

Zoralan Wound

More than just wound healing



Content

1) Wounds: introduction

2) Wound healing

3) Wound treatment

4) Hydrogel

5) Zoralan Wound

6) Offer

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2) Wound healing

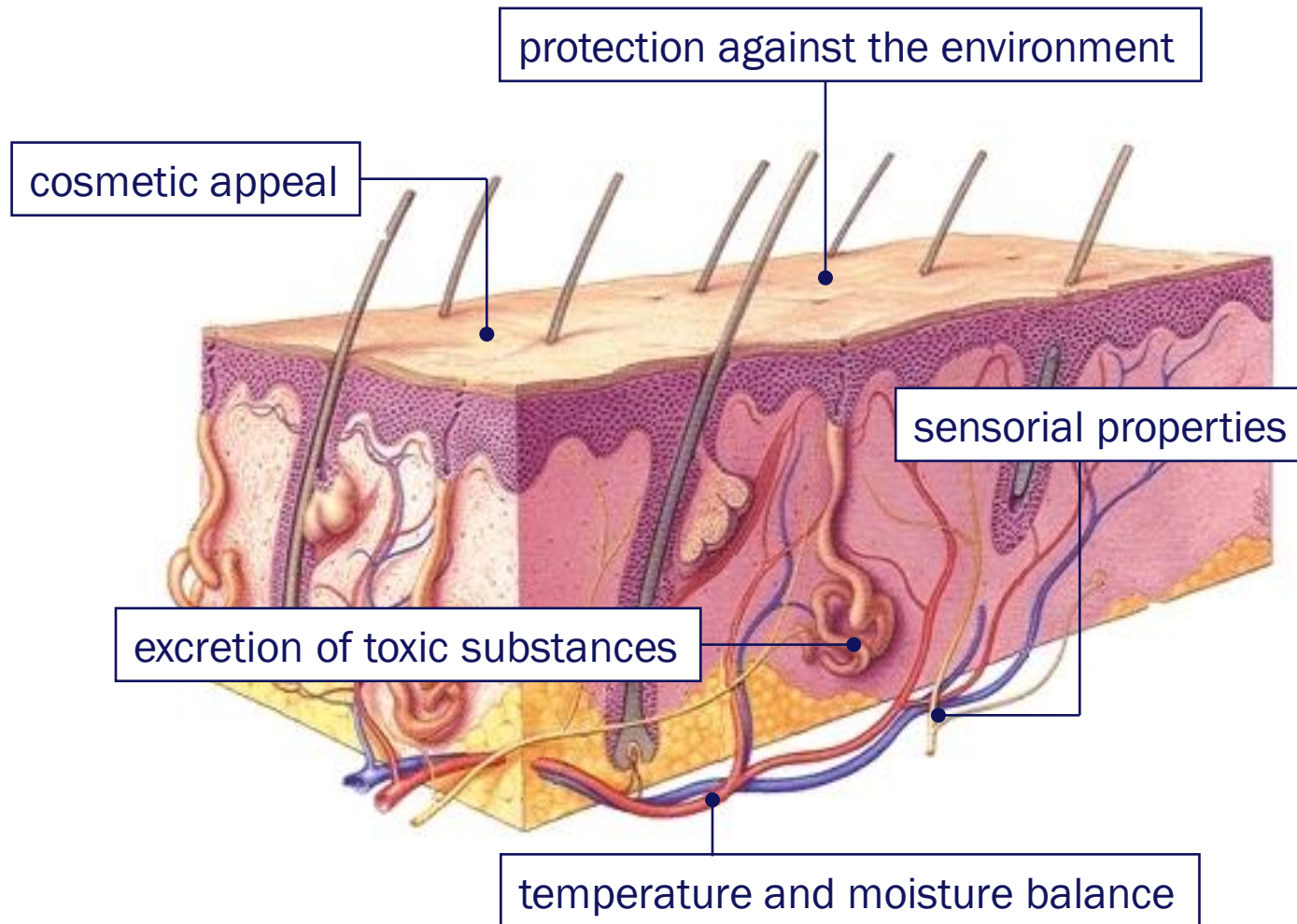
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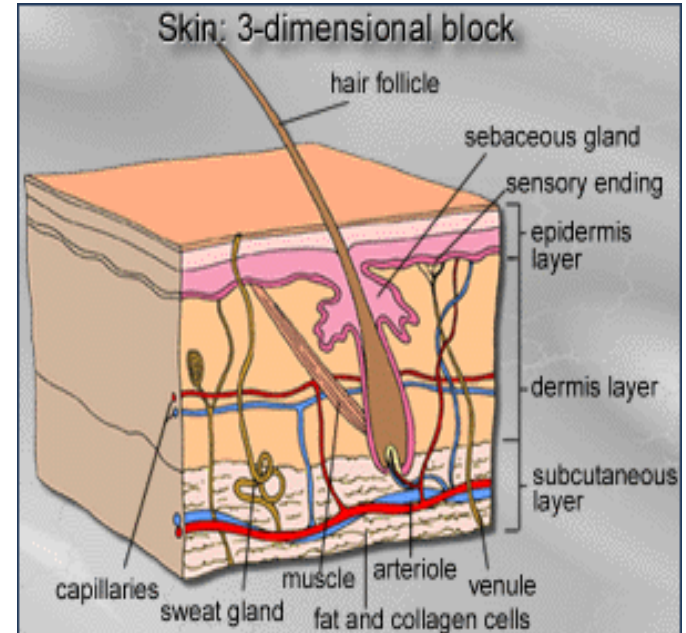
6) Offer

The skin - function



Wounds: disruption of the skin

- The skin
 - Epidermis
 - Outermost layer
 - Continuously renewed by division of keratinocytes
 - Contains pigment cells
 - Dermis
 - Inner layer
 - Contains nerves, blood vessels, sweat and oil glands, hair follicles
 - Contains collagen and elastin
 - Hypodermis
 - Subcutaneous fat layer



Wounds: classification

- Superficial wounds
 - Damaged epidermis – no blood
 - F.e. irritation by friction, maceration, sun burn
- Traumatic wounds
 - Also dermis is damaged – wound can bleed
 - F.e. cuts, burns, abrasions, nipple gaps
- Chronic wounds
 - Do not heal as anticipated, insufficiency in the blood circulation
 - F.e. bed sores (decubitus), open leg sores (ulcers)

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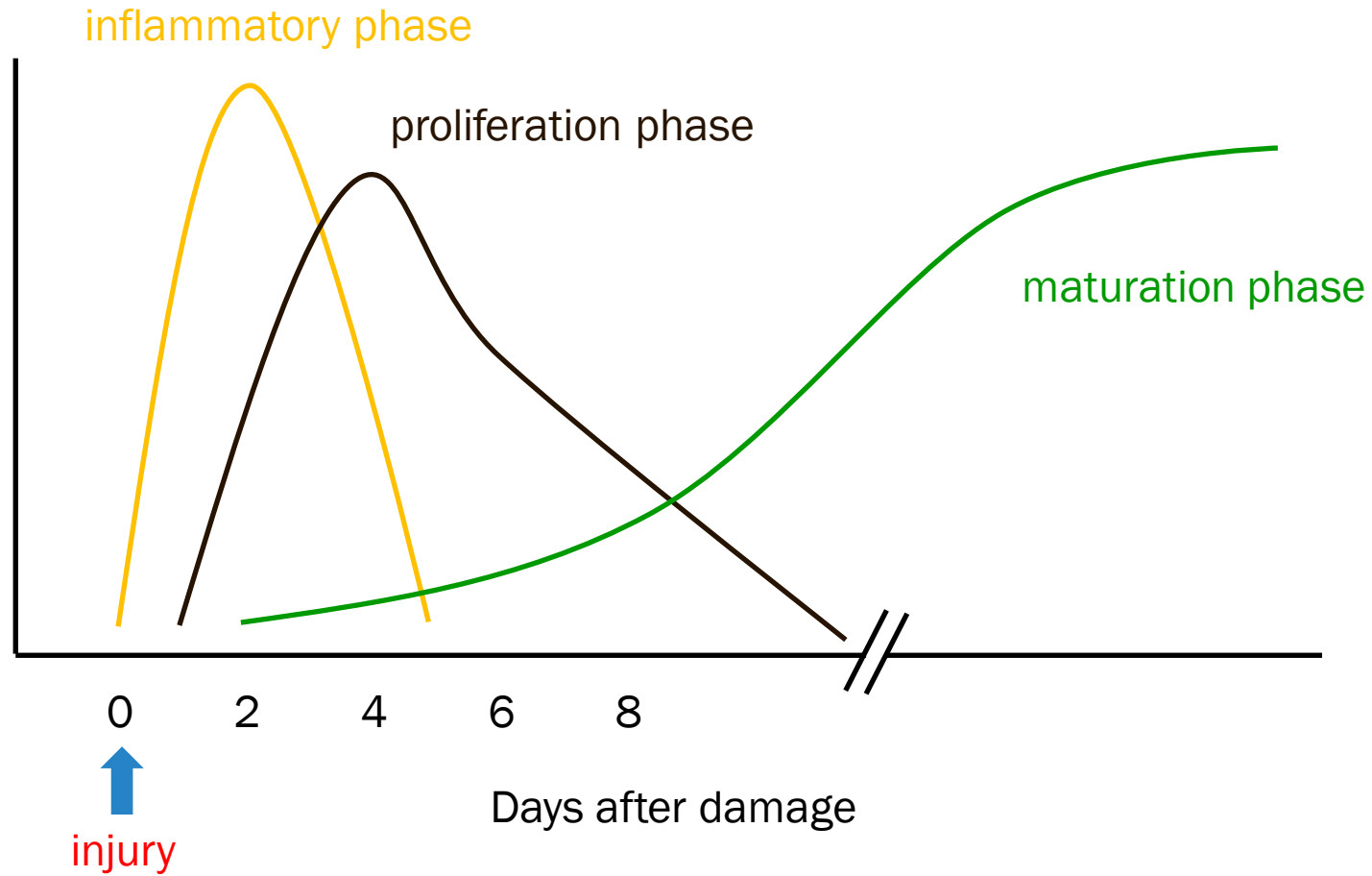
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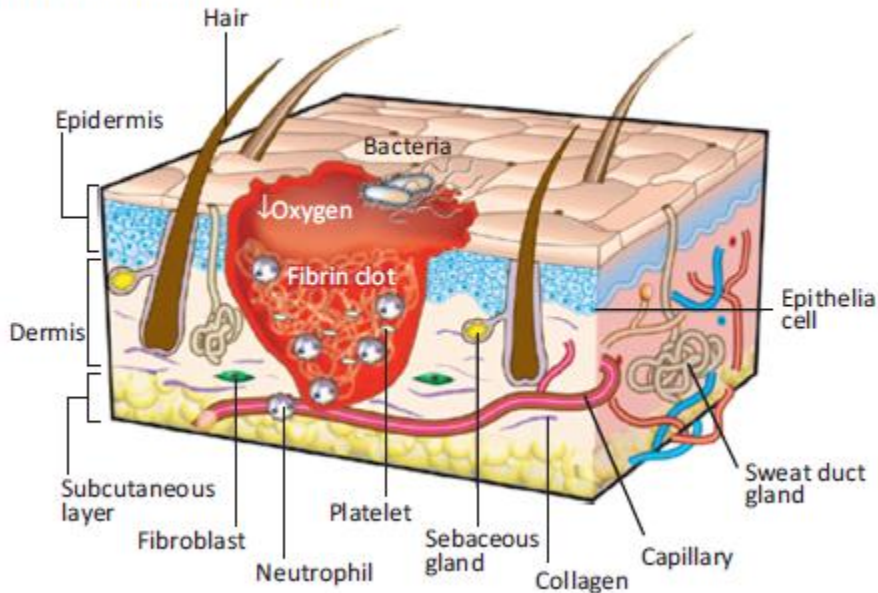
Wound healing: 3 phases



http://www.youtube.com/watch?v=zZpMQ_7qiRg&gl=BE

Phase 1: inflammatory phase

(A) Inflammatory phase

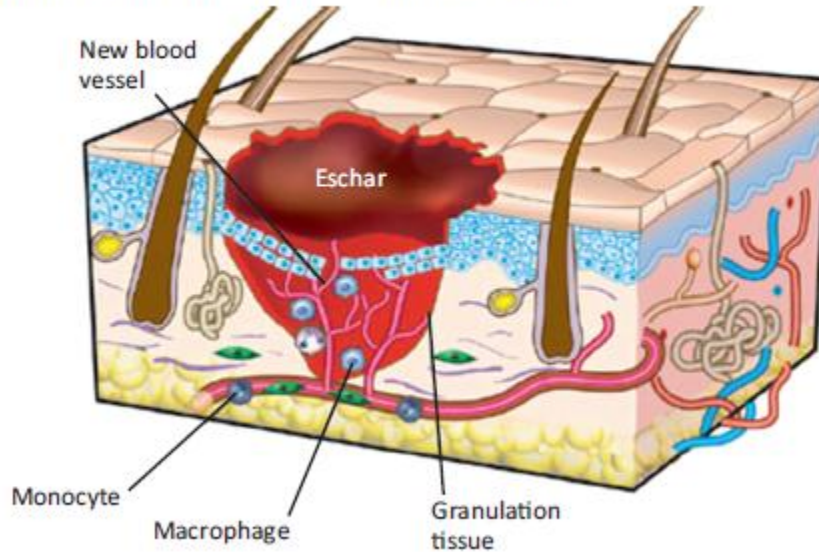


- Coagulation
- Thrombocytes, neutrophils, monocytes, eosinophils...
- Proinflammatory neuropeptides: substance P, neurokinin A
- Histamine, leukotrienes, thrombin
- TGF- β , fibroblast growth factor 2

- Remove foreign matter and dead cells
 - Formation of fibrous tissue to stop bleeding
 - Main symptoms:
 - Contraction, closing & recruiting
 - The wound is swollen, warm and painful

Phase 2: proliferation phase

(B) Proliferative phase/reepithelization

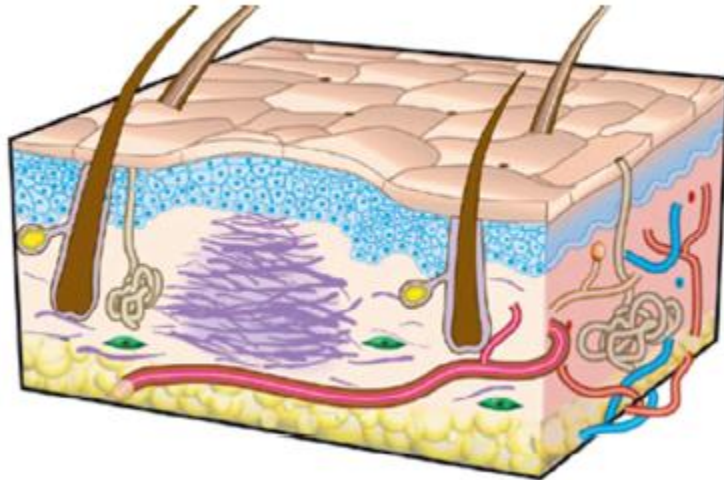


- Keratinocyte migration, reepithelization
- FGF-2, -7, -10
- Matrixmetalloproteinase (MMP) 1
- Collagen synthesis, angiogenesis
- Granulation tissue: fibroblasts
- Hypoxia-induced factor (HIF)-1 α , VEGF A, FGF-2

- Wound is “closing”
 - collagene \rightarrow matrix \rightarrow fibroblasts \rightarrow angiogenesis \rightarrow reepithelisation

Phase 3: maturation phase

(C) Maturation



- Myofibroblasts → wound contraction
- Platelet-derived growth factor (PDGF), TGF- β
- MMP-2, MMP-7

- Wound tissue increases in strength
 - quickly formed tissue from proliferation phase is now being remodeled to “normal” skin

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Principles of wound treatment

- Main goals
 - rapid closure of the skin
 - prevention of infection
 - pain relief
 - prevention of mechanical damage
 - restriction of scar formation
- Common practice
 - drying out of the wound environment
 - eschar formation
 - since 1960s: **creating a moist wound environment**
 - prevents eschar formation
 - accelerates the inflammatory and proliferation phase

Woundbed – 2 possibilities

dry wound

decreased healing,
risk of tearing, scarring,...



needs hydration



occlusion

wet wound

decreased healing,
risk of infection,...



needs dehydration



open woundbed

optimal treatment combines 2
complementary activities

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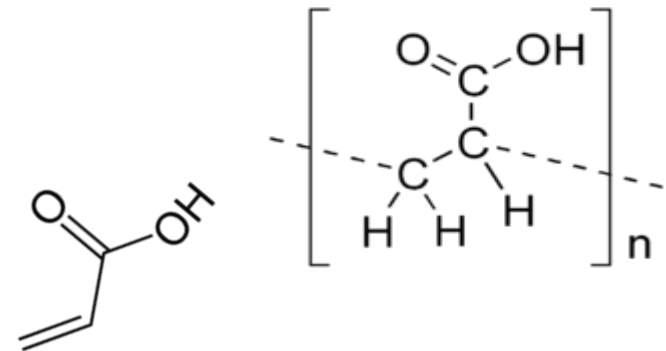
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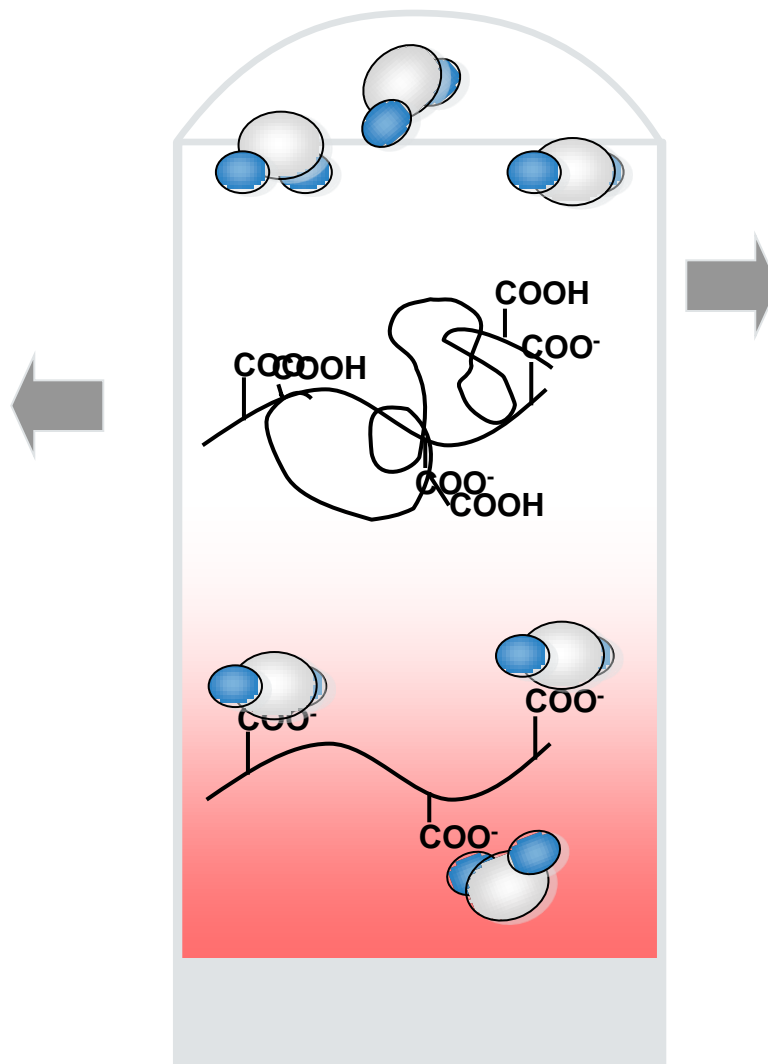
What is a hydrogel?

- Hydrophilic cross linked polymer
 - three-dimensional
 - biological inertness as opposed to linear polymers
 - High water content
- Occurs in nature
 - cartilage, cornea,...
- Zoralan Wound
 - synthetic: carbopol 980 NF
 - polymer of acrylic acid
 - cross linkage with ethers



Hydrogel vs wet wound

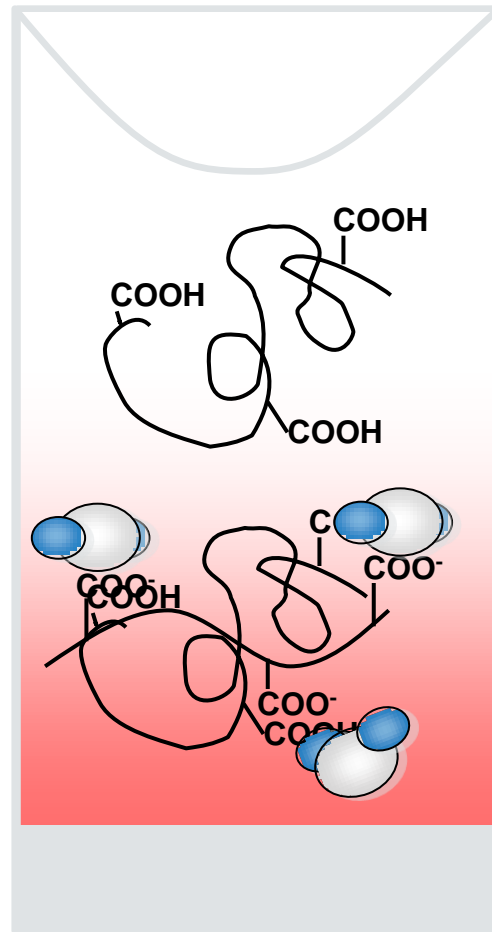
dehydrated polymer takes up water from the wound and decreases the moisture content



optimal healing conditions

Hydrogel vs dry wound

hydrated polymer
releases water into
the wound
increasing the
moisture content



optimal
healing
conditions

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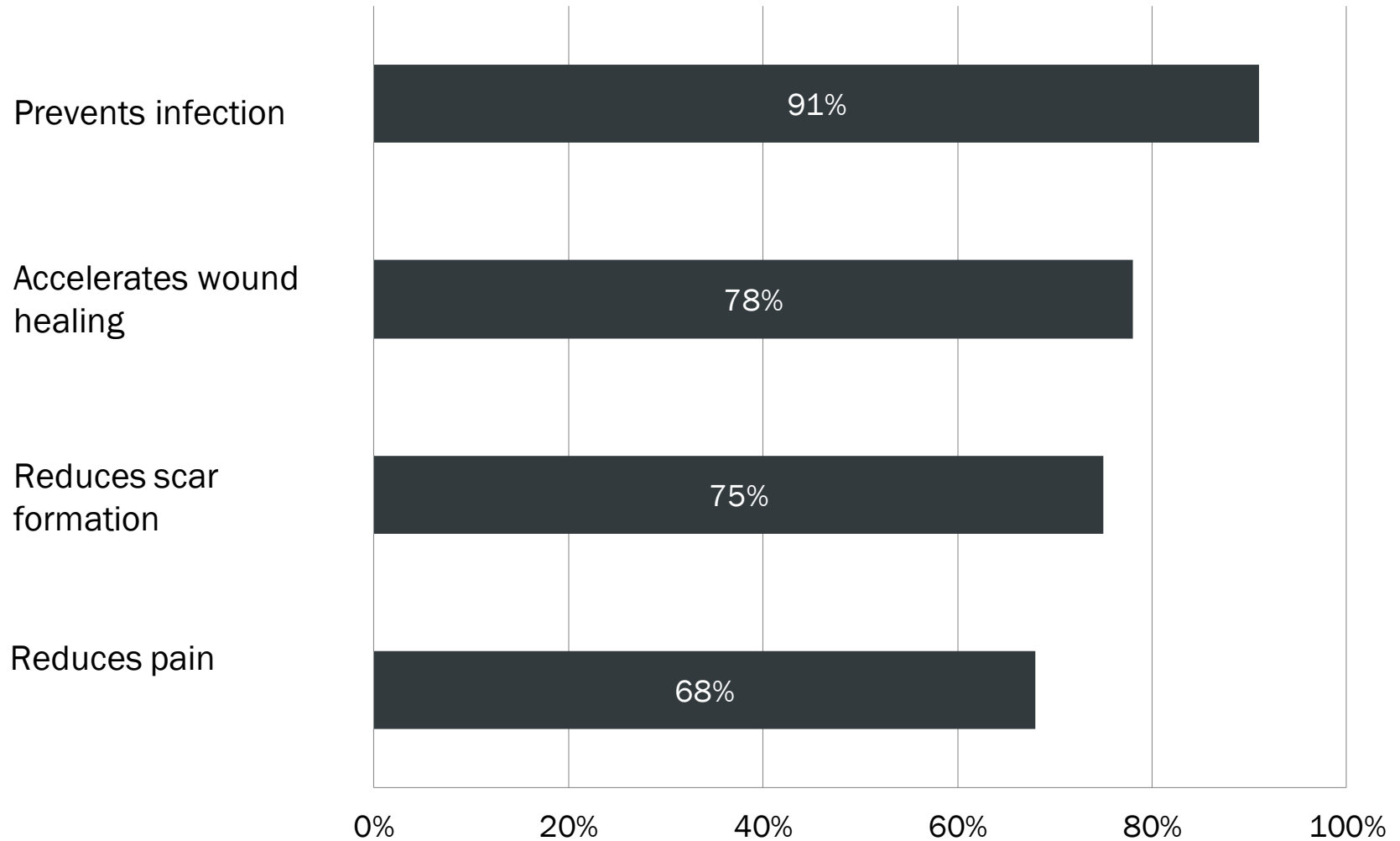
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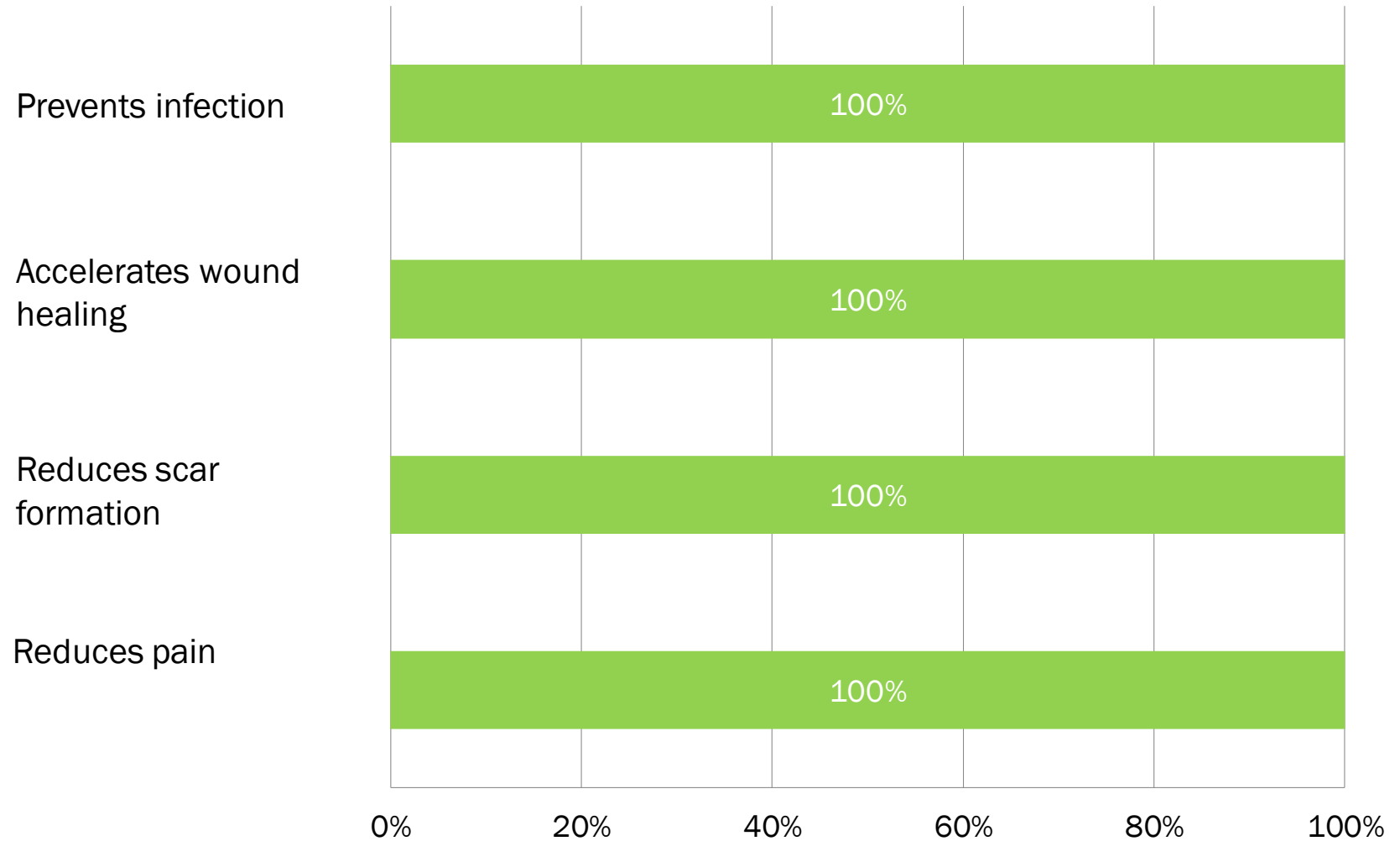
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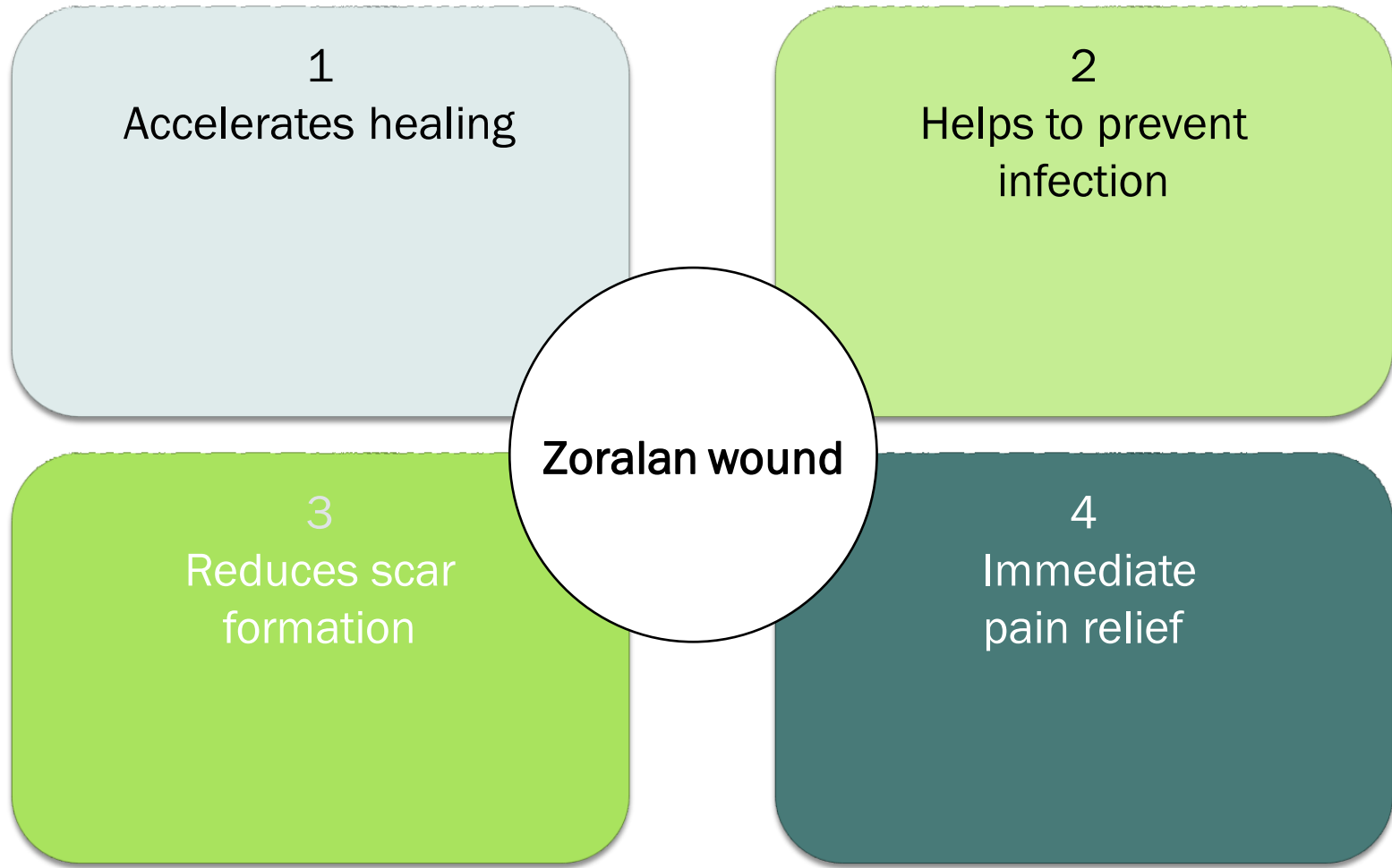
Wound healing: consumer expectations – research OYS



Zoralan Wound: more than just wound healing



Zoralan Wound: unique 4-in-1 concept



Zoralan Wound: more than just wound healing

- Essence of product
 - Hydrogel
 - Actipientia®
 - Intelligently chosen excipients that reinforce the benefits of the hydrogel



Zoralan Wound: benefits of the hydrogel

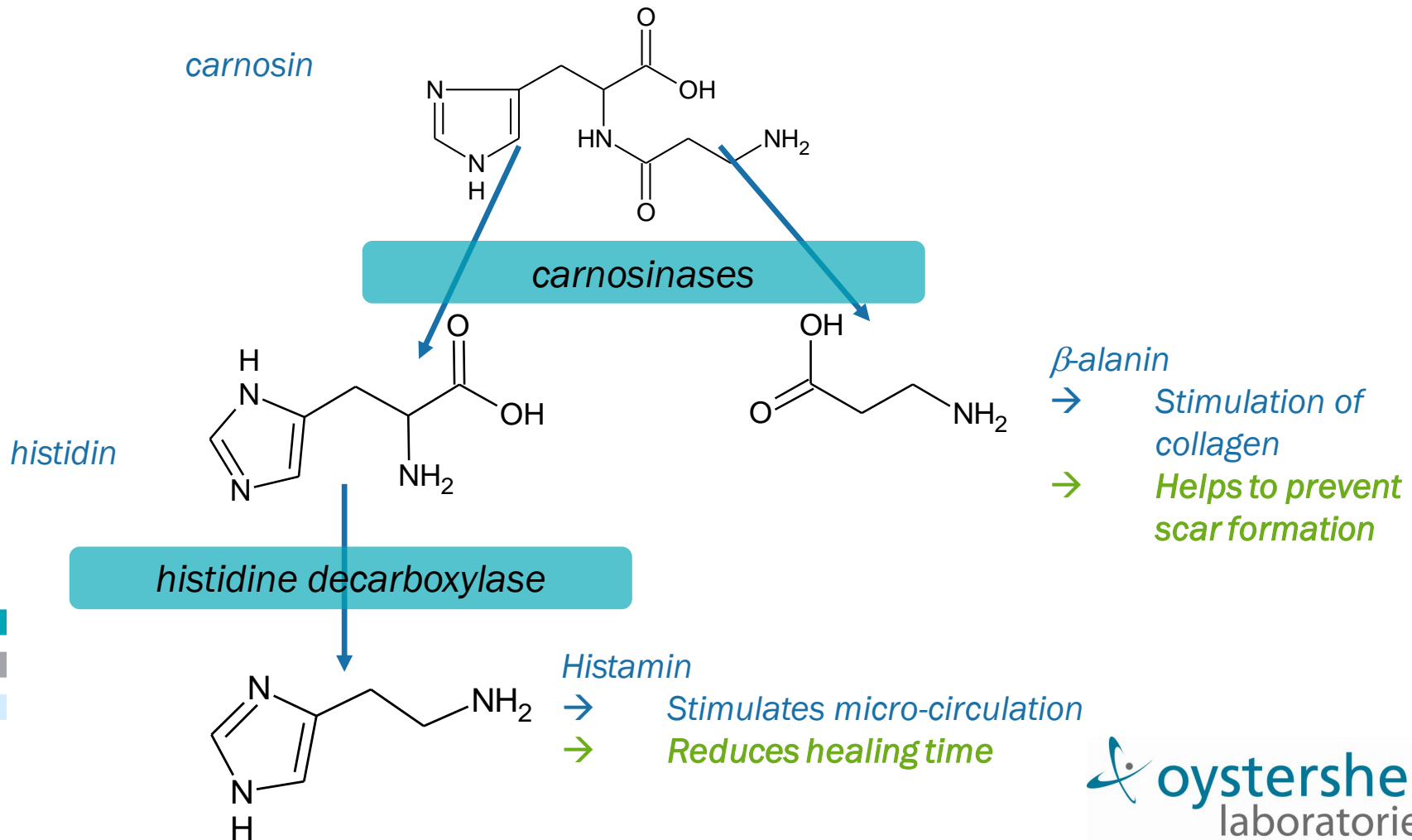
- Accelerates healing
 - Fast wound healing through optimal hydration
- Helps to prevent infection
 - Acid polymers create an unfavorable environment for development of bacteria, microbes and fungi
- Reduces scar formation
 - High viscosity ensures little mechanical damage and prevents severe scar formation
- Immediate pain relief
 - The evaporation of the gel is associated with temperature drop and thus cooling and pain killing

Actipentia® reinforce the benefits of the hydrogel

- Accelerates healing
 - Fast wound healing through optimal hydration
 - Carnosine
- Helps to prevent infection
 - Acid polymers create an unfavorable environment for development of bacteria, microbes and fungi
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 - Carnosine
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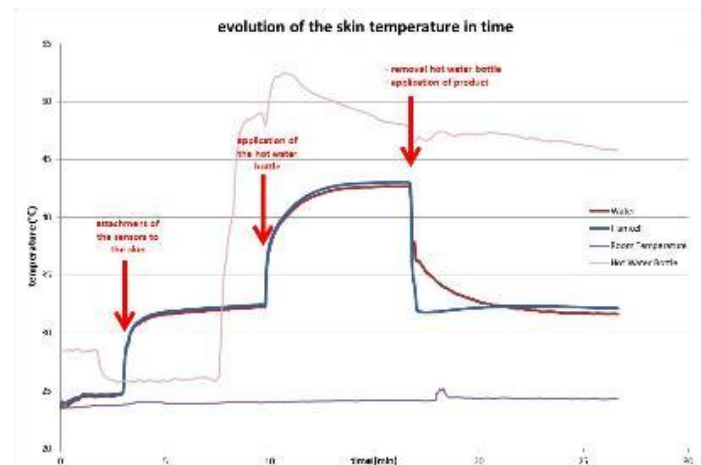
Actipentia®: carnosin

- Stabilisator: carnosin instead of NaOH
- Deliberately chosen because carnosin also helps to accelerate wound healing and to prevent scar formation

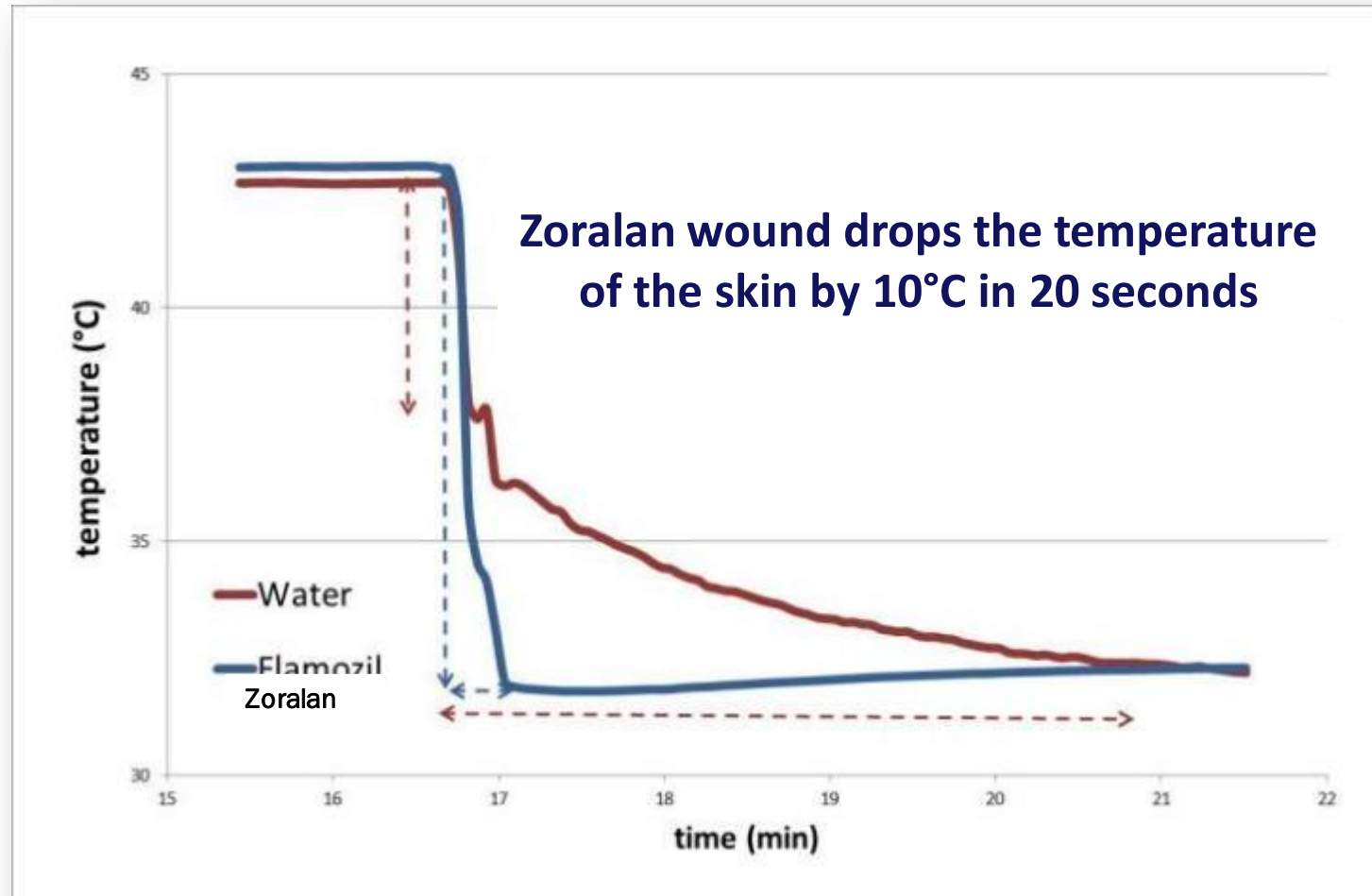


Zoralan Wound: studies – cooling activity

- In vivo test using miniature thermocouple sensors attached to the skin
- Heating of the skin with a hot water bottle (50 °C)
- Application of Zoralan and water as control
- Monitoring of temperature throughout experiment



Zoralan Wound: studies – cooling activity



Zoralan Wound: studies – study on the effect on staphylococcus aureus

- The University of Ghent performed a **test to understand the antiseptic effect of Zoralan and its main competitors**. The effect of Staphylococcus Aureus was measured (if this bacteria manages to penetrate the skin, or a wound, it can cause infections).

➔ **Excellent results!** (study in attachment)

Zoralan Wound: studies – study by wound expert Frans Meuleneire

Clinically proven (study by wound expert Frans Meuleneire)

- patients with chronic and acute wounds
- treatment within 3 months span





Clinical evaluation:

- positive effect on wound cleaning
- sufficient hydration of necrotic wound
- enhances autolytic debridement
- excellent tolerability
- has a cooling action, which provides pain relief

Practical evaluation:

- Airless dispenser is unique and a big advantage
- opaque/white color for better control of application

Exemplary cases

	before	after
knee burn		
decubitus malleolus		

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Zoralan Wound: offer

Airless dispenser: 50gr

- Modern
- Hygienic: no air + no oxidation
- Easy to use
- Easy to store
- Less chance of damage and leakage compared to a tube

Claims

- Sunburn
- Burns
- Cuts
- Chafed skin
- Cracked skin
- ...

Suitable for OTC applications

Without parabens



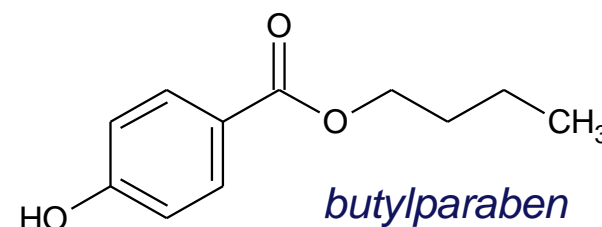
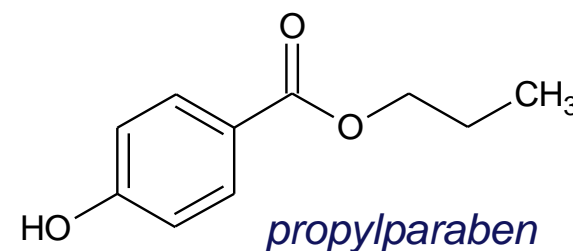
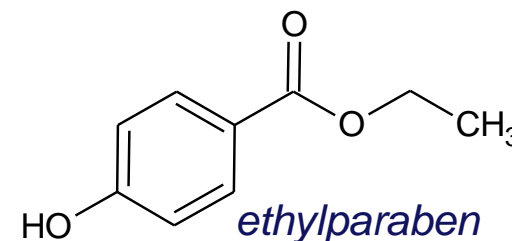
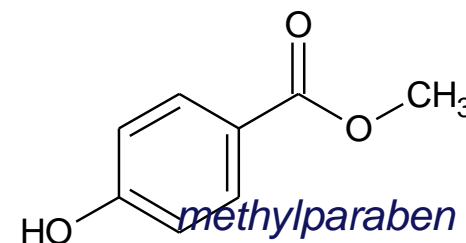
Without parabens

Parabens (4 types) are not safe because:

- They have an **estrogenic activity** (female hormones)
- They **decrease** the proliferation of **keratinocytes**.

Keratin is the key structural material making up the outer layer of human skin.

- They **decrease** the expression of **collagen**.
Collagens ensure regeneration of skin.
- They **reinforce** harmful influence of **UVB**.
- They **sensitize the skin** when applied to broken/damaged skin



Conclusion

- Zoralan Wound, more than just wound healing
 - Advanced hydrogel
 - Heals fresh wounds extremely effectively
 - Paraben free
 - Easy to use gel pump
 - Europe: registered as medical device class IIa

