

## We recommend against disinfecting of gloved hands

Hand hygiene and proper glove usage remain critical in medical and healthcare settings. We would like to clarify that medical gloves are **not intended to be disinfected prior to use**. In accordance with the recommendations of the WHO<sup>1</sup>, it shall also be avoided to disinfect single-use gloves for reusing them on the same patient. This aligns with the definition of a 'single-use device' in the applicable EU regulation<sup>2</sup>: 'a device that is intended to be used on one individual during a single procedure.'

Aside all concerns about sterilizing an examination glove – and the potential legal consequences! – there are hazards that are even more relatable to your daily work:

Sanitizers and disinfectants typically contain alcohols (usually ethanol or 2-propanol) as active ingredient. Due to their nature, most disposable gloves are not sufficiently resistant to concentrated alcohols. This means that the chemicals can pass through the glove barrier onto the user's skin (**permeation**). While this may not seem to be a problem in case of hand disinfectants, the opposite is true: The evaporation of the disinfectants is hindered by the glove film. This results in significantly prolonged exposure to harmful chemicals, which causes a hazard for the skin of the user, **potentially resulting in occupational diseases**.

Furthermore, these concentrated alcohols can cause **severe degradation** of the glove polymer film and thus may **reduce** the physical properties (**force at break**) of the glove **considerably**! As a consequence, gloves have a greater risk of breaking which means that **safety and effectiveness are significantly reduced**, up to a point where a potential contamination of healthcare professionals during clinical practice cannot be excluded anymore.

Both internal and external<sup>3</sup> studies have shown, that when single-use gloves are exposed to alcohol-based disinfectants, the normative requirements for medical gloves<sup>4</sup> (force at break median  $\geq 6$  N) are not met anymore – after an exposure time of 1-3 min (depending on the glove).

We would also like to point out that unintentional exposure of the disposable glove to alcoholic disinfectants can also lead to the same negative effects. This can happen, for example, if the hands have not been dried sufficiently long after disinfection and the agent is still on the hands when the gloves are donned. Please also observe the instructions for use of the disinfectant particularly with regard to drying time of the agents.

<sup>1</sup> WHO, Guidelines on Hand Hygiene in Health Care, (2009), [https://iris.who.int/bitstream/handle/10665/44102/9789241597906\\_eng.pdf](https://iris.who.int/bitstream/handle/10665/44102/9789241597906_eng.pdf), (27.01.2025)

<sup>2</sup> Regulation (EU) 2017/746: Article 2(8)

<sup>3</sup> Examples: Garrido-Molina JM, Márquez-Hernández VV, Alcayde-García A, Ferreras Morales CA, García-Viola A, Aguilera-Manrique G, Gutiérrez-Puertas L, Disinfection of gloved hands during the Coronavirus outbreak (COVID-2019), Journal of Hospital Infection, [https://www.journalofhospitalinfection.com/article/S0195-6701\(20\)30430-8/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(20)30430-8/fulltext), (27.01.2025); Kampf, Günter; Niermeier, Florian; Lemmen, Sebastian, Desinfektion behandschuhter Hände, ds during the Coronavirus outbreak (COVID-2019), Krankenhaushygiene up2date 2018; 13(01): 27 - 40, [https://eref.thieme.de/ejournals/1862-5800\\_2018\\_01#/10.1055-s-0043-123914](https://eref.thieme.de/ejournals/1862-5800_2018_01#/10.1055-s-0043-123914), (27.01.2025)

<sup>4</sup> EN 455-2:2024 "Medical gloves for single use Part 2: Requirements and testing for physical properties"

Among the factors that influence the time until degradation are:

- Glove material, wall thickness and type
- Type of disinfectant used
- Additional stress on the glove film (e.g. mechanical, thermal, stretching)

In our HARPS Insights "*Do Disinfectants Present a Risk for the Safety of Medical Gloves?*", which is accessible via the following link, further background information and explanations on the effects of disinfectants on glove behavior are given:

[https://www.sempermed.com/fileadmin/user\\_upload/MediaLibrary/Sempermed/Knowledge\\_Area/Chemical\\_resistance/HARPS\\_InsightsNo.8\\_Disinfection\\_of\\_Gloves.pdf](https://www.sempermed.com/fileadmin/user_upload/MediaLibrary/Sempermed/Knowledge_Area/Chemical_resistance/HARPS_InsightsNo.8_Disinfection_of_Gloves.pdf)

In case of doubt or for further questions, please contact HARPS at [sempermed@harpsglobal.com](mailto:sempermed@harpsglobal.com)!



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