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PAR4, PERCENTAGE AREA REDUCTION IN 4 WEEKS, A ROBUST PREDICTOR OF TOTAL WOUND HEALING

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It is not simple to choose effective interventions to realise total wound healing. Thereby chronic wounds need a long time for total healing. The initial healing rate is a predictor and expressed in the PAR4 (Percentage Area Reduction in 4 weeks). PAR is calculated as $(A1 - A0) / A0$; where in A0 is the initial wound area and A1 the wound area at end of the treatment period.

Wounds with a low PAR4 are likely to remain unhealed after 8 weeks of additional treatment. Kantor (2000), Sheehan (2003) and Cardinal (2008) performed studies that confirm the predictive value of PAR4. In a cutoff point of PAR4 = 37,7% the positive predictive value for complete healing was 70,6% and the likelihood ratio is 6,15; meaning that patients (wounds) that reaching at least PAR4 37,7% have a 6,15 bigger chance on total healing than wounds that don't reach a PAR4 of 37,7%.

We performed a systematic review to determine the PAR4 in 19 RCT's that studied the effects of Electro Stimulation (ES) on chronic skin wounds (n= 1042). We found a PAR4 in the control, most of the time placebo ES group, of around 25%. Applying ES in a random way, any ES type and electrode placement, increased the PAR with 16,4% to 41,4%. In 12 studies (n=460) only unidirectional ES was applied mostly combined with in-wound electrode placement, the difference between ES and control increased to 32,61%.