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**Ophthalmic instruments decontamination: ( cleaning , disinfection , inspection , packaging , sterilization, transport)**

***Decontamination***

 is the term used to describe a combination of processes, including cleaning, disinfection and/or sterilization, used to render a re-usable item safe for further use on patients and handling by staff.

The Three Main Types of Decontamination

There are three main types of decontamination. They involve using cleaning agents based on the type and level of contamination. They include:

***1-Physical Removal***

Physical removal can include removing a contaminant by displacing or dislodging it. Evaporation, rinsing, or wiping are methods for physical removal.

It may involve using heat or high pressure in some cases. But you should only use this if necessary as it can cause burns. It can also cause the contamination to spread.

You can use physical removal for loose contaminants such as vapors and dust. It’s also effective on pollutants that adhere to surfaces. These include glue, resins, and cement. You can use it on volatile liquids as well.

***2-Chemical Detoxification***

This type is also referred to as chemical disinfection or sterilization. It involves three methods that use cleaning solutions.

The first dissolves surface contaminants in a solvent. The solvent used should be compatible with the surface. If using organic solvents, you’ll need to discard them carefully. These can be toxic and/or flammable.

The second uses a surface-active agent such as household detergent. You can use some agents with organic solvents. This can help disperse and dissolve the contaminants.

The third solidifies the contaminant before removal. The process usually involves removing moisture, freezing, or producing a chemical reaction.

Both physical and chemical methods fall into four types of decontamination categories. These include radiation, heat, gases or vapors, and liquid disinfection.

***3-Biological***

This involves the process of eliminating biohazardous materials. These can include biological toxins, infectious agents, or human materials. Decontamination should be low enough to not cause infection.

Methods used include general cleaning, sterilization, disinfection, or antisepsis. Any contaminated materials require decontamination before storage, washing, or discarding.

An autoclave is often used to do this. It’s a machine that uses high temperatures and pressure. This helps to decontaminate scientific and industrial equipment. Other medical emergencies often use various types of GI decontamination.

The Importance of Using One of the Three Levels of Decontamination

Regardless of your industry, decontamination is essential. It can protect your workers by reducing the transfer of contaminants. In addition, this safeguards the areas and employees who were not exposed to hazardous materials.

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***The three processes included in decontamination are***

. 1-Cleaning

. 2-Disinfection

3- Sterilisation.

***Medical devices and tools are disinfected in several ways, including:***

***1-Cleaning***

is the most important stage in the decontamination process. Cleaning is a process

which removes dust, dirt, excretions, secretions, organic matter and all contamination

including harmful and undesirable substances as well as a large proportion of microorganisms which may be present.

Micro-organisms cannot multiply on a clean dry surface and the majority rapidly die.

***2-Disinfection***

Disinfection is a process that removes or destroys potentially harmful microorganisms to a level non-harmful to health. Manufacturers’ guidance must always be

Disinfection is usually achieved by the use of liquid chemicals or by moist heat. Moist heat is

the first choice method except for devices unable to withstand high temperatures.

***3-Inspection***

Inspection of devices should be performed by staff members in the decontamination facility

other than those responsible for cleaning them. For fine ophthalmic instruments, it is useful

for magnification to be used, using a loupe system or microscope. Instruments that are

damaged can be identified, as can those that have been inadequately cleaned.

***4-Packaging***

The packaging of an instrument will depend on its size, planned use, and chosen sterilization

method. Some instruments will form part of a multiple package and be packed in suitable.

trays.

***5- Sterilisation***

Sterilisation is a process that removes or destroys all micro-organisms and spores. The

preferred method for instruments is autoclaving which achieves sterilisation by applying

steam under pressure at the highest temperature compatible with the instruments being

processed.

***6-Transport***

It is essential that transit containers fully protect their contents and individuals handling

them. They must be secure, tamper-proof, waterproof, and clearly labeled.

***Why is cleaning and decontamination important?***

Cleaning and disinfection involves the use of physical or chemical processes to reduce, remove, inactivate, or destroy pathogenic microorganisms. C&D procedures are crucial in controlling the spread or transfer of microorganisms between animals, between locations, or to people.

***Thank you***