

# THE ROLE OF GROWTH FACTORS IN THE HEALING OF DIABETIC FOOT ULCERS

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**Background:** Diabetic foot ulcers are one of the most important complications of diabetes whose successful treatment is a challenge for patients and health professionals. The utilization of growth factors in the treatment of diabetic foot ulcers is a relatively new, but simultaneously controversial and not well documented therapeutic approach, which has shown some encouraging clinical results.

**Aim:** The aim of this systematic review was to investigate the efficacy of growth factors as a topical treatment in the healing of diabetic foot ulcers.

**Methods:** Literature has been systematically reviewed by searching international electronic databases (PubMed, Science Direct, Scopus, Cochrane Library and Ebsco) with appropriate keywords, for publications from 2011 and onwards. The keywords were: diabetes, diabetic foot, ulcer and growth factors.

**Results:** The search resulted in 11 articles being evaluated. The main parameters used to evaluate the efficacy of the treatments applied in the healing of diabetic foot ulcers were: the percentage of patients with complete healing, the time of some incomplete healing, and the reduction of the ulcer surface area. Growth factors demonstrated a significantly increased healing effect, compared to the alternative treatments, in all of the included studies. Epidermal growth factor (EGF) was the most frequently used growth factor, while its effectiveness was rather adequate. On the other hand, the available data and the limited number of studies about other growth factors, as platelet derived growth factor (PDGF) and acidic fibroblast growth factor (aFGF) are not sufficient to fully support the effectiveness of these growth factors.

**Conclusion:** Topical application of growth factors and especially epidermal growth factors (EGFs) seems to facilitate and accelerate the healing process of diabetic foot ulcers. The use of growth factors as topical therapy should be further studied as the number of clinical trials available cannot fully and reliably answer all research and clinical questions. Furthermore, as healing of diabetic foot ulcers is a complicated process, the use of growth factors should be a part of a holistic therapeutic approach.