Surgical Scrubbing, Gowning and Gloving

Aim
To minimise the risk of infection from microorganisms present at the time of interventional procedures and surgery.

Background
The patient’s surgical outcome is influenced by the creation and maintenance of an aseptic environment.

The surgical scrub is the process of removing debris and transient microorganisms from the hands and forearms, reducing the residual microbial count and leaving an antimicrobial residue on the skin to prevent growth of microorganisms for several hours.

The wearing of sterile gowns and gloves by the surgical scrub team minimises the risk of surgical wound infection in the patient, and protects the team from exposure to contamination from blood and other body fluids.

Key points
1. All members of the surgical scrub team shall be appropriately dressed in perioperative attire and personal protective equipment prior to commencing the surgical scrub.

2. Skin disinfectants and or antiseptics used for the surgical scrub shall be approved by the Therapeutic Goods Administration and used in accordance with the manufacturer’s recommendations.

3. The surgical scrub team shall follow a standardised procedure for the surgical scrub.

4. The surgical gown shall be presented in a manner that enables its application using an aseptic technique.

5. Surgical gloves shall be applied in an aseptic manner.

6. Double gloving is recommended.

7. During long surgical cases top gloves should be changed between 90 minutes and 2 hours\(^1\).

8. A rescrub and change of gown and gloves is required if the sterility is compromised during the case.

9. A three minute scrub shall be undertaken as the first scrub of the day.

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\(^1\) Refer to the Disinfection and Sterilisation Procedure for guidance on when gloves should be changed.
10. Subsequent scrubs of 2 minutes shall be undertaken between cases.

11. Antimicrobial surgical hand scrub agents and alcohol based surgical rub agents should not be combined sequentially.

**Preparation**

**Surgical Scrub Team Members**

- Theatre suite attire shall be worn
- Bare below elbows at all times
- Clean closed in shoes, trainers, rubber boots or clogs shall be worn in theatre
- Hair completely covered with disposable hat provided or clean cloth hat
- Facial hair must be covered with a mask and disposable hood worn
- Headdresses worn for religious reason must be clean and for the purpose of wearing in theatre
- Remove all jewellery from the hands and arms (e.g. rings with stones, watches and bracelets)
- If unable to remove wedding ring, please pay particular attention to scrubbing under the ring
- Appropriate mask to be worn with protective eyewear
- Protective eyewear must be worn in theatre
- Ensure sleeves are above elbows
- Nails shall be short, clean and free of artificial acrylic nails and nail polish
- Ensure sterile gown pack and gloves are opened ready for use
- Disposable AAMI 3 or 4 gown must be used for surgery.

**Note:** for insertion of spinal/epidural anaesthetist will use AAMI 2 gowns.
First surgical scrub of the day
First case of the day: 3 minutes duration

3 Minute Scrub With Brush

First Scrub Of The Day

1. Remove all jewellery
   - Apply PPE
     - (Face mask & eyeshield)

2. Open brush

3. Turn on tap
   - Rinse hands and arms
   - Select cleanser
   - Cleanser needs contact with skin for 2 minutes
   - As per manufacturer’s instructions, apply:
     - 2 Pumps Betadine OR
     - 2 Pumps Chlorhexidine

4. Cover hands and arms with cleanser 2.5 cm beyond elbows

5. Use pick for cleaning fingernails

6. Use brush for fingernails only
   - Discard brush after use
   - Do not rinse off

Thereafter 2 Minutes No-brush Scrub

7. Wash between fingers

8. Wash front and backs of hands

9. Use circular downward movement from wrists to forearm
   - Hands must remain higher than elbows at all times

10. Rinse from fingertips down to elbows

11. Reapply cleanser to hands
    - Repeat steps 7, 8
    - Use circular motion from hands to wrists to finish
    - Rinse from fingertips down to elbows

12. Turn off tap with elbow
    - Let water drip from elbows

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Note: Non-medicated soap will be available to use for the handwash before drying the hands and using the skinman 90 surgical rub product. The non-medicated soap will be situated near to the skinman 90 and the instructions for use.

**Skinman® surgical handrub protocol**

**Step 1**
Dispense 1 pump of Skinman 90 and distribute into both hands. Then dispense 2-3 pumps of Skinman 90 into palm of left hand.

**Step 2**
Dip fingers of right hand into Skinman 90 to decontaminate nails.

**Step 3**
Apply Skinman 90 to right hand and forearm up to elbow continue rubbing for 10-15 seconds.

**Step 4**
Dispense 2-3 pumps of Skinman 90 into palm of right hand.

**Step 5**
Dip fingers of left hand into Skinman 90 to decontaminate nails.

**Step 6**
Apply Skinman 90 to left hand and forearm up to elbow continue rubbing for 10-15 seconds.

**Step 7**
Dispense 1-2 pumps of Skinman 90 into palm of hands and continue rubbing hands and wrists for 60 seconds (see Steps 8-10).

**Step 8**
Cover whole surface of hands up to wrists, rubbing palm to palm.

**Step 9**
Rub over the back of each hand with fingers interlaced and rub palms back and forth.

**Step 10**
Grip the fingers on each hand and rub in a sideways back and forth movement.

**Step 11**
Clasp each thumb in the opposite hand and rotate.

**Step 12**
When hands are dry, sterile surgical clothing and gloves can be donned.

Acknowledgments to EcoLab for permission to use the above diagram.
Subsequent Scrubs:
- Repeat steps as above. Washing is not required unless hands are visibly soiled.

Gowning and gloving:
- Disposable gowns only are used for surgery
- The closed glove method of gloving shall be used to don gloves
- Double gloving is recommended practice, the gloves underneath should be ½ size larger than the gloves on top, the top gloves will be the normal size for the wearer
- Should a change of gloves be required during surgery and the user has donned only 1 pair of gloves, the open method should be used to don gloves, the sleeves of the gown must remain at the wrist, not pulled down over the hand.

Note: medical staff must gown, glove and wear PPE when uterine manipulation is required.

Gloving:
1) Closed Glove Technique  2) Open Glove Technique

Closed Glove Technique
This is the recommended technique for those involved in a surgical procedure.
- Grip the sterile inside pack through your gown cuffs keeping the fingers inside the gown cuff, open and display the gloves upside down
- Place your right thumb inside the top cuff edge of the right glove (thumb to thumb), pick up and lay flat on your right hand.
- Place left thumb under the cuff exposed on right glove, and stretch glove over right hand
- Keeping your right fingers straight, pull down the glove with your left hand, using a combination of glove and sleeve pulling
- Ensure the white cuff remains inside the glove
- Repeat procedure with left glove.

Once gowned and gloved, areas considered most sterile are between the nipple line and umbilicus, the fingertips to the elbow.

Disposable gowns have a left side tie and a right side tie, both attached to a sterile card. The left tie is released from the card which is held by the scrub person, and the card with right tie attached is handed out to the scout. The scout will hold on to one side of the card while the scrub person pivots round and their back is covered. The scrubbed person releases the tie from the card and ties both ties at the side. The card is disposed of by the scout. The ties are tied at the front.
**Open Glove Technique:**
This technique should be used if contamination has occurred at the table. This technique can be used if a catheterisation is performed on table by the circulating nurse.

- Pick up the cuff of the right glove with your left hand. Slide your right hand into the glove until you have a snug fit over the thumb joints and knuckles. Your bare left hand should only touch the folded cuff - the rest of the glove remains sterile.
- Slide your fingertips into the folded cuff of the left glove
- Pull out the glove and fit your left hand into it
- Unfold the cuffs down over your gown sleeves. Make sure your gloved finger tips do not touch your bare forearms or wrists.

### References

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### Keywords:
Surgical scrubbing, surgical gowning, gloving, perioperative services, surgical preparation, preparation for surgery

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