PROBE **HYGIENE** SOLUTIONS

Why high-level disinfection of ultrasound probes is important?

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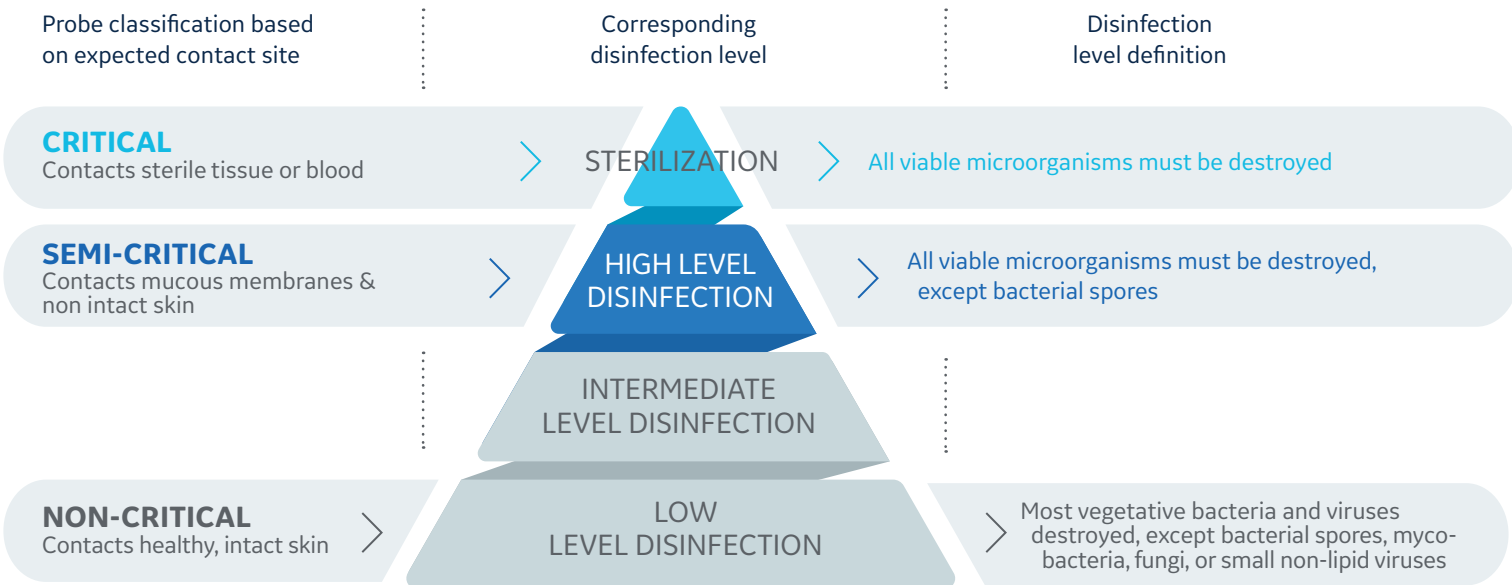
What is HLD?

High-level disinfection is defined as the complete elimination of microorganisms in or on an instrument, except for small numbers of bacterial spores. To reduce the risk of ultrasound probe cross-infection, it is important to know when to perform the HLD process. HLD should be performed on probes that are used in semi-critical procedures, as defined by The Spaulding Classification.

The Spaulding classification specifies medical device reprocessing requirements based on the intended use. This classification scheme is used by infection control professionals, and others, when planning probe disinfection methods.



WHAT ARE THE RISKS OF NOT DOING PROPER REPROCESSING?

33,7%

of probes still carry pathogenic bacteria after sheath removal[5]

12.9%

of probes still carry pathogenic bacteria following routine disinfection[1]

Up to **7%**

of ultrasound probes were found to be contaminated with human papillomavirus (HPV) after disinfection with low level wipes[2,3,4]

Bacterial contamination of ultrasound probes prior to hygiene training proved to be high and showed higher bacterial load than toilet seats or bus poles[11]

Ultrasound probes are a potential source of Human Papillomavirus (HPV) infection, posing a new challenge for infection prevention.

Studies show that common disinfection methods, even high-level disinfection methods, don't kill the cancer-causing HPV on ultrasound probes.[8] The HPV virus can survive and remain infectious on surfaces, including medical equipment, for days or weeks, when treated with common disinfectants.[9]

WHAT DOES GE RECOMMEND

GE Healthcare recommends in its user manual the following about cleaning and disinfection of ultrasound probes.

"Adequate cleaning and disinfection between patient cases are necessary to prevent disease transmission.

All probes must be thoroughly cleaned prior to disinfection. The level of disinfection required is based on patient contact."

- ✔ **Probes that contact mucosal or non-intact skin require cleaning followed by high-level disinfection by either soaking or use of an automated system such as trophon®2 or TD100®.**
- ✔ **Probes that contact intact skin require cleaning followed by intermediate-level disinfection (wipe or spray).**

Verify probe compatibility and instructions on the GE probe website:

http://www.gehealthcare.com/transducers

EU LANDSCAPE ABOUT PROBE DISINFECTION

In Europe, the landscape is moving around probe disinfection.

The European Society of Radiology made a study in 2016 and found a wide range of practices throughout Europe and the need to raise awareness among practitioners regarding the importance of infection preventions and control measures.

Based on that, they issued a best practice recommendation[6] in November 2017:

- ✓ ***High level disinfection is mandatory for endocavitary ultrasound probes and all interventions***
- ✓ ***Another important aspect of automated systems is the standardized and reproducible decontamination process which helps avoid operator-associated errors or variations.***
- ✓ ***Dedicated transducer covers should be used for endocavitary ultrasound and all interventions***
- ✓ ***Sterile gel should be used for all endocavitary ultrasound and all interventions.***

Furthermore, the European Federation of Societies for Ultrasound in Medicine and Biology (EFSUMB)7 published its recommendations in 2017:

"All internal transducers (e. g. vaginal, rectal, transesophageal transducers) and intra-operative transducers, require a high-level of disinfection before they can be used in a new patient [...] Automatic processes such as hydrogen peroxide methods are preferred, where approved by the manufacturer to guarantee a reproducible standardized and fast process."

Other countries have already started to develop their own regulations further, to the point where high level disinfection is mandatory between each examinations: Ireland and Scotland in 2017[8]. The British Medical Ultrasound Society and the Society and College of Radiographers have similarly brought out a recommendation along those lines[9].

The French Ministry of Health published in March 2019 data sheets for healthcare professionals to execute about endocavitary probe reprocessing[10].

1. Leroy, SJ., Infectious Risk of endovaginatl and transrectal ultrasonagraphy, Journal of Hospital Infection, 83(2):99–106, 2012.

2. Casalegno JS, Le Bail Carval K, Eibach D, Valdeyron ML, Lamblin G, Jacquemoud H, et al. High risk HPV contamination of endocavity vaginal ultrasound probes: an underestimated route of nosocomial infection? PloS one. 2012;7(10):e48137.

3. Ma ST, Yeung AC, Chan PK, Graham CA. Transvaginal ultrasound probe contamination by the human papillomavirus in the emergency department. Emergency medicine journal. 2013;30(6):472–5.

4. M'Zali F, Bounizra C, Leroy S, Mekki Y, Quentin-Noury C, Kann M. Persistence of Microbial Contamination on Transvaginal Ultrasound Probes despite Low-Level Disinfection Procedure. PloS one. 2014;9(4):e93368.

5. Leroy S, M'Zali F et al. (2013) Infection control and hospital epidemiology, 35 (12):1497-1504

6. Nyhsen CM, Humphreys H, Koerner RJ, Grenier N, Brady A, Sidhu P, et al. Infection prevention and control in ultrasound - best practice recommendations from the European Society of Radiology Ultrasound Working Group. Insights into imaging. 2017.

7. EFSUMB (European Federation of Societies for Ultrasound in Medicine and Biology) -2017 http://www.efsumb.org/safety/resources/2017-probe_cleaning.pdf

8. http://www.hps.scot.nhs.uk/documents/hai/infection-control/guidelines/NHSScotland-Guidance-for-Decontamination-of-Semi-Critical-Ultrasound-Probes.pdf (Irish HSE Guidance for Decontamination of Semi-critical Ultrasound Probes QPSD-GL-028-1– 2017)

9. https://www.bmus.org/policies-statements-guidelines/professional-guidance/guidelines-for-professional-ultrasound-practice/

10. https://solidarites-sante.gouv.fr/soins-et-maladies/qualite-des-soins-et-pratiques/securite/article/prevention-des-risques-d-infection-associes-a-l-utilisation-des-sondes-d

11. Sartoretti and al. (2017) Bacterial contamination of ultrasound probes in different radiological institutions before and after specific hygiene training, Oct;27(10):4181-4187

Data subject to change.
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