

# Effectiveness in the disinfection of the stethoscopes: 70% alcohol vs. commercial wipes

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## Background:

Healthcare-associated and nosocomial infections prolong hospital stays, cause unnecessary deaths, increase resistance to antimicrobials and represent an additional financial burden for health systems and generate high costs for patients and their family. Therefore prevent the transmission of microorganisms that cause infections is a major purpose of current medicine. Stethoscopes can be a vehicle of transmission from one to another patient. Consequently, disinfection of stethoscopes between the use in one patient and another is required.



The aim of this study was to know the effectiveness in the disinfection of the stethoscopes and compare two methods: 70% alcohol vs. commercial wipes.



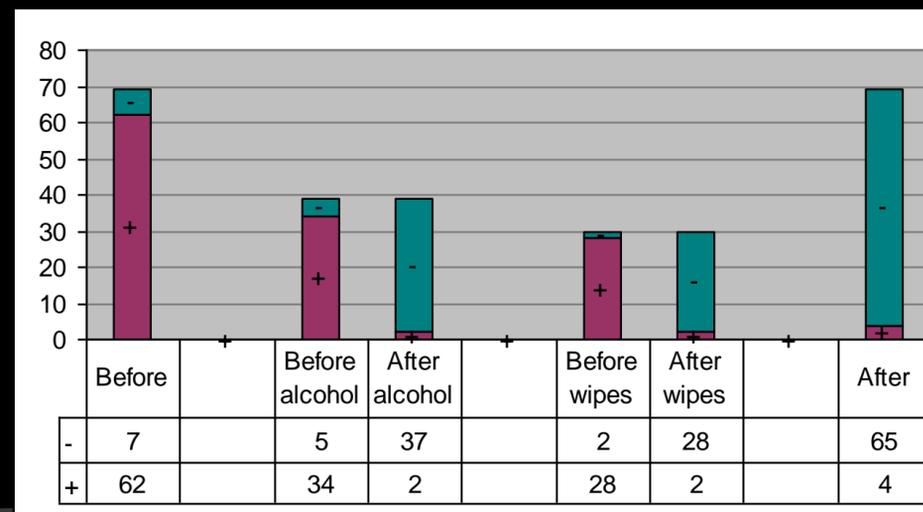
## Results:

89.9% (62/69) of stethoscopes before disinfection was positive culture. The most prevalent microorganism isolated was *Staphylococcus hominis* (44/69) followed by *Staphylococcus epidermidis* (22/69) and *Micrococcus luteus* (10/69). Other species were isolated with lower prevalence, among them Methicillin-resistant *Staphylococcus aureus* (2/69) and *Pseudomonas aeruginosa* (1/69) highlight by the risk that can lead. The two disinfection methods used showed similar effectiveness (>90%) (Graphic 1). Two samples were positives cultures after applied 70% alcohol. Microorganisms that grew were *Rothia mucilaginosa* and *Bacillus cereus*. Other two samples were positives after cleaned with the wipes. In this case, microorganisms that grew were *Neisseria* spp. and *S. epidermidis*.

## Material/methods:

69 samples from stethoscopes of health workers from different sections of the Miguel Servet University Hospital (Zaragoza, Spain) were taken using swabs. Afterwards, 70% alcohol was applied to 39 stethoscopes and the others 30 stethoscopes was cleaned with commercial wipes (Menalind® HartMann Laboratories). After that, new swabs were taken again. All samples were cultured onto sheep blood agar at 35°. The system of Matrix-assisted laser desorption/ionization-Time of Flight (MALDI-TOF) was used to microbiological identification. Negative cultures were stored 48 hours before to confirm the absence of growth.

Graphic 1: culture results before and after disinfection of the stethoscopes.



## Conclusions:

-70% alcohol and commercial wipes tested show high effectiveness in the disinfection of the stethoscopes.



-This study shows that it is very advisable to disinfect stethoscopes that without disinfection can carry microorganisms, even multiresistant pathogenic bacteria, with either tested methods due to seem to be equally effective.