

# **STRONGLY IMPAIRED GROWTH OF BACTERIA AND DERMATOPHYTE COMMONLY INVOLVED IN DIABETIC ULCER CONTAMINATION AND INFECTION FOLLOWING EXPOSURE TO A HIGHLY GLYCERINATED HYDROGEL**

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Purpose: contamination and infection are major problems in wound healing management of not only deep perforating, but even of low grade diabetic ulcers. We tested the microbial replicative rates of most common troublesome microbia in wound healing, following a 48 hr contact with a highly glycerinated hydrogel. A bacteriostatic dressing able to reduce the microbial replicative strength for prolonged times after contact should be a very important tool to counteract infective complications of ulcers, and speed up diabetic wound healing.

Method: in vitro growth rates of *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Streptococcus pyogenes*, *Escherichia coli*, *Candida albicans* and *Trycophyton mentagrophytes* after being exposed to a 48 hr contact with a highly glycerinated hydrogel were studied in a time range of 30 min to 24 hours for bacteria, and of 1 hour to 10 days for dermatophyte.

Results: growth curves of all the experimental bacterial samples showed both a delayed and very slowed replication rate. No fungal regrowth was observed at any time scheduled.

Conclusions: the dressings ability to reduce microbial replication curtails one of the repetitive agonistic stimuli for locally prolonged inflammatory reaction in diabetic ulcers. This effect allows the reactivation of normal wound healing sequelae.