

➤ For steps to follow in *all* procedures, refer to the inside back cover of Volume 2.

### critical aspects

- Determine the institution's policy for duration of the scrub and type of cleaning product to be used.
- Gather supplies and set up sterile gloves, gown, and towel before beginning the scrub.
- Remove jewelry prior to starting the scrub.
- Don shoe covers, a cap, and a mask. Tuck hair completely under the cap.
- Use a pick to remove dirt and debris from under the nails; discard.
- Turn the water on and off, using the knee or foot controls.
- Wet hands and forearms from fingertips to elbows.
- Keep hands above the elbows and away from the body at all times.
- Do not touch the inside of the sink during the cleansing procedure.
- Rinse and dispense soap into hands each time when cleansing a new area. Scrub in this order:
  - Nails, fingers, hands, and lower third (nearest the wrist) of the nondominant arm.
  - Nails, fingers, hands, and lower forearm of your dominant arm.
  - Upper 2/3 of your nondominant arm and 2 inches above the elbow.
  - Upper of your dominant arm and 2 inches above the elbow.
  - Repeat all the scrub steps.
- The scrub is complete after cleansing every aspect of the hands and forearms for three full minutes.
- Keep the arms flexed and hands held higher than the elbows and away from the body.
- Grasp the sterile towel, and move away from the sterile field.
- Lean forward slightly, and allow the towel to fall open, being careful not to let it touch clothing or gown.
- Use one end of the towel to dry one hand and arm. Dry the other hand and arm with the opposite end of the towel.

### Equipment

- Antimicrobial soap
- Plastic disposable nail pick
- Sterile towel
- Surgical cap and mask
- Deep basin sink with knee, foot, or motion-operated controls

### Procedural Steps

**Step 1** Determine the institution's policy for duration of the brushless surgical scrub and type of cleaning product to be used.

Policies vary from institution to institution, although all should be based on sound principles for infection control designed in accordance with CDC guidelines.

**Step 2** Prior to starting the surgical scrub, gather supplies and set up sterile gloves, gown, and towel for use after the scrub.

To maintain sterility of the hands after the scrub, the sterile gloves, gown, and towel must be ready prior to washing.

**Step 3** Avoid use of artificial nails and extenders and chipped polish when in

direct contact with patients or high-risk situations, such as the perioperative setting or among those receiving immunosuppressant therapy.

Individuals wearing artificial nails have been shown to harbor more pathogenic organisms in the subungual area than those with natural nails, particularly gram negative bacilli and various strains of yeast.



## PROCEDURE 20–3A

## Brushless Surgical Scrub *(continued)*

**Step 4** Remove jewelry on the hands prior to starting the surgical scrub.

Removing hand jewelry is advised to increase the quality of hand hygiene and reduce the spread of potential pathogens, although there is less evidence to support this measure.

**Step 5** Don shoe covers, a cap, and a mask. Tuck hair completely under the cap.

Masks on health-care personnel engaged in procedures requiring sterile technique shield possible airborne pathogens carried in the nose or mouth. Covering the hair reduces the transmission of pathogenic organisms that are adherent to the hair shaft or scalp, which is a warm, moist environment for organisms.

**Step 6** Use a pick to remove dirt and debris from under the nails; discard.

The nail bed is a source for harboring dirt and debris, leading to contamination of the sterile field.

**Step 7** Turn on the water, using the knee or foot controls. The temperature usually adjusts automatically.

Water temperature that is too hot can cause injury to the skin, making it prone for disruption in the skin integrity. Additionally, scalding water can remove the skin's normal flora and natural oil, which has a protectant effect.

**Step 8** Wet hands and forearms from fingertips to elbows, keeping hands above the elbows and away from the body at all times.

Applying the principle of clean-to-dirty, the area above the elbows that is more distal to the extremities is considered cleaner than the finger tips. Therefore, clean water should run down the arms in order to prevent contamination from microbes on the hands.

**Step 9** Dispense a palmful of antibacterial soap into your dominant hand. Insert the fingertips of your nondominant hand into the soap using a twisting motion to apply the product.

**Step 10** Vigorously rub all surfaces of your nondominant hand and fingers, adding water as needed. Be sure to rub each digit on all sides. Do not touch the inside of the sink during the cleansing procedure.

Complete contact and friction are necessary for removal of microorganisms adherent to the skin's surface. The inside of the sink is considered contaminated with microbes and should be avoided. Incidental contact necessitates repeating the cleansing procedure.

**Step 11** Then rub the hands together and cleanse the back side of the hand and the lower third of your nondominant arm (nearest the wrist).

Although the palmar surface carries more organisms than the back side of the hands and arms, this area, nonetheless, should be cleansed thoroughly to reduce microbial colonization.

**Step 12** Rinse using deep basin sink with knee, foot, or motion-operated controls.

Improved adherence to sterile technique commonly results from use of motion or foot/knee-operated controls for faucets.

**Step 13** Repeat the hand cleansing and rinsing process on the dominant hand and forearm.

**Step 14** Rinse and dispense soap into hands each time when cleansing a new area. Be sure the soap dispenser is not blocked or partially blocked as this can reduce the proper amount of product needed to reduce bacterial colonization.

Many products are available for the brushless surgical scrub procedure. Adhere to the manufacturer's guidelines for use.

**Step 15** Cleanse the remaining 2/3 of the nondominant arm to 2 inches above the elbow. Cover every aspect of the middle and upper third of the forearm.

**Step 16** Repeat the wrist-to-elbow scrub on the dominant arm.

**Step 17** Rinse each arm thoroughly and independently.

**Step 18** Repeat all the scrub steps (9 through 17), stopping before the elbow on this time. The scrub is complete after cleansing every aspect of the hands and forearms for 3 full minutes.

The CDC promotes the 2–3 minute scrub time using an antiseptic detergent in order to achieve maximal microbicidal activity while avoiding irritant contact dermatitis associated with use of an abrasive sponge. Reduced time required to perform the surgical scrub often results in increased compliance to the prescribed technique.

**Step 19** With the arms flexed and hands held higher than the elbows away from the body, move to the area with the sterile towel and gown.

Because greater numbers of microorganisms are located on the palmar and digital surfaces of the hands, clean water of the scrub procedure should travel down the arms from the elbows to fingertips in order to reduce contamination of cleaner surfaces.

**Step 20** Grasp the sterile towel, and move away from the sterile field. Lean forward slightly, and allow the towel to fall open, being careful not to let it touch clothing or gown.

This motion is performed to maintain a dry sterile field and prevent inadvertent brushing against the table with contamination of the field.

## PROCEDURE 20–3A

## Brushless Surgical Scrub *(continued)*

**Step 21** Use one end of the towel to dry one hand and arm. Dry the other hand and arm with the opposite end of the towel.

Use of a separate section of the towel guards against inadvertently rewetting the skin or contaminating an already clean area.

**Step 22** Allow time for the skin to dry thoroughly before donning sterile gloves.

Dry skin prevents maceration and allows the gloves to go on more easily. Moisture left on the skin can be a source for further microbial contamination.

**Step 23** Once the brushless scrub is complete, prevent contamination of the

hands and forearms when moving from the scrub sink to the sterile table by keeping the hands in front of the body and above the waist.

It may be necessary to enter back through the door of the surgical suite if there is potential content that could impose contamination of the scrubbed hands.

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### Evaluation

NA

### Documentation

A brushless surgical hand scrub does not require documentation in the patient's medical record. However, adherence to the institution's policy for performing the technique is mandatory.

### Patient Teaching

If the patient is alert for the procedure, explain the purpose of a diligent approach to surgical scrub for promoting a low-risk environment for infection.

### Home Care Adaptations

- Sinks in the home environment typically do not have knee or foot-operated controls or motion-sensor on/off devices. Therefore, contact with the faucet handles is performed with barrier objects (e.g., a paper towel) between the clean hands and the environmental surface in the home.

## References

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