**Are dietary interventions effective in preventing and treating chronic wounds in people living with diabetes; A systematic review and meta-analysis**

**Aims:** Determine effectiveness of dietary interventions in prevention and treatment of chronic wounds in people with diabetes.

**Methods:** A systematic search was conducted of intervention studies in prevention and/or treatment of chronic wounds in people with diabetes. Risk of bias was assessed with Rob-2 or ROBINS. A meta-analysis was conducted utilising mean wound size at follow-up and non-adjusted data where available. Sensitivity analyses were performed.

**Results:** Seventeen randomised controlled trials and six non-randomised trials were included. Included studies explored dietary interventions for treatment of diabetes-related foot ulcers (DFU) only, with one evaluating both prevention and treatment of DFU. No studies for any other wound aetiologies were eligible for inclusion. Twenty studies focused on nutrient supplementation alone, one explored nutrient supplementation with nutrition education, one evaluated nurse-led nutrition education, and one utilised a multidisciplinary intervention including a dietitian. A random-effects meta-analysis was conducted to account for between-study variability, providing an overall estimate while acknowledging differences between studies. The meta-analyses for wound length (-0.443 [95%CI -0.841, -0.045], p = 0.0292), width (WMD -0.466 [95%CI -0.724], -0.208), p = 0.0004) and depth (MWD -0.200 [95%CI -0.364, -0.035], p = 0.0172) all found statistically significant differences favouring intervention, however quality of studies was low with moderate to high risk of bias, and substantial heterogeneity (I2 56-68%). The meta-analysis for proportion of people healed did not show a significant difference. Sensitivity analyses excluding non-randomised studies and per-protocol papers did not show significant changes.

**Conclusion:** This meta-analysis demonstrates nutrition supplementation is effective in reducing DFU wound length, width and depth, however the quality and certainty of the evidence is low. Therefore, caution must be taken in interpretation. Nutrition education may support wound size reduction, however more research is required. More research in other wound types, and the role of nutrition in wound prevention would be beneficial.