

# **QUICK** GUIDE



Haemoglobin

**Granulox:**

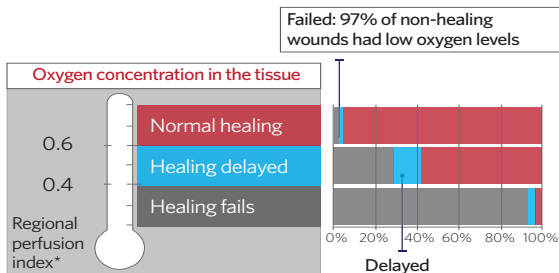
TOPICAL HAEMOGLOBIN

Wounds<sub>UK</sub>

# OXYGEN AND WOUND HEALING<sup>1</sup>

- Oxygen is needed at all phases of wound healing
- Insufficient wound tissue oxygenation is a major risk factor for delayed healing
- Low levels of oxygen in the wound may be due to poor tissue perfusion and/or underlying comorbidities (e.g. diabetes)
- The majority of non-healing wounds have low oxygen levels

## Poorly oxygenated wounds almost never heal



\*Regional perfusion index: oxygen levels in wound vs oxygen levels in upper-body skin

Source: Hauser CJ. Tissue salvage by mapping of skin surface transcutaneous oxygen tension index. Arch Surg 1987; 122(10): 1128-30

## Practical solutions to deliver oxygen to the wound bed are needed

### References

1. Chadwick P et al (2015) *Wounds UK* (EWMA Edition).
2. Arenbergerova et al (2013) *EWMA J* 13(2):25-30
3. Bateman SD (2015) *Br J Nurs* 24(12)

# ABOUT TOPICAL HAEMOGLOBIN: GRANULOX

- Granulox is an easy-to-use aqueous solution containing haemoglobin molecules
- The spray is designed to transport oxygen to slow-healing and non-healing wounds such as diabetic foot ulcers, pressure ulcers, venous leg ulcers and surgical wounds
- Topical haemoglobin can be considered after 4 weeks of standard care if the wound fails to respond substantially to treatment

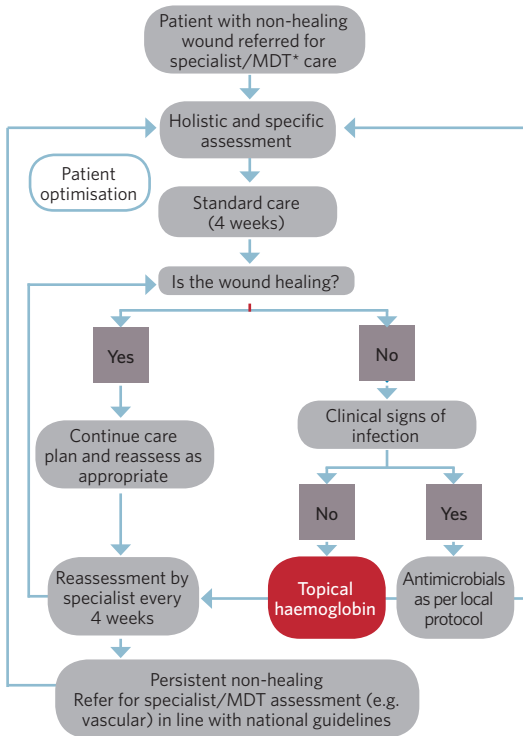
## The evidence for Granulox is building in chronic wounds, with reports of:

- ✓ Statistically significant reduction in wound surface area of 53.4% in patients with chronic venous ulcers. Patients in the Granulox group had a 75% increase in granulation (vs 18% controls) and a 78% increase in epithelialisation (vs 7%) at 13 weeks<sup>2</sup>
- ✓ 100% reduction in slough over a period of 4 weeks in patients with diabetic foot wounds<sup>3</sup>
- ✓ Reduction in wound size in 17 out of 18 patients with pressure ulcers<sup>4</sup>
- ✓ No product-related adverse events and well-tolerated by patients<sup>2-5</sup>
- ✓ A positive impact on pain and quality of life<sup>2</sup>

4. Tickle J (2015) Br J Comm Nurs. S12, S14-8

5. Arenberger M et al (2011) GMS Krankenhhyg Inderdisczip 6(1): Doc05

# WHEN TO USE GRANULOX<sup>1</sup>

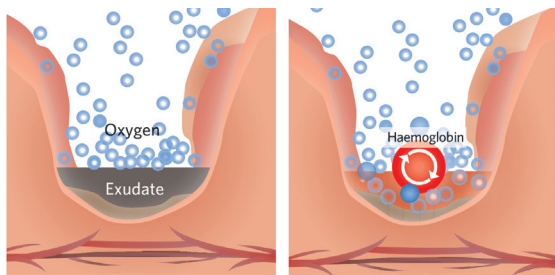


\*Multidisciplinary team

Further information

Website: <http://granulox.de/en/granulox/granulox-information>

## HOW GRANULOX WORKS<sup>2</sup>



- Wound fluid prevents atmospheric oxygen from reaching the wound bed
- When Granulox is applied to the wound, ambient oxygen can bind to the haemoglobin molecules within the solution
- Oxygen is transported by the haemoglobin to tissues where the concentration of oxygen is low and is then released due to the difference in partial pressures
- As oxygen is delivered to the wound bed, low oxygen levels in the tissues are reversed and processes needed for tissue regeneration are stimulated
- As the haemoglobin does not get used up, it can create a cycle of continuous oxygen transport
- This cycle lasts up to 72 hours, with oxygen being delivered continuously to the tissues that are using the oxygen to restart wound healing processes

## PRACTICAL TIPS FOR USING GRANULOX<sup>1</sup>

- ✓ Inform patients of the red appearance of the product in advance of use
- ✓ Discuss the ingredients of Granulox and address any concerns
- ✓ Excess exudate levels should be managed prior to the start of treatment
- ✓ Take appropriate action to avoid staining of clothes and use an appropriate (breathable) secondary dressing to prevent strikethrough and leakage
- ✓ Cleanse the wound at each dressing change. Assess the wound and debride as appropriate
- ✓ Reapply Granulox at every dressing change, with a maximum wear time of 3 days
- ✓ To prevent the nozzle from becoming blocked, consider rinsing the nozzle with warm water or saline directly after use
- ✓ Depending on wound size, one spray can is sufficient for approximately 30 applications
- ✓ Ideally Granulox should be stored in the fridge. If not possible, non-refrigerated products will last at least 6 weeks