

Surgical Skin Preparation and Draping

Treating the Surgical Patient



Lesson Objectives:

1. Review the standards of practice for surgical prep and draping
2. Review the guidelines for patient hygiene before surgery
3. Discuss the guidelines for hair removal and skin marking in the surgical prep
4. List the FDA's approved antiseptics for the surgical prep
5. Demonstrate the different procedures for skin prep
6. Discuss the elements of patient safety in regards to skin prep
7. Discuss the rationale and techniques for surgical draping
8. Demonstrate draping techniques of the surgical site
9. Discuss how to remove drapes at the end of a procedure

Principles of Skin Prep

- **Microbial Reduction:**
 - Skin cannot be sterilized, but prep aims for highest microbial reduction.
 - Wide margin prepped around incision to prevent contamination.
- **Spiral Application:**
 - Antiseptic applied in spiral pattern with incision site at center.
- **Avoiding Contamination:**
 - Sponge not passed over previously covered areas to prevent bacterial transfer.
- **Prioritizing Contaminated Areas:**
 - Less contaminated areas prepped first if incision site is more contaminated.
- **Exclusion of Highly Contaminated Areas:**
 - Use plastic or synthetic barrier drapes and cloth towels to exclude nearby highly contaminated areas.

Catheterization

- Drain urine or irrigate bladder
- 5f (Small)-30f (Large)

Urinary
catheters



- Temporary
- Decompress bladder
- **Robinson**-red rubber-straight
- **Coude**-curved tip

Non-
retaining



- **Foley**-Drainage and measurement
- Fill balloon w water

Self-
retaining



Catheters

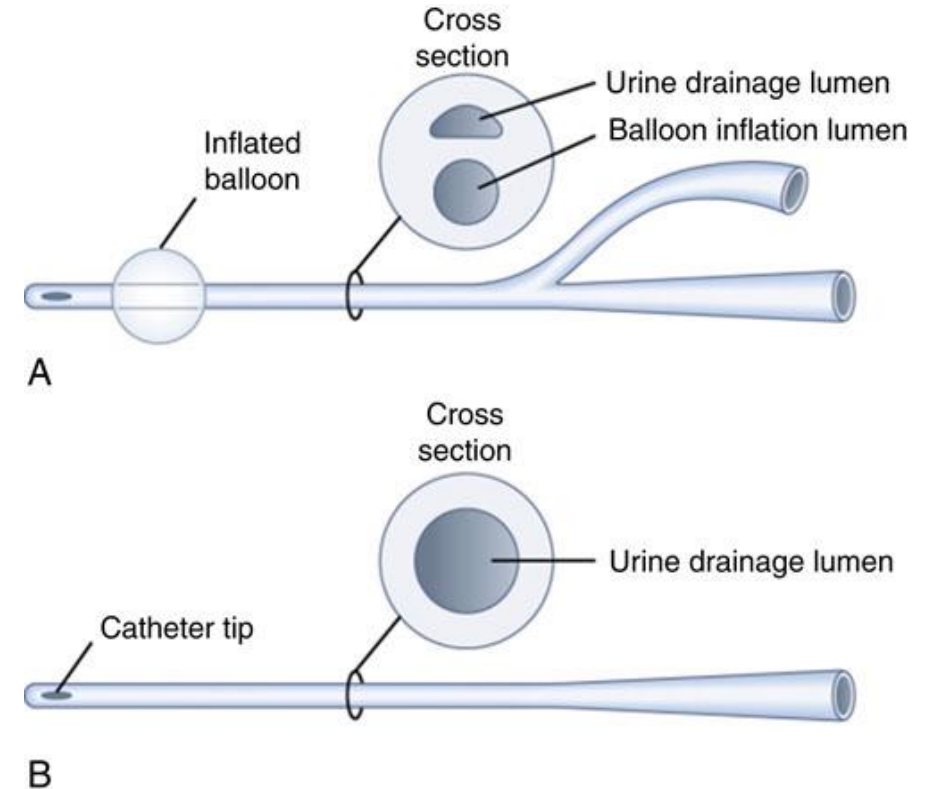
Remove fluid, monitor body function, inject fluid

Urinary Catheterization

- Performed before skin prep unless procedure requires lithotomy position
- Require order from surgeon

- **Catheterization Supplies**

- Foley Catheter: Common for continuous drainage.
- Balloon Sizes: 5 mL for routine, 30 mL for prostatectomy.
- Straight Catheter: Used for pre-surgery bladder emptying.



Procedure for Catheterization

- **Positioning**

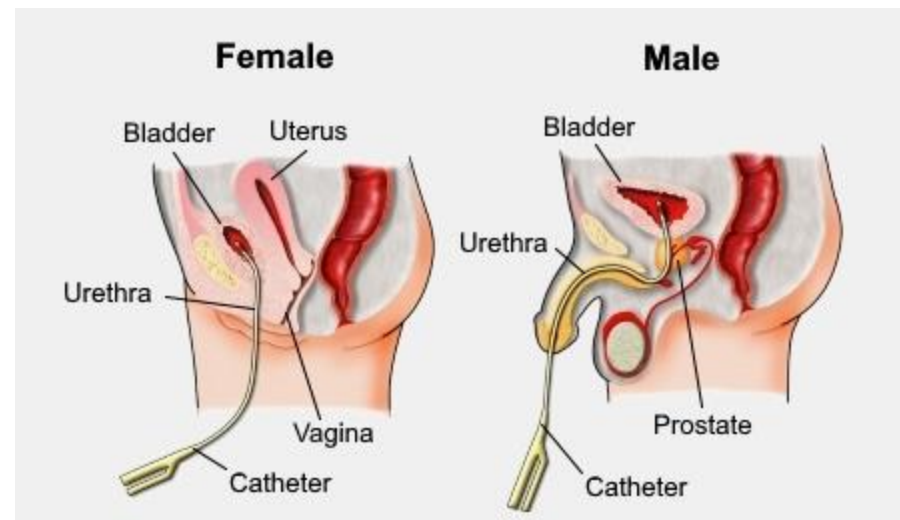
- Female - knees flexed, hips externally rotated; Male - supine.

- **Sterile Technique**

- Dominant hand sterile for prep and insertion; Nondominant hand nonsterile for stabilization.

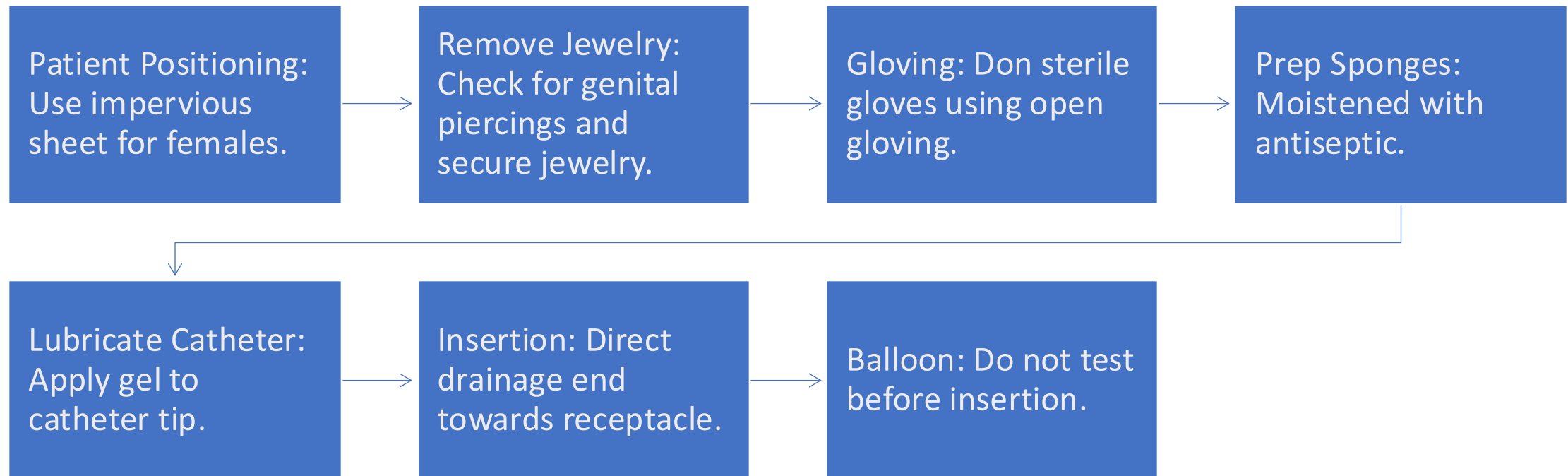
- **Contamination Protocol**

- Stop if dominant hand contaminated; Change gloves or catheter if contaminated.



Technique for Catheterization

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Technique for Catheterization

(Slide 2 of 2)

Male Catheterization

- Draping: Expose only genitalia.
- Prep Technique: Cleanse in circular motion, discard sponge.

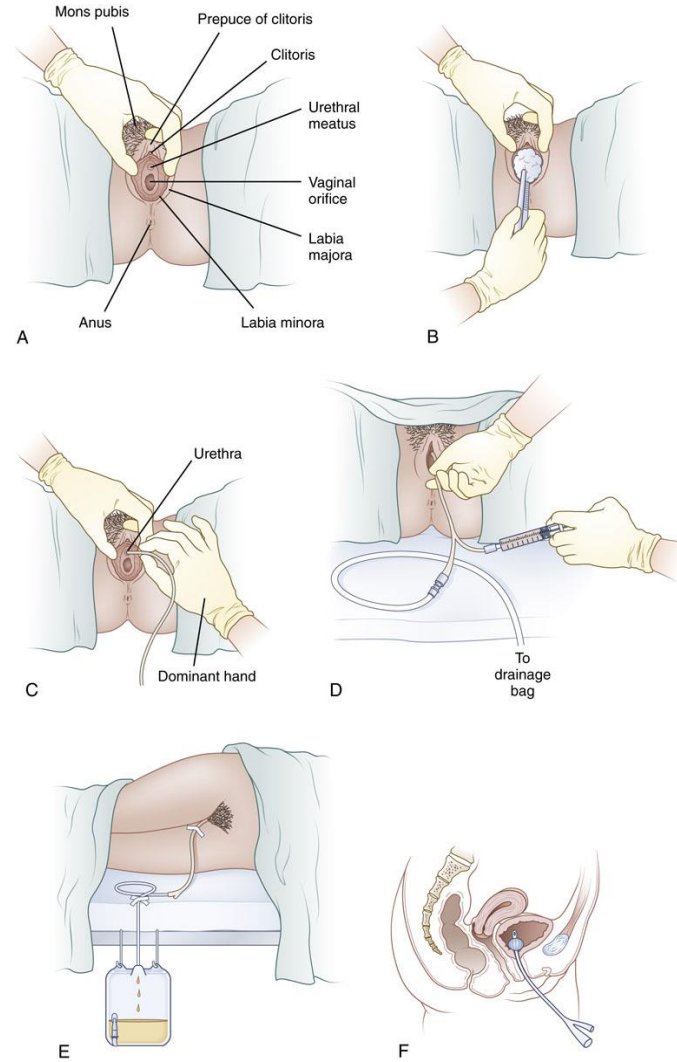
Female Catheterization

- Labial Spreading: Use C-shaped grip, cleanse from apex to anus.
- Sponge Disposal: Avoid contact with prepped area.

Insertion Process

- Catheter Tip: Lubricate and insert with steady pressure.
- Balloon Inflation: Use 10 mL water, remove syringe.
- Caution: Seek medical assessment if blood appears during insertion.

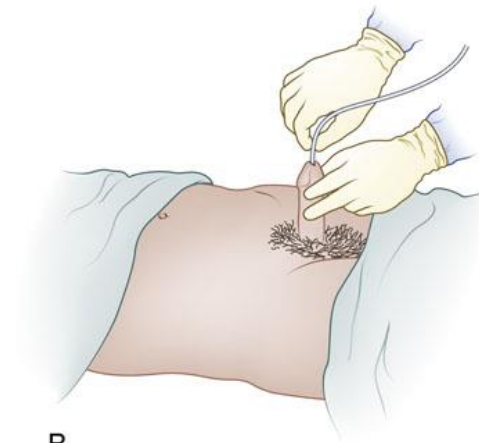
Urinary Catheterization for the Female



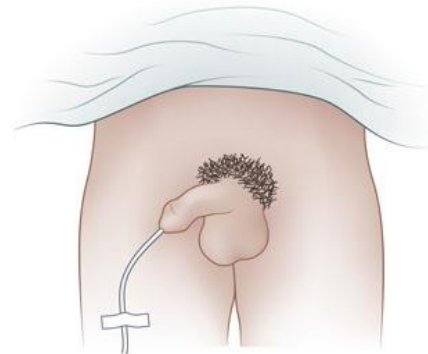
Urinary Catheterization for Male



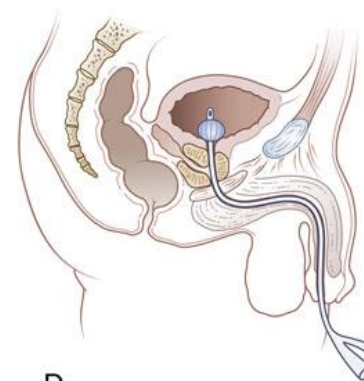
A



B



C



D

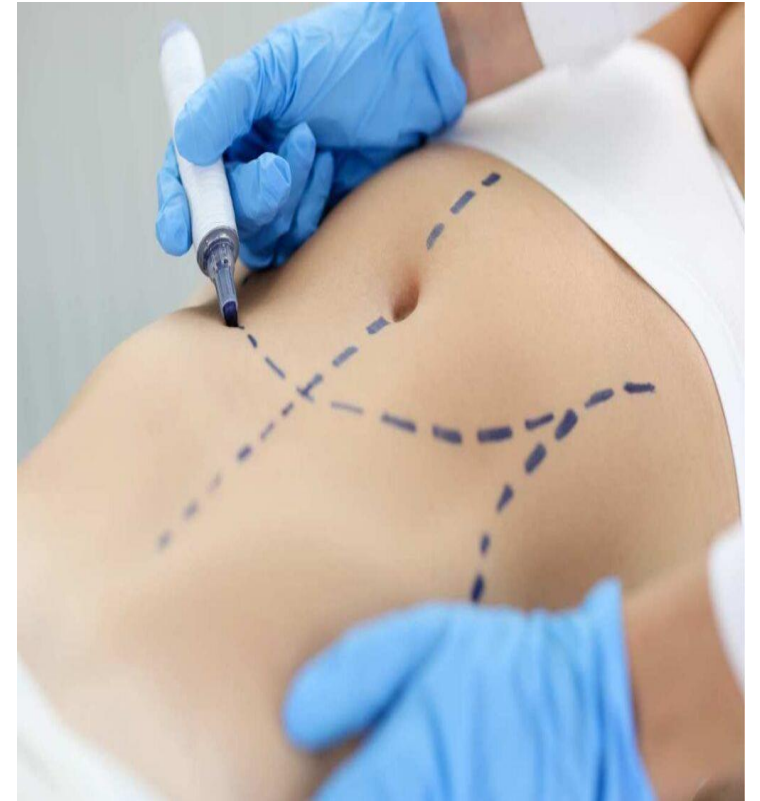
Hair Removal for Surgery

- Requires a physician's order
- Completed as close as possible to the procedure
- Removed with:
 - Razor
 - Clippers
 - Depilatory cream
- Removed in an area away from the location where the surgery will be performed
- Single-use clippers are disposed in biohazard container
- Eyebrows and eyelashes are never removed



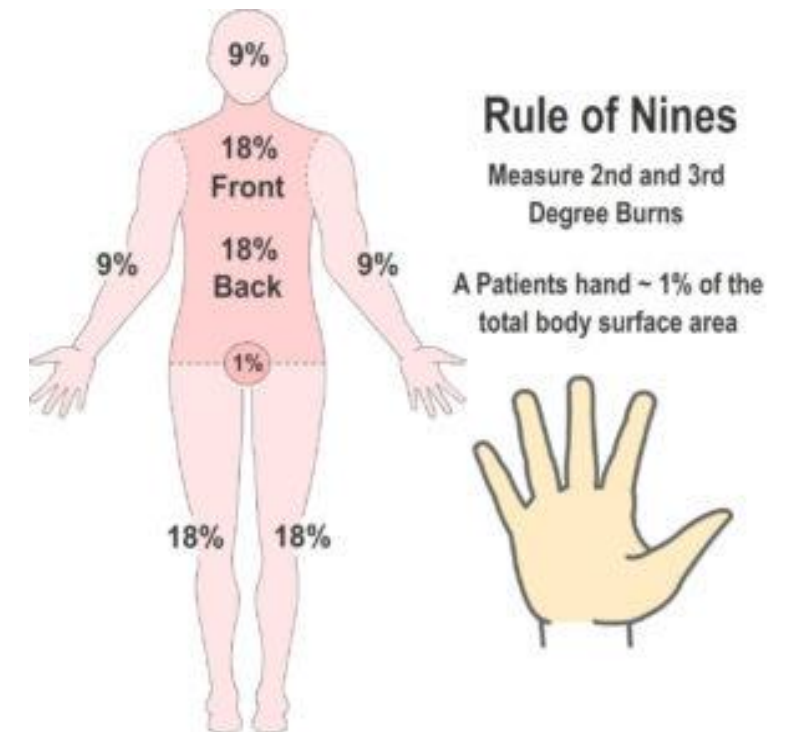
Preoperative Skin Marking

- Required by The Joint Commission Guidelines for Universal Protocol
- Prevents wrong site, wrong procedure, and wrong person surgery
- Verification of side, levels, and multiple sites such as fingers
- **Types of Pens Used**
 - Surgeons utilize surgical skin markers approved for specific use
 - Gentian violet ink recommended for being antiseptic, long-lasting, and easily visible
 - Avoid ballpoint pens or non-approved inks to prevent washing off during prep



Skin Prep Safety

- **Risks of Skin Prep**
 - Chemical Burns: Pooling of agent under patient and equipment.
 - Thermal Burns: Avoid prewarming solutions.
- **Chemical Burns Prevention**
 - Towels: Place around prep site.
 - Waterproof Drape: Under buttocks in lithotomy.
 - Cleanup: Soft towel post-procedure.



Skin Prep Safety

- **Thermal Burns Prevention**
 - No Heating: Avoid microwaving or prewarming.
 - Iodine Sensitivity: Check for allergies.
- **Allergy Management**
 - Chart Check: Verify allergies.
 - Iodophor Caution: Avoid on infants under 2 months.
 - Special Areas: Follow manufacturer's guidelines.



Basic Skin Prep Supplies

- **Antiseptic Prep Solution:** Single-use containers only, avoid stock bottles.
- **Antiseptic Scrub Soap:** If required.
- **Small Sterile Bowls or Cups:** For holding sterile water, saline, and antiseptic.
- **Prep Sponges:** Impregnated with antiseptic soap for two-stage prep.
- **Gauze Sponges:** For single-stage prep as needed.
- **Forceps:** For handling sponges.
- Sterile Gloves
- Sterile Towels
- **Cotton-Tipped Applicators:** As needed for precise application



Skin Prep Checklist

Prepare the
patient

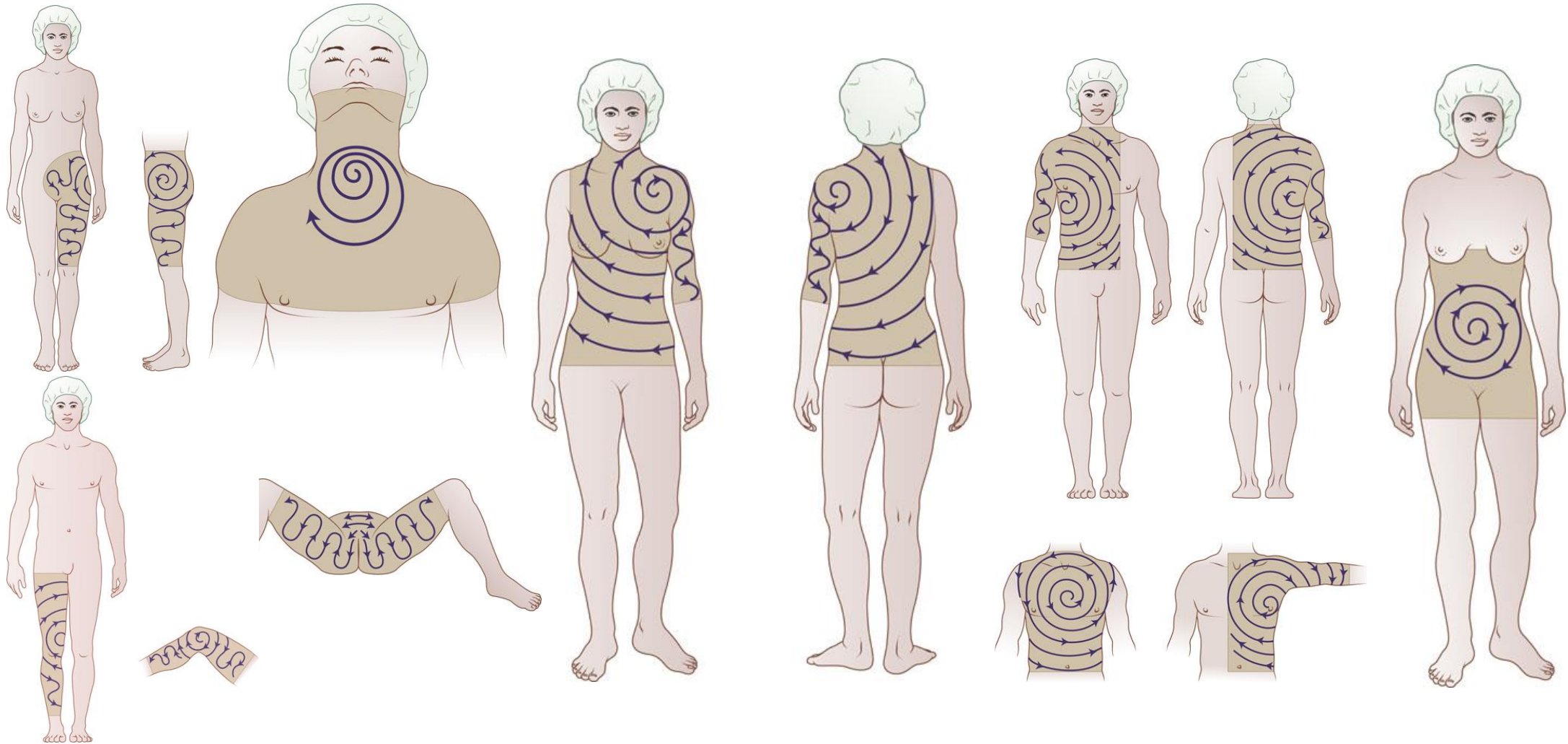
Prepare the
supplies

Prepare
yourself

Two-stage
prep

Single-
stage prep

Techniques for Prep Sites



Common Skin Prep Sites

- Eyes
- Ears
- Face
- Neck
- Breast and thorax
- Perianal region
- Leg and foot
- Shoulder
- Arm and hand
- Abdomen
- Flank or back
- Vulva, perineum, and vagina
- Penis and scrotum

Watch the "Chloraprep" Video for an overview of this device

Chloraprep Video



Chloraprep Video

Summary of Video:

- Chloraprep is Chlorohexidine Gluconate and Alcohol Based
- Start at incision site for at least 30 seconds, scrub (Follow hospital Guidelines)
- Prep contains alcohol, wait at least 3 minutes for it to dry before draping
- Chloraprep cannot be used on open wounds and mucous membranes

**Watch the "Betadine Scrub and Paint" Video for an
overview of this prep**

Betadine Scrub and Paint Video



Betadine Scrub and Paint Video

Summary of Video:

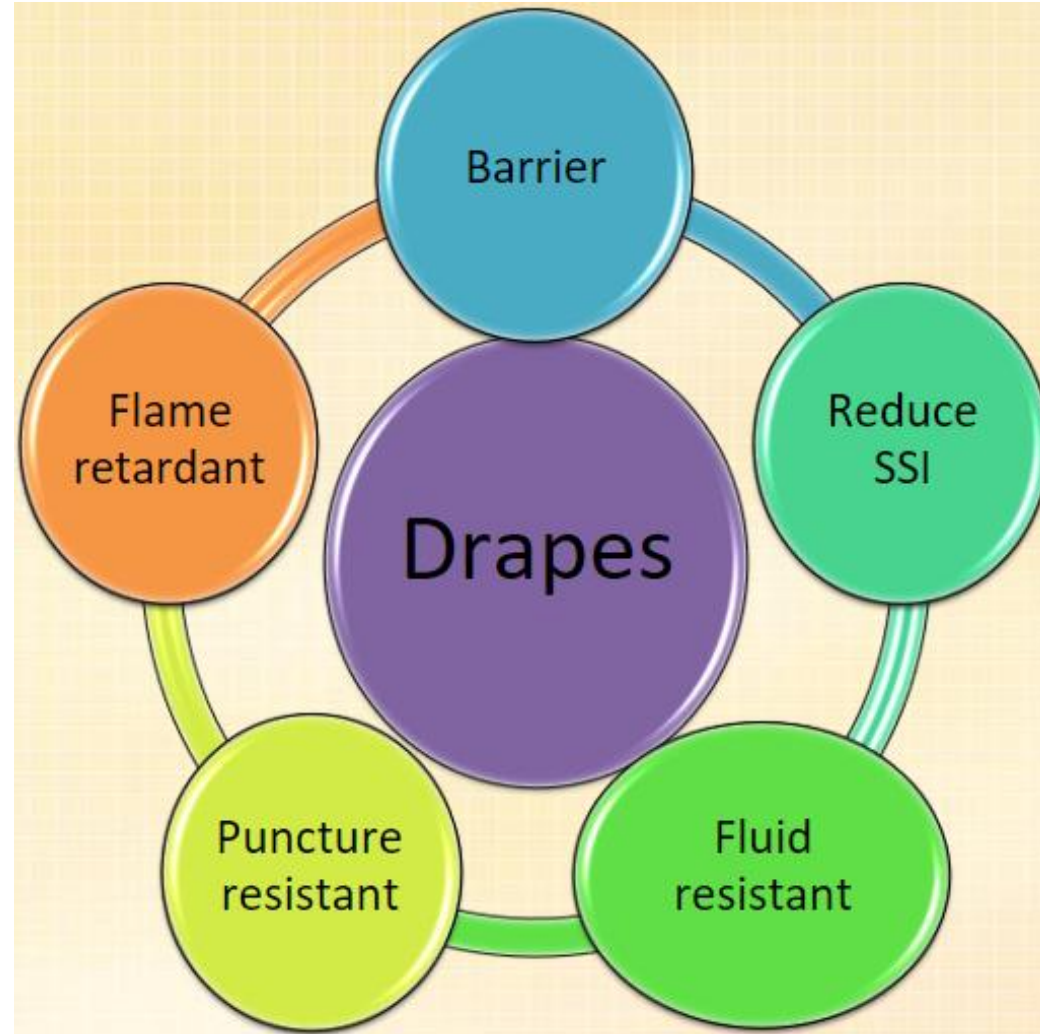
- Line patient with prep towels to prevent pooling
 - Pooled povidone-iodine solution with cause burns
- Scrub First
- Then Paint
- Remember this contains Iodine, so note patient allergies
- Wet prep must be used on open wounds

Draping the Surgical Site

- **Principles**
 - Provide a wide sterile area
- **Learning to drape**
 - May be difficult
 - Maintain aseptic technique
 - Size and shape of drapes vary
 - Must be properly oriented

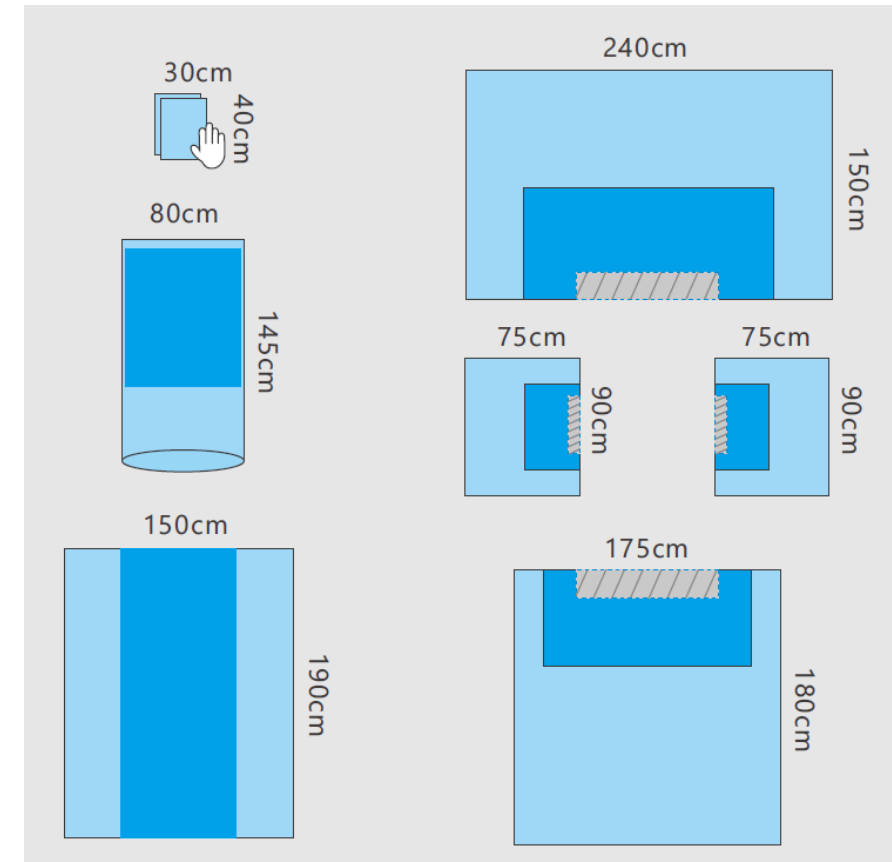


Drapes

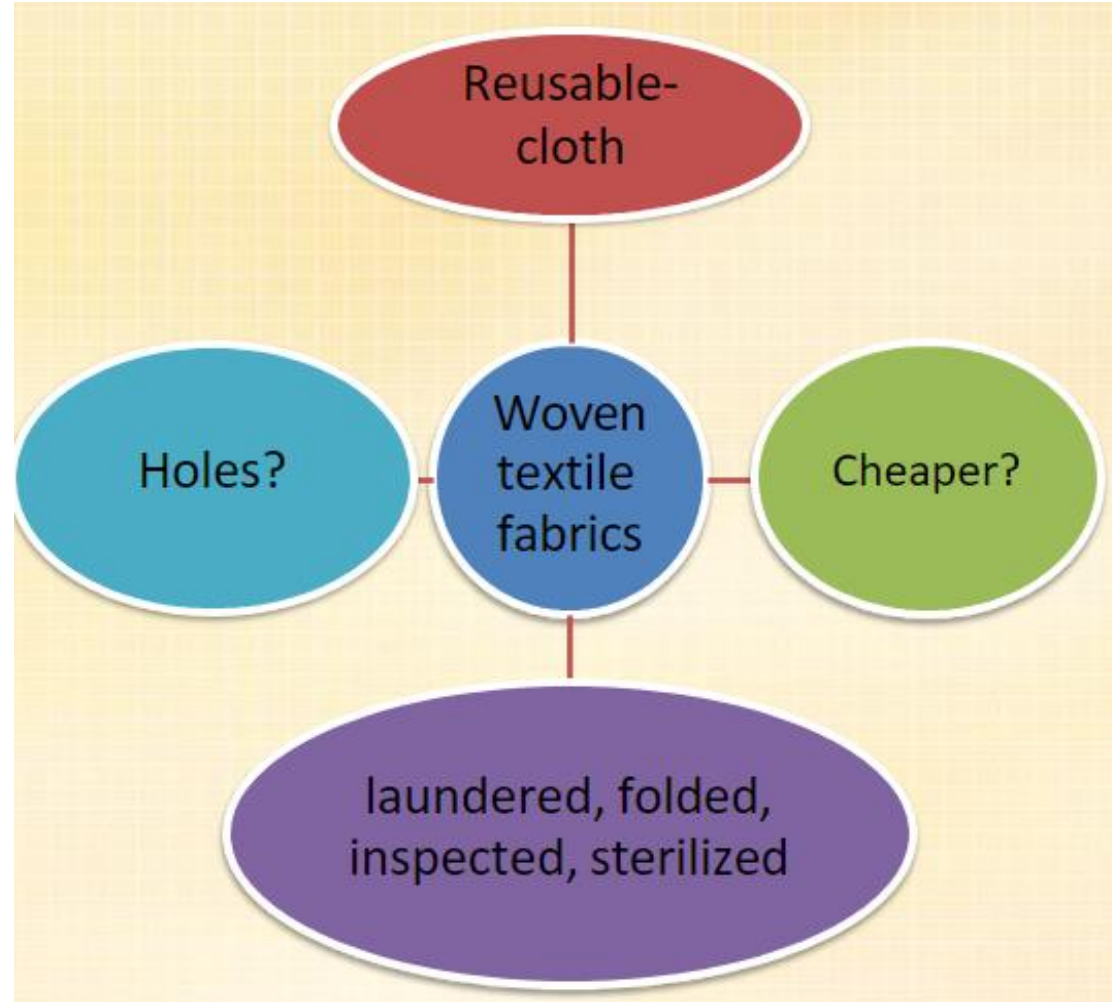


Necessary Draping Materials

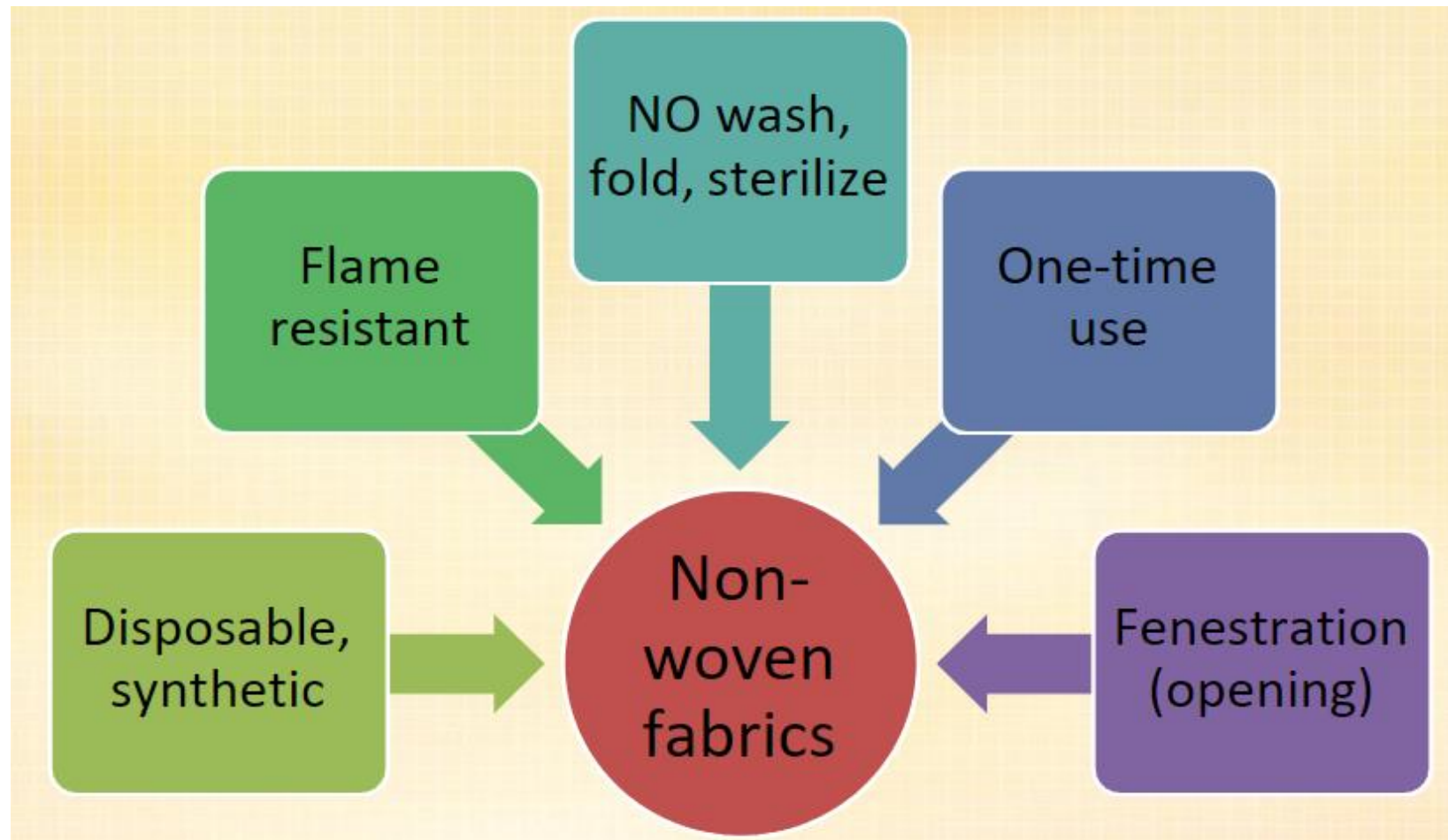
- Materials
 - **Woven**
 - Cotton or cotton synthetic blend
 - **Nonwoven**
 - Bonded synthetic
 - **Plastic**
 - Plastic sheeting



Woven Drapes



Non-woven Drapes



Types of Drapes

(Slide 1 of 2)

Surgical Towels

- Base Layer: Soft, absorbent towels frame incision site.
- Securing Methods: Adhesive drape, clips, or staples.
- Exclusionary Use: Prevent contamination of specific areas.

Plastic Towel Drape

- Adhesive Strip: Excludes non-operative areas.
- Usage Examples: Ear, perineum in gynecology.

Impervious Towels

- Synthetic Material: Adhesive for skin contact.
- Purpose: Exclusion and protection.

Types of Drapes

(Slide 2 of 2)

Plain Sheet

- Utility Drape: Simple, versatile rectangle or square.
- Coverage: Used to cover large body areas or table portions.

Fenestrated Drape

- Operative Site Exposure: Hole or "window" while maintaining sterility.
- Commercial Variations: Designed for specific surgical sites.

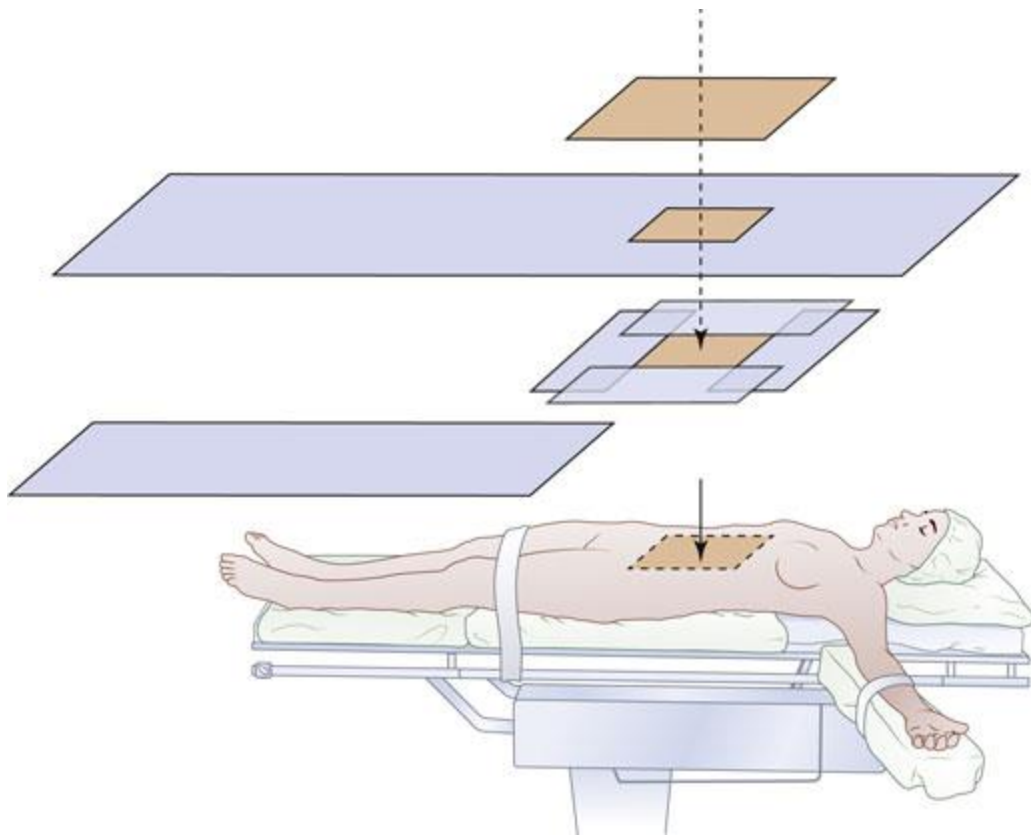
Split and U-Drape

- Large Rectangles: Split at one end, with "tails."
- Common Usage: Orthopedic surgery.

Maintaining Asepsis During Draping

- Handle drapes with little movement
- Do not touch the patient's body or nonsterile surfaces
- Do not shift or move a drape
- Use nonpenetrating towel clamps
- Pass draping towels correctly
- Any portion of the drape that falls below the top of the table is nonsterile
- The edges are not sterile once placed
- Do not reach over the prepped surgical site
- Use impervious drapes to avoid strike-through contamination
- Aluminum-coated drapes are used for laser cases
- Plan ahead for draping

Principles of Draping



- **Fan Folding:** All drapes are folded in a fan pattern for controlled application.
- **Strategic Placement:** Position folded drapes for sequential unfolding, ensuring control during application.
- **Layering:** Each drape represents a layer, with the first layer starting at the incision site and subsequent layers extending outward.
- **Standard Order:** Layering follows a standard sequence, from the incision site to the periphery.

Common Surgical Sites Requiring Draping

- Abdomen
- Perineal
- Leg/hip
- Knee
- Hand
- Shoulder
- Face
- Eye
- Cranium

Watch the "Draping Supine or Prone" Video

Draping Supine or Prone Video



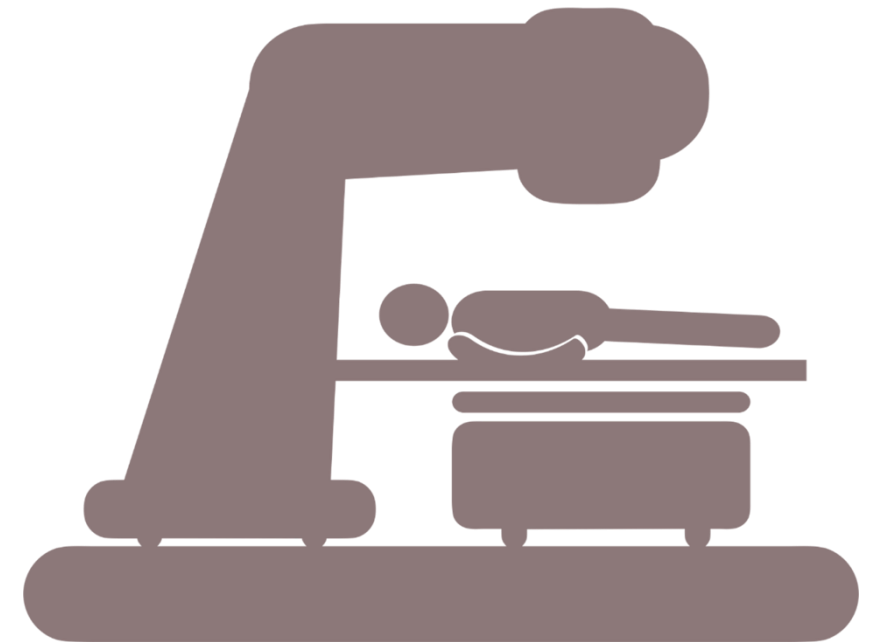
Draping Supine or Prone Video

Summary of Video:

- Surgeon first, create a cuff, never move down or up
- Place towels around prep area
- Follow diagram on drape for placement of specialty drape

Draping the Surgical Equipment

- Equipment may need to be within the sterile field and will have a specialty drape for this. Some of the more common pieces of equipment:
 - Microscope
 - C-arm
 - Robotic equipment
- At close of procedure, all instruments and equipment must be removed from top drape



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Watch the Video from Chapter 17 of the E-book

- Watch the videos on "Patient Prep" , "Draping" from **Surgical Technology - Elsevier eBook on VitalSource, 8th Edition** by logging into your Evolve account
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Thank you!

Get ready for your quiz and rest of the activities now. Best of luck!



Congratulations!

Lesson 17 is complete.