SCOREBUILDERS

SPOTLIGHT *Series*

Tubes, Lines, and Medical Equipment

Presented by
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Topics we'll cover

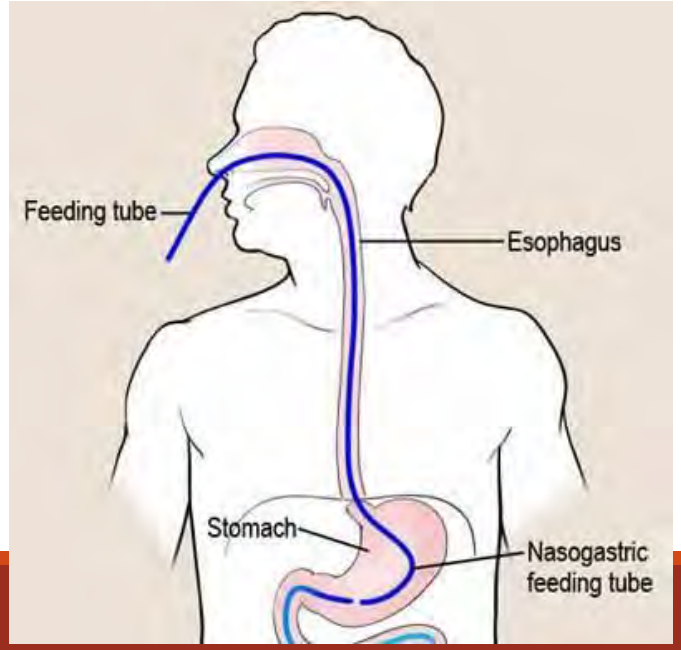
- ✓What do we use a Swan-Ganz for?
- ✓What types of urinary catheters are there?
- ✓How do I know what all these lines and tubes do?

✓This session will review the common tubes, lines, and medical equipment we'll see while treating our patients. We'll discuss the function, location, complications and restrictions associated with each type of equipment.

Feeding Devices

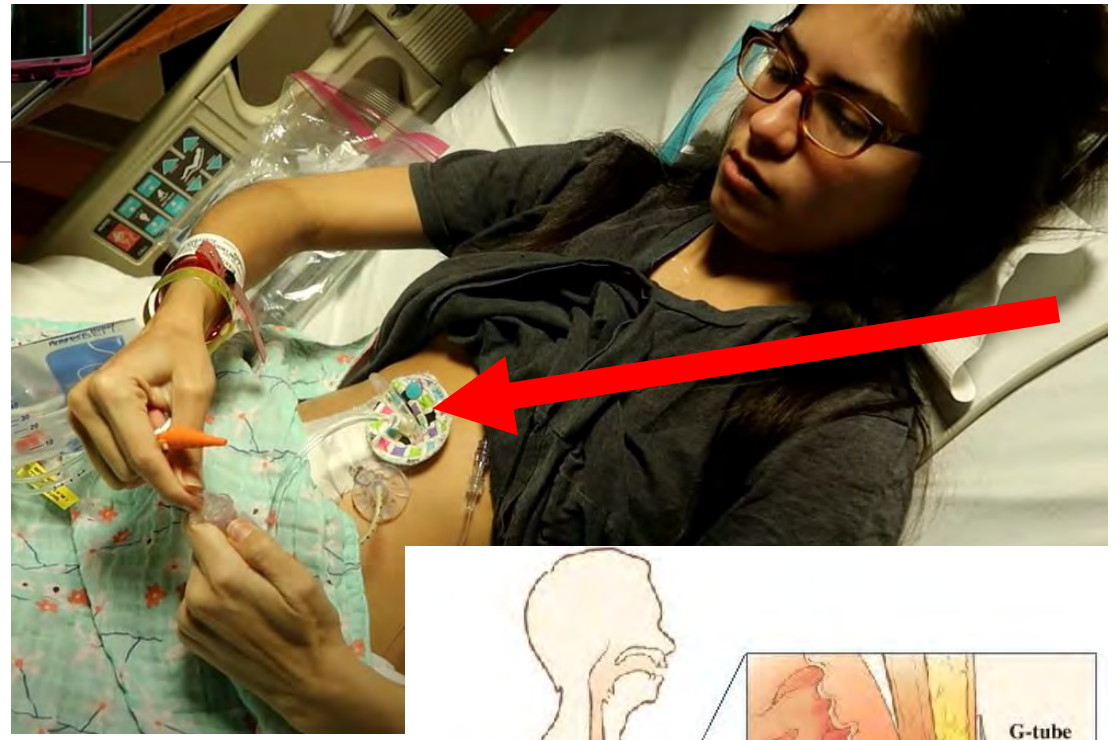
Nasogastric Tube (NG tube)

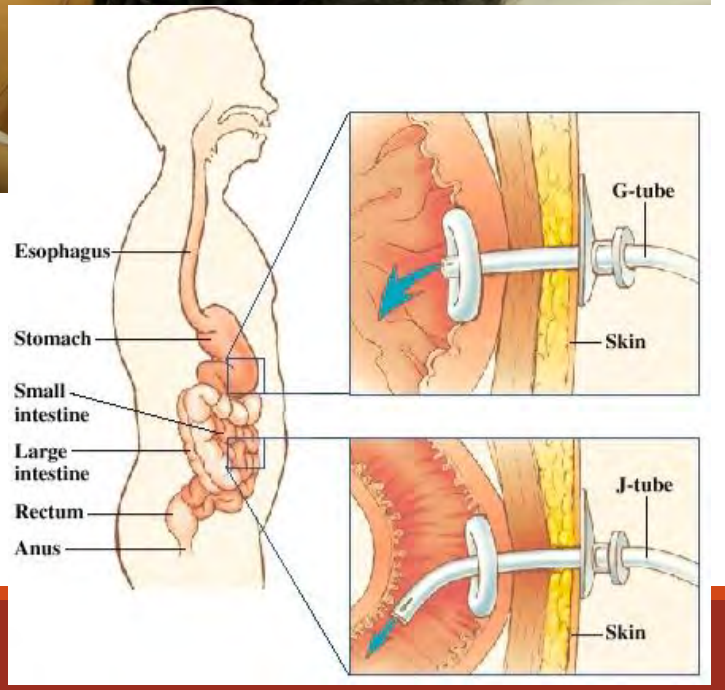
- Location: plastic tube inserted through a nostril that extends into stomach
- Uses:
  1. Short-term feeding
  2. Deliver medication
  3. Remove gas/Suction
- Precautions: avoid dislodging, may limit mobility distance if connected to suction



Gastric or Percutaneous Tube (G tube or PEG tube)

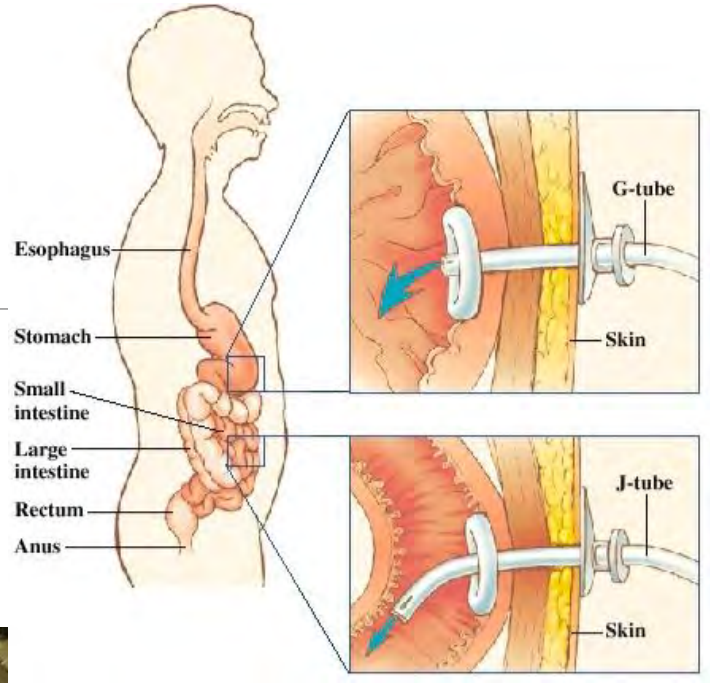
- Location: inserted through a small incision in abdomen into stomach
- Uses:
  1. Long-term feeding for patients with difficulty swallowing or inability to maintain nutrition through mouth
- Precautions: gait belt placement, tube movement during activity, avoid dislodging

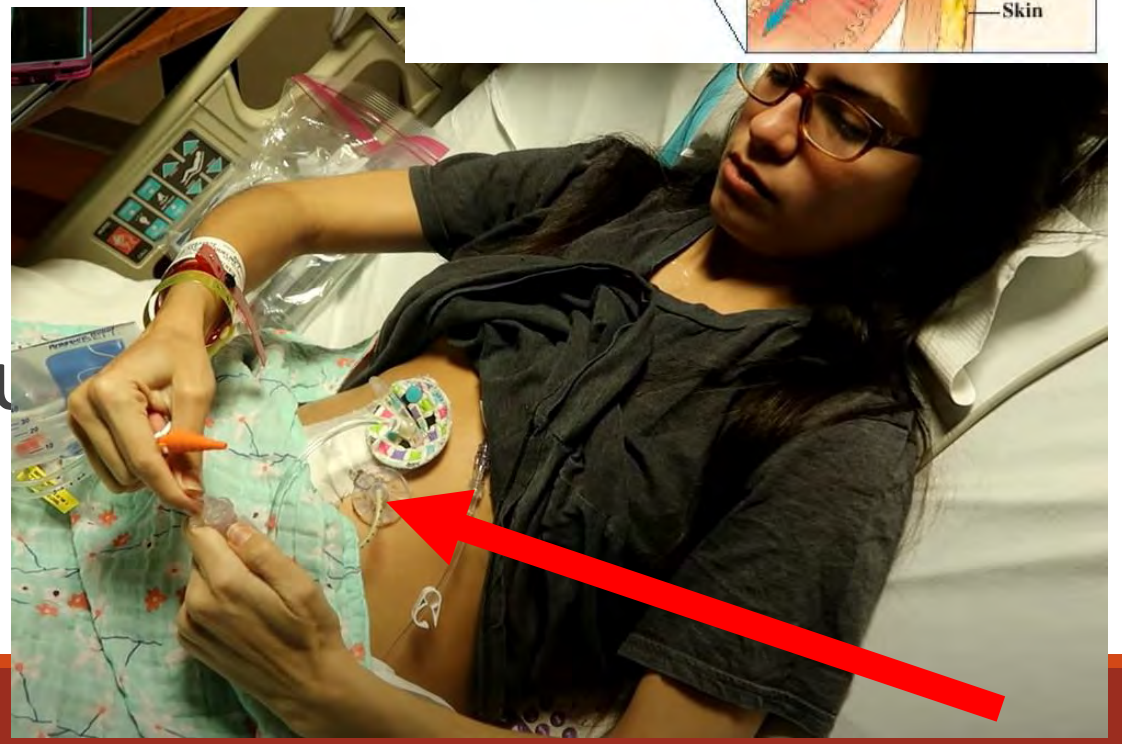


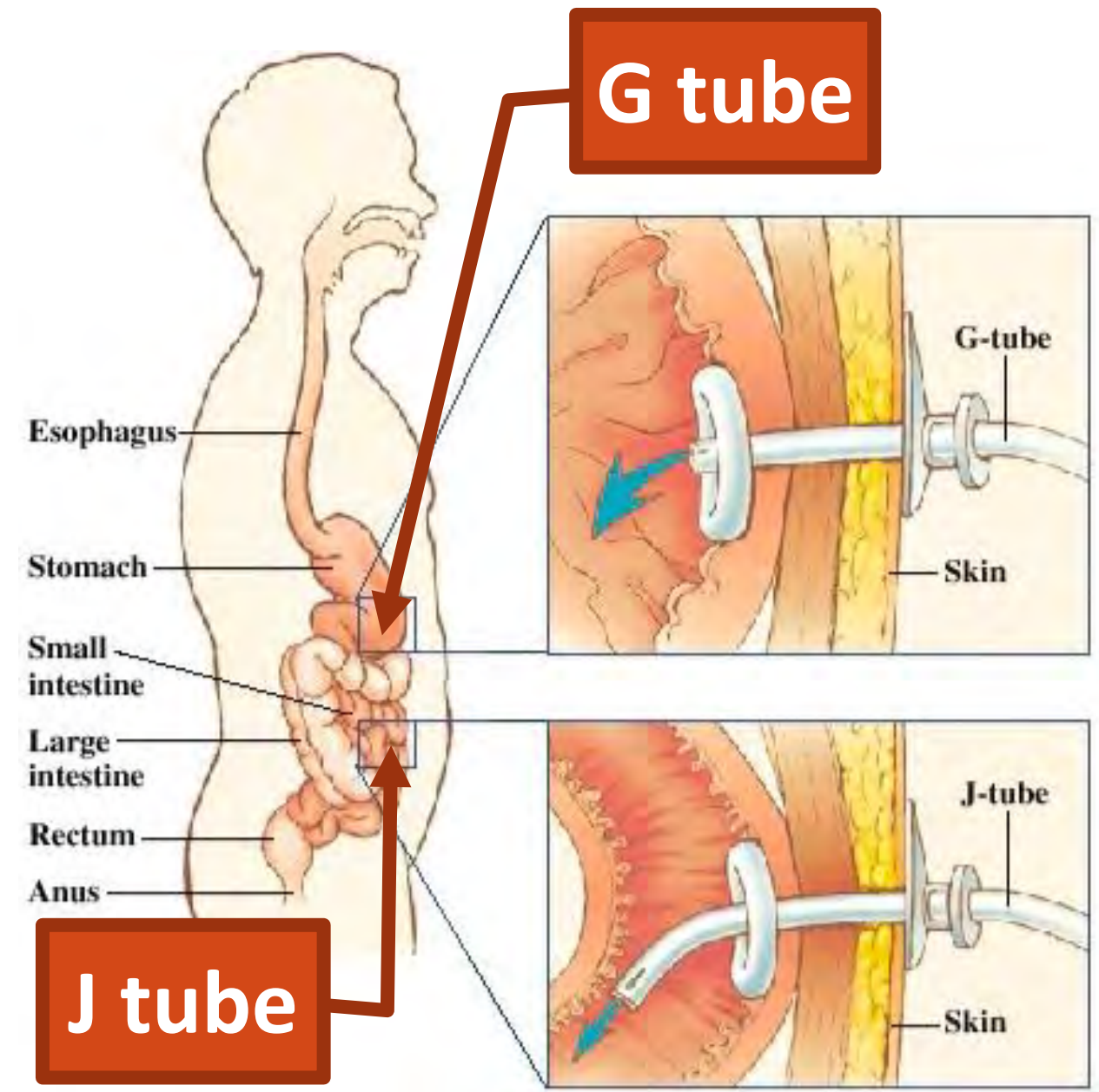


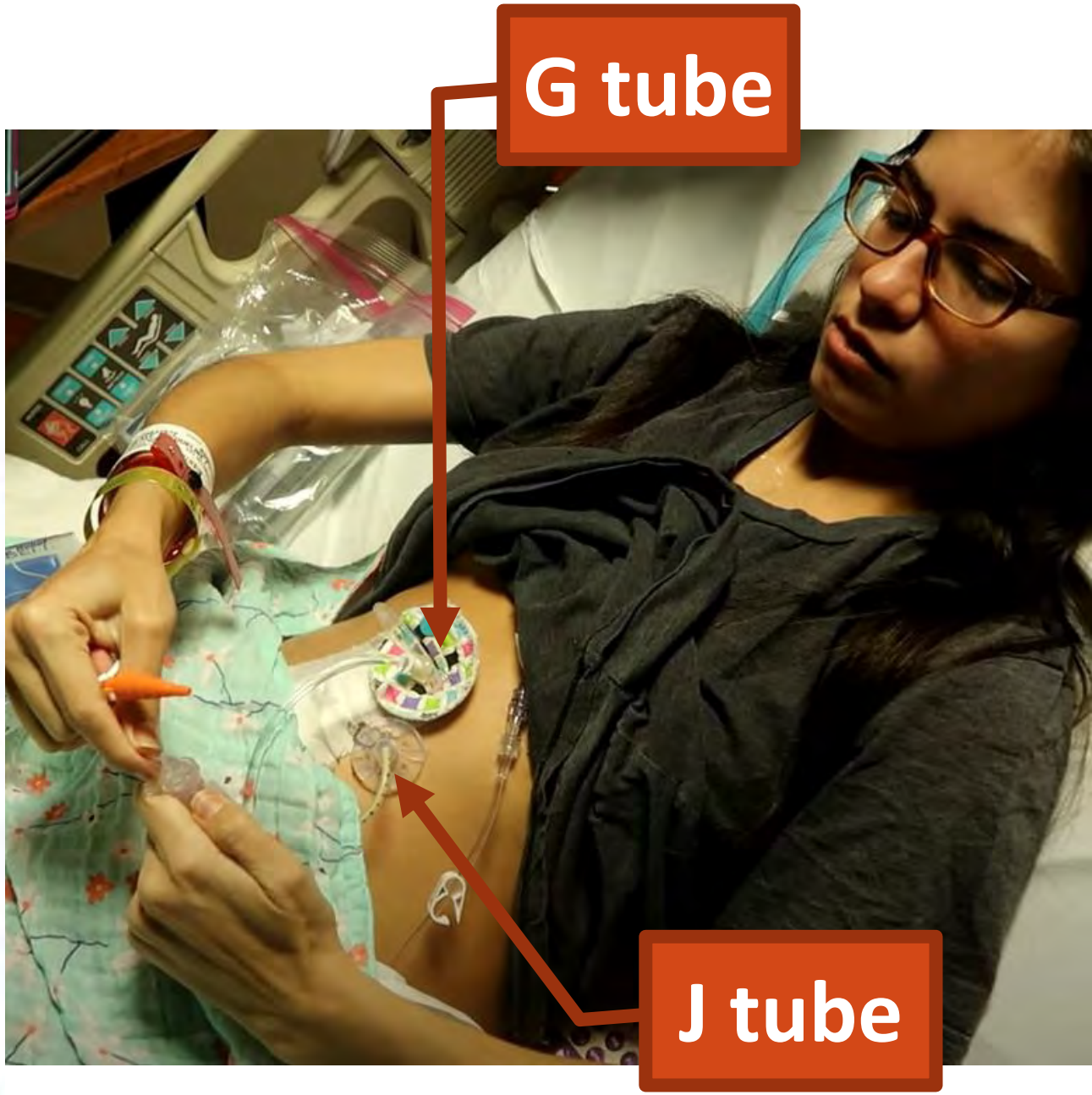
Jejunostomy Tube (J tube)

- Location: inserted through a small incision in abdomen into stomach
- Uses:
  1. Long-term feeding for patients with difficulty swallowing or inability to maintain nutrition through mouth
- Precautions: gait belt placement, tu movement during activity, avoid dislodging






G tube
Esophagus
Stomach
Small intestine
Large intestine
Rectum
Anus
J tube
G-tube
Skin
J-tube
Skin

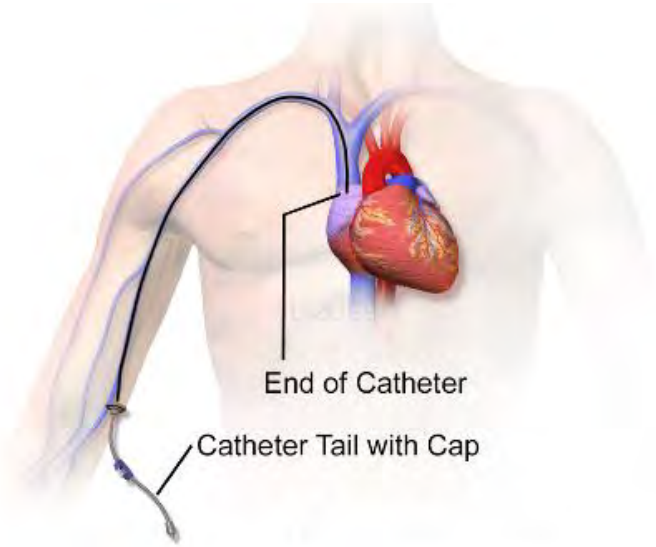

G tube
J tube

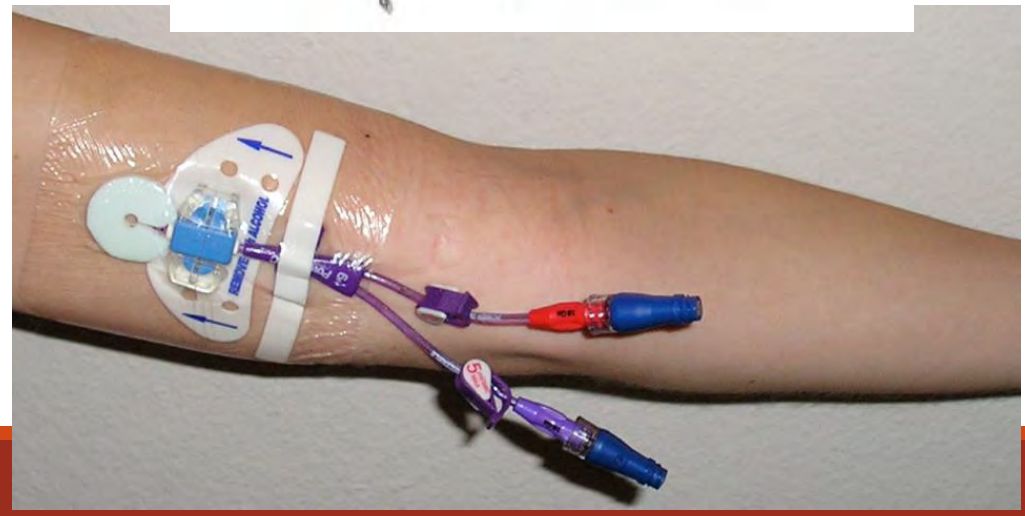
Intravenous System (IV)

- Location: soft, flexible tube inserted into superficial veins with a needle (that is then removed) in the dorsal hand, antecubital fossa, dorsal foot
- Uses:
  1. Infuse fluids, electrolytes, nutrients
  2. Deliver medication
- Precautions: avoid dislodging, may limit mobility at insertion sight

Peripherally Inserted Central Catheter (PICC)

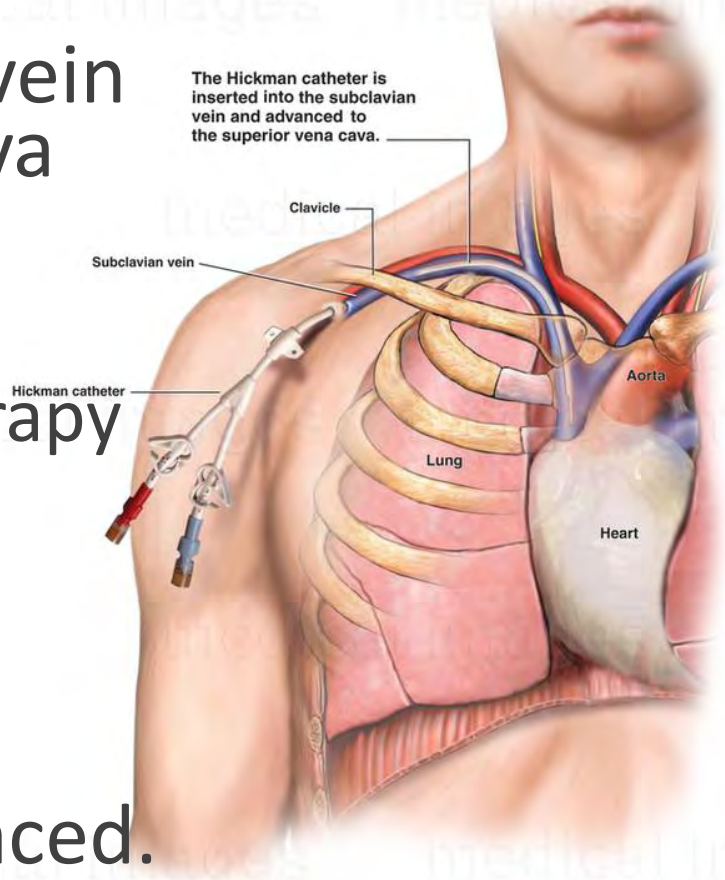
- Location: catheter inserted through peripheral vein and advanced toward heart until tip lies in the superior vena cava
- Uses:
  1. Deliver medication
  2. Deliver liquid nutrition
- Precautions:
  1. DON'T PULL THEM OUT! Potential to rip vena cava if line is displaced.
  2. No BP on PICC side

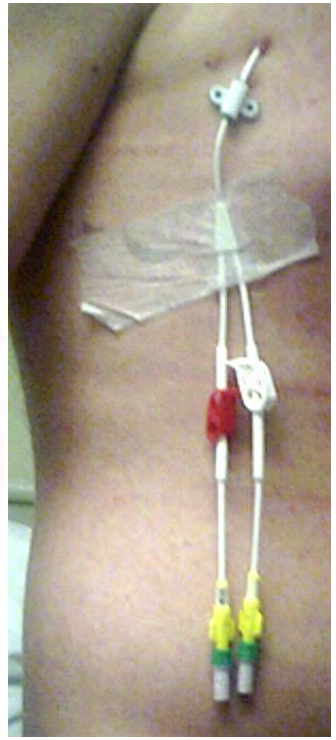


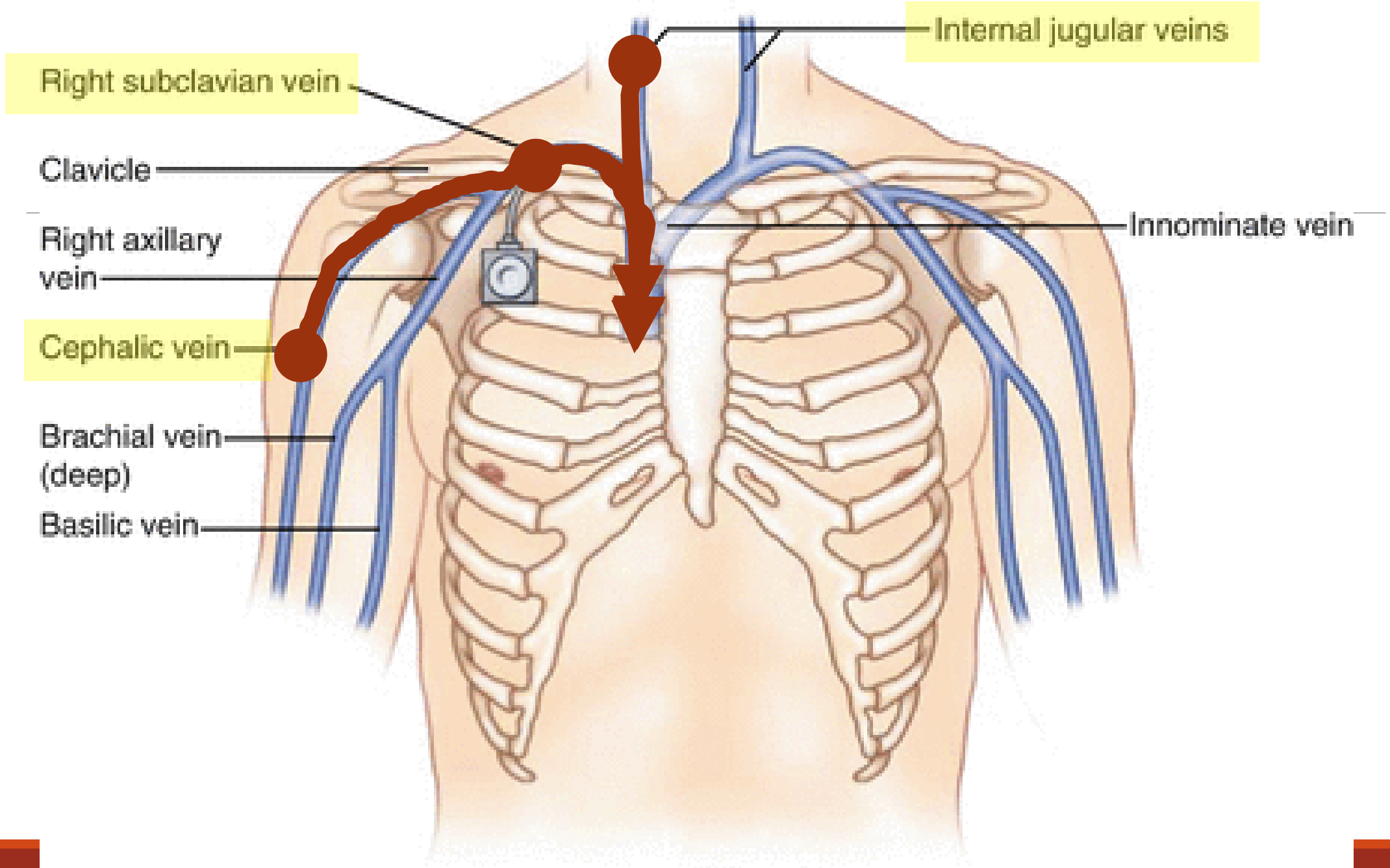


Indwelling Right Atrial Catheter (Hickman)

- Location: catheter inserted through cephalic, subclavian or internal jugular vein and threaded into the superior vena cava and right atrium
- Uses:
  1. Long-term administration of chemotherapy agents
  2. Delivery of nutrition
  3. Delivery of antibiotics
- Precautions: DON'T PULL THEM OUT! Potential to rip vena cava if line is displaced.






Internal jugular veins
Right subclavian vein
Clavicle
Right axillary vein
Innominate vein
Cephalic vein
Brachial vein (deep)
Basilic vein

Time to Practice

While reviewing a patient's medical chart prior to your treatment, you see they are using a feeding device short-term while healing from their surgery. With your knowledge of the feeding devices, **which type of device do you anticipate the patient having**?

a) NG tube

b) G tube

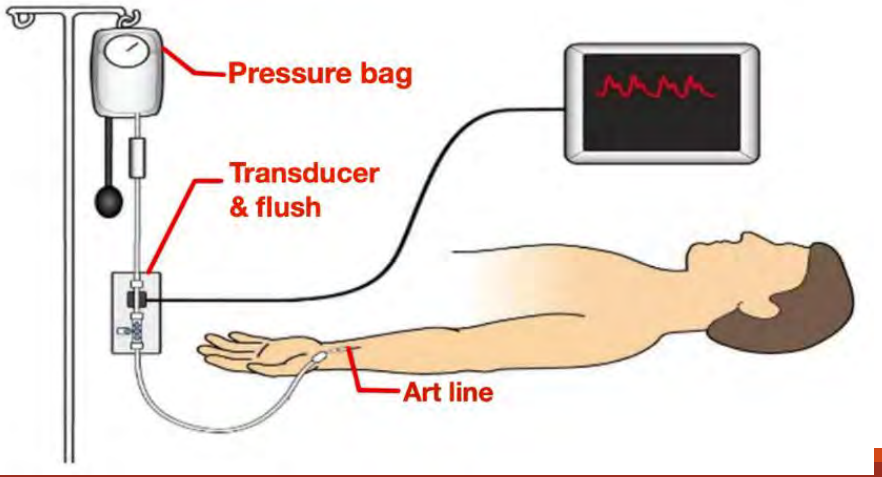
c) J tube

d) IV

Monitoring Devices

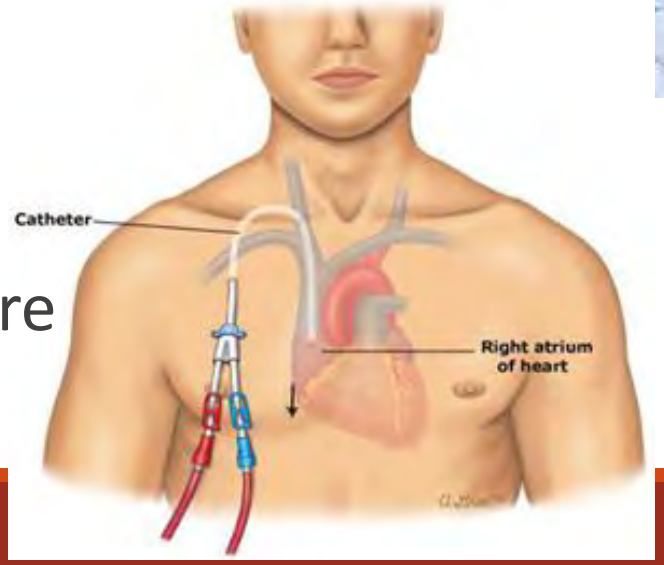
Arterial Line (A-Line)

- Location: catheter attached to an electronic monitoring system inserted into the radial, dorsal pedal, axillary, brachial, or femoral artery
- Uses:
  1. Measure blood pressure
  2. Obtain blood samples
- Precautions:
  1. DON'T PULL THEM OUT! Apply direct pressure and call for assistance if line is displaced.
  2. May cause limited ROM at wrist/groin/ankle



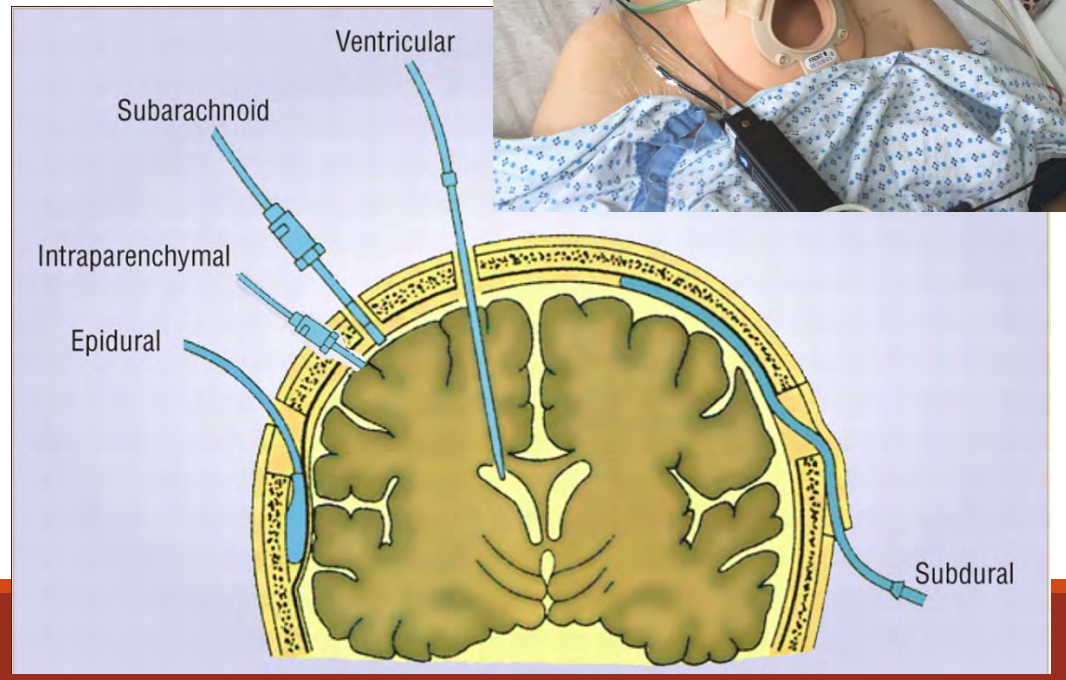
Central Venous Pressure Catheter (CVP)

- Location: catheter attached to pressure manometer inserted through internal jugular vein into the right atrium or superior vena cava
- Uses:
  1. Evaluate right ventricular function
  2. Evaluate right atrial filling pressure
  3. Evaluate circulating blood volume
- Precautions:
  1. DON'T PULL THEM OUT! Apply direct pressure and call for assistance if line is displaced.



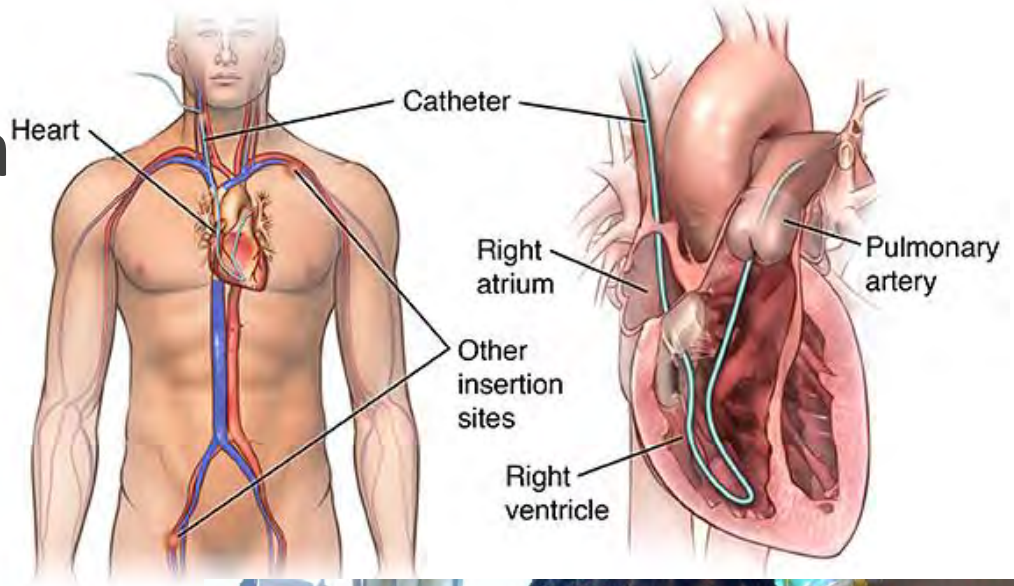
Intracranial Pressure Monitor (ICP)

- Location: catheter placed intraventricular, intraparenchymal, epidural, subdural, or as a subarachnoid bolt
- Uses:
  1. Measure pressure exerted against the skull caused by swollen brain tissue, blood, and CSF
- Precautions:
  1. Avoid displacing ICP
  2. Avoid Valsalva-like maneuvers



Pulmonary Artery Catheter (Swan-Ganz)

- Location: soft, flexible catheter inserted through the internal jugular or subclavian vein then passed into the pulmonary artery
- Uses:
  1. Measure pulmonary artery pressure
- Precautions:
  1. Avoid displacement
  2. Avoid excessive head, neck, and UE movement that may disrupt insertion site



Oximeter or Pulse Ox

- Location: device clipped on or taped to finger, ear, or foot
- Uses:
  1. Measure oxygen saturation of blood
- Precautions: secure attachment, inhibited mobility/grip

Time to Practice

A physical therapist is instructing a patient who experiences episodes of orthostatic hypotension to transfer from the bed to the chair. **Which of the following devices would assist the therapist in monitoring the patient's blood pressure**?

a) A-Line

b) CVP

c) ICP

d) Swan-Ganz Catheter

Oxygen Therapy

Nasal Cannula

- Location: tubing extending ~1cm into each nostril that runs across cheeks, behind ears and under chin to then connect to oxygen source
- Uses:
  1. Deliver oxygen up to 6L/min
- Precautions: cannulas remain in patients' nostril, no open flame

Oronasal Mask

- Location: face piece covering nose and mouth with small vent holes for exhalation
- Uses:
  1. Oxygen delivery
  2. Delivery of medications, mucolytic detergents, or humidity with attachment of nebulizer
- Precautions: proper seal, no open flame

Oxygen Tent

- Location: canopy placed over entire head and shoulders and sometime entire body
- Uses:
  1. Delivers oxygen at much higher level
- Precautions: proper seal, no open flame

Tracheostomy Mask

- Location: mask placed over a stoma or tracheostomy
- Uses:
  1. Deliver oxygen to an individual with a tracheostomy
- Precautions: clearance of trach, no open flame

Time to Practice

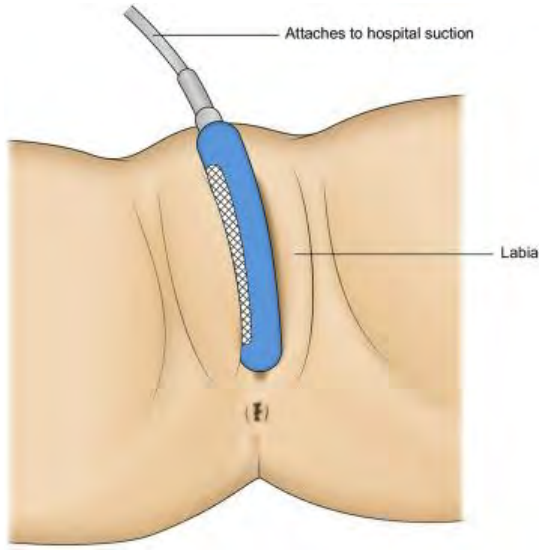
The respiratory therapist (RT) is asking you about a patient you share. The RT shares the orders are for the patient to receive oxygen at a rate of 10L/min. Knowing the history of the patient, you know they do not have a tracheostomy and they are as activity as they can be. **What oxygen delivery method is BEST for this patient**?

a) Nasal cannula
b) Oronasal mask
c) Oxygen tent
d) Tracheostomy mask

Urinary Catheters

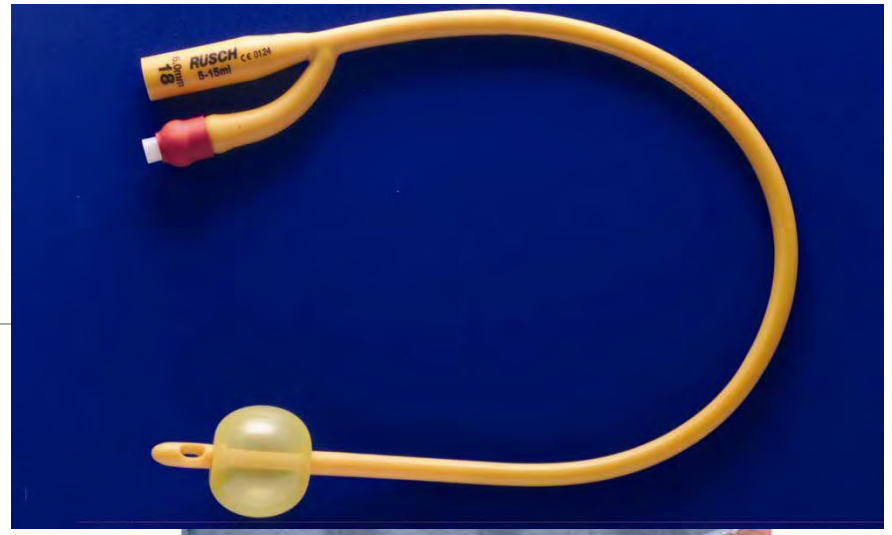
External Urinary Catheter

- Location: to the shaft of the penis or between the gluteus and labia
- Uses:
  1. collect or wick away urine for a short-term period
- Precautions: improper placement, collection bag puncture



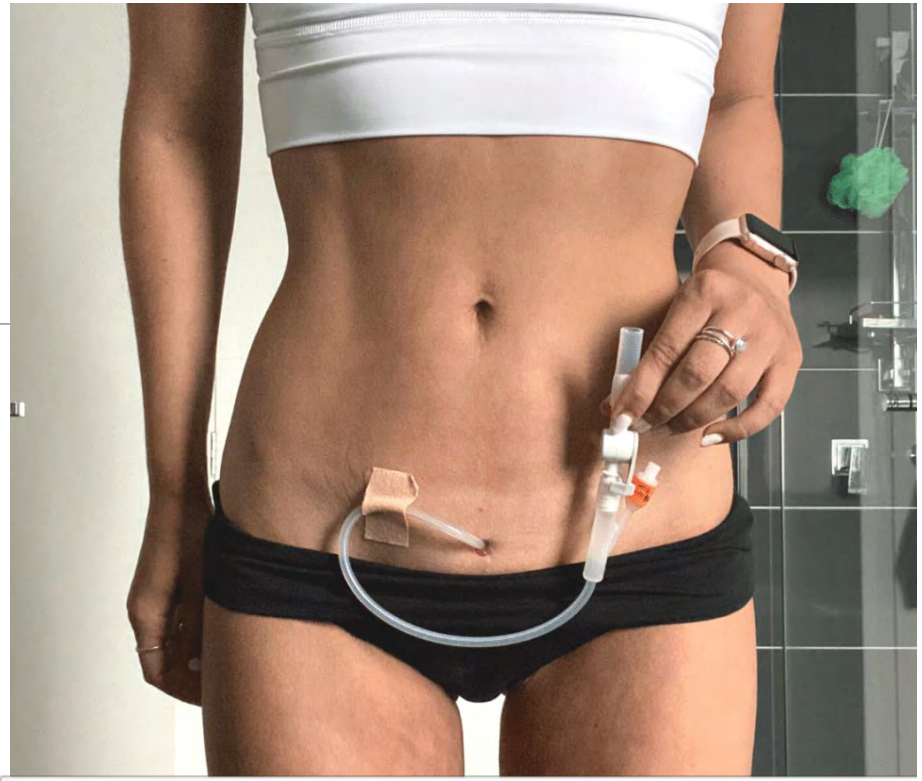
Foley Catheter

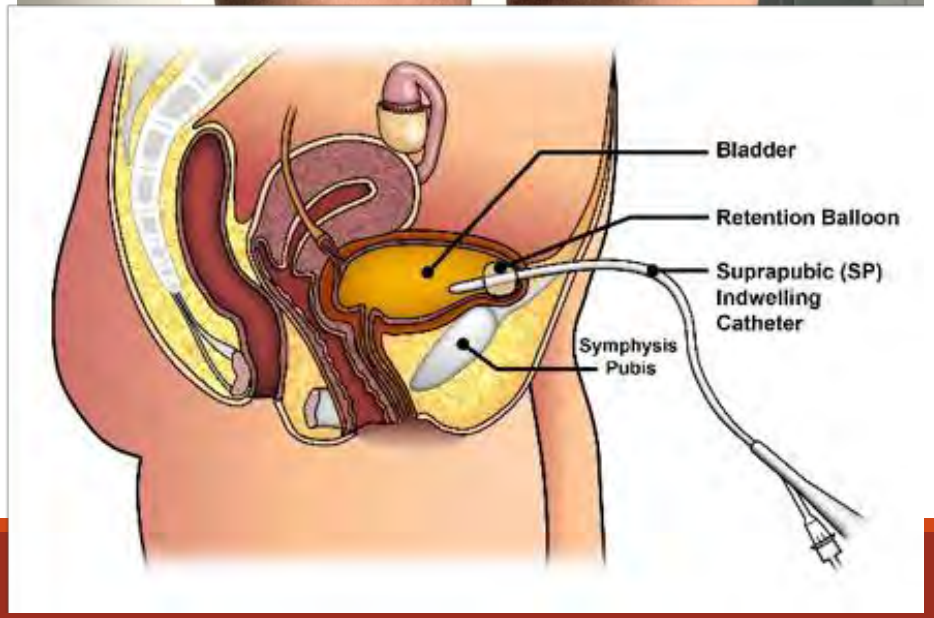
- Location: flexible tubing inserted through the urethra into the bladder and uses an inflated balloon to stay in place
- Uses:
  1. Continually drain urine from the bladder for a prolonged period of time
- Precautions:
  1. collection bag MUST remain below the level of the bladder
  2. increased potential for UTI
  3. don‘t pull out



Suprapubic Catheter

- Location: surgically inserted directly into the bladder just above the pubic symphysis and uses an inflated balloon to stay in place
- Uses:
  1. when the urethra is damaged or blocked
- Precautions:
  1. don‘t pull out
  2. gait belt placement
  3. collection bag (if attached) MUST remain below the level of the bladder





Time to Practice

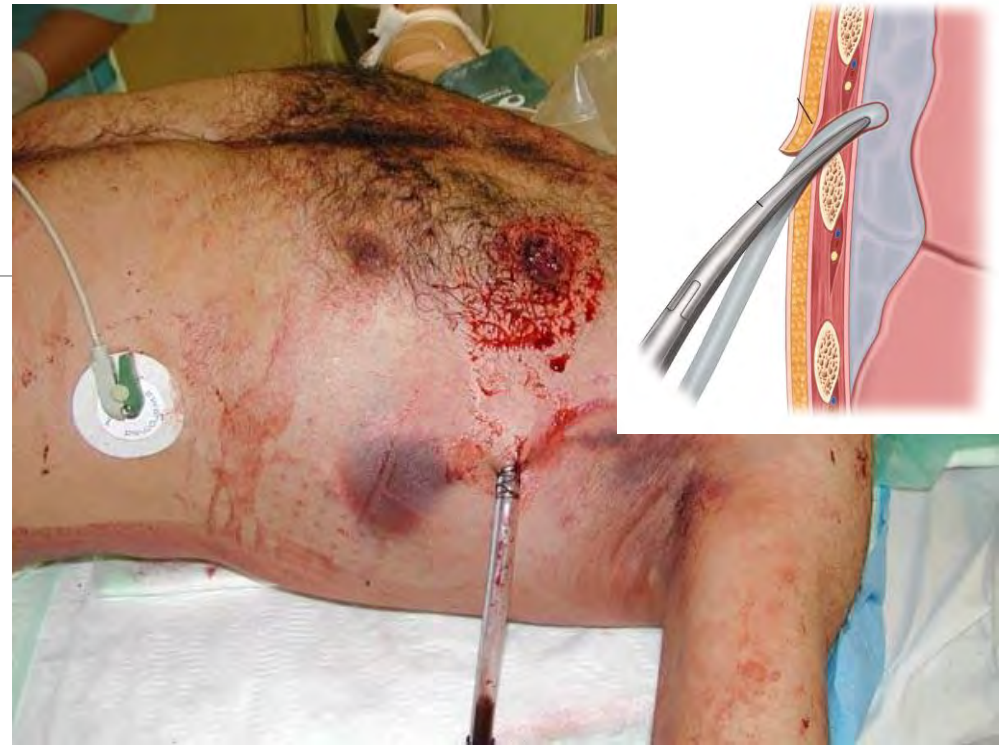
A physical therapist reviews a patient's chart in preparation for treatment and notes the patient had a T4 spinal injury and experiences urinary incontinence. The patient history also indicates the patient has a history of frequent UTIs and currently is receiving medication to treat one. **What urinary catheter is MOST appropriate for this patient**?

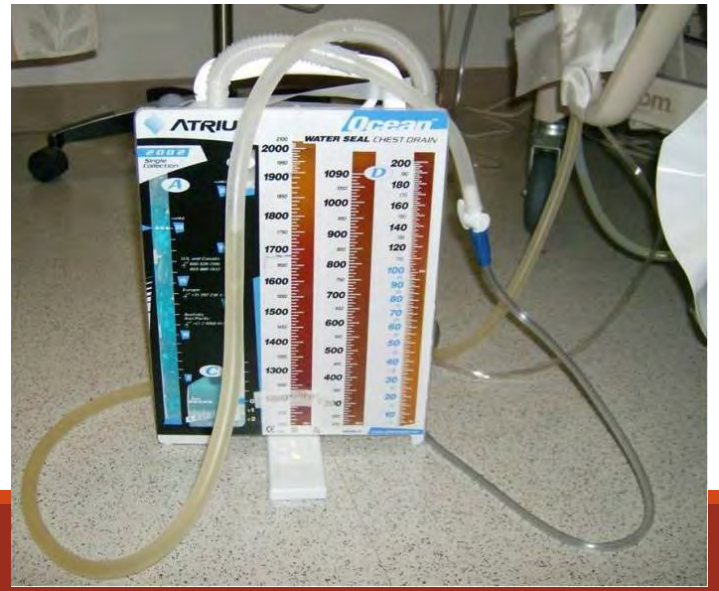
a) Condom catheter
b) Purwick
c) Foley catheter
d) Suprapubic catheter

Other Acute Devices

Chest Tube

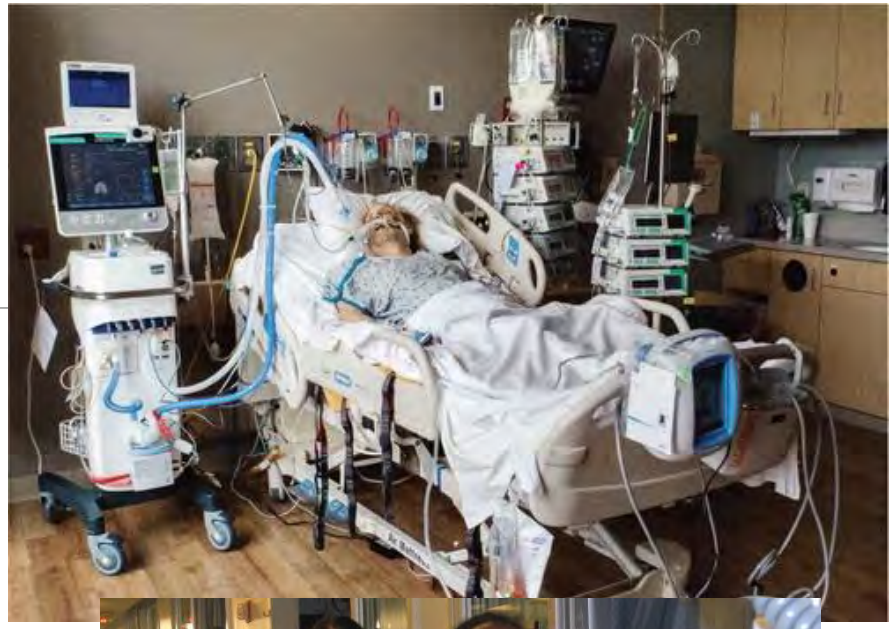
- Location: flexible plastic tube inserted through an incision in the side of the chest into the intrathoracic space
- Uses: Remove air, fluid or pus from intrathoracic space
- Precautions:
  1. DON'T PULL THEM OUT!
  2. Don't spill collection container
  3. Gait belt placement





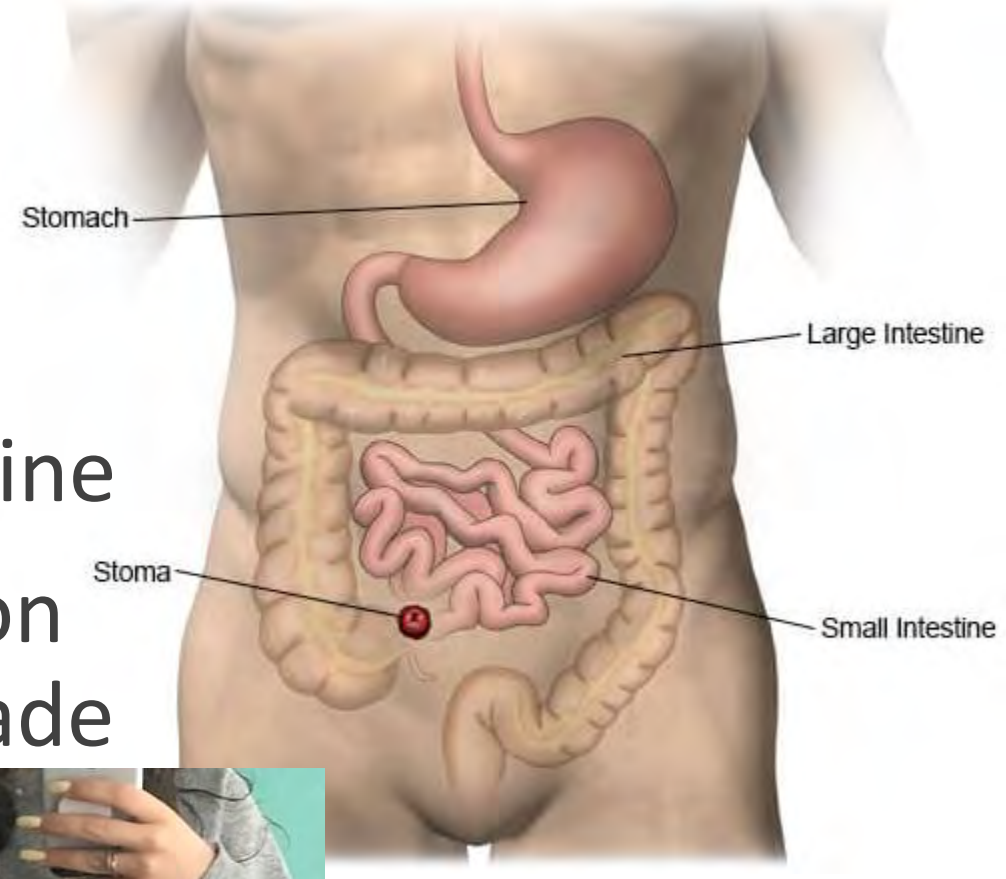
Mechanical Ventilator

- Types:
  1. Volume cycled – delivers a preset volume of gas giving a consistent tidal volume each time
  2. Pressure cycled – uses a preset max pressure of gas limit that allows changes in tidal volume each time to reach the pressure max
- Uses: Produces a controlled flow of gas into a pt's airways creating positive pressure that inflates their lungs
- Precautions: monitor levels, displacement of vent tubes



Ostomy Device

- Location: in the abdomen through a stoma extending into the small intestine
- Uses: provides a method for collection of fecal waste through a surgically made opening
- Precautions:
  1. Gait belt placement
  2. Secure attachment of bag



What we learned

We reviewed the common tubes, lines, and medical equipment we'll see while treating our patients.

- ✓ Feeding Tubes
- ✓ Monitoring Devices
- ✓ Oxygen Therapy
- ✓ Other Acute Devices

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Series

Thanks for Tuning In!

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