

A painting of a foot in a black boot, resting on a wooden surface. The foot is positioned diagonally, with the heel towards the bottom right. The boot is black with laces. The background is a warm, textured wooden surface with a mix of brown and yellow tones.

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Basic Principles of Wound-Care & Off-Loading

Koen Deloose, MD

Head Dpt Vascular Surgery

AZ Sint Blasius Dendermonde

Belgium

Ideal world.... But....



...looks quite innocent ...but....



Etiology definition/treatment is essential

- Venous insufficiency
- Arterial insufficiency
- Pressure
- Trauma
- Infections
- Dermatological diseases
- Neuropathic diseases
- Complex combinations : ex. diabetic foot



Wound-care.... The problem

Complexity of pathology



Booming Wound-Care Products/
Dressings /Devices/Techniques



Confusions/Mistakes



The Solution ?



Intuitive
classification/treatment algorithm based on
4 important parameters

Tissue

Infection

Moisture

Edge

LOCAL WOUND-BED PREPARATION

TISSUE



GRANULATION

NECROSIS

Fibrin

Black necrosis

HYPERKERATOSIS

TIME : Tissue – status

- Granulation tissue formation



TIME : Tissue – status

- Black necrosis



TIME : Tissue – status

- Yellow fibrin deposits



TIME : Tissue – status

- Hyperkeratosis



TIME Tissue : TREATMENT

-> a lot of (black) necrosis, (tight) fibrin, hyperkeratosis

SURGERY

- Bistouri
- Hydrosurgical systems (ex Versajet°)



TIME Tissue : TREATMENT

-> intermediate necrosis & fibrin

(BIO) MECHANICAL, NON-SURGICAL SOLUTIONS

- NWPT systems
- MAGGOT THERAPY
- WET TO DRY DRESSINGS

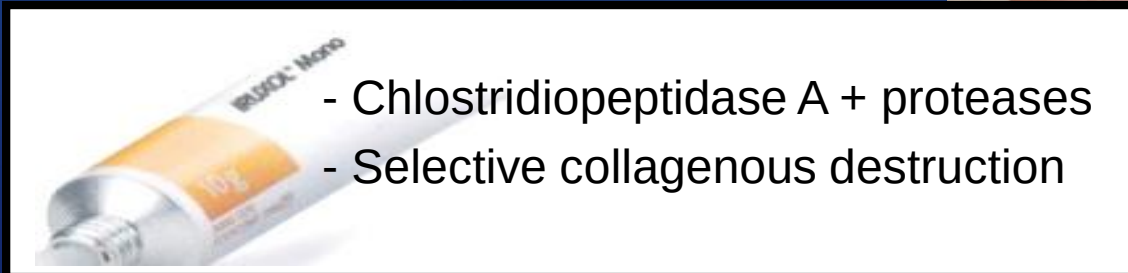


TIME Tissue : TREATMENT

-> small amounts necrosis & fibrin, some granulation

AUTOLYTIC – OSMOTIC – ENZYMATIC DEBRIDEMENTS

- Hydrogels
- Alginates
- Honey dressings
- Proteolytic enzymes



- Chlostridiopeptidase A + proteases
- Selective collagenous destruction

INFECTION



CONTAMINATION

COLONIZATION

CRITICAL COLONIZATION

INFECTION

TIME : *Infection – status*

- Calor, Rubor, (Dolor), Tumor
- Purulent aspect
- Odor
- Swap cultures vs Deep tissue culture sampling!!!



TIME : *Infection* : TREATMENT

- LOCAL TREATMENT

- Surgical drainage
- Antiseptics (Iodium, Chlerohexidine, acetic acid...)
- NO ANTIBIOTICS
- Dressings with Ag

- SYSTEMIC TREATMENT

- ANTIBIOTICS
- CAVE OSTEOMYELITIS



MOISTURE



Too humid



Maceration



Too dry



Epithelialisation
granulation tissue

NO HEALING

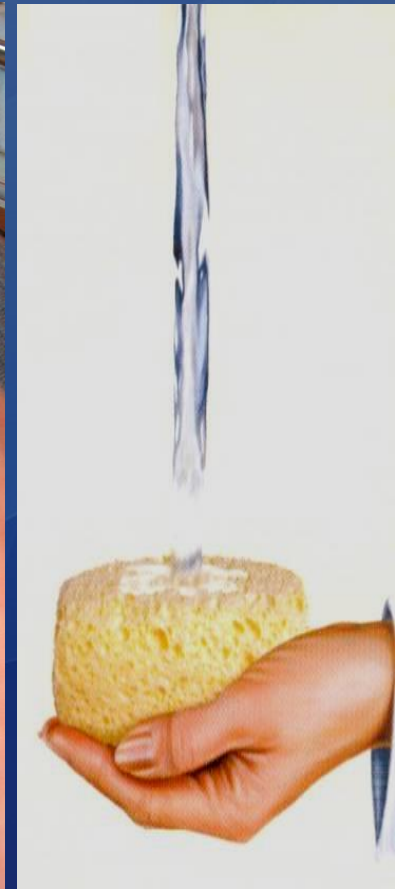


TIME : *Moisture* : TREATMENT

- **TOO WET**

->Absorbing dressings

Alginates, hydrocellular
poly-urethane dressings,
hydrofiber dressings, ...



TIME : *Moisture* : TREATMENT

- **TOO DRY**

->Hydrating dressings

Hydrogels, hydrocolloid dressings, silicone dressings ...



EDGES



IDEAL **T I M**
concept...



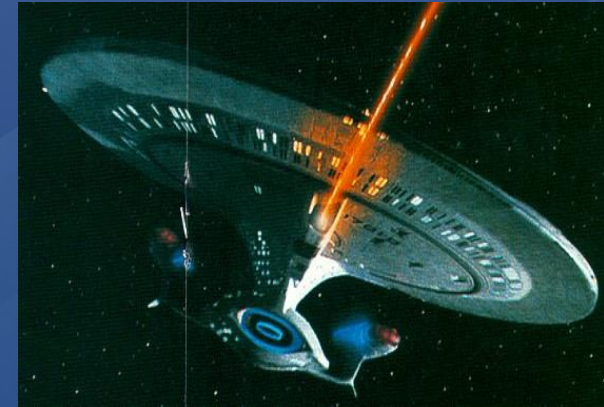
Nevertheless
...no healing



TIME : *Edges* : TREATMENT

- ACTIVE RE-EPITHELIALIZATION

-> BIOLOGICAL MEDIATED DRESSINGS



- Extra cellular matrix (ECM) containing dressings
 - Collagenous dressings (Catrix°, DropCollagen°,...)
 - Hyaluronic acid dressings (Hyalofill°, Hyalogran°, Jaloplast°,...)
- MMP modulators : Promogran°, Dermax°, Prisma°(+Ag)

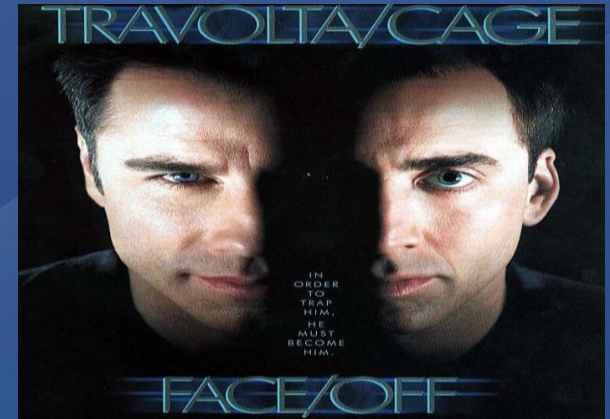
TIME : *Edges* : TREATMENT

- ACTIVE RE-EPITHELIALIZATION

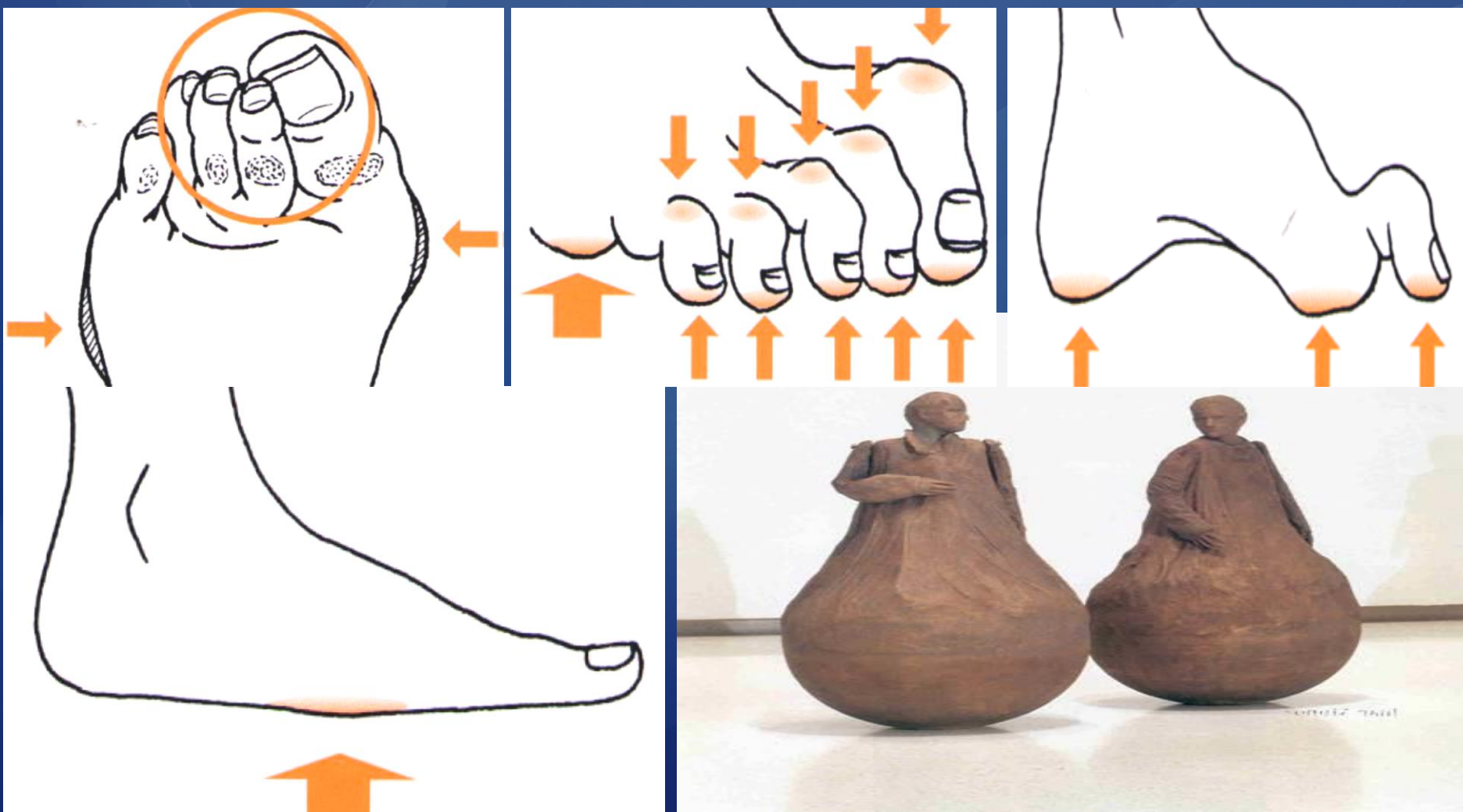
-> BIOLOGICAL DRESSINGS

- Growth factors : PDGF Becaplermin (Regranex°), KGF, EGF,...
- Cell Cultures (cultivated keratinocytes)
- Tissue engineered skin

Dermagraft°, Silicone + Dermal kweek (Integra°), 2 layer reconstructed skin (Apligraf°, Orcel°, Hyalograft 3D°)



DIABETIC FOOT : principles of OFF LOADING



DIABETIC FOOT : principles of OFF LOADING



DIABETIC FOOT : principles of OFF LOADING



CONCLUSION

- Multidisciplinary WOUND CARE according to the pragmatic rules of TIME strategy makes it safe and efficient;
- Fluent dynamical switches between the different phases are obligatory
- Off loading is one of the most essential parts of CLI treatment.

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Woud/off-loading cases



CASE 1

- Recanalization successful : single outflow ATA up to ADP and foot arch
- TIME ?
- OFF LOADING?
- ORIGIN?
- PREVENTION?
- MULTIDISCIPLINARITY?



CASE 1

- 2 Weeks later....
- Continue our treatment?
- Changing strategy?



CASE 2

- Diabetic patient, lateral ankle ulceration : QUID?
- RECANALIZATION NEED?
- OTHER TREATMENTS?
- TIME ?
- OFF LOADING?
- MULTIDISCIPLINARITY?



CASE 3

- IDDM patient, fever, no pain
 - RECANALIZATION NEED?
 - OTHER TREATMENTS?
 - TIME ?
 - OFF LOADING?
 - MULTIDISCIPLINARITY?



CASE 4

- Lateral ankle ulceration, spontaneous, non diabetic
- **RECANALIZATION NEED?**
- **OTHER TREATMENTS?**
- **T I M E ?**
- **OFF LOADING?**
- **MULTIDISCIPLINARITY?**



CASE 5

- IDDM patient, new shoes, “all at once”



- RECANALIZATION NEED?
- OTHER TREATMENTS?
- TIME?
- OFF LOADING?
- MULTIDISCIPLINARITY?