

CLINICAL OUTCOMES AND COST-EFFECTIVENESS OF A BIOACTIVE BETA-GLUCAN GEL WOUND DRESSING IN A COHORT OF PATIENTS WITH DIABETIC FOOT ULCERS

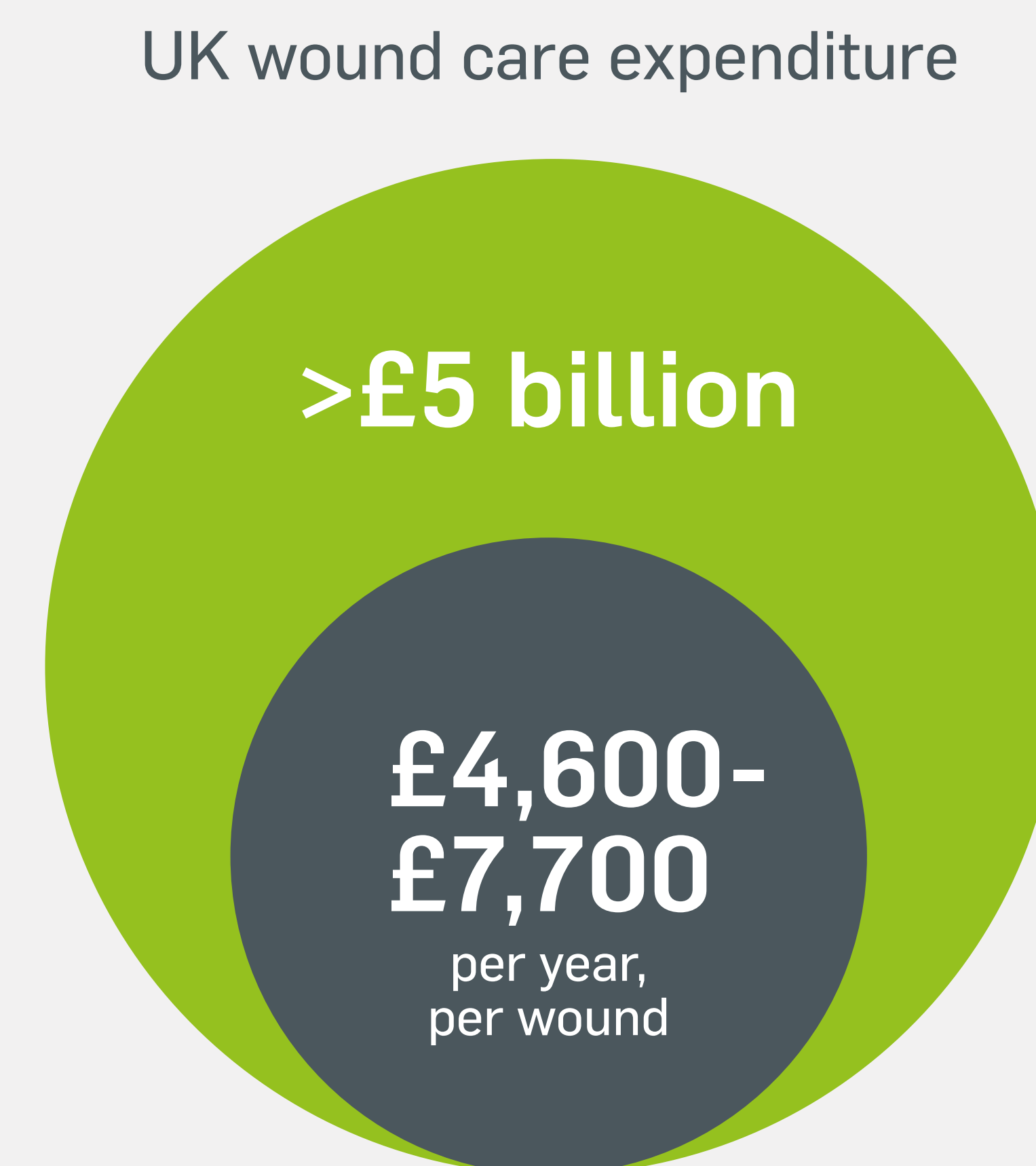
Introduction

Bioactive Beta-Glucan* Gel is a sterile, homogenous viscous gel that contains Soluble Beta-Glucan (SBG) extracted from Baker's Yeast *S. cerevisiae*, Glycerol, Carboxymethylcellulose and water.

The hydrogel components provide a moist healing environment¹ and supports autolytic debridement.

SBG has been found to be a powerful immunomodulator in animal models^{2,3} and an effective, safe and well tolerated treatment in diabetic foot and leg ulcers⁴.

Wound care demands extensive financial resources. Current estimates indicate that costs to the National Health Service in the UK are in the region of £4.5 - £5.1 billion per annum⁵. Evaluating the economic benefits of therapeutic intervention is therefore of paramount importance in the dressing selection process.



Aim: To report on the cost-effectiveness of treating patients with diabetic foot ulcers (DFU) with a Bioactive Beta-Glucan Gel dressing plus secondary dressing when compared to the standard of care dressing (methylcellulose).

Method: A health economic evaluation of a prospective, double-blinded, randomized controlled study of 60 patients with DFUs who received a SBG gel or a 2% methylcellulose (MC) hydrogel. The SBG gel efficacy was evaluated by the percentage of fully healed ulcers at 8 and 12 weeks where treatment was applied 3 times weekly. Cost effectiveness was measured by calculating per patient costs over an annual budget cycle.

CLINICAL OUTCOMES AND COST-EFFECTIVENESS OF A BIOACTIVE BETA-GLUCAN GEL WOUND DRESSING IN A COHORT OF PATIENTS WITH DIABETIC FOOT ULCERS

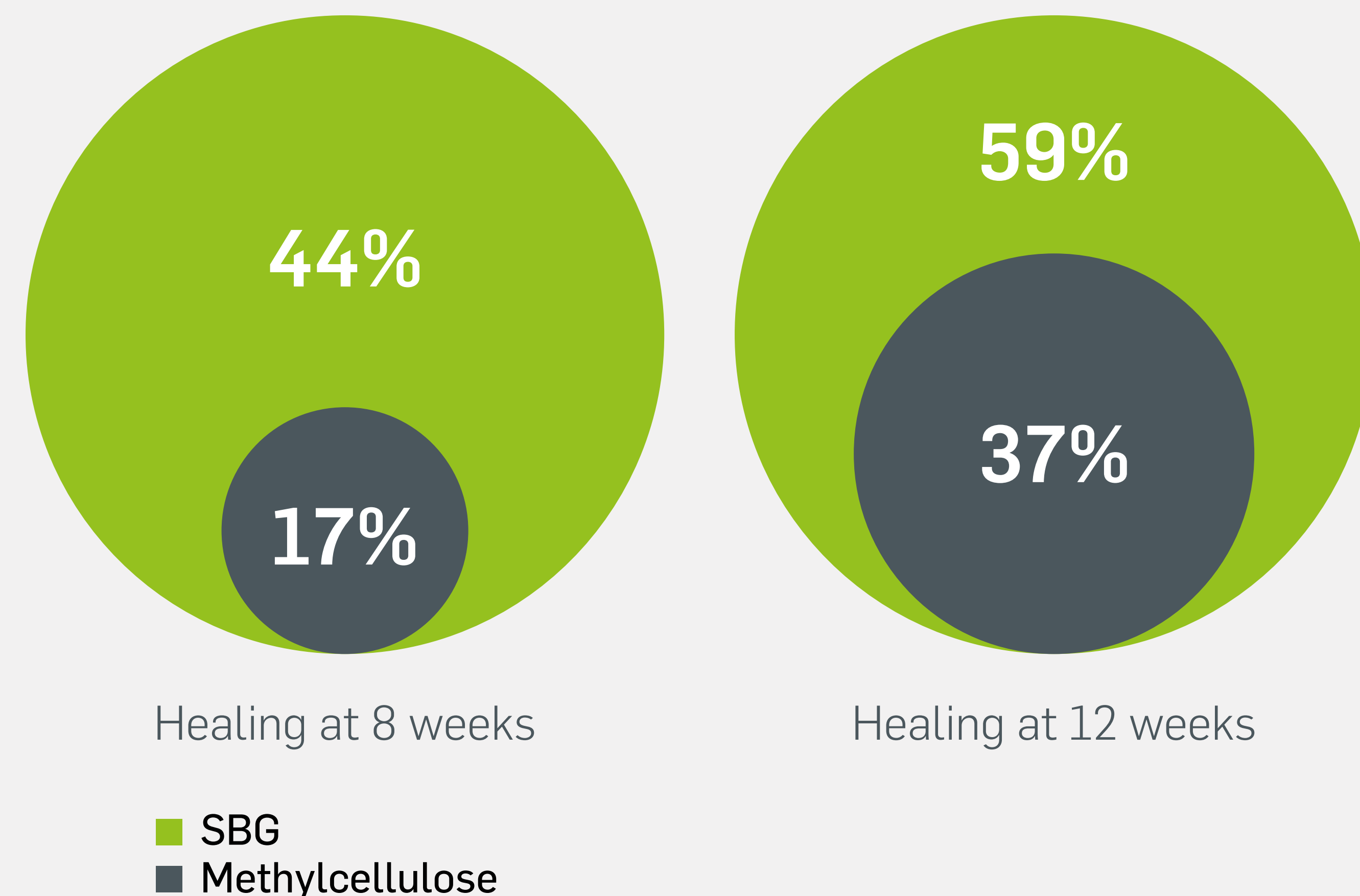
Results / Discussion

Economics is the science of scarcity. We have unlimited healthcare needs but limited resources. We therefore need to make careful choices when it comes to deciding on therapeutic interventions.

54 patients completed the treatment in the Per Protocol (PP) population, total of 57 ulcers.

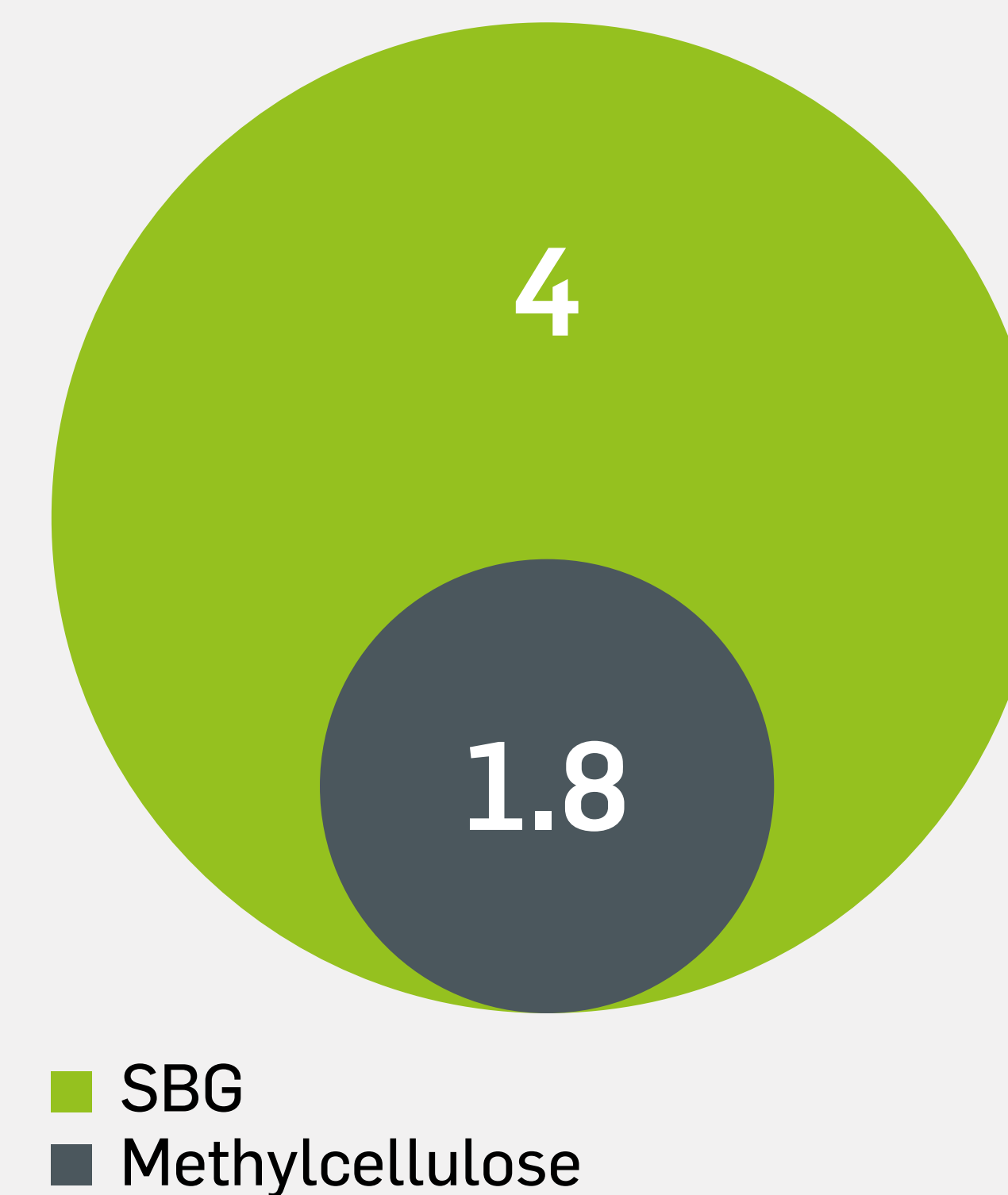
- At 8 weeks, a significantly higher healing incidence was observed in the SBG gel group (44% vs 17%, $P=0.03$), and a clearly higher incidence was seen at 12 weeks (59% vs 37%, $P=0.09$).

57 diabetic ulcers treated with SBG / Methylcellulose



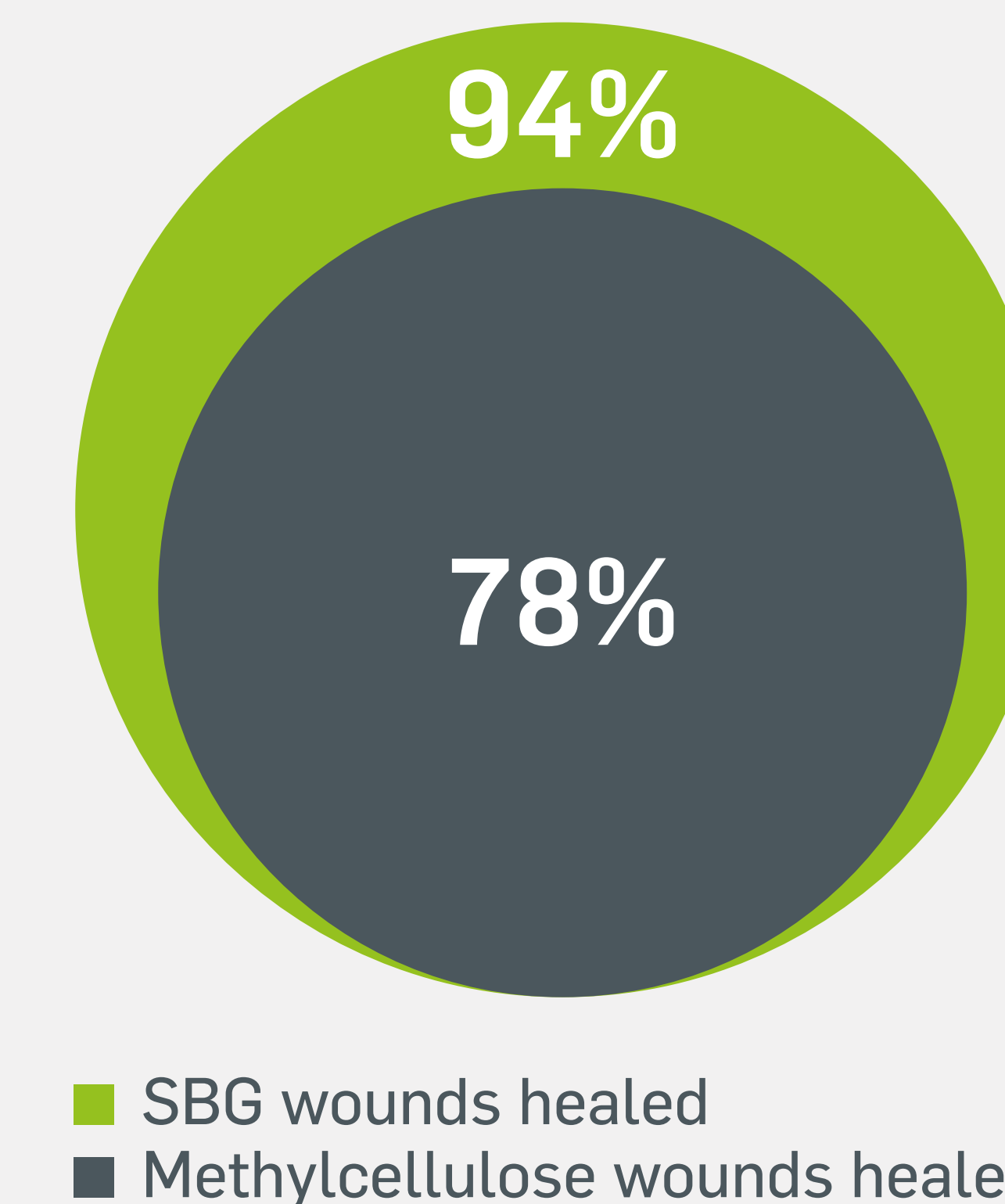
- The mean number of weeks healed for patients treated with SBG was 4.0 compared with 1.8 for the MC group.

Mean number of weeks healed

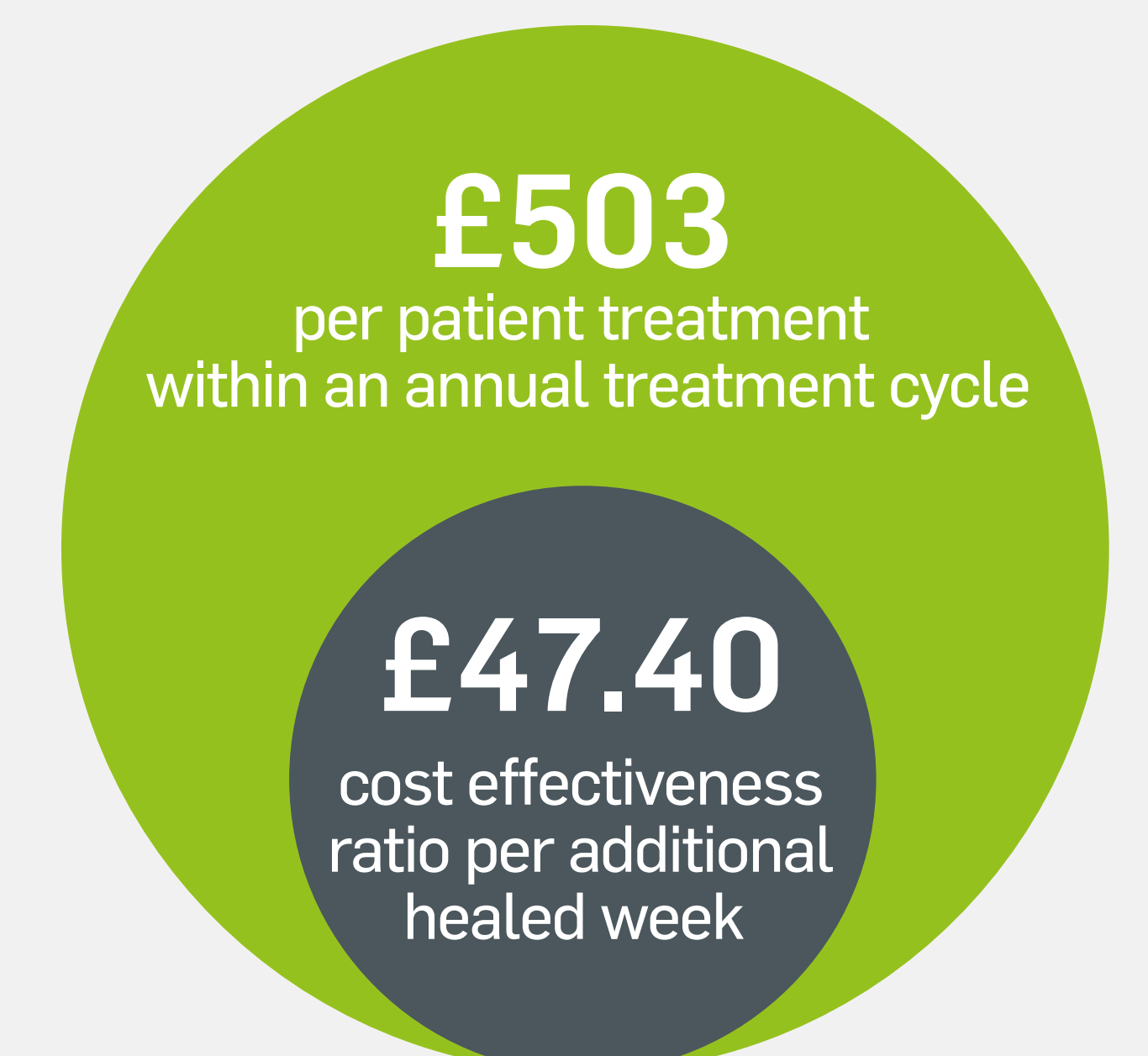


- The SBG gel group demonstrated an incremental 2.13 more wounds healed at 12 weeks.
- When results are extrapolated to 1 year the SBG gel group will see 94% of wounds healed with 78% healed in the standard of care group. These results deliver an incremental cost effectiveness ratio of £47.40 per additional healed week and a yearly cost saving of £503.15 per patient. Thus, more patients heal faster and the average cost per patient treatment is reduced by £503 within an annual treatment cycle.

Results extrapolated to 1 year



Cost reduction



CLINICAL OUTCOMES AND COST-EFFECTIVENESS OF A BIOACTIVE BETA-GLUCAN GEL WOUND DRESSING IN A COHORT OF PATIENTS WITH DIABETIC FOOT ULCERS

Conclusion

SBG wound dressing offers improvements in healing rates at 8 and 12 weeks of treatment when compared to 2% methylcellulose hydrogel. Annual cost savings exceed £500 per patient.

*Bioactive Beta-Glucan Gel is marketed as Woulgan®

■ This poster was supported by an educational grant from
Biotec Beta-Glucans, Tromsø, Norway

References:

1. Skjaveland I, Engstad RE. Can the activation of the body's own key cells in wound healing, WOUND MACROPHAGES, make a positive contribution in the treatment of chronic wounds? *Sår* 2013;21(4):5-7.
 2. Kofuji K, Huang Y, Tsubaki K, et al. Preparation and evaluation of a novel wound dressing sheet comprised of β -glucan-chitosan complex. *Reactive and Functional Polymers* 2010;70(10):784-89.
 3. Zhang X, Mosser DM. Macrophage activation by endogenous danger signals. *The Journal of pathology* 2008;214(2):161-78.
 4. Zykova SN, Balandina KA, Vorokhobina NV, et al. Macrophage stimulating agent soluble yeast β -1,3/1,6-glucan as a topical treatment of diabetic foot and leg ulcers: A randomized, double blind, placebo-controlled phase II study. *Journal of Diabetes Investigation* 2014;5(4):392-99.
 5. Guest JF, Ayoub N, McIlwraith T, et al. Health economic burden that wounds impose on the National Health Service in the UK. *BMJ open* 2015;5:e009283.
-