

## DIGITAL THERAPY SUCCESS DETERMINATION IN THE FIELD OF COMPRESSION THERAPY

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The increasing digitalisation of social life is changing the requirements for modern healthcare and at the same time offers opportunities for a more efficient healthcare system. An end-to-end digitally supported, patient-oriented care chain should achieve a significant improvement in patient care. In this context, medical technology holds far-reaching opportunities for establishing and optimising new digital medical procedures and services.

Under this premise, Bauerfeind AG, Karl Otto Braun GmbH & Co. KG, BÖSL Medizintechnik GmbH, ISIS-IC GmbH, Bielefeld University of Applied Sciences and Klinikum Altenburger Land carried out a joint project funded by the German Federal Ministry of Education and Research (BMBF). In the project with the Acronym THERAFOLG-KOMP, a digitally supported system was developed that gives patients an overview of the success of their oedema treatment and thus improves the therapy.

Bioimpedance is the response of intracellular and extracellular body matter to an externally applied electric current. In this context, a Bioimpedance system (BIA) with radio gateway was developed in the project THERAFOLG-KOMP. The BIA + radio gateway has been tested (preliminarily) in a clinical environment with approval of ethic board and has proven to be able to check edema reduction.

During the 5-day treatment in the clinical environment, the parameter Z (in  $\Omega$ ) and Phi (in degrees) were measured with the THERAFOLG-KOMP-device and correlated with volume reduction (in ml) and body mass (in kg). The volume reductions were comparable with Z and Phi and correlated with weight loss.

The results show, that monitoring compression therapy with THERAFOLG-KOMP-System can provide digital health support with compression therapy, which will of course be highly individualised as people are only able to compare their own therapy success during processing the therapy. The preliminary data, measured within the THERAFOLG-Project, show that compression treatment reduced the volumina of the treated limbs, at the same time the BIA measurement showed corresponding values