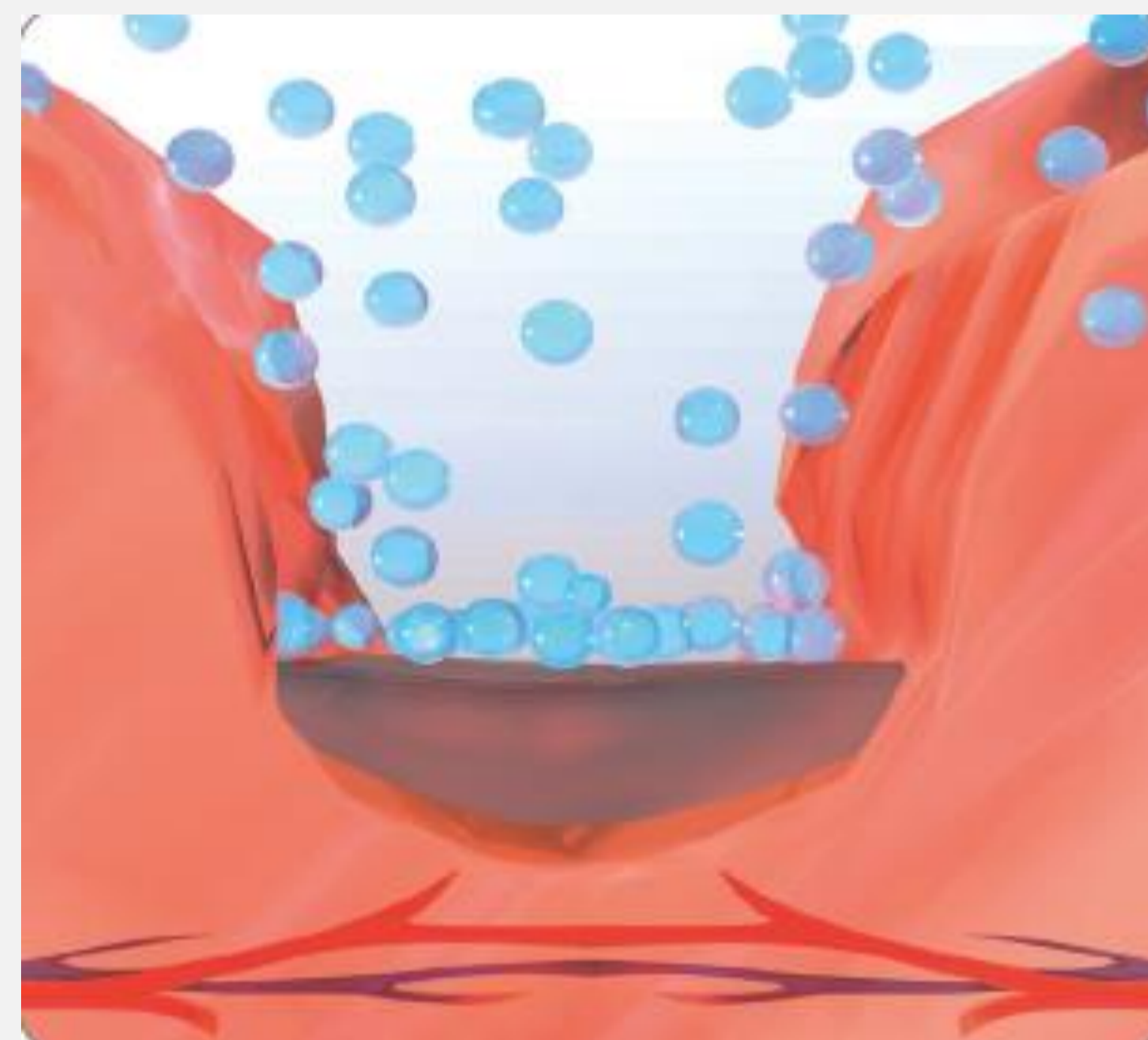


# Improving outcomes in chronic venous leg ulcers with a topical haemoglobin spray, using post hoc analysis and simulation of wound closure to evaluate cost effectiveness

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Oxygen is vital for all stages of wound healing: cell proliferation, angiogenesis, collagen synthesis and bacterial host defences

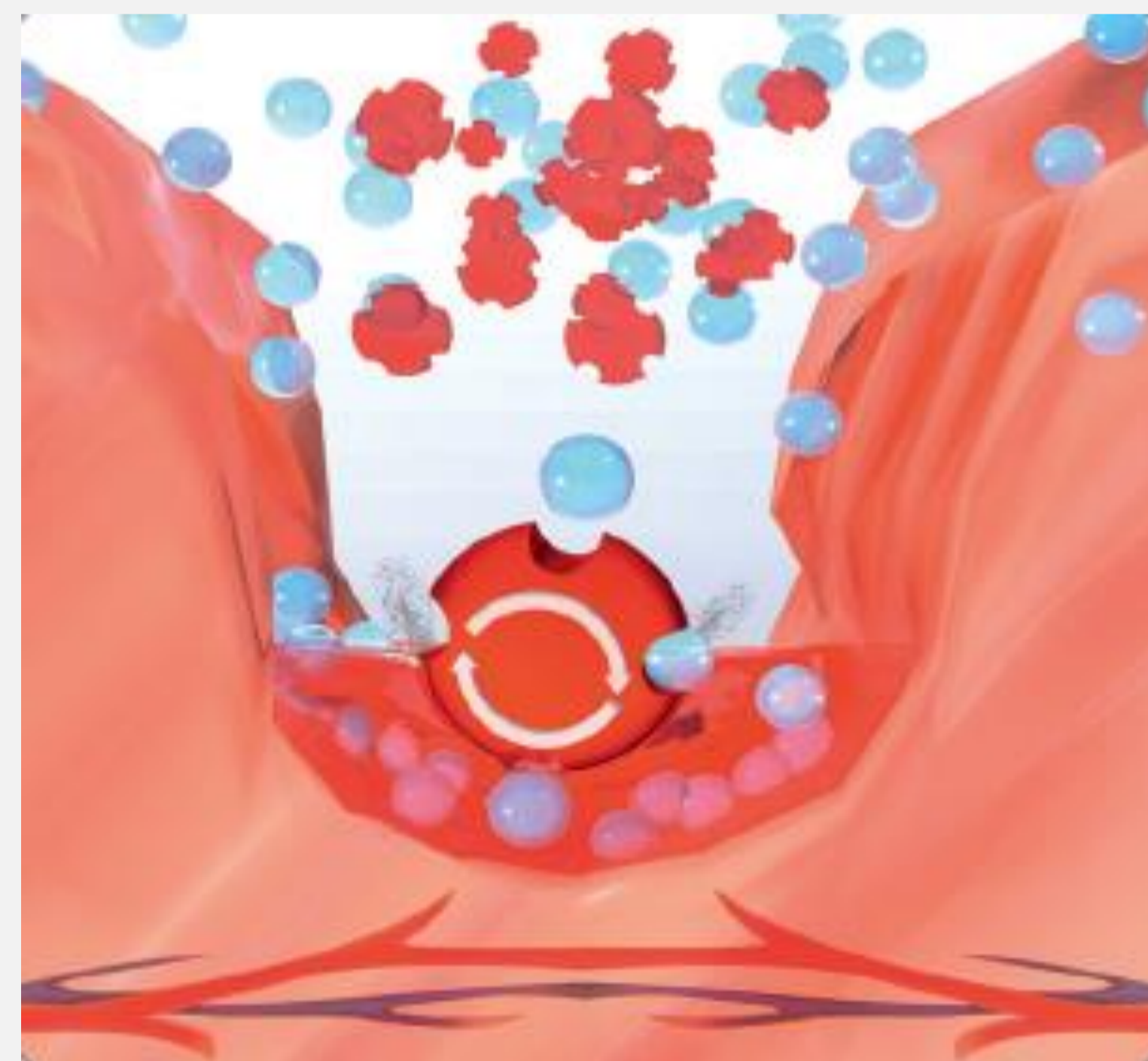


## Wounds require adequate oxygen

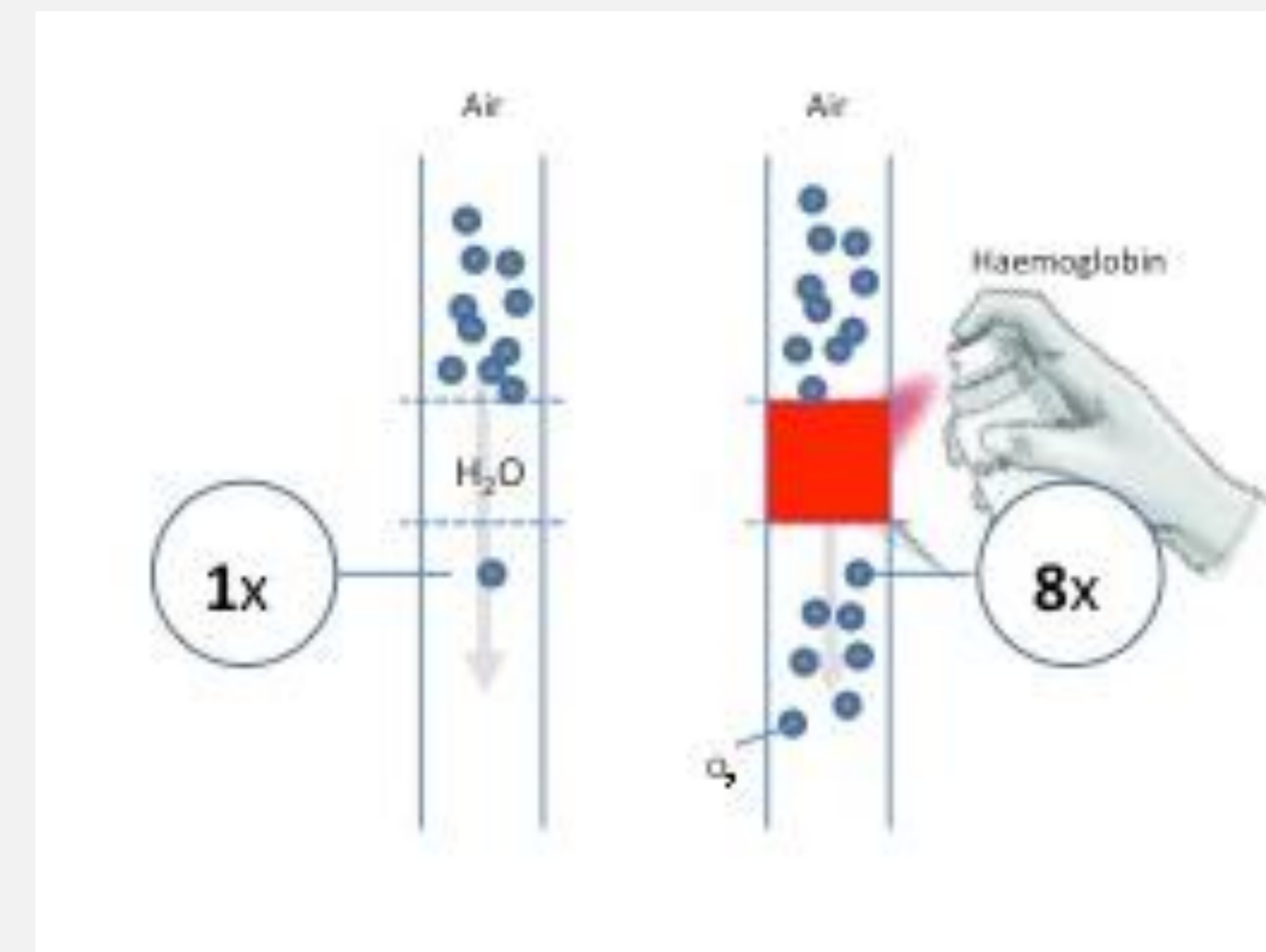
- Increased oxygen demand in all phases of wound healing
- Poor vascular oxygen supply due to primary disease i.e. diabetes, peripheral Arterial Occlusive Disease (pAOD) and non-healing Chronic Venous Insufficiency (CVI)
- Exudate forms a diffusion barrier for oxygen from outside

## Application of Granulox®

- Haemoglobin is able to bind oxygen and release it again as oxygen drops
- This process repeats itself continuously and without using up haemoglobin
- In this way large quantities of oxygen can be brought to the wound base



Following application of Granulox® *in vitro* research shows O<sub>2</sub> diffusion rates increase by over 800%



- Transports more than eight times more oxygen at low oxygen tension<sup>1</sup>
- Proven to work continuously for more than 5 days *in vitro*<sup>2</sup>
- Apply when changing dressing, at least every three days<sup>3</sup>

Spray can reproduced with permission from SastoMed GmbH;

<sup>1</sup>Scholander (1960) Oxygen Transport through Hemoglobin Solutions. Science 131 :585-590;

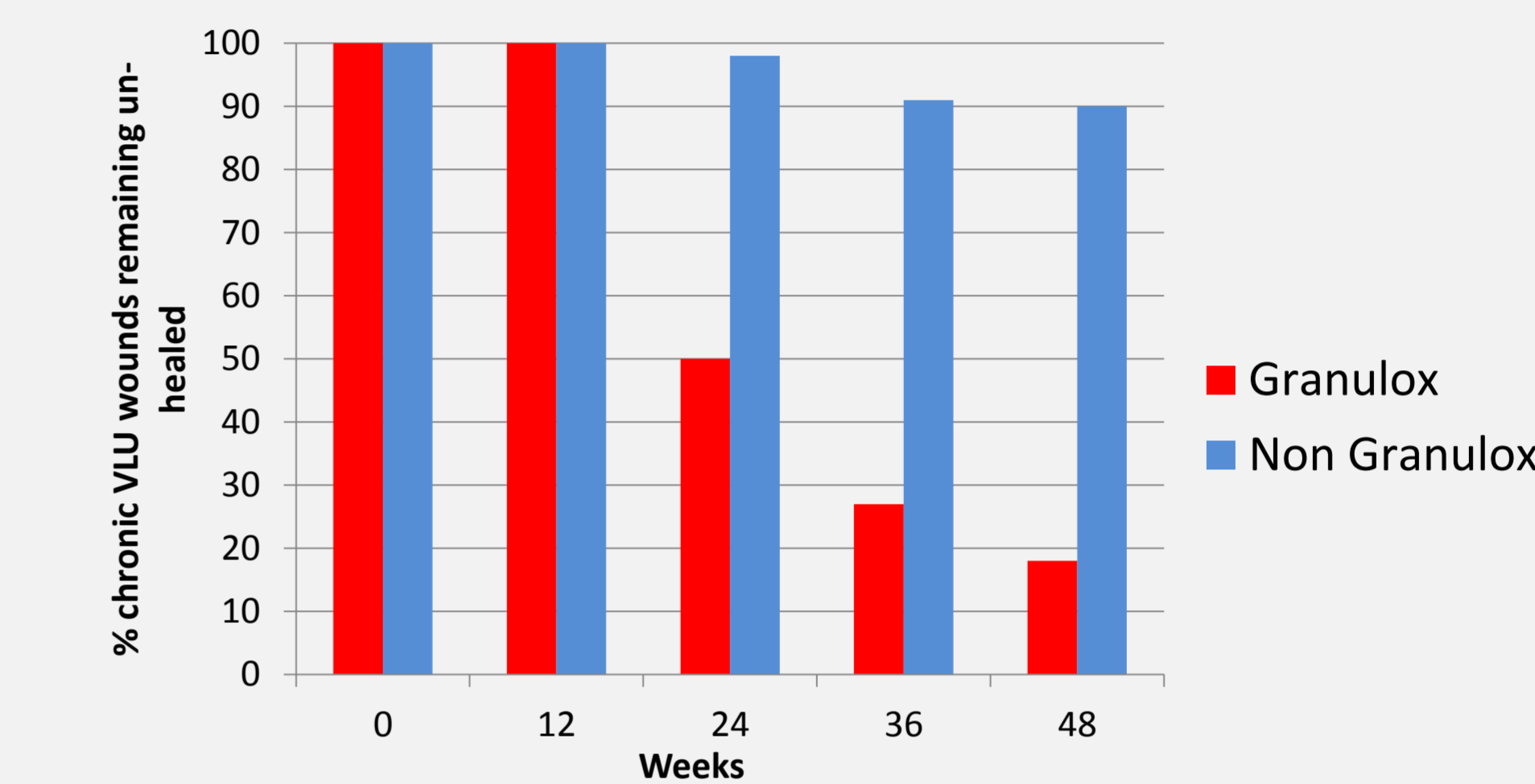
<sup>2</sup>Engels (2014) *In Vitro* oxygen binding test of oxygen. Peter Engels 09.04.14. infirst HEALTHCARE, Data on File.

<sup>3</sup>Hälsa Pharma GmbH. Granulox® Instructions for Use. April 2014

- The results from a post hoc analysis of a 72 VLU patient prospective, rater-blinded, randomised controlled study (36 standard care, 36 standard care plus topical haemoglobin spray) were used to forecast healing outcomes over a 12-month period in a simulated 25,000 'patient' population.
- Over a 12-month simulation period a 43% overall reduction in wound burden was predicted 74% fewer open wounds remaining at the end of the year.

Source: Arenberger Elg Petyt Cutting (2015). Expected outcomes from topical haemoglobin spray in non-healing and worsening venous leg ulcers. J Wound Care. 2015 May;24(5):228, 230-2, 236. doi: 10.12968/jowc.2015.24.5.228.

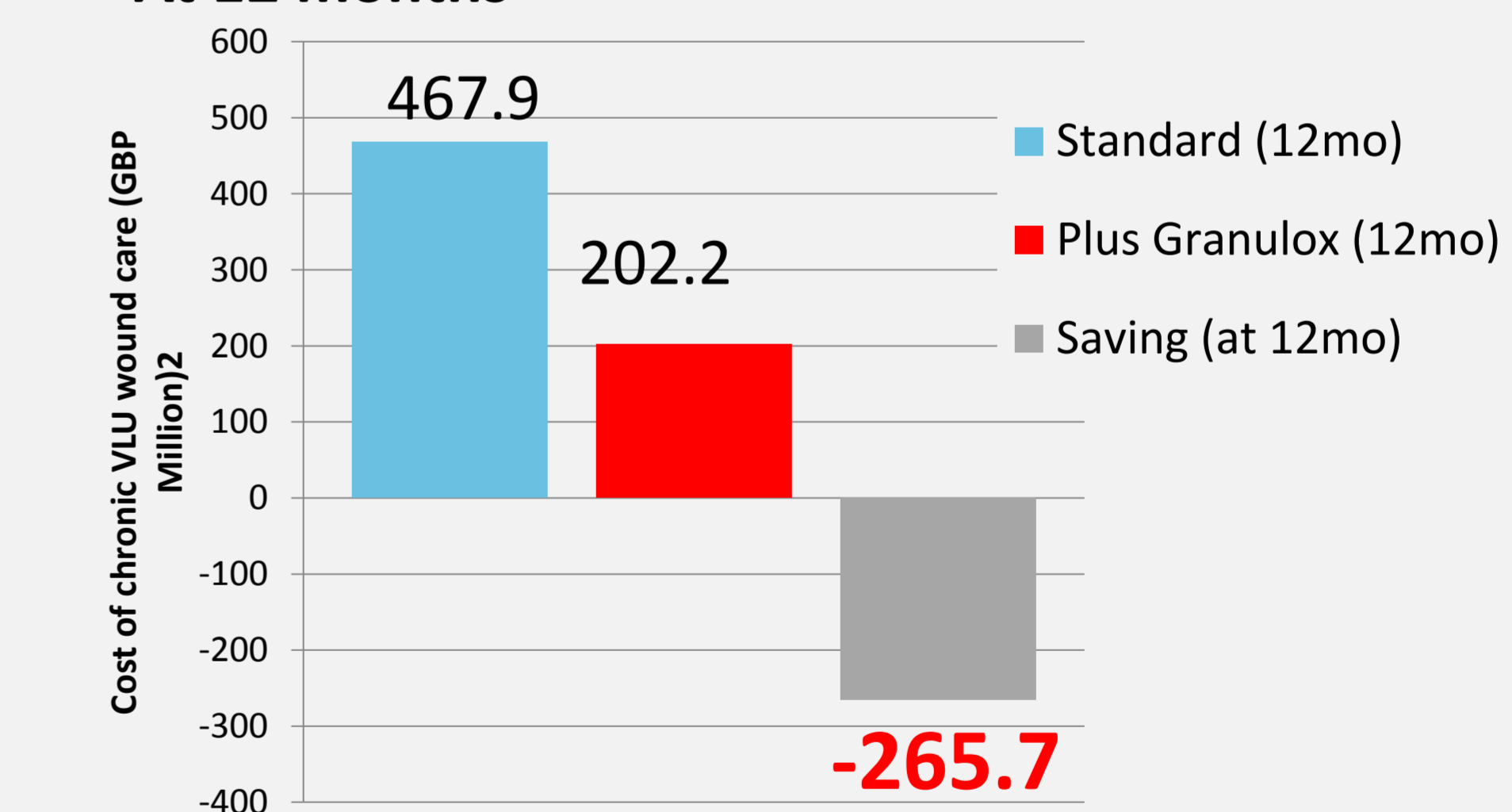
Wound persistency from simulated populations of 25,000 chronic VLU patients for each treatment group



- Predicted reduction of total open wound weeks by 43% in year one
- 74% fewer open wounds remaining at year end

## Granulox® Cost savings in treating chronic venous leg ulcers

At 12 months



- Adoption of Granulox® in the UK's estimated 60,000 chronic venous leg ulcers could save **£265 million** within 12 months
- For a leg ulcer service treating 60 chronic venous leg ulcer cases, this equates to a **£265k** saving within 12 months

Source: Adapted from Arenberger Elg Petyt Cutting (2015). Expected outcomes from topical haemoglobin spray in non-healing VLUs. JWC. 2015 May;24(5):228, 230-2, 236; applying average weekly cost of care from Harding, Posnett and Vowden (2013) and projected to YR2014 using PSSRU Unit Costs HCHS pay and prices index; Healed £6.87pw, Improving/progressing £99.67 pw, Static/stagnant £114.10pw, Deteriorating £181.45pw (No patients assumed severe at £725.04pw). Costs of Granulox® assume multi-use can usage (i.e. each can used up on next patient) at £125/can, 30 application/can, and 2.33 applications per week for £9.72/week. Savings with cans on single patient use basis will be (slightly) smaller. Data on File.

**Conclusions:** Topical haemoglobin spray is not only an effective treatment for non-healing VLUs but promises to deliver substantial cost savings to the NHS