

ASEPSIS

-PREETI SAMUEL

ASEPSIS

Asepsis is the state of being free of pathogenic micro-organisms.

DEFINITION-

Asepsis is the practice to reduce or eliminate contaminants (such as bacteria, fungi) from entering the operative field in surgery or medicine to prevent infection.

ASEPTIC TECHNIQUE-

Aseptic technique is the effort to keep a client as free from hospital micro-organisms as possible.

PRINCIPLES OF ASEPSIS

Three things are important in achieving asepsis are the reduction of time, trauma and trash.

1. Time of surgical procedure is an important factor, as longer a procedure takes the greater possibility of contamination and therefore infection.
2. Trauma that is sustained by the tissue as a result of rough handling, drying out upon exposure to room air, excessive dead space, implants or foreign bodies or non-optimal temperature will contribute to infection.
3. Trash refers to contamination by bacteria or foreign matter.

ESSENTIAL COMPONENTS OF MAINTAINING ASEPSIS ARE –

- Hand washing**
- Utilizing gloves, gown, and mask**
- Cleaning equipment**
- Handling linens in ways that prevent germs from spreading.**

TYPES OF ASEPSIS

- 1. Medical asepsis**
- 2. Surgical asepsis**

MEDICAL ASEPSIS-

Medical asepsis or clean technique includes procedures used to reduce the number of micro-organisms and prevent their spread.

Eg: Hand washing

SURGICAL ASEPSIS-

Surgical asepsis or sterile technique includes procedure used to eliminate micro-organisms from the area. Sterile techniques are practiced in Operation Theatre (OT) and means of areas where sterile instruments are used.

Step-1



Rub palms together

Step-2



Rub the back of both hands

Step-3



Interlock fingers and rub the hands together.

Step-4



Interlock fingers and rub the back of fingers of both hands

Step-5



Rub thumb in a rotating manner followed by the area between index finger & thumb.

Step-6



Rub fingertips on palm for both hands

Step-7



Rub both wrists in a rotating manner
rinse and dry thoroughly.

MEDICAL HANDWASHING

- **The most important technique in preventing and controlling transmission of pathogens is hand washing.**
- **Hand washing is a vigorous, brief rubbing together of all surfaces of hands lathered in soap, followed by rinsing under stream of water.**

EQUIPMENTS FOR MEDICAL HANDWASHING-

- **Easy to reach sink with warm running water.**
- **Antimicrobial soap/ regular soap.**
- **Towel**

HANDWASHING

Indications for hand washing-

Hands should be washed:

- Before and after any aseptic technique or invasive procedure.
- Immediately after gloves are removed.
- Before contact with any susceptible patient or site, for example, intravenous sites or wounds.
- After contact with any body fluids, this also includes contact with toileting facilities.
- After handling contaminated equipment, waste or laundry.
- Before and after contact with any patient under isolation.

Soap can be used for routine decontamination of hands. However, bars of soap sitting in stagnant water should be avoided.

ANTISEPTIC SOLUTION USED-

An effective antiseptic hand cleanser will contain any of the following antiseptics:

- **Chlorhexidine gluconate 2–4%**
- **70% ethyl alcohol and 70–90% isopropylalcohol**
- **Iodophor 2.5%**

PROCEDURE

1. Push wrist watch and long uniform sleeves backwards and avoid wearing rings and ornaments.
2. Finger nails should short and filled
3. Stand in front of the sink, keeping hands and uniform away from sink surface.
4. Turn on water press pedals of the tap to regulate flow.
5. Avoid splashing of water against uniform.
6. Wet hands and lower arms thoroughly under running water, keep hands and forearm lower than elbows during washing.
7. Apply 1 ml of regular or 3 ml of antiseptic liquid soap to hands, lathering thoroughly.
8. Rub hands using plenty of lather and friction for atleast 10-15 seconds.

STEPS OF HAND WASHING-

1. Interlace fingers and rub palms and back of the hands with circular motion atleast 5 times each.
2. Interlace the fingers and rub the right dorsum of palm over the left dorsum and vice-versa.
3. Interlace the fingers and rub the palms thoroughly.
4. Rub the knuckles of the one hand into the other hand and vice versa.
5. Rub the finger nails of one hand on the palm of the other hand and vice versa.
6. Rotation rubbing of the thumb of one hand on the other and vice versa
7. Wash the wrist of the one hand and to the opposite in the circular motion.

- Rinse the hands and wrist thoroughly keeping hands down and elbow up.
- Turn off the water tap after washing hands.
- Dry the hands thoroughly from fingers to wrists and forearms with towel.
- Put the towel for washing, if paper towel then discard it.

SURGICAL ASEPSIS

Surgical asepsis or aseptic technique is designed to eliminate all micro-organisms, including spores and pathogens, from an object and to protect an area from micro-organisms

PRINCIPLES-

- A sterile object remains sterile when touched only by another sterile object.
- Only sterile objects may be placed on sterile field. All items are properly sterilized before use.
- An object held below a person waist is contaminated .
- A sterile object becomes contaminated by prolonged exposure to air.
- When a sterile surface comes in contact with the wet contaminated surface, the sterile object gets contaminated by capillary action.

- Fluid flows in the direction of gravity and sterile object becomes contaminated liquid to flow over the object surface.
- The edge of the sterile field or container are consider to be contaminated.

SURGICAL HAND WASHING

ARTICLES REQUIRED-

- Antiseptic soap or solution
- Nail brush
- Towel

PROCEDURE

1. Ensure that nails are short
2. Inspect hands for abrasions and cuts
3. Affects medical hand wash, wear cap and mask.
4. Turn on water
5. Wet hands and arms under running lukewarm water and lather with soap to 5 cm above the elbows.
6. Use circular movements to wash palms, back of hands, wrist, forearms and interdigital spaces for 20-25 secs.
7. Rinse hands and arms thoroughly under running water.
8. Scrub the nails of each hand with 15 stroke using anti microbial agents.
9. Holding brush perpendicular , scrub palms each side of the thumb and fingers and posterior side of the thumb and fingers and posterior side of hand with 10 strokes each.

10. Scrub from wrist to 5 cm above each elbow that is lower arm, upper forearm and anti cubital fossa to marginal area above elbows.
11. Entire scrub should last for 5-10 mins.
12. Discard brush and rinse hands from fingertips to elbows.
13. Take care not to touch the taps and sink during the procedure.
14. Use a sterile towel to dry one hand moving from fingers to elbow.
15. Dry from clean to least clean area.
16. Repeat drying of the other hand using the different towel.(if only one towel available dry one hand with one side of the towel and reverse the towel and dry another).
17. Discard towel.