Antimicrobial resistance, a global concern



Non-healing wounds are a significant problem for healthcare systems worldwide.

- **Infection** is one of the most frequent complications that can jeopardise the progression towards healing.¹
- Inappropriate use of antimicrobials creates an environment for resistance against some products that are
- **Antimicrobial resistance** is directly responsible for morbidity, length of hospitalisation, mortality and healthcare costs.²

The aim in wound care is to achieve the best clinical outcome with the least cytotoxicity by selecting the optimal wound healing and antimicrobial treatment.²

Frequently Asked Questions

Hydro vs Forte?

♣ Flaminal

♣ Flamina



For low to moderately exuding wounds, **low** alginate content (3,5%)

⊘ ⊘ For moderate to highly exuding wounds, higher alginate content (5,5%)

Debriding

Identical



Identical



Topical antimicrobial agents used in wound care¹

Antibiotics

E.g. fucidic acid, silver sulphadiazine....

Antiseptics

E.g. povidone iodine,

agents

E.g. GLG enzyme system (Flaminal®)

Flen Health is committed to fight antimicrobial resistance together with the European Wound Management **Association (EWMA)**



Link to EWMA e-learning course on antimicrobial stewardship

How to apply?

Cover the wound bed with a sufficiently thick layer (0.5cm)



e.g. with a nozzle





e.g. with a spatula



e.g. directly on the dressing

When to change the dressing?

> At the start: > Thereafter: Every 1-4 days (depending on the amount of exudate)

Thorough cleaning with a suitable irrigation solution is recommended. **In case of an alginate crust:** remove gel and alginate remnants by rinsing thoroughly.



Flaminal[®] Hydro

5 x 15g tubes PIP code: 324-2971 NHS CAT NO.: ELG021

1 x 50g tube

PIP code: 344-9600 NHS CAT NO.: ELG025

500g tub

PIP code: -NHS CAT NO.: ELG209



Flaminal® Forte

5 x 15g tubes PIP code: 324-2963 NHS CAT NO.: ELG022

1 x 50g tube

PIP code: 344-9592 NHS CAT NO.: ELG023

500g tub

PIP code: NHS CAT NO.: ELG028



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- 2. Lipsky et al. Antimicrobial stewardship in wound care: a Position Paper from the BSAC and EWMA. J Antimicrob Chemother 2016; 71: 3026-3035
- 3. De Smet, K. et al. Pre-clinical evaluation of a new antimicrobial enzyme for the control of wound bioburden. Wounds. 2009,
- 4. Jones, J. et al. TIME to assess wounds a clinical evaluation of Flaminal. Wounds UK. 2018, 14(3): 63-69
- 5. Swanson, T. et al. International Wound Infection Institute (IWII) Wound infection in clinical practice. Wounds International. 2016
- 6. Wu S et al. Oxidized Regenerated Cellulose/Collagen Dressings: Review of Evidence and Recommendations, Advances in Skin & Wound Care. 2017, (11 Suppl 1):S1-S18
- 7. Cooper, RA. Inhibition of biofilms by glucose oxidase, lactoperoxidase, and guaiacol: the active antibacterial component in an enzyme alginogel. International Wound Journal. 2013, doi: 10.1111/iwj.12083
- 8. Doby, D. et al. Fucidic acid resistance in Staphylococcus Aureus. 2004. Arch Dis Child, 89:74-77.
- 9. Horner, C et al. Reduced susceptibility to chlorhexidine in staphylococci: is it increasing and does it matter? J Antimicrob Chemother. 2012; 67: 2547-2559
- 10. Lacey, RW. et al. Action of povidone-iodine against methicillin sensitive and –resistant cultures of Staphylococcus aureus. Postgrad Med J. 1993, 69 Suppl 3: S78-83



Safe and effective wound management with Flaminal®

In accordance with the principles of the antimicrobial stewardship





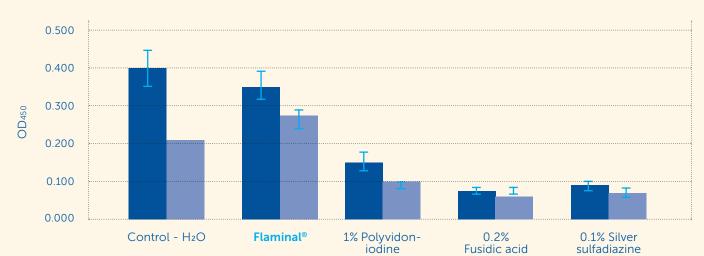
Optimal wound healing









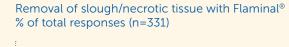




Debride and remove necrotic tissue⁴:

keep the wound clean



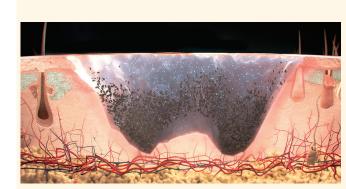


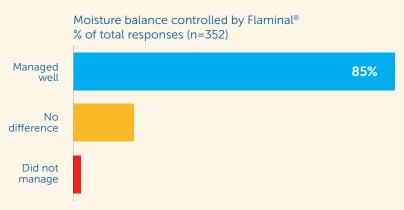




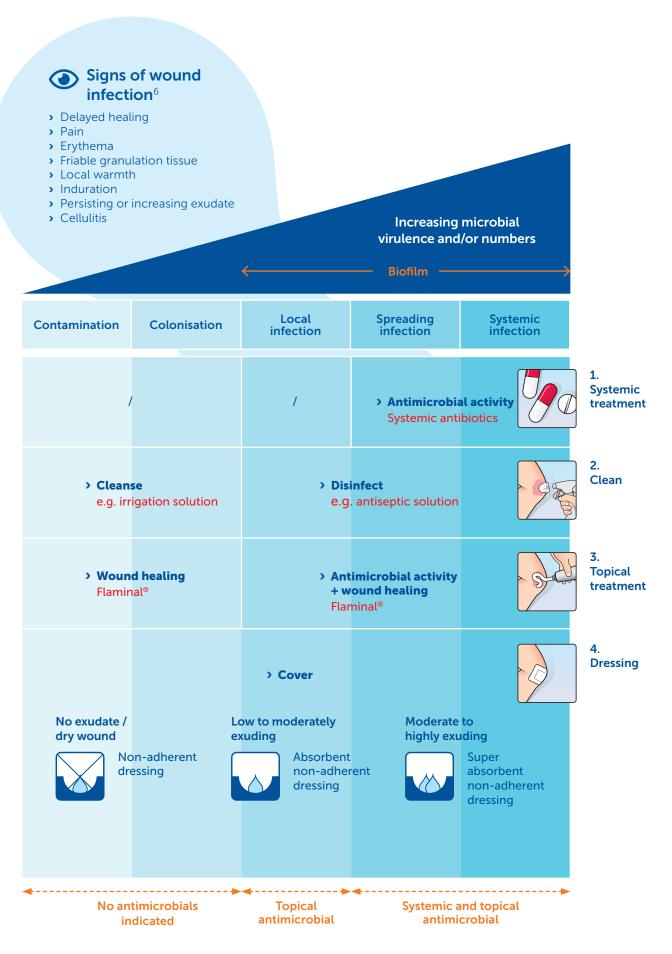
Manage wound exudate⁴:

create an optimal moist wound environment





Recommended treatment according to the wound infection continuum⁵



^{*}Flaminal® Hydro and Flaminal® Forte can be used on infected wounds under medical supervision.



Antimicrobial protection*



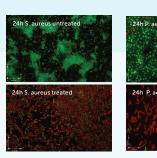
Broad-spectrum antimicrobial activity of the GLG enzyme system in Flaminal^{®3}

Gram	Bacteria	Killed within 6 hours
0	Staphylococcus aureus (MRSA)	⊘
	Enterococcus faecium	②
	Enterococcus faecalis	②
	Escherichia coli	Ø
	Klebsiella oxytoca	Ø
	Enterobacter cloacae	②
	Enterobacter aerogenes	Ø
	Burkholderia multivorans	Ø
	Pseudomonas aeruginosa	②
	Stenotrophomonas maltophilia	②
	Pandoraea apista	Ø
	Achromobacter denitrificans	②



Rapid bactericidal activity⁷

een = viable bacteria / Red = dead bacteria







Minimal risk for antimicrobial resistance development

Product categories	Antimicrobial resistance reported to date
GLG enzyme system (Flaminal®) ¹	No
Topical antibiotics ^{1,8}	Yes**
Topical antiseptics ^{1,9,10}	Yes**

*Flaminal® antimicrobial protection mode of action:

1) absorption of necrotic tissue and bacteria to the gel, and

2) antimicrobial activity of GLG enzyme system within the gel
**Resistance has been reported in vitro for certain antibiotic and antiseptic agents.