

Topical haemoglobin spray for chronic wound therapy

Oxygenating wounds

- ✓ Time to heal diabetic foot ulcers 50% shorter than with standard of care¹
- ✓ Twice as many chronic wounds healed at 8–16 weeks compared to standard of care^{1,2,3}
- ✓ More than 70% lower average pain scores at four weeks than with standard of care in chronic wounds³
- ✓ Less slough during wound management: 99% less slough in chronic wounds after 4 weeks compared to 33% with standard of care⁴
- ✓ Using Granulox[®] as adjunct therapy, approximately 90% more wounds healed compared to standard of care alone^{*5}



12 ml unit =
3 months
treatment*

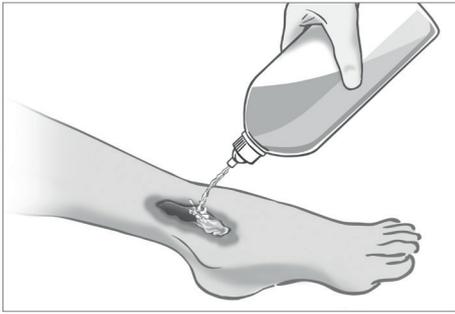


*After 26 weeks of treatment with Granulox adjunct

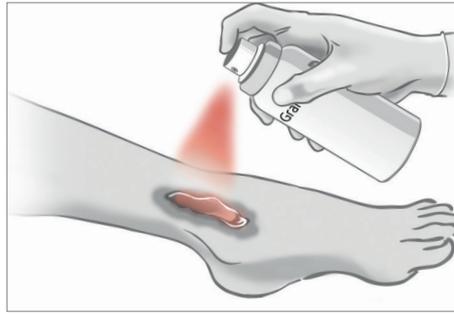
Granulox[®]

Mölnlycke[®]

How to use Granulox®



1. Wound cleansing and debridement as clinically appropriate. Granulocyn wound irrigation recommended.



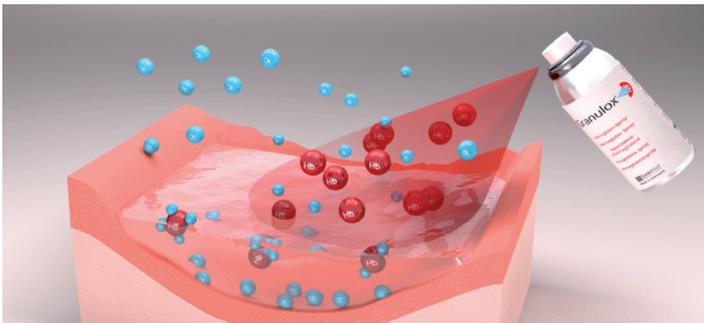
2. Thin and even application of Granulox from 5-10cm distance. 1 spray for 1 second covers a wound of 2x3cm.



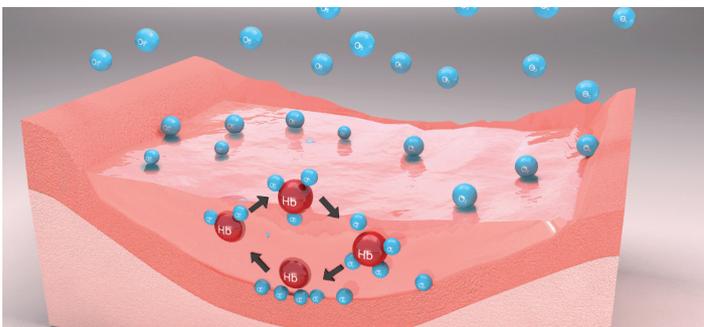
3. Covering the wound with a breathable, non-occlusive wound dressing, e.g. Mepilex®, Mepilex® Border and Mepilex® Border Flex.

Unique mode of action – Granulox acts like a shuttle for oxygen molecules

Granulox® is an innovative medical device for the treatment of chronic wounds, such as venous leg ulcer, arterial leg ulcer, mixed leg ulcer, diabetic foot ulcers, secondary healing of surgical wounds and pressure sores. Granulox can also be used on sloughy and infected wounds as an adjunct to standard of care. Granulox provides the wound with oxygen by means of diffusion. The haemoglobin supplies the base of the wound with oxygen. The improved oxygen supply to the base of the wound supports wound healing.



1. From the moment Granulox is sprayed, the highly purified haemoglobin starts to bind oxygen from the environment and stores it in its molecular structure. Oxygen loaded haemoglobin diffuses through the wound exudate in the wound bed⁶.



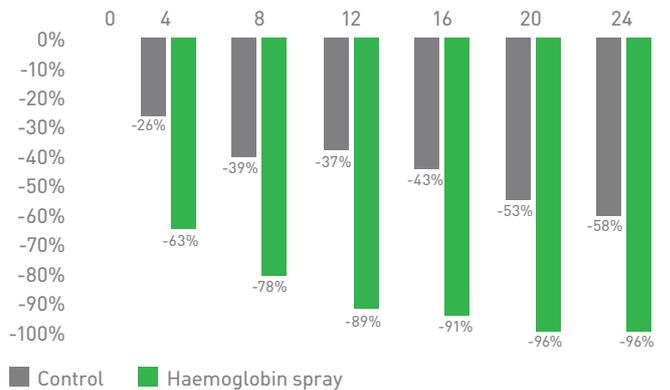
2. Due to the concentration gradient oxygen is released and the haemoglobin molecule is available to bind oxygen again. The reversible oxygen binding property of hemoglobin means each molecule can contribute to multiple cycles of oxygen binding and release⁷.

References: 1. Hunt, SD., Elg, F. Clinical effectiveness of hemoglobin spray (Granulox®) as adjunctive therapy in the treatment of chronic diabetic foot ulcers. November 2016. 2. Hunt, SD., Elg, F. Hemoglobin spray as adjunct therapy in complex wounds: Meta-analysis versus standard care alone in pooled data by wound type across three retrospective cohort controlled evaluations. SAGE Open Medicine, 2018; 6:1-9. 3. Hunt, SD., Elg, F. The clinical effectiveness of haemoglobin spray as adjunctive therapy in the treatment of chronic wounds. Journal of Wound Care, 2017; 26(9):558-568. 4. Hunt, S., Elg F., Percival S. Assessment of clinical effectiveness of haemoglobin spray as adjunctive therapy in the treatment of sloughy wounds. Journal of Wound Care. 2018 Apr; 27(4): 210-219. 5. Elg F, Bothma G. Cost-effectiveness of adjunct haemoglobin spray in the treatment of hard-to-heal wounds in a UK NHS primary care setting. J Wound Care. 2019 Dec 2;28(12):844-849. doi: 10.12968/jowc.2019.28.12.844. PMID: 31825776. 6. Petri, M., Stoffels, I., Griewank, K., Jose, J., Engels, P., Schulz, A., Pötzschke, H., Jansen, P., Schadendorf, D., Dissemond, J., Klode, J. Oxygenation Status in Chronic Leg Ulcer After Topical Hemoglobin Application May Act as a Surrogate Marker to Find the Best Treatment Strategy and to Avoid Ineffective Conservative Long-term Therapy. World Molecular Imaging Society, 2017. 7. Scholander, PF., Oxygen transport through hemoglobin solutions. Science. 1960 Feb 26;131(3400):585-90. 8. Hunt S: D., Elg F., Diabetic Foot & Ankle 2016, 7: 33101

The application of Granulox can be adjusted to the frequency of changing the corresponding wound dressing. Apply Granulox every time the dressing is changed, or at least every 3 days.

Wound healing (wound size reduction)

Percent wound size change versus baseline by week



4 weeks of treatment:

63% average wound size reduction in Granulox group with 5 patients fully healed

26% average wound size reduction in Standard Care group with 1 patient fully healed

Wound size reduction in patients with diabetic foot ulceration receiving Standard of Care + Granulox® compared to retrospective control cohort with SoC alone [20/20 patients]⁸.

Product information**

Ref. No	Content	Treatments per can
360001	12ml	30

**Depending on the size for the wound. One spray of 1-2 seconds is normally sufficient to cover a wound area of 2 x 3cm.

Find out more at www.molnlycke.com

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