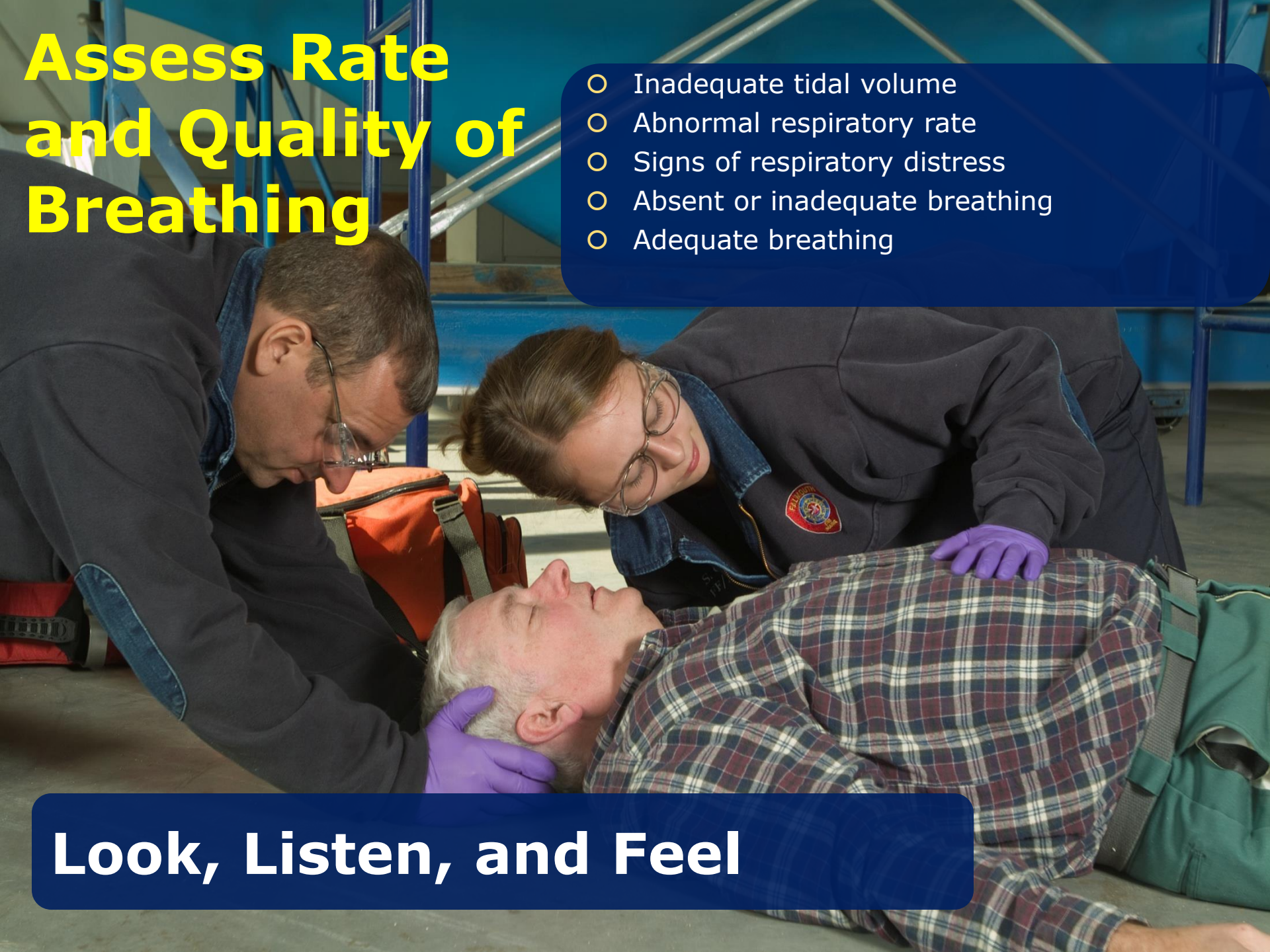
- Manual maneuvers (head-tilt, chin-lift or jaw thrust)
- Manual thrusts
- Positioning of patient
- Suction (EMS)
- Airway adjuncts (EMS)

Indications of Partial Airway Occlusion

- Snoring
- Gurgling
- Crowing
- Stridor

Assess Rate and Quality of Breathing

- Inadequate tidal volume
- Abnormal respiratory rate
- Signs of respiratory distress
- Absent or inadequate breathing
- Adequate breathing



Look, Listen, and Feel

Breathing Rate

- The rate is calculated by counting the number of breaths in 30 seconds and multiplying by two
- General ranges for respirations
  - Adults: 12-20 breaths per minute
  - Children: 15-30
  - Infants: 20-40
  - Newborns: 30-60

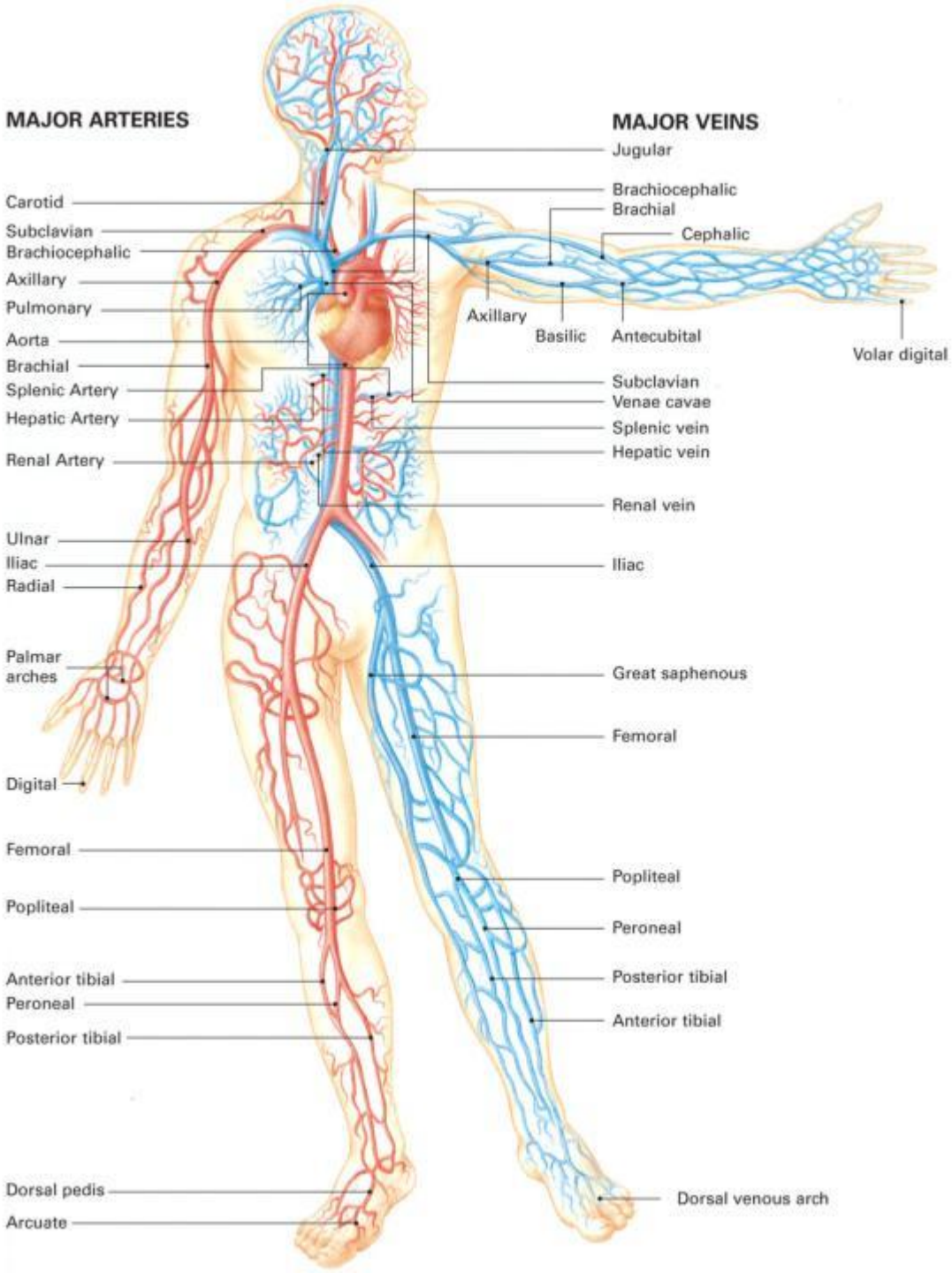
Administer Oxygen or Assist Ventilations

Assess Circulation-Check Pulse

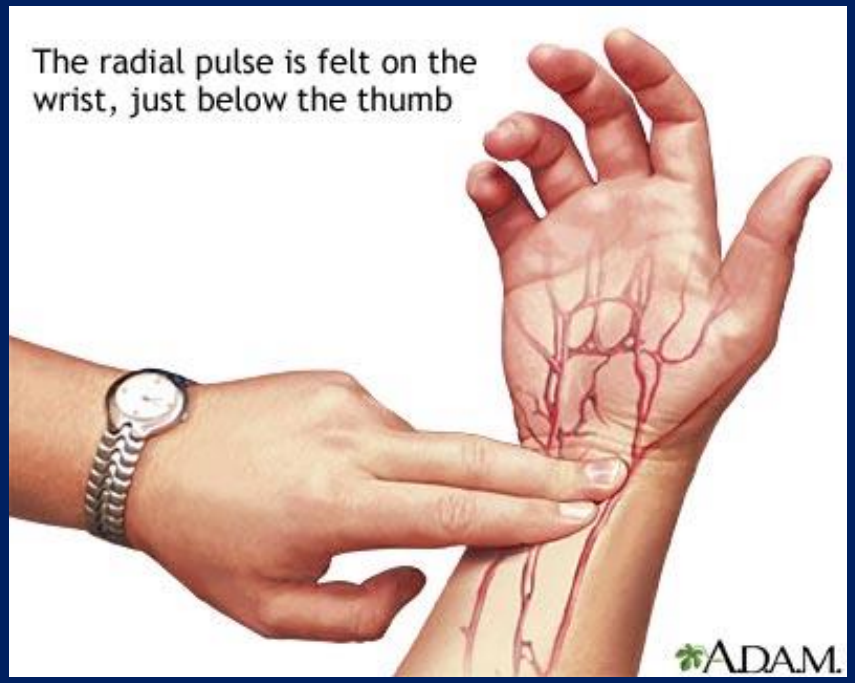
Pulse

- Assess the pulse
  - A pulse represents a pressure wave of blood created by the heart's contraction
  - Several locations for assessment
  - The rate is calculated by counting the number of beats in 15 seconds and multiplying by four

- Carotid ***
- Femoral
- Radial ***
- Brachial
- Popliteal
- Posterior tibial
- Dorsalis pedis



Pulse

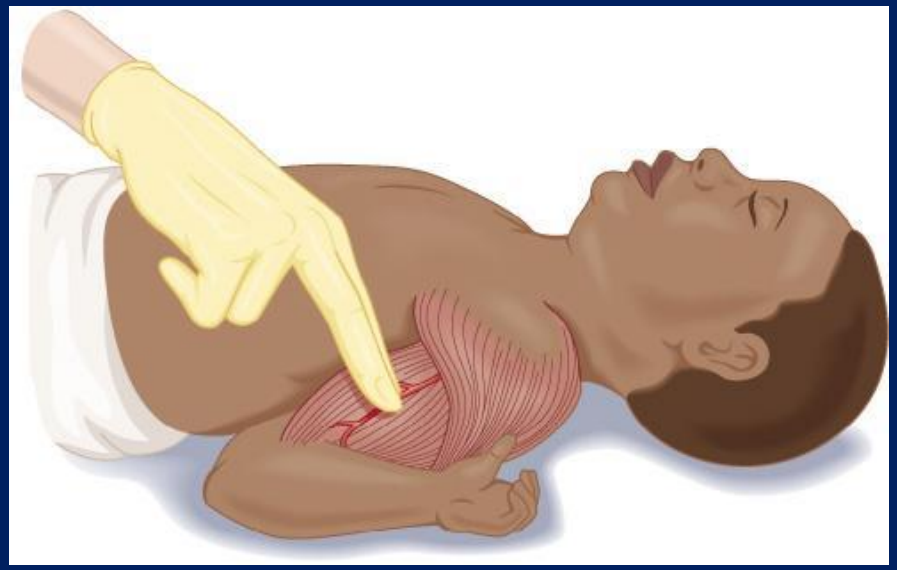


Locating a radial pulse

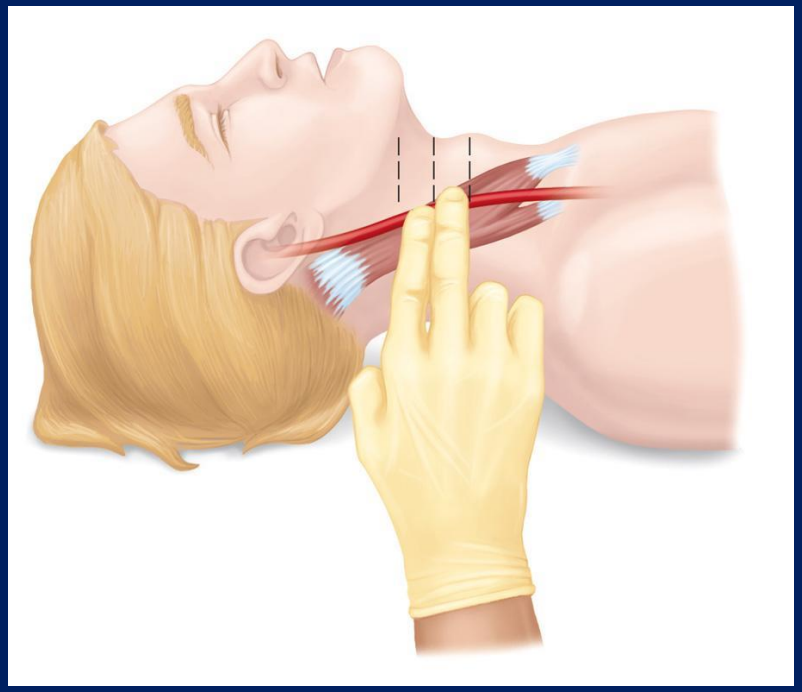
May use 2 or 3 fingers

Pulse

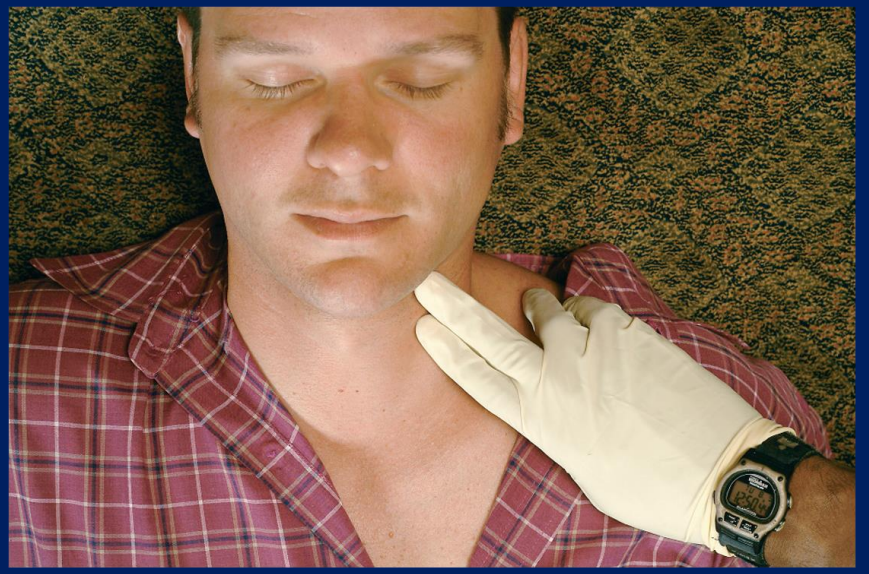
In patients less than one year of age, assess for a pulse at the brachial location

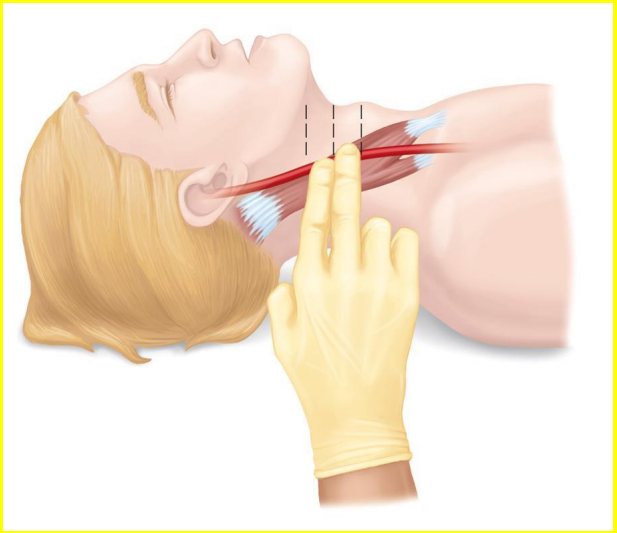


Pulse



Locating a carotid pulse





For unresponsive patients always assess the CAROTID ARTERY


RATE
• Average rate
• Tachycardia >100
• Bradycardia < 60
• The younger the patient, the faster the rate
Adult avg = 60-80 bpm

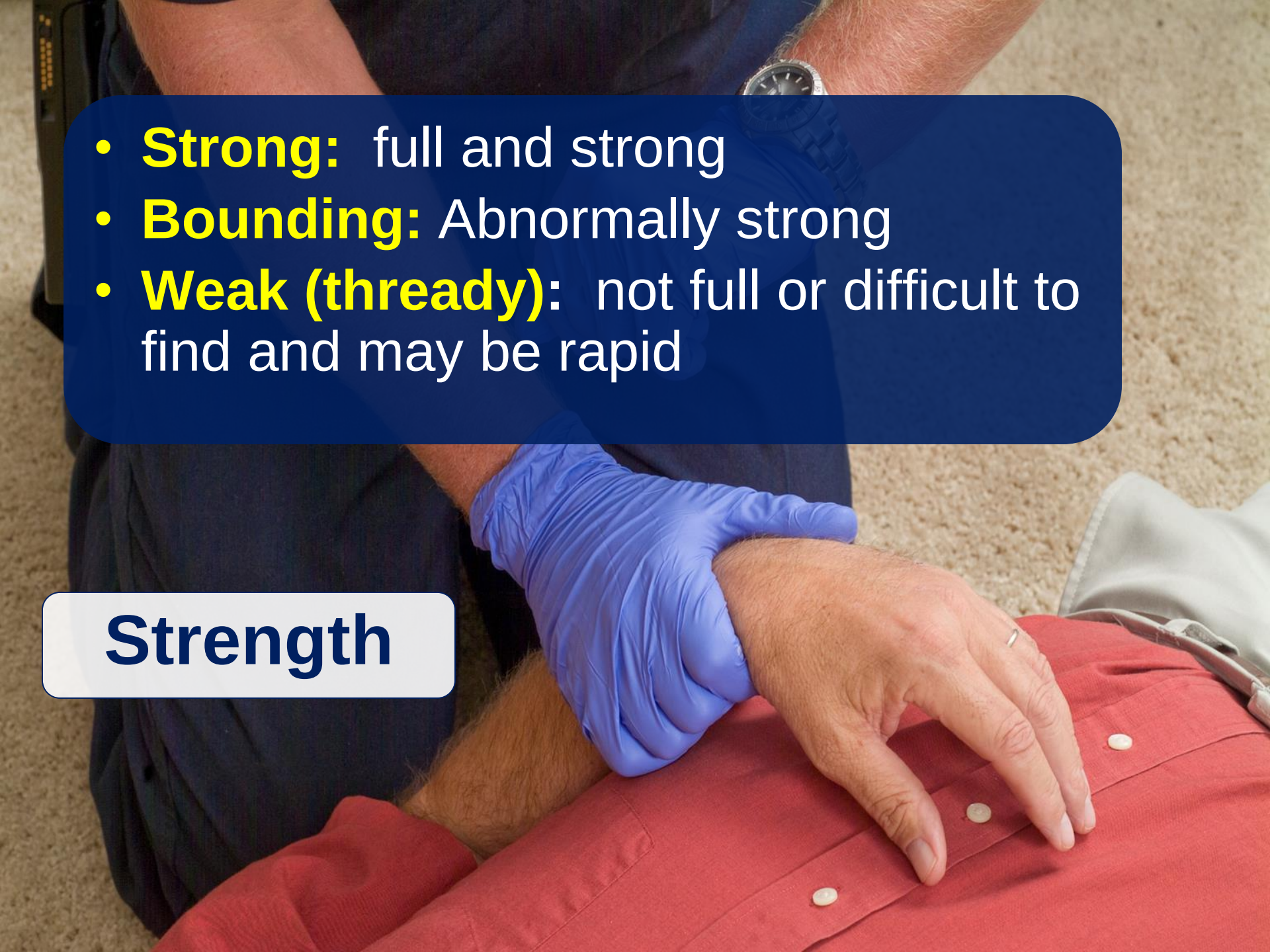
RATE

Use tips of 2 or 3 fingers: Never use thumb

Count # of beats in 30-second period and multiply by two

Quality

- **Strength:** Strong or weak
- **Rhythm:** Regular or irregular



- **Strong:** full and strong
- **Bounding:** Abnormally strong
- **Weak (thready):** not full or difficult to find and may be rapid

Strength

Assess Circulation - Perfusion

Assess skin

- Color
- Temperature
- Condition
- Capillary Refill
- Signs of shock

Skin

Skin

- Appearance and condition is another indicator of the body's circulatory status
- Assess for:
  - **Color**
  - **Temperature**
  - **Condition**

Skin Color

- CHECK color: should be pink
  - Color of the nail beds
  - Oral mucosa
  - Conjunctiva
- In infants, children and dark skinned people check
  - Palms of the hands
  - Soles of feet

Abnormal Skin Colors

Jaundice

Pallor

Cyanosis

Mottling

Flushing

Skin Temperature & Condition

Assessment:

Use back of hand

Skin Temperature/Condition

Hot:

fever or exposure to heat

Cool:

indequate ciruclation, shock or exposure to cold

Cold:

extreme exposure to cold or dead

Wet, moist or clammy:

shock or many other conditions

Diaphoresis:

strong autonomic activation

Abnormally dry:

spine injury or severe dehydration

Diaphoretic Skin

Skin

Capillary Refill

Skin

Capillary refill

- Amount of time for a compressed capillary bed to refill with blood
- Most reliable in infants less than 6 months old
- Factors affecting response in older patients
  - cold environment,
  - preexisting conditions of poor circulation
  - certain medications

PROCEDURE

- Press firmly on skin or nail bed
- Compressed area blanches
- Count time it takes to return to normal color

Normal capillary refill

- Infants, children: 2 seconds
- Male Adults: 2 seconds
- Female Adults: 3 seconds
- Elderly: 4 seconds

Pupils

Pupils

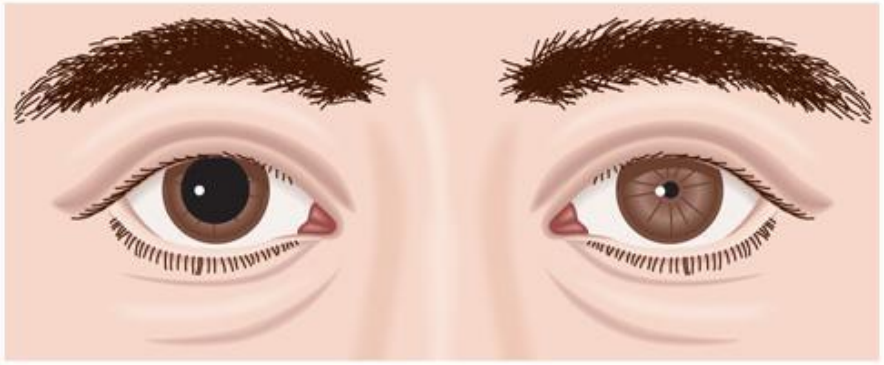
- Use a regular penlight
- Shine the light briefly, and at an angle to the pupil, and observe the response

- **Size**
- **Equality**
- **Reactivity**

Findings may indicate underlying problems

Constricted pupils

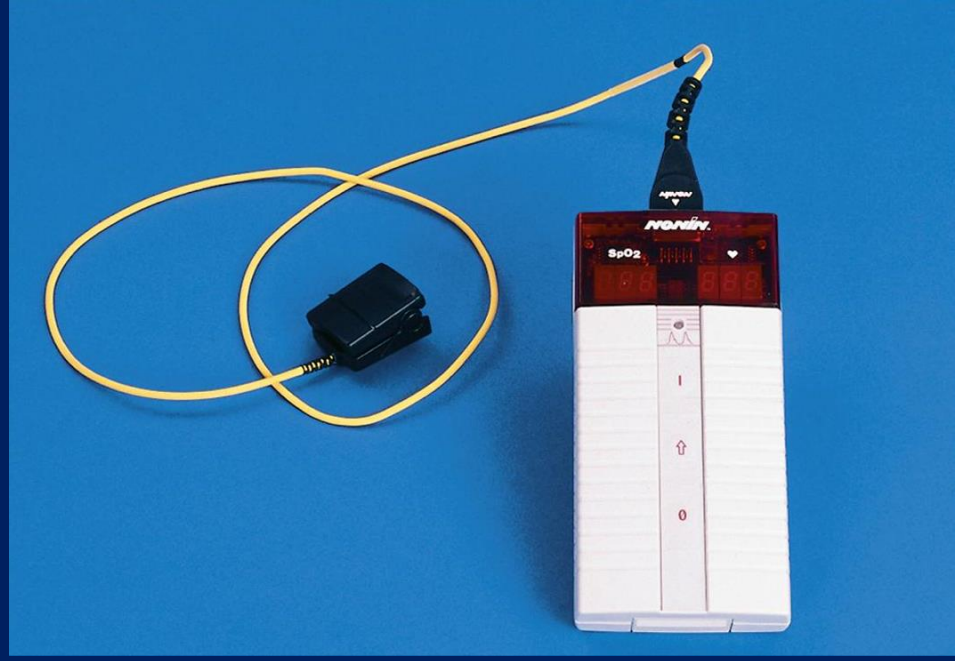
Dilated pupils



Unequal pupils

Pulse Oximeter: Assessing Oxygen Saturation

Pulse Oximetry

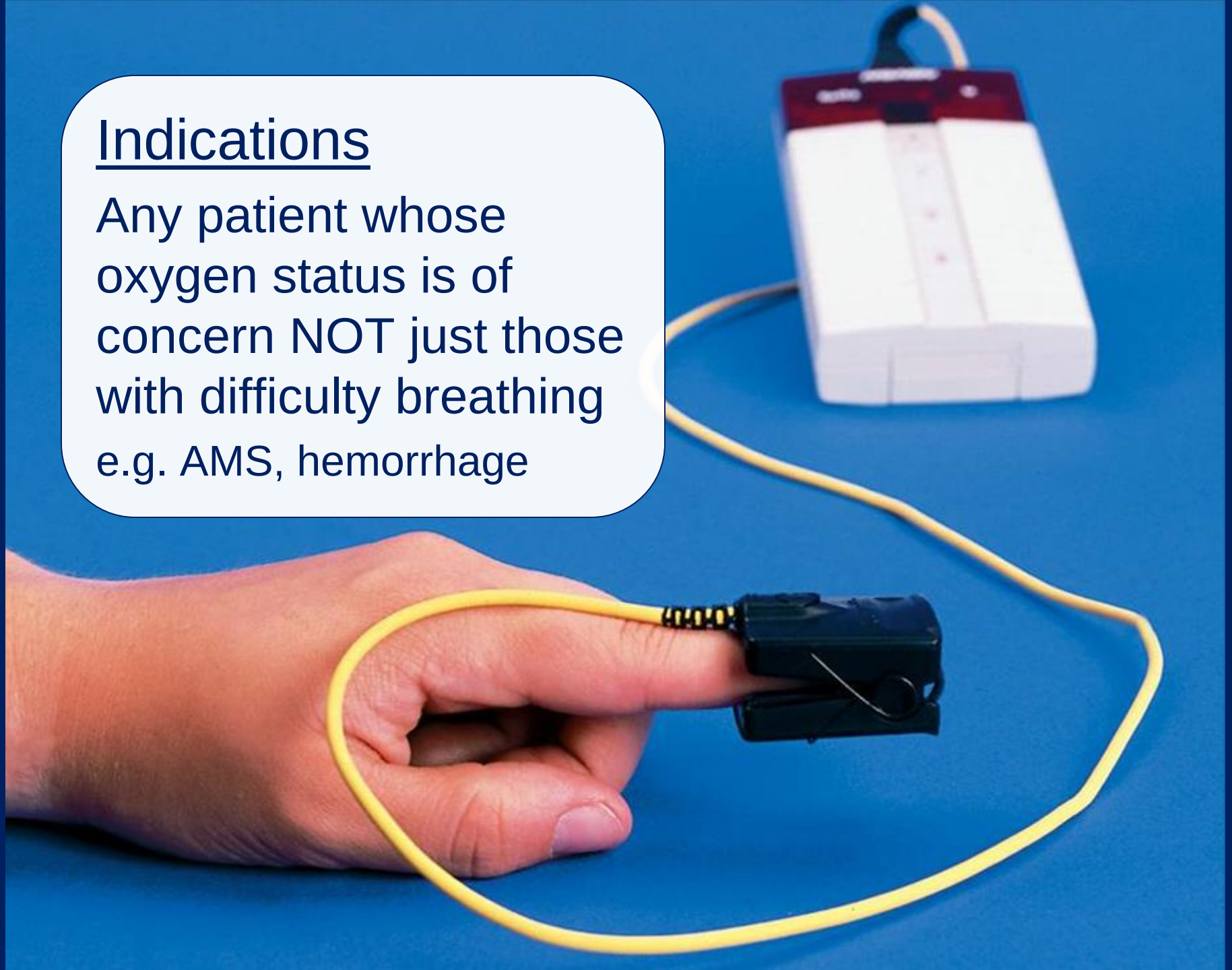


Readings

- 97% to 100% SpO_2 is normal
- <95% SpO_2 indicate hypoxia and compromise
- 90% or < is moderate to severe hypoxia

Method of measuring the percent of hemoglobin saturated with O2

ALL patients with a pulse ox reading of <94% MUST get oxygen



Indications

Any patient whose oxygen status is of concern NOT just those with difficulty breathing

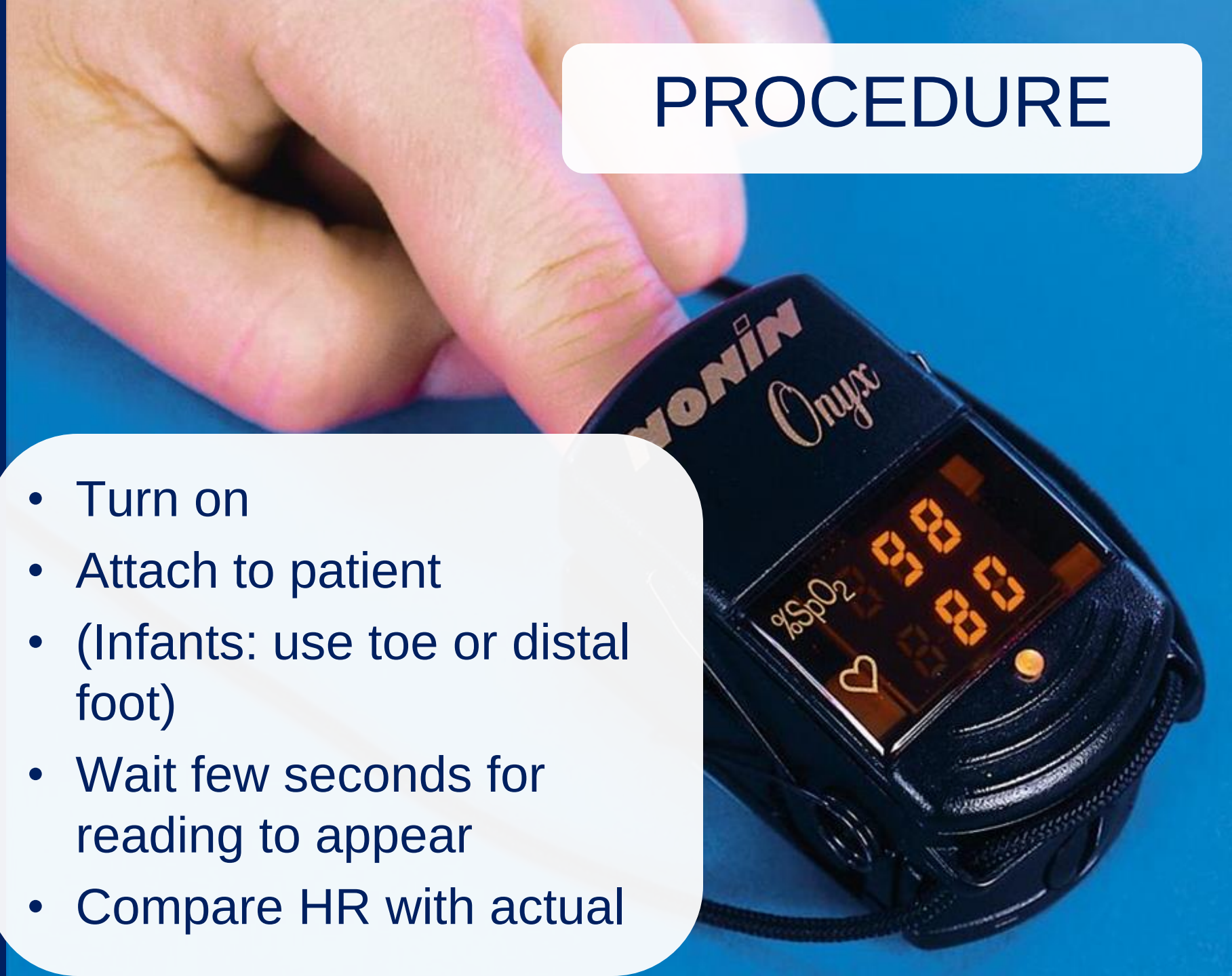
e.g. AMS, hemorrhage

Inaccurate Readings

Any condition interfering with blood flowing to area where probe is

- Shock
- Hypothermia or cold extremities
- Excessive movement of patient
- Seizures
- Carbon monoxide
- Anemia
- Very dark fingernail polish

PROCEDURE



- Turn on
- Attach to patient
- (Infants: use toe or distal foot)
- Wait few seconds for reading to appear
- Compare HR with actual

Secondary Assessment

Secondary Assessment

- **Anatomical Approach**
  - Head-to-toe Assessment
  - May be Rapid or Detailed
- **Body Systems Approach**
  - Linking body systems together after an injury is identified.
  - Respiratory, Cardiovascular, Neurological, Musculoskeletal

D-CAP BTLS

- **D**eformities
- **C**ontusions
- **A**brasions
- **P**unctures/**P**enetrations
- **B**urns
- **T**enderness
- **L**acerations
- **S**welling

Preparing to Take the History


• Chief complaint
• Gather history from patient or family

Identifying data

- Age, sex, race
- Dates and Times
- Complaints
- Signs/symptoms
- Treatments
- Illnesses
- Hospitalizations

SAMPLE HISTORY

The SAMPLE history is a medical history of the patient that you gather by asking questions indicated by the acronym

Standardized Approach to History Taking

The SAMPLE History

- **S**igns and symptoms
- **A**llergies
- **M**edications
- **P**ertinent past history
- **L**ast oral intake
- **E**vents leading to the injury

SAMPLE History

- **Signs and Symptoms**
  - A **sign** is **an objective assessment** finding that you can see, hear, feel, or smell
  - A **symptom** is a **subjective assessment** finding that you cannot observe, and must be described by the patient

  ASK
  - What are you feeling?
  - When and where did the first symptoms occur?

OPQRST

- Most relevant to medical patients
- Not all questions are relevant to every situation


• Onset
• Provocation
• Quality
• Radiation
• Severity
• Time
Use to further investigate signs and symptoms of chief compliant

OPQRST

- **O = ONSET**
  - What were you doing when the problem started?
- **P = Provocation**
  - Does anything make it better or worse?
- **Q = Quality**
  - Can you describe what it feels like?
- **R = Radiation**
  - Does the pain radiate anywhere?
- **S = Severity**
  - On a scale of 0 to 10 with 0 being no pain and 10 being the worst pain you can imagiine, how would you rate it?
- **T = Time**
  - How long has this been going on?

SAMPLE History

Allergies

- Medications
- Food
- Environmental agents
- Look for medical alert tags
  - Necklace
  - Anklet
  - Bracelet

SAMPLE History

- **Medications**
  - Current medications taken by the patient
    - Prescription
    - Nonprescription (OTC or supplements)
    - Illicit

SAMPLE History

- **Pertinent past history**
  - Underlying medical problems
  - Past surgical procedures
  - History of significant trauma
  - If under a doctor's care at this time
- ASK
  - Do you have any medical problems?
  - Have you had any recent surgeries?

SAMPLE History

- **Last oral intake**
  - Last ingestion of solid or liquid
  - Approximate time and quantity of last ingestion

ASK: “When did you last eat or drink anything?”

Very important if patient needs to go to operating room for definitive care

SAMPLE History

- **Events** leading up to illness or injury
  - What was the patient doing prior to emergency?
  - Were there any unusual circumstances?
  - Did the patient experience any peculiar feelings?

Special Challenges

- Silent or overly talkative
- Pt. with multiple symptoms
- Anxious patient
- Angry/hostile pt.
- Intoxicated patient
- Crying patient
- Depressed patient
- Confusing behavior or history

- Confusing behavior or history
- Pt. with limited intelligence
- Language barrier
- Hearing or visual impairment
- Talking with friends or family
- Pediatric or elderly patients

Establish Patient Priorities

- Unstable versus stable
- Rapid transport versus secondary assessment on the scene

Summary – Scene Size-Up

- Standard Precautions
- Scene Safety
- MOI/NOI (Trauma? Or Medical?)
- Determine # of Patients
- Request Additional Resources if needed

Summary – Primary Survey
NC – Initial Assessment

- Form a General Impression
  - Establish In-Line Stabilization if needed
- Assess Level of Consciousness/Responsiveness (AVPU)
- Airway (assess and manage)
- Breathing (assess and manage)
- Circulation (assess for pulse, perfusion/skin, major bleeding)
- Establish Patient Priority (Transport Decision)

Summary - Reassessment

- Repeat the Primary Assessment.
- Reassess and record the Vital Signs.
- Repeat the Secondary Assessment for other complaints, injuries, or change in chief complaint.
- Check Interventions.
- Note Trends in the patient's condition.
- Repeat and record assessment findings every 5 minutes for unstable patients, every 15 minutes for stable patients.

References

- EMS1.com
- Prehospital Emergency Care, Ninth Edition