

PREVENTION GUIDE
TO HOSPITAL TRANSMITTED INFECTION
IN
CONSULTATIONS OF OPHTHALMOLOGY
[Version 2 - 2010]









HAND HYGIENE

In all circumstances where hands disinfection is necessary (where there is contact with the patient's eye or the eye area, especially before any medical examination and between each treatment), rub your hands with a solution, a hydro-alcoholic gel or foam instead of traditional hand washing.

In absence of counter-indications, i.e. when hands are visually clean, not contaminated by liquids or organic materials, this simple and fast gesture can be done whenever possible.

EQUIPMENT SELECTION GUIDE

Gel	Mousse	Solution
 <p data-bbox="240 1070 491 1106">Hand pump bottle</p>	 <p data-bbox="711 1048 962 1084">Hand pump bottle</p>	 <p data-bbox="1182 1048 1433 1084">Hand pump bottle</p>
 <p data-bbox="121 1626 568 1700">Automatic dispenser with 1200 ml gel refill</p>	 <p data-bbox="592 1626 1038 1700">Automatic dispenser with 1200 ml mousse refill</p>	 <p data-bbox="1222 1648 1393 1684">Spray bottle</p>

Each station must be equipped with a solution or gel or hydro-alcoholic foam dispenser.

The use of aqueous solutions does not exclude the presence of a water point for hand washing.

THE PROTOCOLS

BETWEEN EACH PATIENT

1. Disinfect your hands by rubbing an hydro-alcoholic product of your choice OR
2. Simply wash your hands

IN CASE OF PATIENT WITH AN EYE INFECTION

1. Disinfect your hands by rubbing an hydro-alcoholic product of your choice OR
2. Wash your hand with an antiseptic soap



Disinfection through friction

1. palm to palm
2. back to back
3. fingers entwined
4. palms/fingers
5. thumbs
6. nails
7. wrists

WITH THE HYDROALCOHOLIC FRICTION

HYGIENE IS IN YOUR HANDS!

TAKING CONTROL OF SEMI CRITICAL EQUIPMENT

These are all medical devices that come into contact with the ocular surface:

The most frequently used V3m, tonometer tips, biometrics or pachymetry probe etc.

ALL THESE DEVICES MUST BE CLEANED BEFORE USE BY THE METHOD SELECTED BY THE AUTHORITIES:

<u>PARTIAL PERFORMANCE</u>		
PERACETIC ACID	CHLORINE DIOXIDE	SODIUM HYPOCHLORITE (0.5%)
Immerge 10 to 15 minutes Sporicidal in 60 minutes	30 seconds contact Sporicidal in 30 seconds	At least 0.5% chlorine active for at least 15 minutes
<u>SIGNIFICANT PERFORMANCE</u>		
SODIUM HYPOCHLORITE (2%)	NORMAL SODA (1M)	AUTOCLAVE AT 134 ° C
2% active chlorine for 1 hour	For 1 hour	18 minute of sterilization tray
<u>MAXIMUM EFFICIENCY</u>		
ASSOCIATION		
OF A CHEMICAL METHOD	AND THERMAL PROCESS	
OF SIGNIFICANT PERFORMANCE	AUTOCLAVING AT 134 ° C FOR 18 minutes of sterilization tray	

PROCEDURES

NON CRITICAL Medical devices	SEMI-CRITICAL Medical devices
Contact with healthy skin or No contact	In contact with the ocular surface Without Incisions Patients not at risk
LOW LEVEL DISINFECTION	INTERMEDIATE LEVEL DISINFECTION
Without individualized cleaning step Must be practiced regularly	Simple cleaning + Disinfection by (peracetic acid, chlorine dioxide, Sodium hypochlorite)
Examination lenses with no contact Angiographs Visual field device Equipment ERG EPI Laser equipment Ultrasound probes Tonometer Slit Lamps Biometer Frames and examination lens	V ₃ M Tonometer Prisms Ultrasound probes Pachymetry probes Flag for scleral buckling VCET

Disinfection efficiency decreases in presence of organic debris or spores, hence the importance of pre-disinfection or cleaning.

Disinfectants work by destroying the microbial membrane, blocking the metabolic exchange, or oxidation of the intracellular constituents.

SELECTION GUIDE
TO PRODUCTS FOR THE
DISINFECTION OF
SEMI-CRITICAL
MEDICAL DEVICES



WITH CHLORINE DIOXIDE (TRISTEL Duo System)

Group II-b

CLEANING PROCEDURE FOR DISINFECTION OF MEDICAL DEVICES

WITH TRISTEL DUO



V₃M, cone tonometer, metal clamps, biometer probes and pachymeter

STEP 1

Rinse the medical device under tap water immediately after use



STEP 2: Disinfection - 2 choices

a) Hand in a dose of chlorine dioxide foam on the V₃m, cones or probes. Ensure that the part in contact with the ocular surface is covered with foam.



b) For tongs and long, thin instruments, spread the foam on a non-woven disposable wipe and apply on the medical device. All areas of the surface must be in contact with the wipe at least once.



STEP 3

Ensure 30 seconds contact time.

STEP 4

Rinse well for 3 minutes to remove any residue of the product.



Note: Rinse water used after disinfection must meet the microbiological criteria of potable water or be sterile.

STEP 5

Store the medical device in its case or tray.



CHLORINE DIOXIDE - TRISTEL system ®

Chlorine dioxide has been widely used since the 1950s, and has the advantage that bacteria, fungi and viruses do not build up any **natural resistance** to it.

The disinfectant properties of chlorine dioxide have been recognised for over a century. Since the 1950s, it has been widely used to treat drinking water and swimming pools. It is now used for a variety of applications: it is used in cooling systems and legionella control towers, and in personal hygiene products such as mouthwash, toothpaste and **contact lens solution**.

Over the past 5 years, health and safety issues related to the use of glutaraldehyde-based disinfectants for decontamination have led to the use of certain chemical products being discontinued, in many cases in favour of chlorine dioxide.

The recent introduction of new delivery formats for chlorine dioxide disinfectants, such as wipes, mousses and sterile sachets, which instantly deliver an active solution in effective concentrations, has considerably broadened its application in the medical field for use on hard surfaces and the disinfection of equipment.

Chlorine dioxide is a powerful oxidant which prompts a bacteria cell to donate electrons, thereby creating a breach through which the contents of the cells pass in an attempt to bring concentrations on either side of the cell membrane to equilibrium. Chlorine dioxide kills viruses by preventing protein production. **The cell dies through lysis.**

The advantage of chlorine dioxide over chlorine, sodium hypochlorite (Dakin's solution) and hypochlorous acid is that it produces by-products that are less harmful to both humans and the environment.

The European Union directive on biocidal products aims to guarantee that biocidal products present no undue risk to human health or the environment and has already led to the withdrawal of a number of substances.

Chlorine dioxide provides a safe, efficient and affordable solution, available in variety of formats to meet all the disinfectant requirements of the doctors' surgery. It is recommended in the French health department's guide to preventing infections associated with the treatment of patients outside of health care institutions (MINSAN, January 2006: *Guide de prévention des infections liées aux soins hors établissements de santé*).

USING PERACETIC ACID
Group II-a

PROCEDURE FOR COLD CLEANING/DISINFECTION OF MEDICAL DEVICES (MD)

V3M, tonometer cones, metal clamps, biometers, pachymeters and tonometer prisms

STEP 1

Rinse the MD in tap water

STEP 2: CLEANING

Soak the MD in the CLEANING bath (deproteinising agent) as per the manufacturer's instructions.

STEP 3: INTERMEDIATE RINSE

Carefully rinse the MD in tap water and wipe dry

STEP 4: DISINFECTION

Soak the MD in the peracetic acid-based DISINFECTANT bath for 10 or 15 minutes, as per the manufacturer's instructions
(sporicidal in 30 minutes)

STEP 5: FINAL RINSE

Remove the MD from the disinfectant bath and wipe it with cotton wool or a compress soaked in water in order to remove as much of the product as possible.

Carefully rinse it with filtered bacteria-free or sterile water for 5 minutes and dry it with a lint-free single-use cloth

OR

Passive rinse : after removing as much of the product as possible with damp cotton wool, completely submerge the MD in a 3rd bath containing sterile or bacteria-controlled water for 5 minutes. Dry.

STEP 6: DRYING

Dry the MD with a microfiber cloth

STEP 7: STORAGE

Store the MD in its box or case, also cleaned and disinfected.

PRESENTATION OF PERACETIC ACID DISINFECTANT PRODUCTS – ASSESSED BY AFSSAPS, 2004

Description of products recommended for the manual disinfection of thermo-sensitive devices. These products are available on the French market and have been the subject of a market survey.

Disinfectant	Anioxyde 1000	Bioxal M	Dynacide PA
Manufacturer	Laboratoires Anios	Schulke	Laboratoire Phagogène
Formats	5 litre bottle + activator flask With test strips	5 litre bottle With test strips	Single-dose Sachet or 2 kg Bucket (1 dose for 5 litres)
Product Type	Solution to be reconstituted. Delay of 20 minutes before use.	Ready to use solution	Powder to dilute
Peracetic Acid Precursor	Acetylcaprolactam	Acetic acid	Tetraacetylene-diamine
Initial theoretical concentration in peracetic acid	0.15% (1500 ppm) after reconstitution	0.11% (1100 ppm)	0.20% (2000 ppm)
Theoretical pH	7 to 5	3.6	7
Best before date	7 days after reconstitution of 5 litres of product	6 months after opening of bottle	Use of bath 4 hours maximum
Compatible with ophthalmology equipment	No	Yes	
Contact time for semi-critical material	10 min	10 min	15 min

Information on peracetic acid-based formulations:

- When they are in use, peracetic acid-based formulations are solutions composed not only of peracetic acid but mixtures of peracetic acid (PA), hydrogen peroxide (H₂O₂) and water, in variable proportions
- Hydrogen peroxide is required for the formation of peracetic acid from a precursor*, whether that is acetic acid or another acetyl radical. The hydrogen peroxide is either present initially or formed as the product is prepared.

*Where the precursor is acetic acid, formulations have a more acid pH; the formation of PA requires the presence of strong acids.

USING SODIUM HYPOCHLORITE (2%)
Group III

STEP 1: CLEANING

Soak the MD in the CLEANING bath (deproteinising agent) as per the manufacturer's instructions.

STEP 2: INTERMEDIATE RINSE

Carefully rinse the MD in tap water and wipe dry.

STEP 3: DISINFECTION

Pour out the desired quantity of **2% sodium hypochlorite solution (ready to use)**, enough to soak the MD.

Soak the MD in the DISINFECTANT bath for 1 HOUR

STEP 4: FINAL RINSE

Remove the MD from the disinfectant bath and wipe it with cotton wool or a compress soaked in water in order to remove as much of the sodium hypochlorite as possible.

Carefully rinse it with filtered bacteria-free or sterile water for 10 minutes and dry it with a lint-free single-use cloth

OR

Passive rinse: after removing as much of the sodium hypochlorite as possible with damp cotton wool, completely submerge the MD in a 3rd bath containing sterile or bacteria-controlled water for 10 minutes. Dry.

→ DH/EM 1 Circular no. 96-7602 of 12 December 1996 prohibits the use of glutaraldehyde- or formol-based disinfectant products in ophthalmology clinics.

IS THERE A SAFE ENOUGH BARRIER BETWEEN YOU AND INFECTION?

SELECTION GUIDE
FOR PRODUCTS TO DISINFECT
NOT CRITICAL MEDICAL DEVICES



How to disinfect medical devices (MD) that come into contact with healthy skin or without contact with the patient?

- non-critical medical devices: chin rest, headrest covers, eye patch
- medical devices with no contact with the patient: checking the eye pressure (projections of tears), drops instillation

The type of disinfection to be used is the low-level disinfection.

- without individualized cleaning step
- sufficient after each patient

PRODUCT SELECTION GUIDE

DISINFECTANT WIPES	DISINFECTANT FOAM
OPHTACLOTH WITH ALCOHOL	NO-RINSE AND ALCOHOL-FREE 
ALCOHOL-FREE OPHTACLOTH	

OPTIMIZE YOUR QUALITY OF CARE,

IMPROVE THE SAFETY OF YOUR PATIENTS AND YOUR ASSISTANTS!