MRAD 223:

Medical Accessory Equipment

MRT Program

Objectives

- Casts, Collars and Traction
- Pulse Oximetry and ET
- Urinary Catheters
- Oxygen administration and equipment
- Suctioning
- Cathartics, suppositories and cleansing enemas

Casts

Protect and support fractured or injured bones and joints

- Immobilizes injury to keep the bone in place until it fully heals



Casts

Stronger

Fiberglass

Plaster

Heavy



http://www.cnfmedical.com/wp-content/uploads/2015/12/PerformancePlus.jpg

Technical Factors

Waterproof

Low Air Permeability



http://www.southpointesurgical.com/images/Deroyal/cellona.jpg

Collars

<u>Never</u> Reposition Head or Neck

- Come in different makes/models and sizes
- Reference policies and procedures for safe patient transfers with spinal injuries



http://www.cardiacsafe.com.au/wp-content/uploads/2016/12/RAC210__treck-ezynek-pro-cervical-collar.jpg

Traction

The use of weights, pulleys and ropes to maintain bony alignment during the healing process



http://www.cgmc.com.tw/upimg/4192016173140ky58c8a1102.jpg



Traction

Short-Term and Long-Term

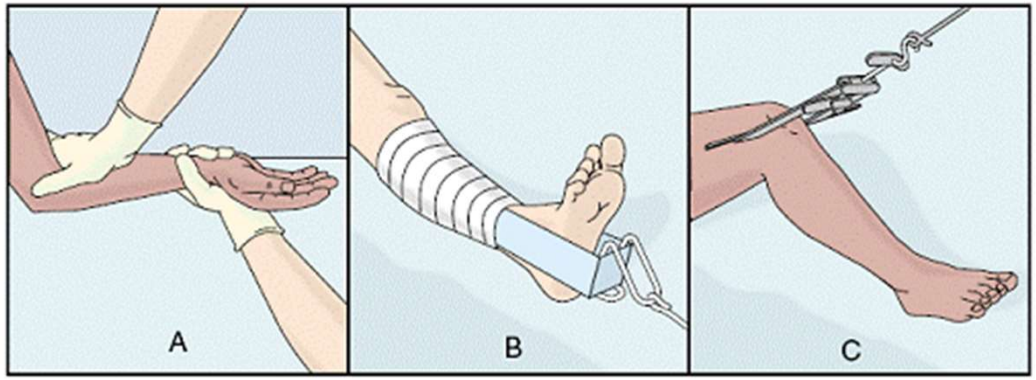


Figure 34-15 Traction Techniques: A. Manual; B. Skin; and C. Skeletal

http://intranet.tdmu.edu.ua/data/kafedra/internal/meds/classes_stud/en.../nurse/en/BSN(4y)/3%20year/Fall%20semester/Integrate%20Nursing%20Practicum/23.Traction%20Pin%20Care.files/image003.gif

Pulse Oximetry

Detects how much oxygen your red blood cells are carrying

- Displayed units = percentage (%)



https://cdn2.hubspot.net/hub/153301/file-1319934430-jpg/low_Oxygen_Levels.jpg

Endotracheal Tube – in trachea to assist with breathing

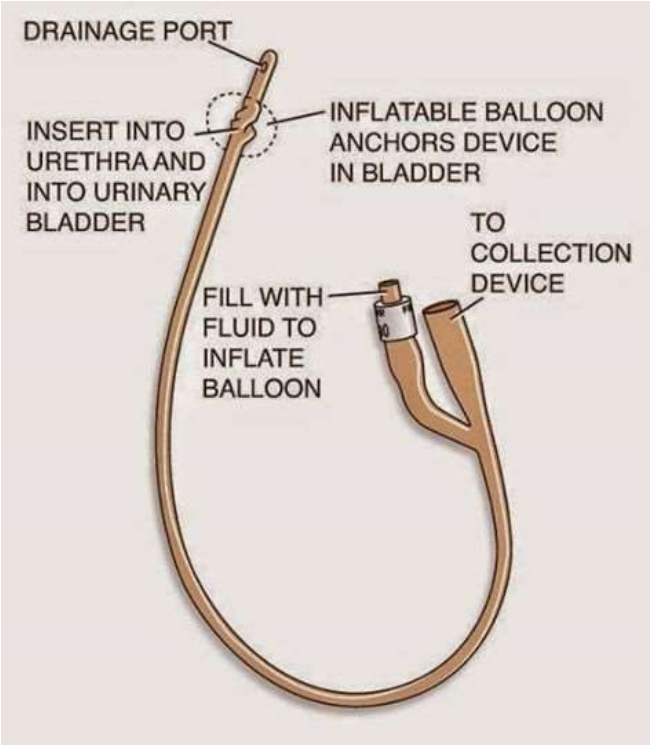


https://cdns.webareacontrol.com/prodimages/1000-X-1000/2/L/2982016654Welcon-Trachtape-Endotracheal-Tube-Securing-Device-L-L.png

Urinary Catheters



http://www.gmoutlook.com/wp-content/uploads/2017/10/Latex-Foley-Catheters-Market.jpg



https://i.pinimg.com/736x/37/30/b8/3730b8e21d9264a3b230cf8ce3960712--urinary-catheterization-hospice.jpg

Urinary catheter drainage bag with in-put and out-put measurements



https://images-na.ssl-images-amazon.com/images/I/41BWk8yFzeL._SX342_.jpg

Oxygen Administration/Equipment

If a pt. is in acute distress, technologists can administer low-flow oxygen and call for help.

Nasal Prongs/Cannula

- Simple
- Long-term use
- 1-6L/min @ a concentration of 24-45%



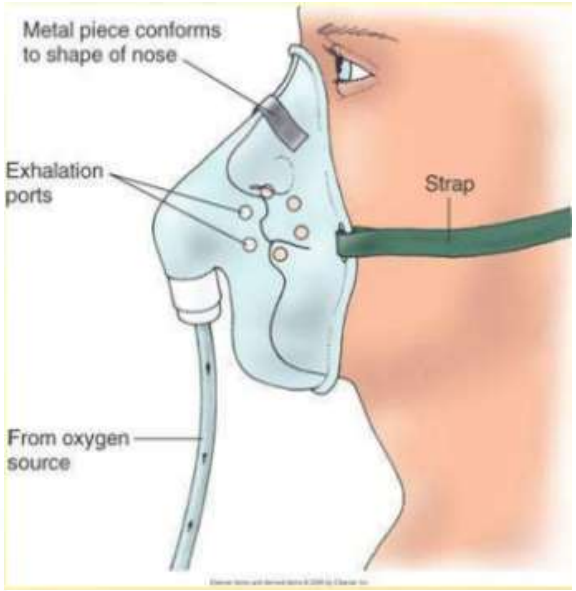


http://cdnmedia.endeavorsuite.com/images/organizations/K 2d5-dfd0-417d-9935-e25451004df0/Oxygen%20Nasal%20Cannula.jpg?v=148125249910

http://www.acesurgical.com/media/catalog/product/cache/1/image/9df78eab33525d08d6e5fb8d27136e95/6/1/61510126_02.jpg

Simple Face Masks

- Oxygen & Humidity
- Short-term use
- 1-10L/min @ a concentration of 40-60%

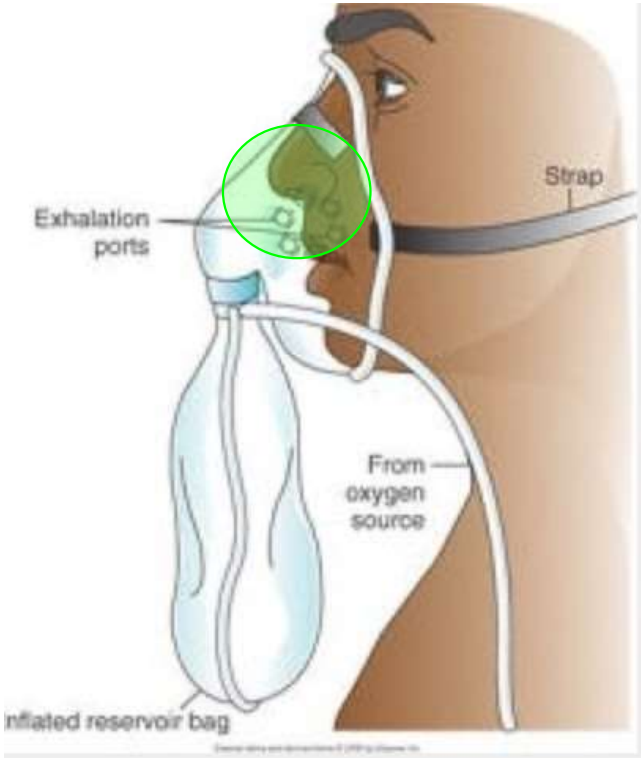


https://image.slidesharecdn.com/oxygentherapy-150524005058-lva1-app6892/95/oxygen-therapy-methods-of-oxygenation-24-638.jpg?cb=1432429684



Non-Rebreather Mask (NRB) - connected to a reservoir bag filled with high concentration of oxygen. Bag attached to oxygen tank.

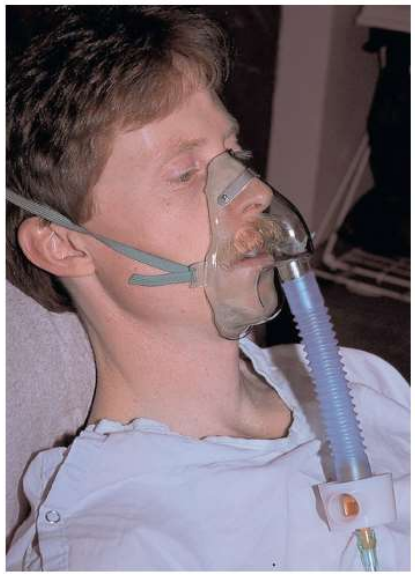
- 100% Oxygen concentration
- 40-70% for partial non-rebreathing masks
- Emergencies: low blood oxygen levels, smoke inhilation, severe COPD, lung trauma
- Patient can receive higher concentration of oxygen

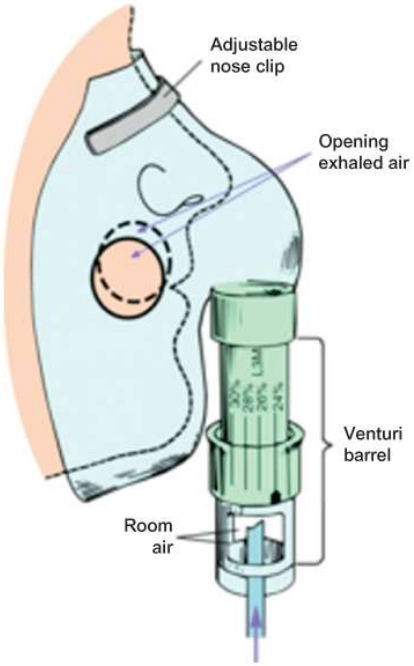


https://allthingsphysicianassistant.files.wordpress.com/2015/12/image38.jpeg

High-Flow (Venturi) masks

- Specialized mask
- More accurately controlled O2 concentration delivery
- 24-60% concentration





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Ehrlich pg. 277 Fig. 15-4

Oxygen Tents

More humidity



Suction Canister and Tubing



Ehrlich pg. 280 Fig. 15-8



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Ehrlich pg. 279 Fig. 15-6

Examples of Yankeur Catheter and Tubing



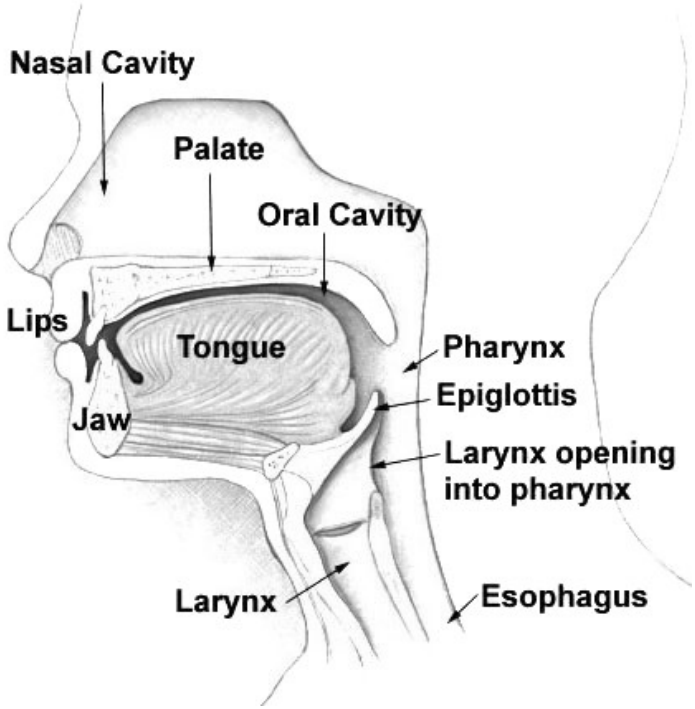


Suction

IMPORTANT- *Suctioning a patient it NOT usually within the technologist's scope of practice. However, in extreme unexpected situations, it may be required.*

- At the start of your shift ensure the pump is working. Test it by listening. There needs to be an inside/disposable container inside the hard outer shell canister.
- Do you have all the equipment required and is it connected properly? i.e.-Yankeur catheter
- Will the tubing be long enough to reach the pt. and is the tubing connector available?

Suctioning



https://upload.wikimedia.org/wikipedia/commons/d/d4/Illu01_head_neck.jpg

- Do **NOT** suction past the pharynx
- *Remember*- This is not within our scope of practice. Only performed in extreme situations.

Cathartics – bowel cleanser

Used to ensure pt. has followed prep instructions, and the success of the prep

- Diet is often used in conjunction with medications to ensure adequate cleansing of the bowel prior to imaging procedure completion
- Medications are stimulants that increase peristalsis of the bowel
  - Acts as strong laxatives
  - Relieves the bowel

Cathartics Continued

Different forms for ingestion

- Carbonated Beverages
- Tablets

Efficacy of Cathartics is improved with increased fluid consumption

- Must have clear liquids
- This can also ↓ pt. discomfort

Due to side effects, pt.'s should be evaluated for medication dosage on an individual basis

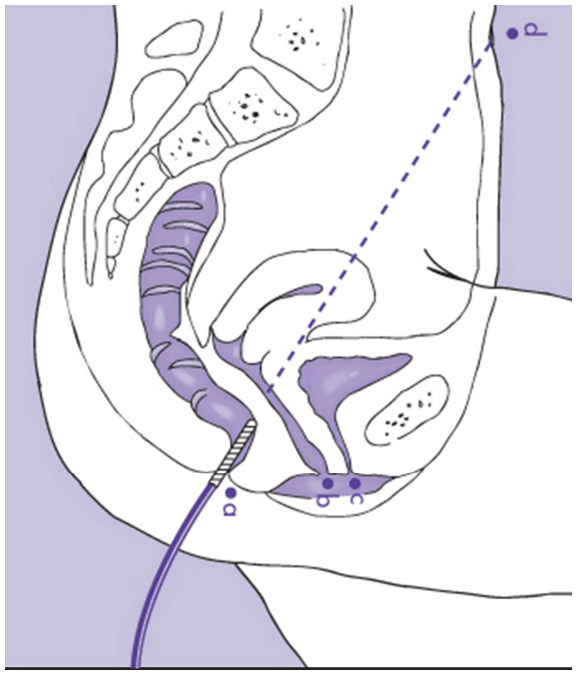
Suppositories

Rectally administered to stimulate peristalsis

- Tablet form
- Only effective at cleansing the distal portion of the bowel

*Always use an **anterior-superior** approach when administering a suppository*

- The suppository is only effective if it is in contact with the mucosal lining
- The pt. must not defecate for at least 30mins post-administration



Ehrlich pg. 310 Fig. 17-2

Cleansing Enemas

Can be therapeutic

- Helps clear the bowel, releasing pressure and possible cramping

Fills the colon with liquid (water/Castile soap) to help purge the bowels of its contents



Cleansing Enemas

When filling the system:

- Ensure the clamp is close to the base of the enema tip
  - Reduces air infiltration
- Hang enema bag from IV pole
  - 18 inches from the table height to ensure adequate filling pressure

Before you administer the cleansing enema, explain the procedure to the pt.

Cleansing Enemas

Important to ask the pt. to hold the contents for approximately 10mins post-administration

- Proper bowel evacuation
- Chart any observations as necessary
  - Old blood = dark appearance
  - Fresh blood = bright red