



Chapter  
1

NINTH EDITION

# Committee on Trauma Presents



## Initial Assessment and Management



# Chapter Statement

لما توصل لا E ممكن يكون صار في  
مشكلة بار A عشان صير  
ببصل نعيد

$A \rightarrow E$

The primary survey should be repeated frequently to identify any deterioration in the patient's status that indicates the need for additional intervention.



# Case Scenario

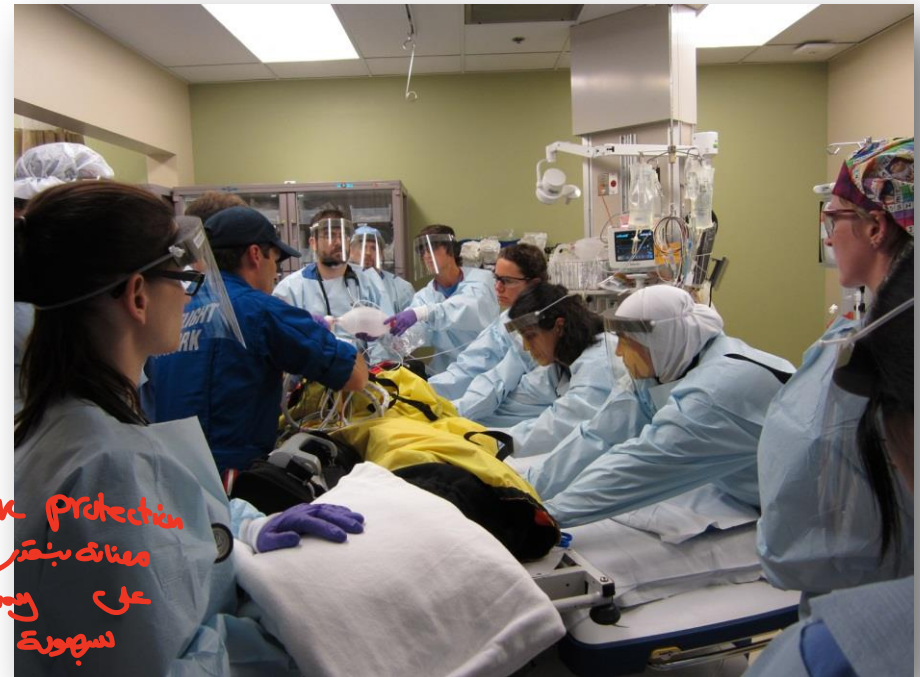
adult not special population → Situation of trauma

- 44-year-old male driver who crashed head-on into a wall → mechanism of injury

- Patient found unresponsive at the scene He can't protect his airway

- Arrives at hospital via basic life support with c-collar in place and strapped to a backboard; technicians assisting ventilations with bag-mask → neck protection  
→ Patient airway but not fixed.

Special population:  
Geriatric, pediatrics, Pregnants



\* \* We should protect the neck when we secure the airway



# Case Scenario

What is the sequence of priorities in assessing this patient?

1. Do you need to identify the specific injuries before initial management of this patient? **NO**      Ex: abd pain → CT

2. If not, how do you proceed?

**A B C D E**



# Objectives

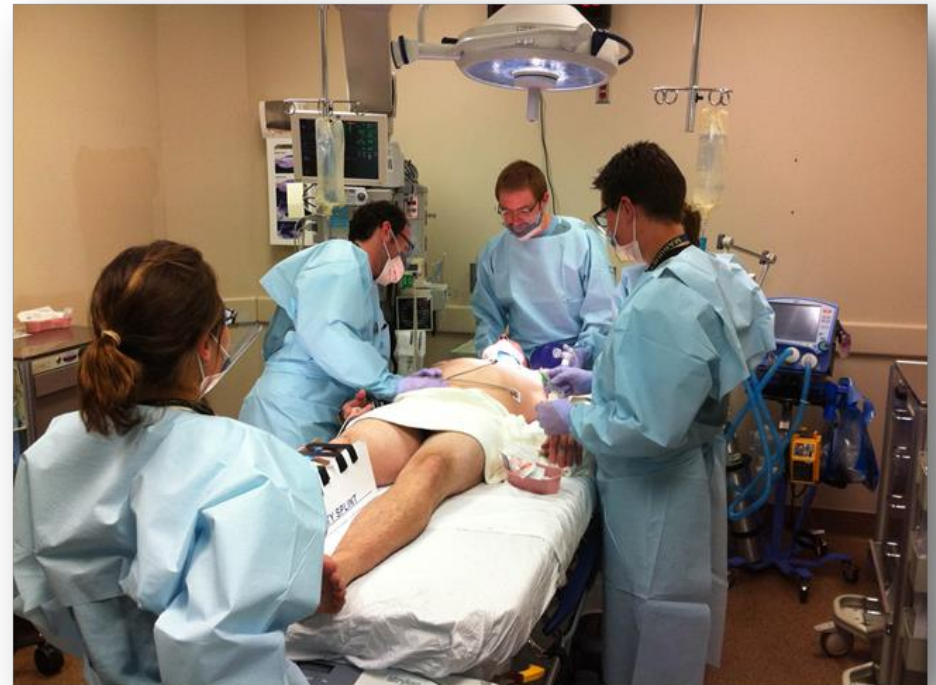
- 1. Identify the correct sequence of priorities for assessment of a multiply injured patient.**
- 2. Apply the principles outlined in the primary and secondary surveys to the assessment of a multiply injured patient.**
- 3. Explain how a patient's medical history and the mechanism of injury contribute to the identification of injuries.**
- 4. Identify the pitfalls associated with the initial assessment and management of an injured patient and describe steps to minimize their impact.**
- 5. Recognize patients who will require transfer for definitive management.**



# Standard Precautions

عنوان تحمي حالات

- **Cap**
- **Gown**
- **Gloves**
- **Mask**
- **Shoe covers**
- **Protective eyewear / face shield**





# Initial Assessment

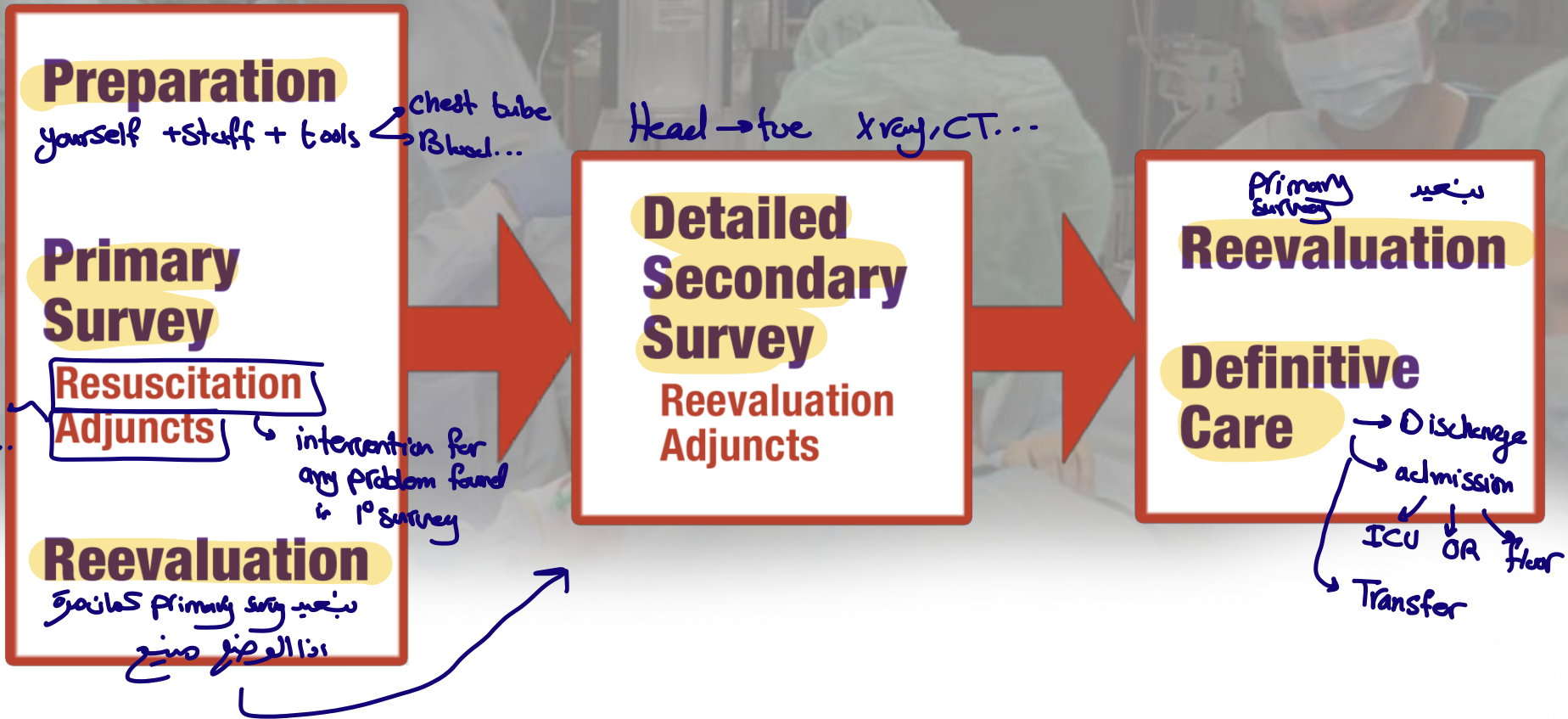
**Primary survey and resuscitation of vital functions are done simultaneously using a team approach.**

كل واحد من ال team بشتغل على  
اسئله من ABCDE





# Concepts of Initial Assessment





# Quick Assessment

**What is a quick, simple way to assess a patient in 10 seconds?**

تخلیے یحکمی مہلکے



# Quick Assessment

**What is a quick, simple way to assess a patient in 10 seconds?**

- **Ask the patient his or her name**
- **Ask the patient what happened**

إذا قدر يحكي معناته



# Appropriate Response Confirms

**A** Patent airway

**B** Sufficient air reserve to permit speech

**C** Sufficient perfusion

**D** Clear sensorium *مرصع وواعي*



# Primary Survey

**A**irway with <sup>+</sup>c-spine protection

مع فحص

**B**reathing and ventilation

**C**irculation with hemorrhage control

**D**isability: Neuro status

New ATLS guidelines:  
~~X~~ ABCDE  
↳ stop hemorrhage

**E**xposure / **E**nvironmental control



# Primary Survey

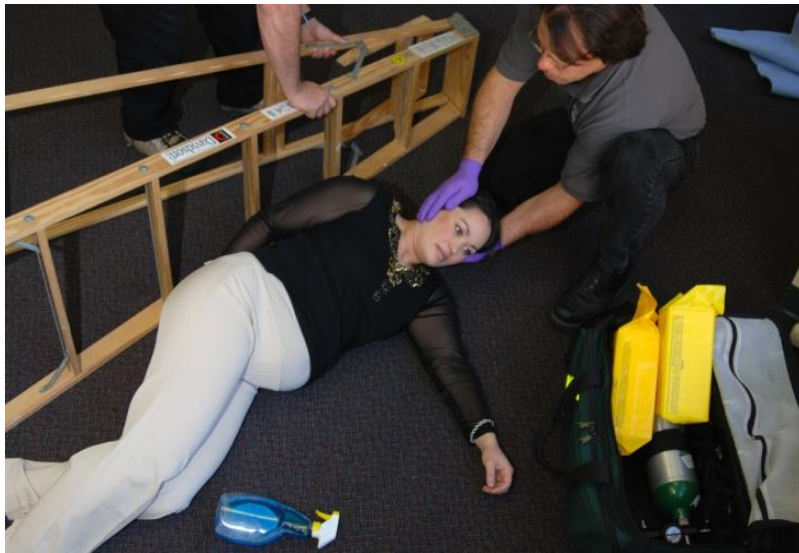
The priorities are the same  
for all patients.





# Special Populations

- Elderly
- Infants and Children
- Pregnant Women
- Obese
- Athletes





# Primary Survey

## Airway

**Establish patent  
airway and  
protect c-spine**

### Pitfalls

- Occult airway injury
- Progressive loss of airway
- Equipment failure
- Inability to intubate

Bleeding  
→ edema

→ with inhalation injury due to edema

→ enlarging hematoma

ask for an expert

use easy intubation tools:

LMA, Combitube

↓  
laryngeal mask airway



# Primary Survey

## 2 Breathing and Ventilation

Assess and ensure adequate oxygenation and ventilation

- Respiratory rate
- Chest movement
- Air entry
- Oxygen saturation

How?

أخذ واحد بعد ذلك لأنه فيه delay



# Primary Survey

## Breathing and Ventilation

### Pitfalls

**Chest**  
Airway versus ventilation  
problem?

← **لا تتركب** ← iatrogenic pneumothorax or  
tension pneumothorax?

→ **emergency**

management : needle thoracocentesis in the 5<sup>th</sup> intercostal

space **mid axillary line** → نفس المكان الذي راج

نحط فيه Chest tube

during ventilation  
with ambu bag  
تشكل سريع

Central  
line



# Primary Survey

## 3 Circulation (including hemorrhage control)

**Assess for organ  
perfusion**

*How?*



**Level of consciousness**

**Skin color and  
temperature**

**Pulse rate and character**



# Primary Survey

## Circulatory Management

بمعمل tourniquet  
لما مايزبط ال direct pressure

↓  
tourniquet proximal  
to the injury



• Control hemorrhage → Compression

• Restore volume → 1L of crystalloid fluid

• Reassess patient

RL NS  
بعد برن بنمبش نفعي لحد  
↓  
PRx whole

→ Elderly

• Children

• Athletes → normally brady cardiac  
تلا tachycardia with 80-90 bpm

→ Medications

β blockers anti hypertensive medications  
فتراح بيبيت منغطه صنيح بس هو عالي



# Primary Survey

## 4) Disability

- Baseline neurologic evaluation
- Glasgow Coma Scale score
- Pupillary response



Observe for  
neurologic  
deterioration



# Primary Survey

## 5 Exposure / Environment

Completely undress  
the patient



Caution

Prevent  
hypothermia

Pitfalls

Missed injuries

سبب کوا یدوروا علی ال وازیریا

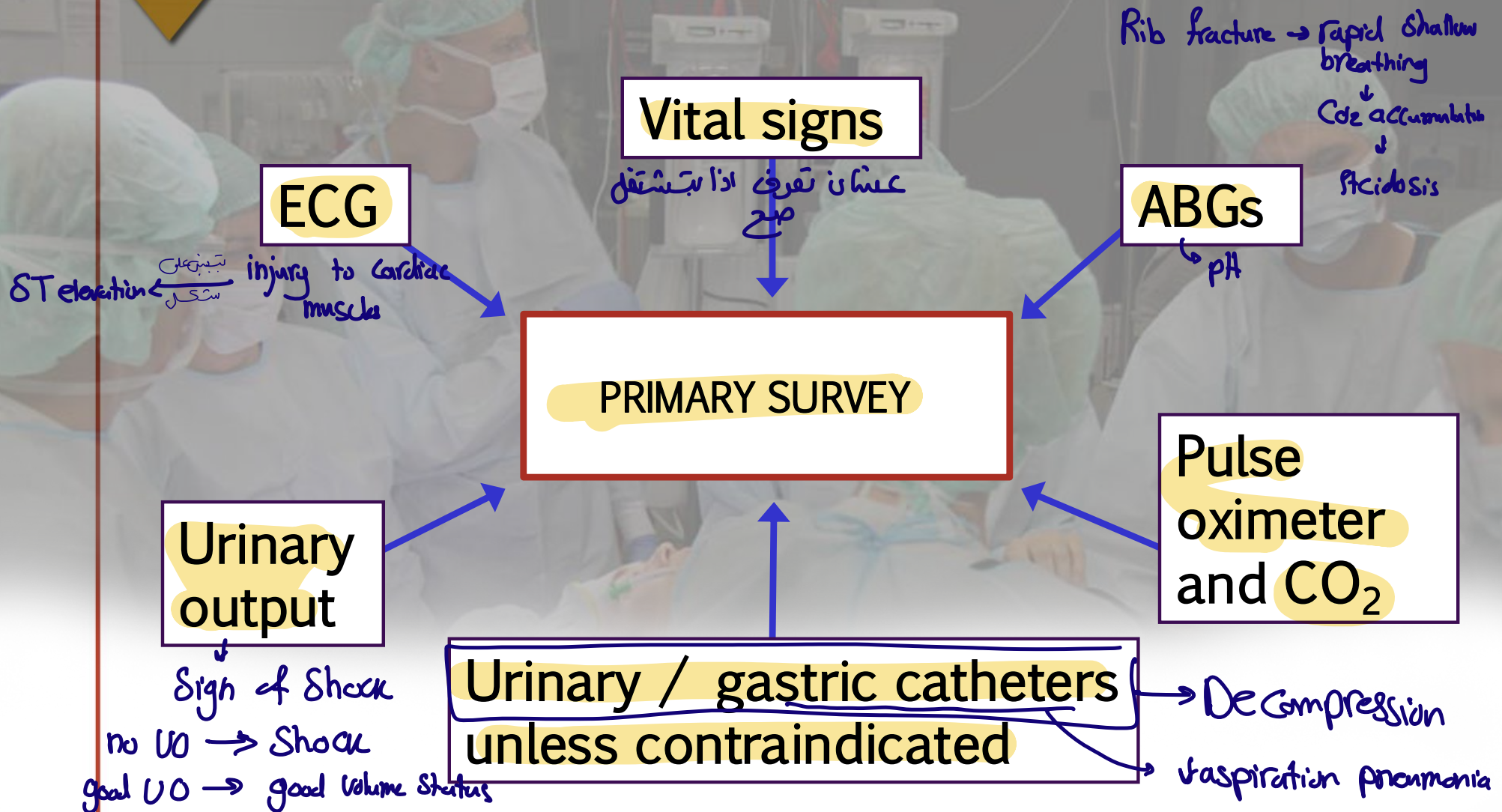


# Resuscitation

- A • **Protect and secure airway**
- B • **Ventilate and oxygenate**
- C • **Stop the bleeding!**
- C • **Crystalloid / blood resuscitation**
- F • **Protect from hypothermia**



# Adjuncts to Primary Survey

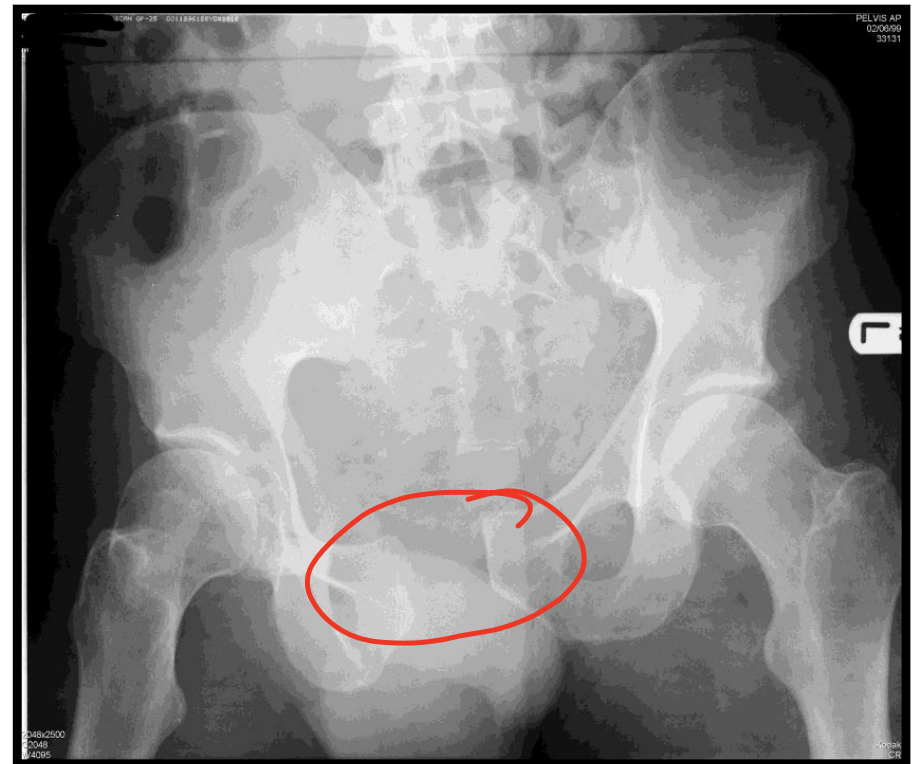
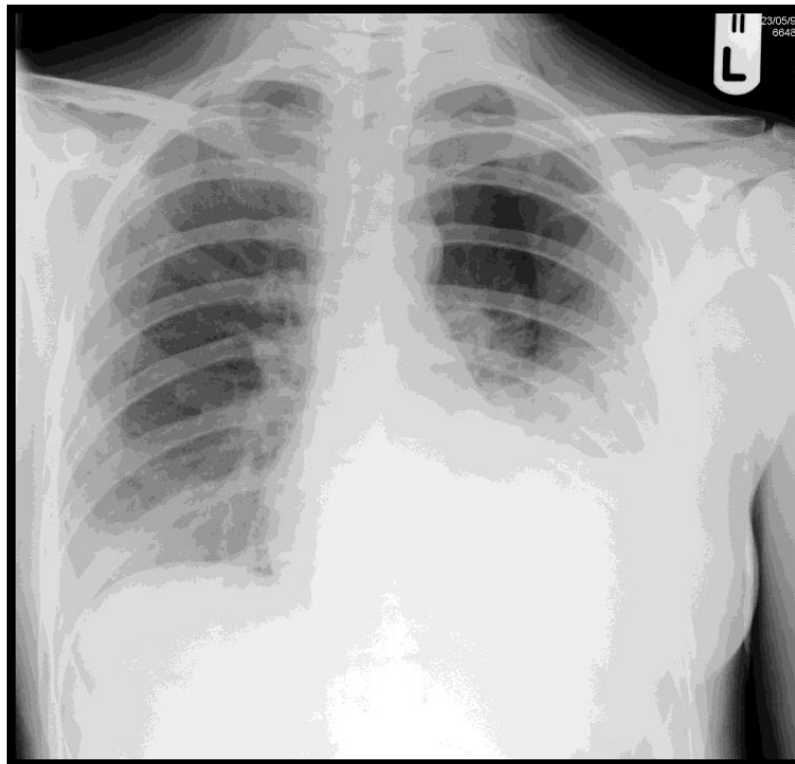




# Adjuncts to Primary Survey

## Diagnostic Tools

① X ray → Pelvic + Chest  
ليس هذول ال Xray  
المسوحة بار Survey ١°





# Adjuncts to Primary Survey

## Diagnostic Tools

② • **FAST**

focused assessment with  
Sonography for trauma

③ • **DPL**

Diagnostic peritoneal  
lavage

تذکرہ ولا عمل





# Adjuncts to Primary Survey

هناك صبار عندك فكرة عن حالة المريض فإذا موقادر تتعامل مع حالته ← transfer

## Consider Early Transfer

- Use time before transfer for resuscitation

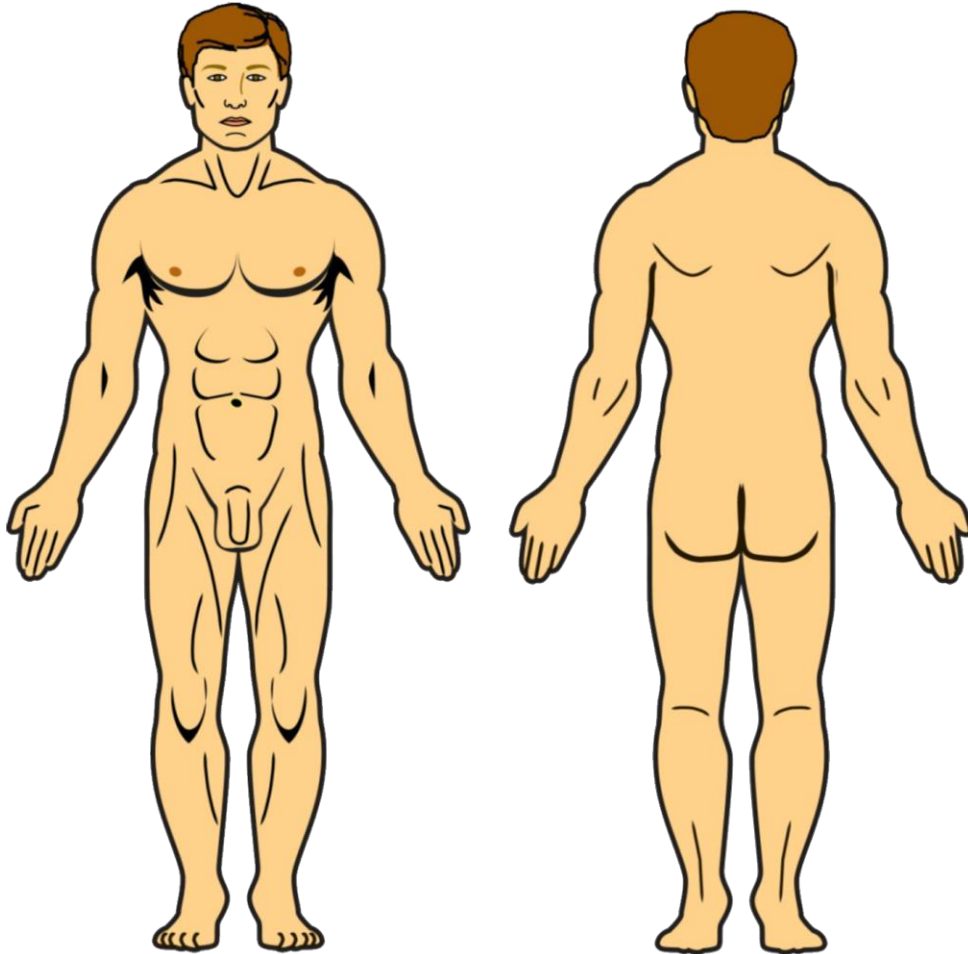
لحد ما بيتقل لازم تحصل لعمل Stabilization

- Do not delay transfer for diagnostic tests





# Secondary Survey



What is the secondary survey?

The complete  
history and  
physical  
examination

زي سنقرابة



# Secondary Survey

*When do I start the secondary survey?*

After

- 1 Primary survey is completed
- 2 ABCDEs are reassessed
- 3 Vital functions are returning to normal



# Secondary Survey

## Components of the secondary survey

- **History**
- **Physical exam: Head to toe**
- **Complete neurologic exam**
- **Special diagnostic tests**
- **Reevaluation**

التي عليك اياها →



# Secondary Survey

**History**

**A**llergies

**M**edications

**P**ast illnesses / **P**regnancy

**L**ast meal

**E**vents / **E**nvironment / **M**echanism



# Secondary Survey

## Mechanisms of Injury

بنتوق مرفقا سو صهار عند المريض





# Secondary Survey

Head → Toe

## Head

- External exam
- Scalp palpation
- Comprehensive eye and ear exam
- Include visual acuity



- Chat gpt:
- Unconsciousness → (الوعي) مالح بيشي من أمراضا مغمضت بغيرها
  - Periorbital edema → التورم حول العين بغير اصابت العين
  - Occluded auditory canal → تورم حول اللذن بغير اصابة الاذن أو قف اللذن



# Secondary Survey

## Maxillofacial

frequently missed  
الدكتور تفكيريا brain  
وبينسوخ maxillofacial

- **Bony crepitus**
- **Deformity**
- **Malocclusion**  
الأسنان مايطبقوا على بعضى



### Pitfalls

- Potential airway obstruction
- Cribriform plate fracture  
ممكن يوفت NGT على brain  
→ ممكن يصير CSF leak or falcon eye
- Frequently missed



# Secondary Survey

## Neck (Soft Tissues)

- Mechanism:** Blunt versus penetrating *hematoma → progressive airway obstruction*  
*→ injury to the major vessels in the neck*
- Symptoms:** Airway obstruction, hoarseness
- Findings:** Crepitus, hematoma, stridor, bruit



### Pitfalls

- Delayed signs and symptoms
- Progressive airway obstruction
- Occult injuries



# Secondary Survey

## Chest

- **Inspect**
- **Palpate**
- **Percuss**
- **Auscultate**
- **X-rays**   
 → ribs fractures   
 → pneumo or hemothorax







# Secondary Survey

## Perineum

Contusions, hematomas, lacerations, urethral blood

## Rectum

↪ indicates urethral rupture

Sphincter tone, high-riding prostate, pelvic fracture,  
rectal wall integrity, blood

## Vagina

Blood, lacerations

### Pitfalls

inability to urinate  
blood in the urethral meatus  
high riding prostate

Urethral injury → X Foley's cath  
Pregnancy



# Secondary Survey

## Pelvis

- Pain on palpation
- Leg length unequal
- Instability
- X-rays as needed

Suspect pelvic fracture



put pelvic binder and prevent excessive pelvic manipulations



### Pitfalls

Excessive pelvic manipulation  
Underestimating pelvic blood loss



# Secondary Survey

## Extremities

- Contusion, deformity
- Pain → analgesia
- Perfusion
- Peripheral neurovascular status  
Compartment Syndrome (ناتکدمايي)
- X-rays as needed





# Secondary Survey

## Musculoskeletal System

### Pitfalls

- Potential blood loss → long bones → loss of 1.5L of blood
- Missed fractures
- Soft tissue or ligamentous injury
- Compartment syndrome

عنه في حبه لازم نعمل  
↓  
fixation



# Secondary Survey

## Neurologic: Brain

- GCS
- Pupil size and reaction
- Lateralizing signs are clinical findings that help determine which side (left or right) of the brain, spinal cord, or nervous system is affected by a lesion.
- Frequent reevaluation
- Prevent secondary brain injury → by giving O<sub>2</sub>, setting at 45°



Early neurological consult



# Secondary Survey

## Neurologic: Spinal Assessment

- **Whole spine**
- **Tenderness and swelling**
- **Complete motor and sensory exams**
- **Reflexes**
- **Imaging studies** → CT



### Pitfalls

- Altered sensorium
- Inability to cooperate with clinical exam



# Secondary Survey

## Neurologic: Spine and Spinal Cord

*Conduct an in-depth evaluation of the patient's spine and spinal cord*



**Early neurological / orthopedic consult**



# Secondary Survey

## Neurologic

لازم أكون متواصل منيع مع الأستسمة  
بتصديقه وبتوجهه على طول



### Pitfalls

- Incomplete immobilization
- Neurologic deterioration



# Adjuncts to Secondary Survey

## Special Diagnostic Tests as Indicated



### Pitfalls

- Patient deterioration
- Delay of transfer
- Deterioration during transfer
- Poor communication



# How do I minimize missed injuries?

نبدأ على الـ 14x. مثلاً ماذا الذي معه  
طابقاً يتوقع انه ممكن يموت، إذا طار  
من السيارة معناه أصابته طياروكيش

- High index of suspicion
- Frequent reevaluation and monitoring



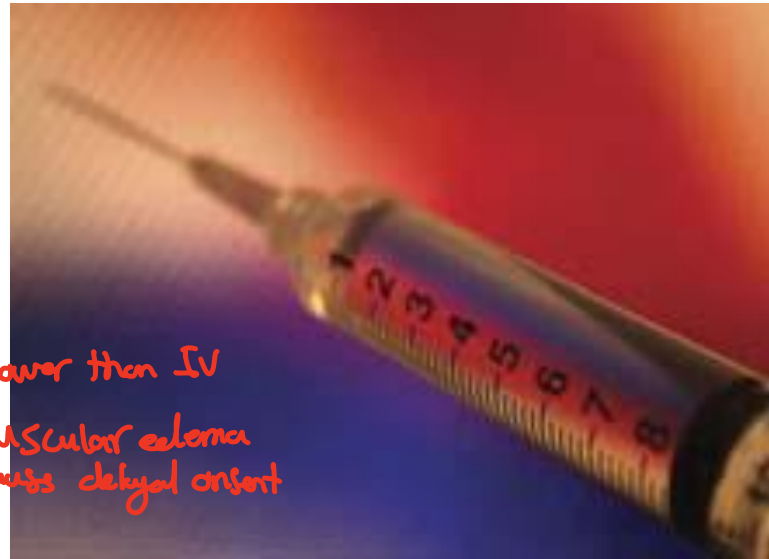


# Pain Management

→ Causes false readings of vital signs

- Relief of pain / anxiety as appropriate
- Administer intravenously
- Careful monitoring is essential

oral  
IM → slower than IV  
muscular edema  
causes delayed onset





# Transfer

**Which patients do I transfer to a higher level of care?**



# Transfer to Definitive Care

## Which patients do I transfer to a higher level of care?

Those whose injuries exceed institutional capabilities:

- Multisystem or complex injuries
- Patients with comorbidity or age extremes



# Transfer to Definitive Care

**When should the transfer occur?**



# Transfer to Definitive Care

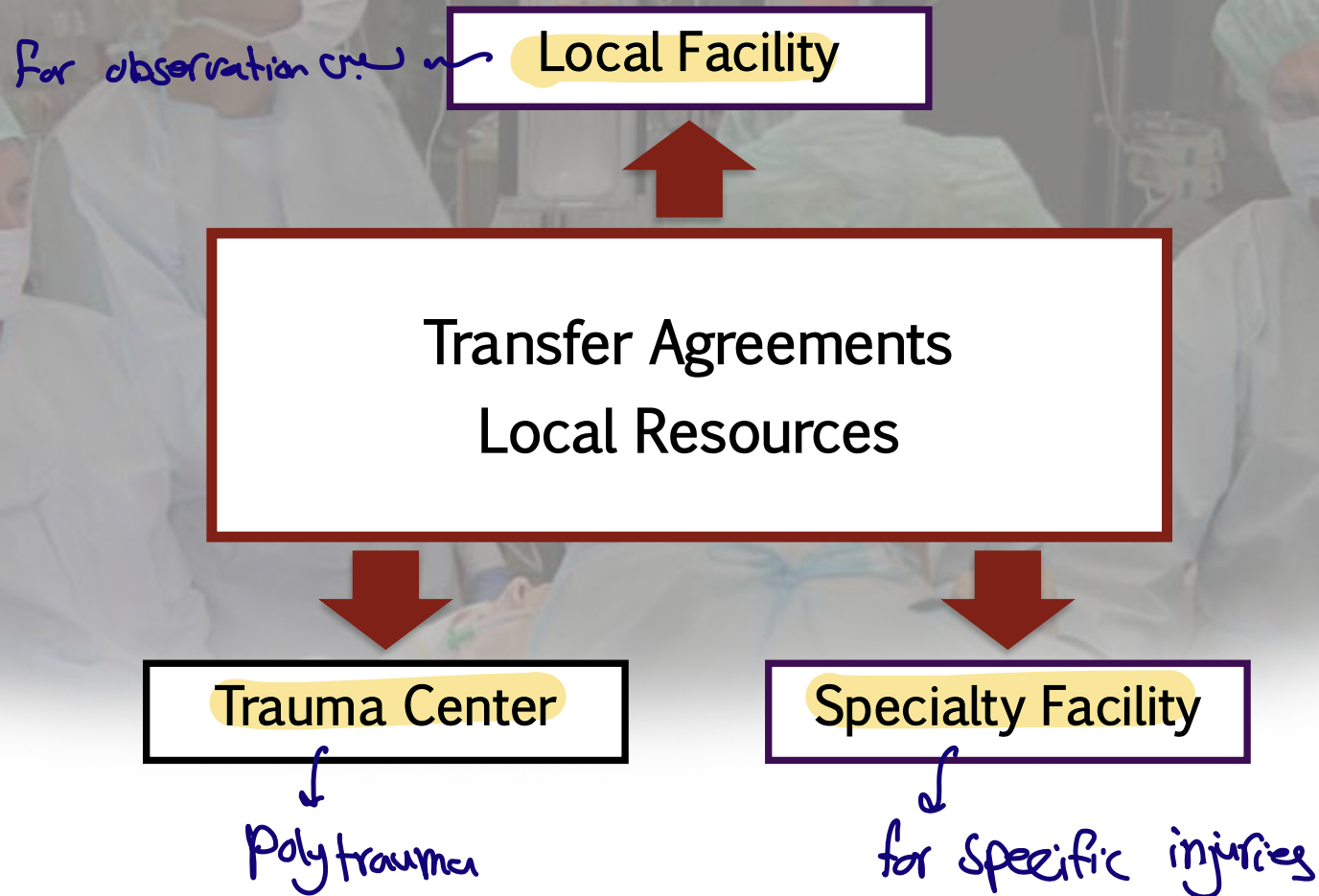
## When should the transfer occur?

As soon as possible after stabilizing measures are completed:

- Airway and ventilatory control
- Hemorrhage control (operation)



# Transfer to Definitive Care





# Case Scenario

- **44-year-old male driver who crashed head-on into a wall**
- **Patient found unresponsive at the scene**
- **Arrives at hospital via basic life support with c-collar in place and strapped to a backboard; technicians assisting ventilations with bag-mask**





# Questions?





# Summary

## Preparation

### Primary Survey

Resuscitation  
Adjuncts

### Reevaluation

### Detailed Secondary Survey

Reevaluation  
Adjuncts

### Reevaluation

Definitive  
Care