


Reprocessing of Endoscopy

Endoscopy Instruments

A lighted optical instrument that is used to get a deep look inside the body. An endoscope, which may be rigid or flexible, can be used to examine organs, such as the throat or esophagus. Specialized endoscopes are named for where they are intended to look.





Healthcare facilities should have a reliable, high-quality system for endoscope reprocessing which minimizes infection risks. To achieve this goal, all reprocessing programs must have an infrastructure that supports training and competencies, quality measurement, and management.

Record Keeping

Documentation for all endoscopes must be maintained with all the decontamination equipment to ensure that the correct decontamination process is being used. To ensure that all endoscopes can be tracked throughout the decontamination process and traced to the patients upon whom they were used, the documentation log includes the following:

- Procedure name
- Patient medical record number
- Endoscopist who has performed the procedure
- Serial number or identifier of the endoscope used
- Proof of the decontamination procedure and the equipment and method used

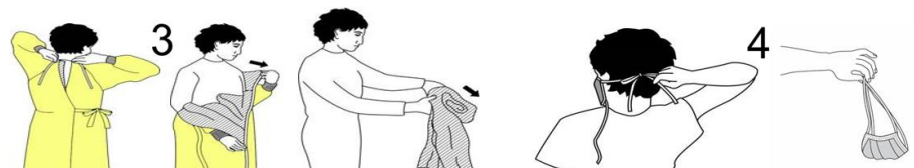
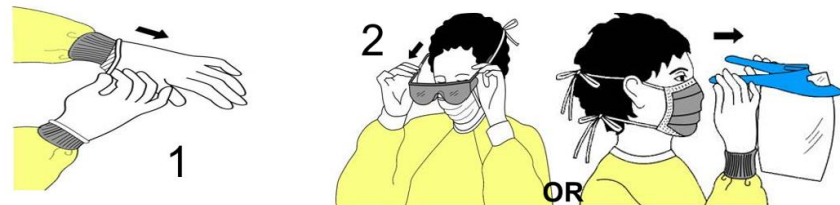
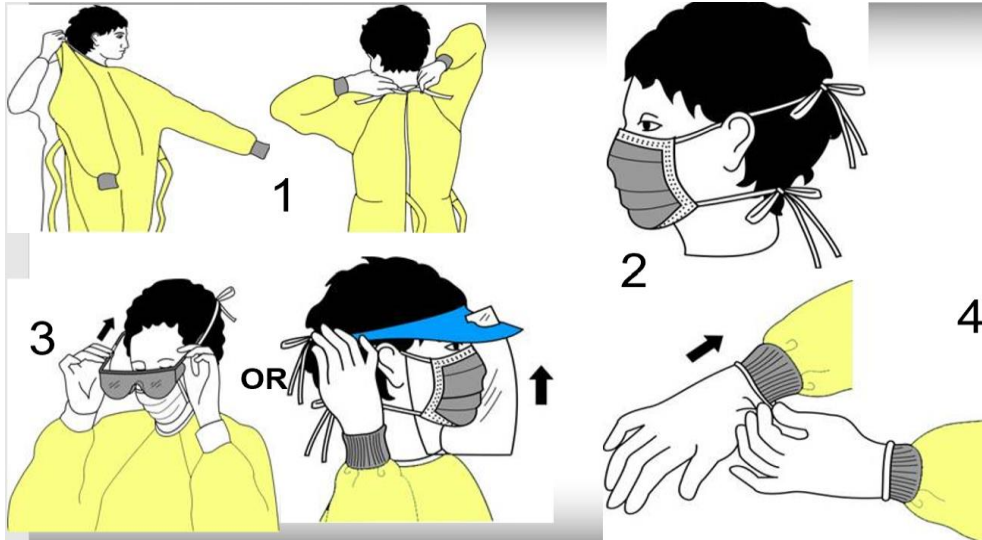
Staff Health

All personnel working in an endoscopy unit must be educated about the biological, chemical, and environmental hazards.

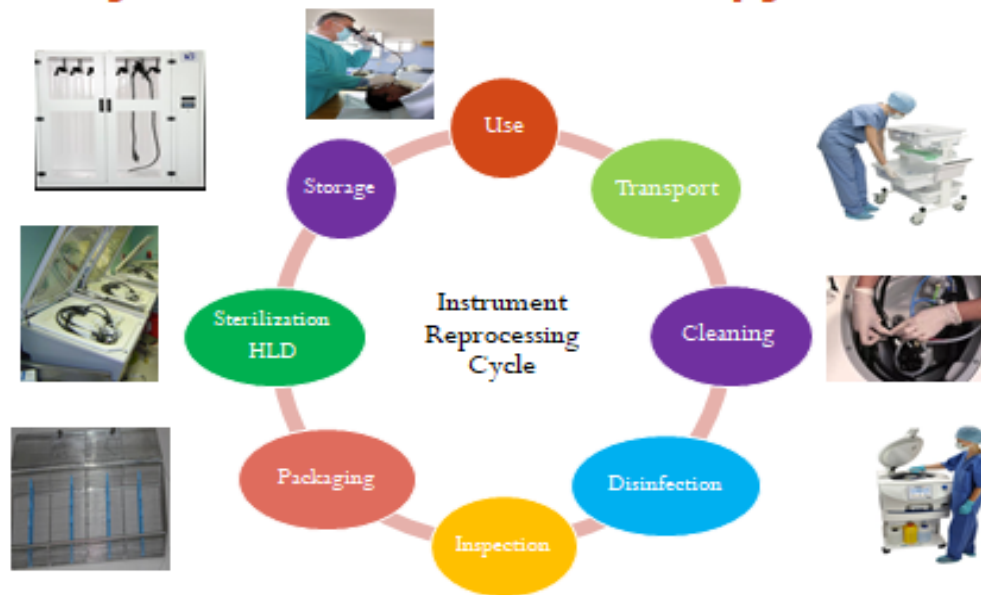
Staff are required to:

- **Be immunized against hepatitis B**
- **Wear PPE**
 - Wear gloves and a disposable waterproof gown with sleeves
 - Use gloves for short contact time (15–20 min); nitrile gloves can be worn for longer contact times
 - Change gloves and wash hands between tasks
 - Use eye protection to protect from splashes

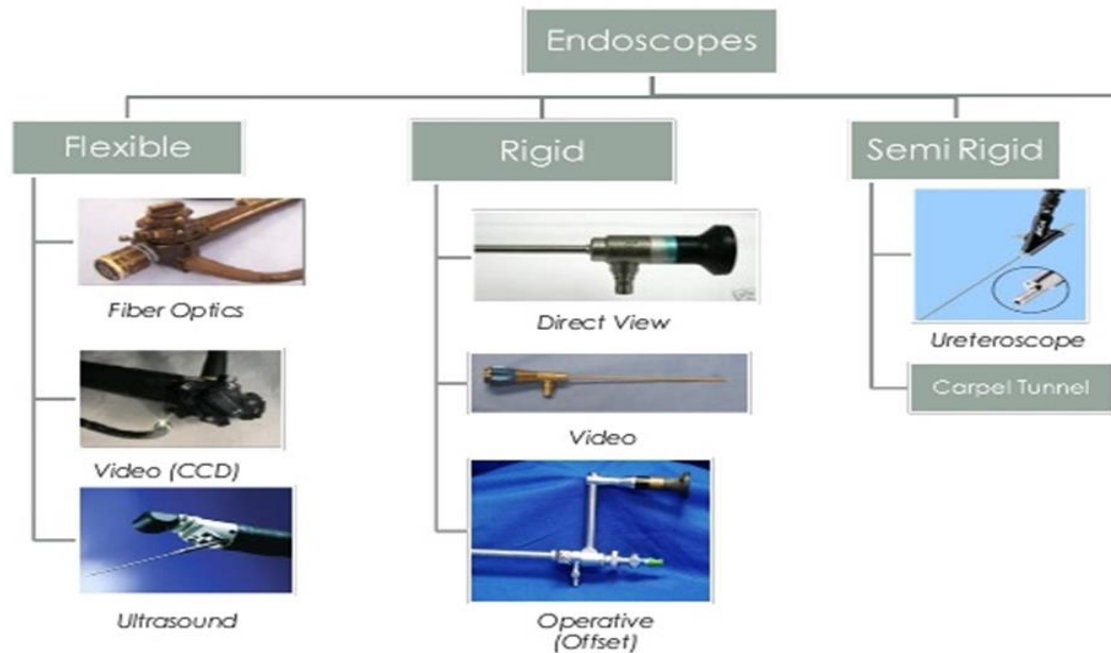
PPE:



A Day in the Life of Endoscopy



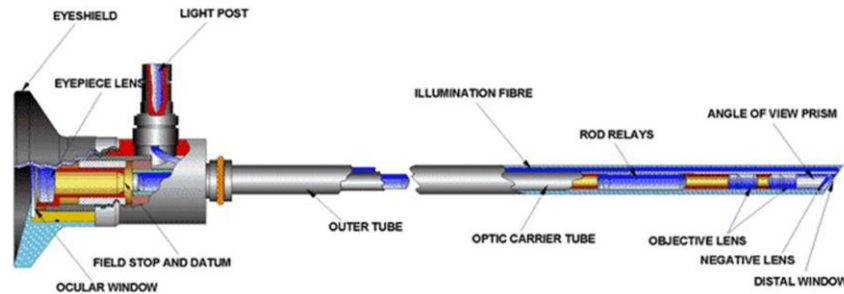
CLASSIFICATION



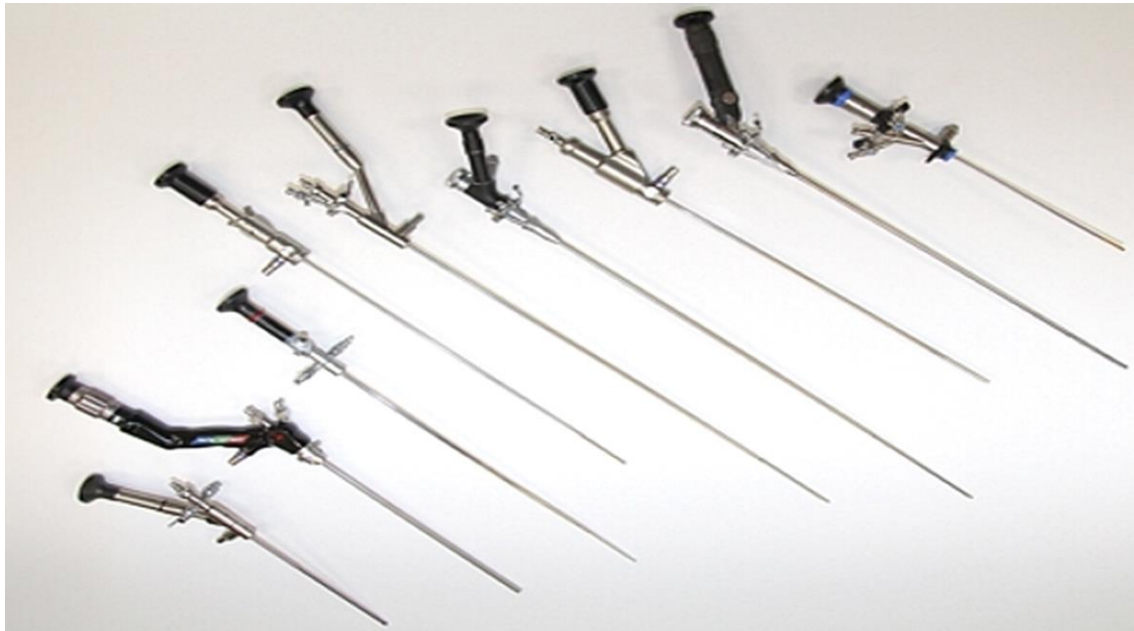
Rigid Endoscopes

The rigid endoscope is a fixed-length and fixed-geometry instrument that usually has several viewing angles available (0, 30, and 70 degrees to the long axis of the endoscope).

RIGID ENDOSCOPE



Semi Rigid Endoscope



Rigid and Semi-Rigid Guidelines for decontamination

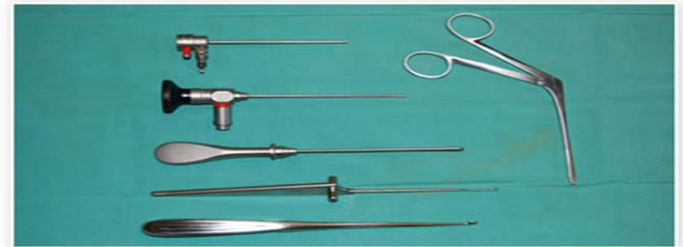
- Remove the light source adaptors.
- Use a neutral-PH enzymatic as manufacture IFUs.
- Hand wash the endoscope using a soft cloth.
- Use the brushes for channel as manufacture IFUs.
- Rinse the endoscope with treated water and flush the channel to remove the enzymatic solution.
- Dry the outside of the scope with a clean, lint-free cloth and dry working channel as manufacture IFUs.



Resectoscope



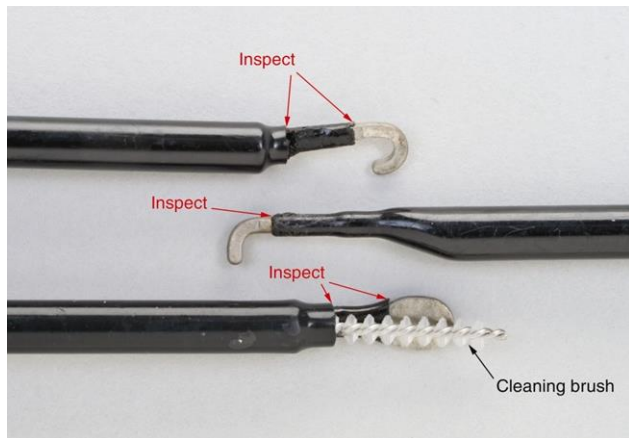
Arthroscopy Instrument



Disassembled Laparoscopic instrument

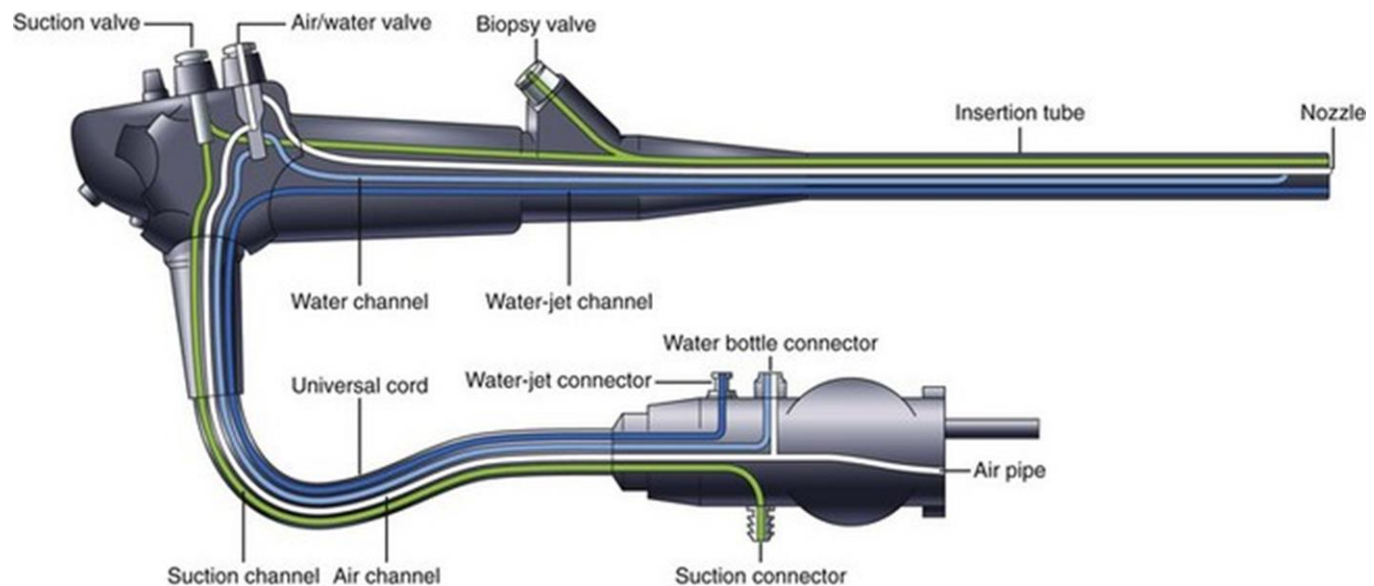


Inspect Insulation for Damage or Wear



Flexible Fiberoptic Endoscope

an optic instrument that transmits light and carries images back to the observer through flexible (about 10 mcm) transparent fibers, and used to inspect and treat interior portions of the body.



Steps in Endoscope Processing

- **Pre-cleaning**
- **Leak Test**
- **Manual clean**
- **Rinsing**
- **Drying/air**
- **Disinfection**
- **Rinsing**
- **Drying/air**
- **Storage**
- **High-Level Disinfect or Sterilize**
- **Dry**
- **Store**

1.Pre-clean

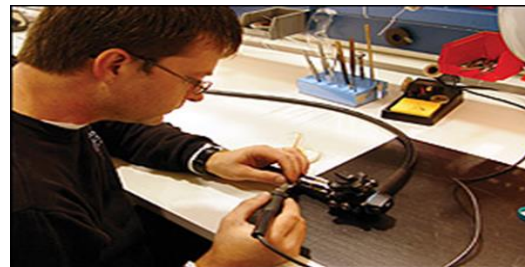
Pre-clean is the removal of gross debris from the endoscopes external surfaces and internal channel .

the insertion tube or shaft should be wiped with an enzymatic detergent solution approved by endoscope manufacturer. **following the device manufacturer's instructions for use (IFU).**



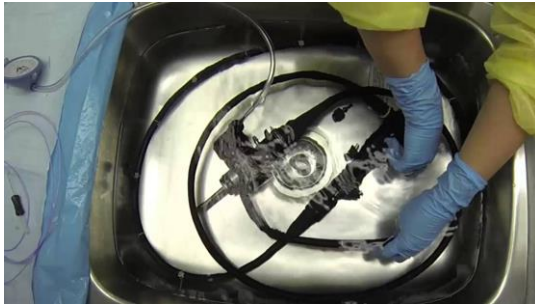
2. Leak Testing

- Detects leaks that can compromise the safety of the scope.
- Scopes that fail a leak test should immediately shipped to the manufacture or authorized repair company



Type of Leak Testing

- **Dry Leak Testing .**
 - ✓ attach the leak tester and pressurize the scope **do not** place the scope in water.
 - ✓ follow the IFU of endoscope.
- **Wet Leak Testing.**



3.Manual clean

Removes organic matter by brushing accessible channels and flushing all channels—this stage also allows the detection of channel blockages

4.Rinsing

Removes detergent residues that may affect the—performance of the disinfectant.

5.Drying/air

Expels excess fluid that may dilute the disinfectant



6. Disinfection Eradicates potentially pathogenic microorganisms, i.e. bacteria, including mycobacteria and viruses

7. Rinsing Removes disinfectant residues that could be harmful to patients

8. Drying/air Expels excess fluid before use on the patient or—storage

9. Storage Flexible endoscopes are stored, preferably hung, to allow drainage of channels in a dust-free environment. Lockable storage cabinets are available. Some are described as drying cabinets as they feed HEPA filtered air down the channels to allow for prolonged storage, some validated up to 30 days. These cabinets must comply with the requirements

- Scopes must be dry when stored.
- Do not kink or bend.



Automatic Endoscope Preprocessors (AERs)

Automated equipment designed to clean, disinfect, and rinse flexible endoscopes



Advantages of AERs

- Process consistency
- Reduced staff exposure to chemicals
- Timed cleaning
- Consistent exposure to the cleaning agent
- Timed contact with liquid disinfectants
- An air flush cycle to remove excess moisture
- Use of copious and consistent amounts of rinse water



When using AERs:

- Follow manufacturer's instructions to connect the scope to the AER.
- Place removable parts in the AER if possible.
- Attach channel cleaning connectors to all channels.
- Follow manufacturer's instructions for using disinfectants.
- Set the machine for the recommended time.



Sterilization of Flexible Endoscopes

- package and sterilize the endoscope following the manufactures IFUs flexible scope sterilized using low-temperature sterilization may require a venting cap during sterilization



Liquid Chemical Processing Systems

Liquid chemical sterilization (LCS) is used to liquid chemically sterilize heat-sensitive, immiscible, reusable medical devices. When a device is liquid chemically sterilized, it is completely immersed in an active sterilant solution (ex: ortho-Phthalaldehyde or OPA) for a prescribed period of time at a controlled temperature and concentration



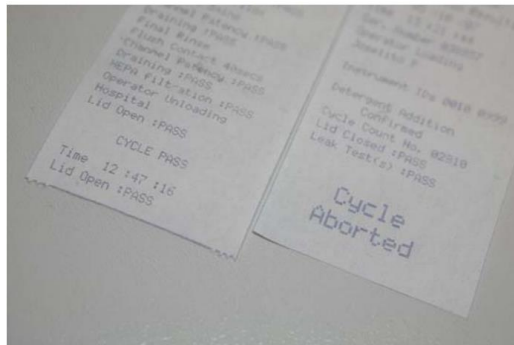
Example of damage caused by improper use include :

- ✓ **Cuts in a flexible endoscope shaft caused by placing sharp objects on it.**
- ✓ **Damage caused by shaver blades contracting a rigid endoscope during arthroscopy.**
- ✓ **Laser damage.**
- ✓ **Scope being dropped.**
- ✓ **inserting the endoscope through a sheath or bridge where the sheath or bridge are bent.**
- ✓ **Inserting an instrument improperly through a working channel.**
- ✓ **Excessive force used by the physician.**
- ✓ **Stacking instrument or other scopes on top of scopes.**
- ✓ **allowing gross soil to dry on the scope.**
- ✓ **No securing the scope prior to transporting.**

Documentation

Maintain documentation of adherence to these essential steps each time an endoscope is reprocessed.

Documentation is essential for quality assurance purposes and for patient tracing in the event a look back is necessary



Thanks

