

# Complex wound management

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Colorectal surgeon

- ◆ Term used more recently to group those well-known difficult wounds, **either chronic or acute, that challenge medical and nursing teams.** They defy cure using conventional and simple "dressings" therapy and currently have a major socioeconomic impact.



4<sup>th</sup> International Conference on

# WOUND CARE, WOUND NURSING TISSUE REPAIR & REGENERATIVE MEDICINE

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## The multidisciplinary team in wound management

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The idea of a multidisciplinary team approach has been accepted as one of the best way to deliver wound care. A major challenge is the lack of the united services which aimed at addressing the complex needs of an individual with wounds. The concept of multidisciplinary suggests the use of different disciplines to answer a clinical problem. In the small wound, management wound care by WOCN (wound ostomy continent nurse) sometimes is enough and the wound become better in the short time but in complex wound or more life-threatening form beside wound care other factors such as nutrition, calories, psychology, family training, endocrine and electrolyte balance, heart evaluation etc., must be consider. Use of all modern wound dressings without accepting these factors is useless. This article reviews the case of 20 years old boy with a lateral skin and abdominal wall traumatic degloving injury. Due to the lack of viable tissue, we had to manage wound with openly. After initial resuscitation and hemostasis, we began to care and dressing the wound in the hospital for about

## Wound management team

Surgeon

Nutritionist

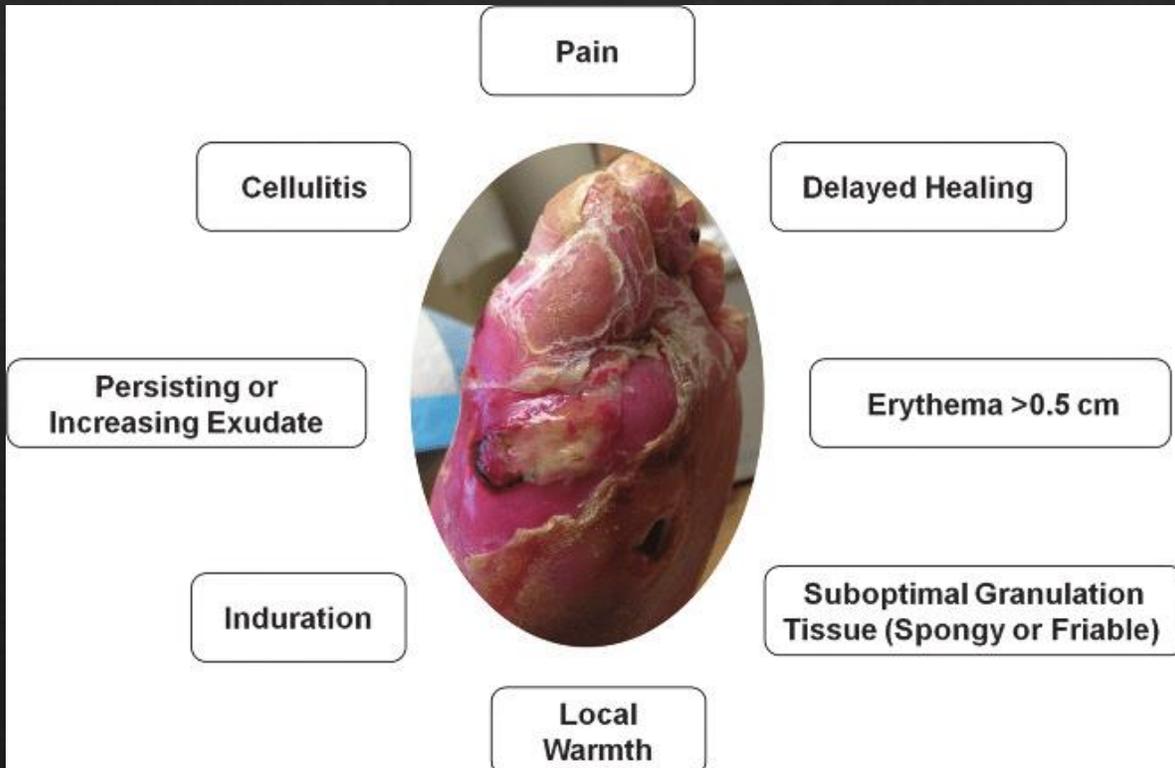
WOCN

Physiotherapist

Psychiatrist

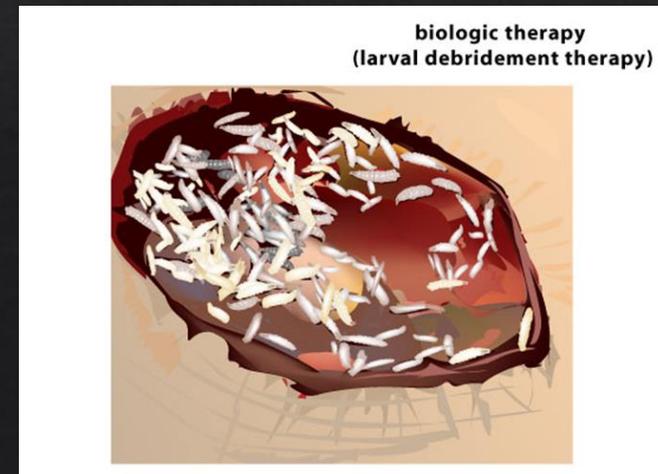
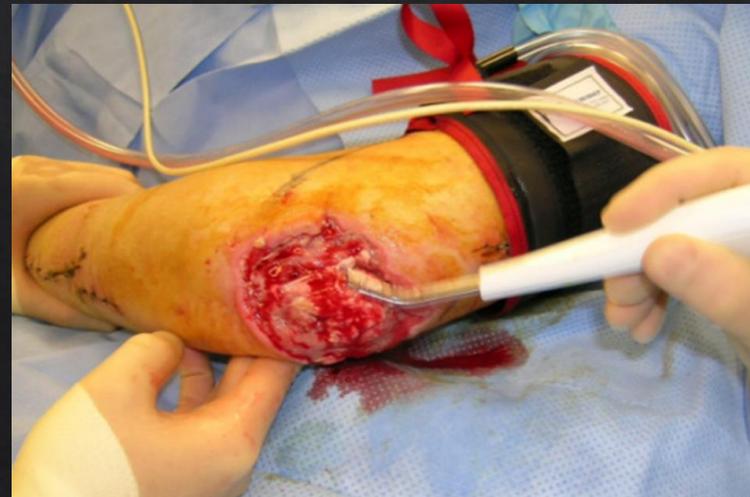
Internist

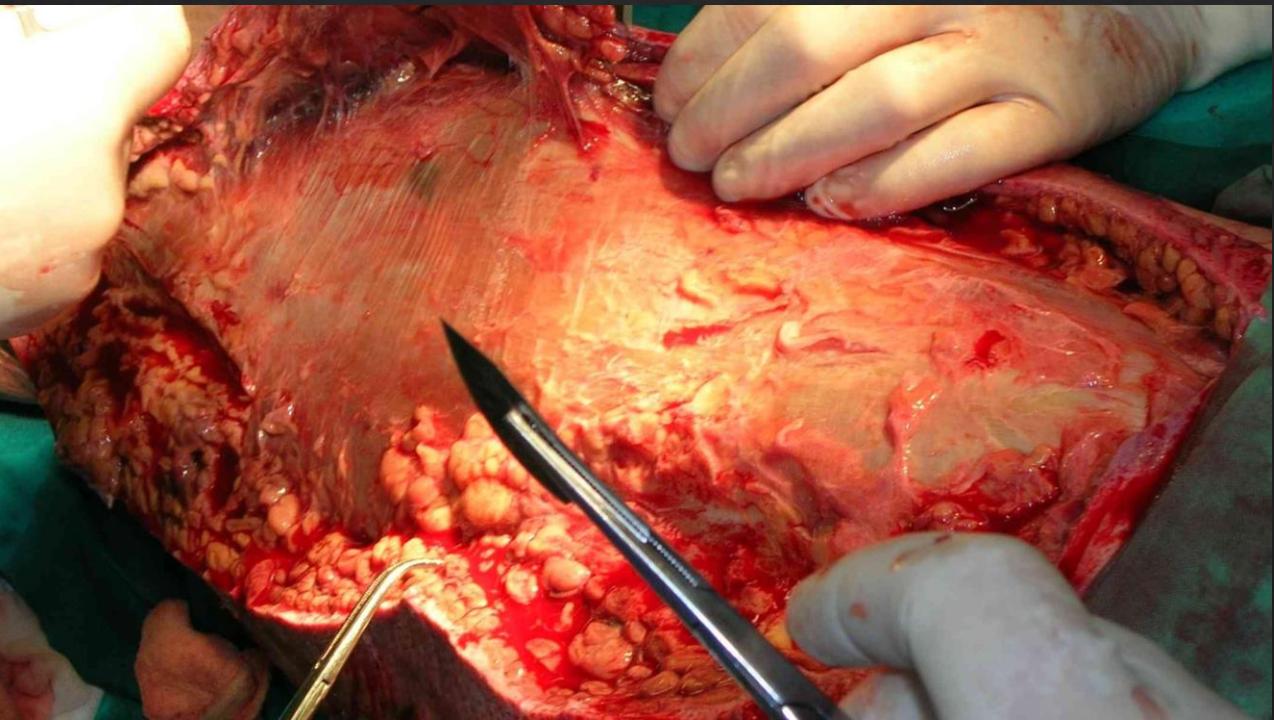
# Infected wound



# DEBRIDEMENT

- ◇ Surgical
- ◇ Sharp
- ◇ Larval
- ◇ Enzymatic
- ◇ Autolytic
- ◇ Mechanical
- ◇ Chemical





# DEBRIDEMENT

- ◇ MORE AND **AGGRESSIVE** IN FIRST DEB
- ◇ USE **ANTIBIOTIC** AND **ANTISEPTIC**
- ◇ **SURGICAL** IS THE BEST AND MOST USEFULL
- ◇ REMOVE **FOREIGN BODY**

# TYPE OF COMPLEX WOUND MANAGEMENT

Ultrasound  
energy in wound  
care and healing

Hyperbaric  
oxygen therapy

Growth factors

Compression  
therapy

Ultraviolet light

Low-level laser  
therapy in  
wound healing

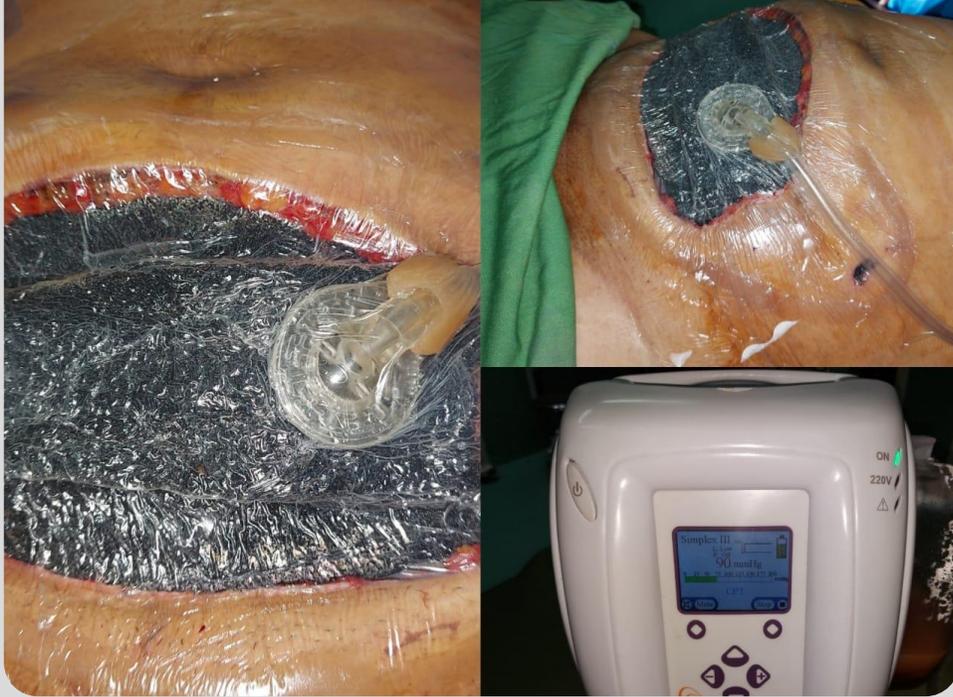
Electrical  
stimulation

Tissue-  
engineered skin  
substitutes

Negative  
pressure wound  
therapy

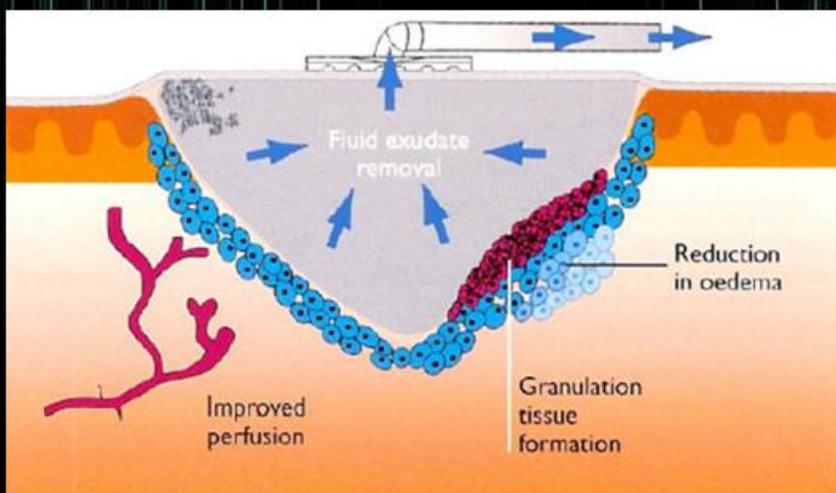
Wound ozone  
therapy

# Vaccum therapy



## Negative Pressure Wound Therapy – NPWT

- Pressure gradient → fluid shift
- Perfusion → increased delivery of  $O_2$  and nutrients
- Bioburden management
- Mechanical forces → stimulatory effect on cells
- Granulation tissue formation



# Negative Pressure Wound Therapy – NPWT



# Contraindications

- ◇ Untreated osteomyelitis
- ◇ Presence of necrotic tissue with eschar
- ◇ Exposed organs or blood vessels
- ◇ Malignancy in the wound bed
  - ◇ Except palliative care
- ◇ Unexplored fistulas
- ◇ Coagulopathy

# OZONE THERAPY



- **Daily:**

- Gangrene
- Severe Infection

- **Three Sessions per Week:**

- Clean Wounds
- Healing Wounds

- **Two / One Session per Week:**

- Healing Wounds (long Duration)

A



B



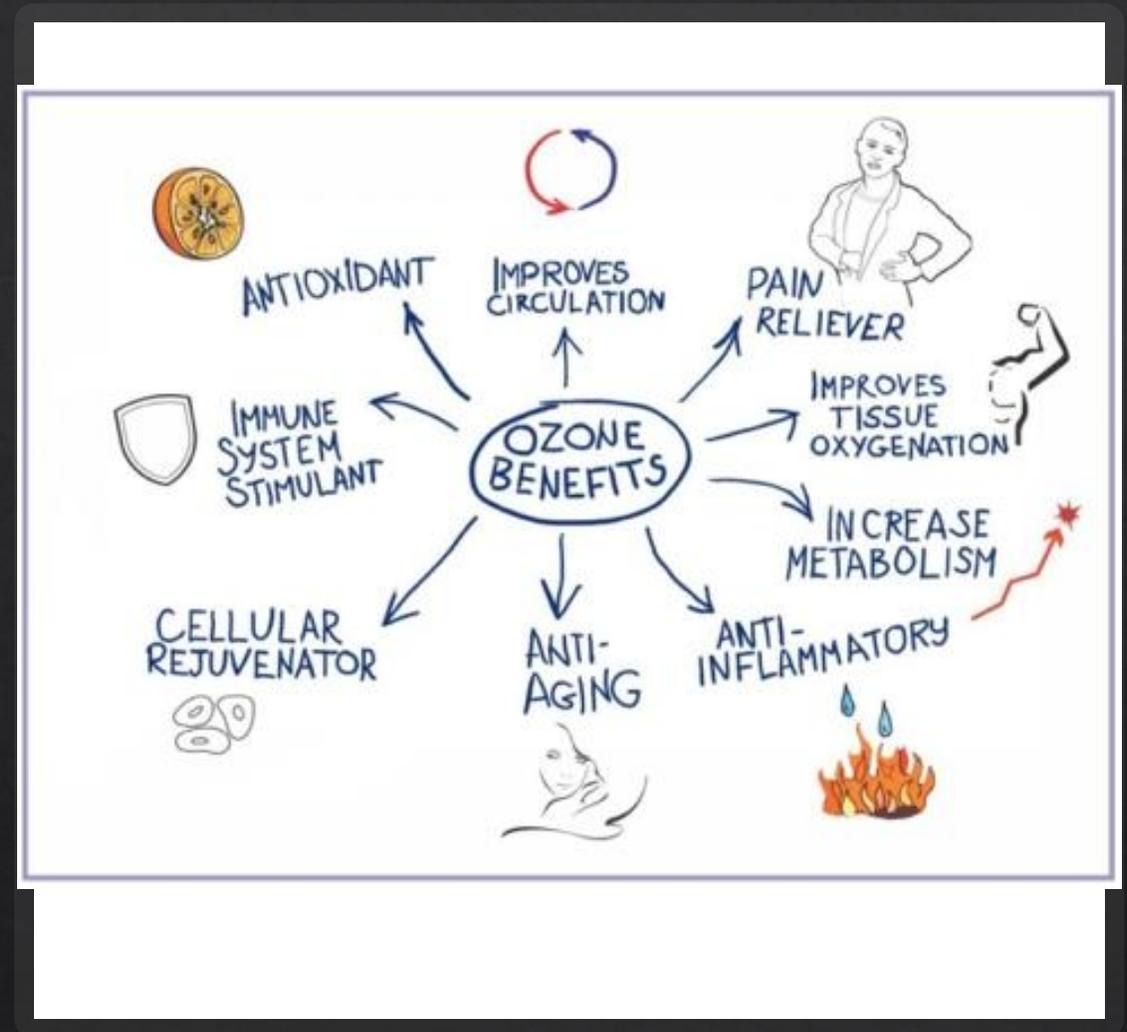
C



D



treating arthritis  
fighting viral diseases, such as  
HIV and SARS  
disinfecting wounds  
activating the immune system  
treating ischemic heart disease  
treating macular degeneration  
treating cancer



# hyperbaric oxygen therapy

- Severe anemia
- Brain abscess
- Bubbles of air in your blood vessels (arterial gas embolism)
- Burns
- Carbon monoxide poisoning
- Crushing injury
- Deafness, sudden
- Decompression sickness
- Gangrene
- Infection of skin or bone that causes tissue death
- Nonhealing wounds, such as a diabetic foot ulcer
- Radiation injury
- Skin graft or skin flap at risk of tissue death
- Traumatic brain injury
- Vision loss, sudden and painless





wound ultrasound  
energy therapy

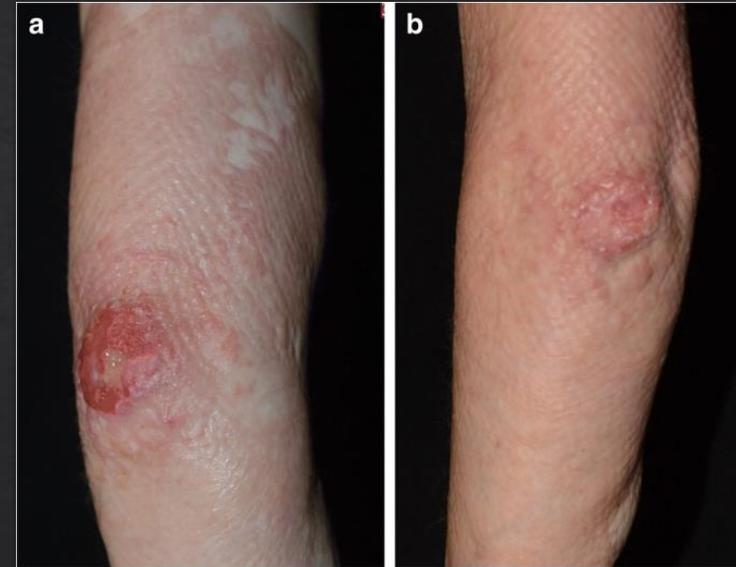
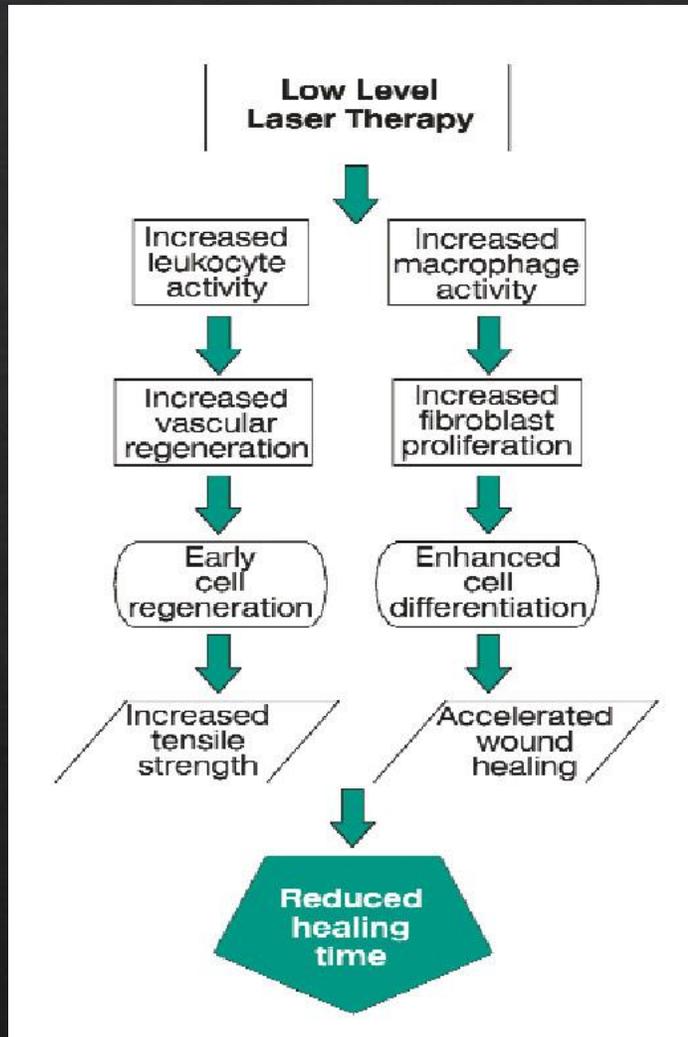
## **Physiological Effects of Ultrasound (cont.)**

### ❖ **Effect on wound healing**

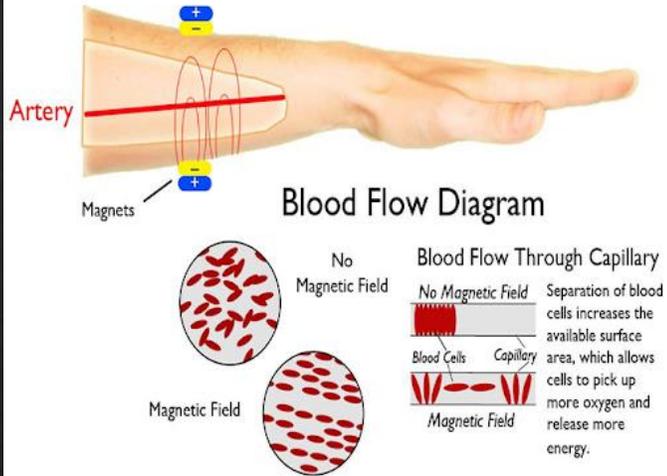
Pulsed ultrasound at low intensities ( $0.8 \text{ W/cm}^2$ ) enhance healing of wound by

- stimulating collagen production by fibroblasts,
- increases the intracellular calcium ion levels
- improve the local blood supply
- encourage the growth of new capillaries
- stimulates the MYOFIBROBLASTS to contract, giving rapid initial wound strength.

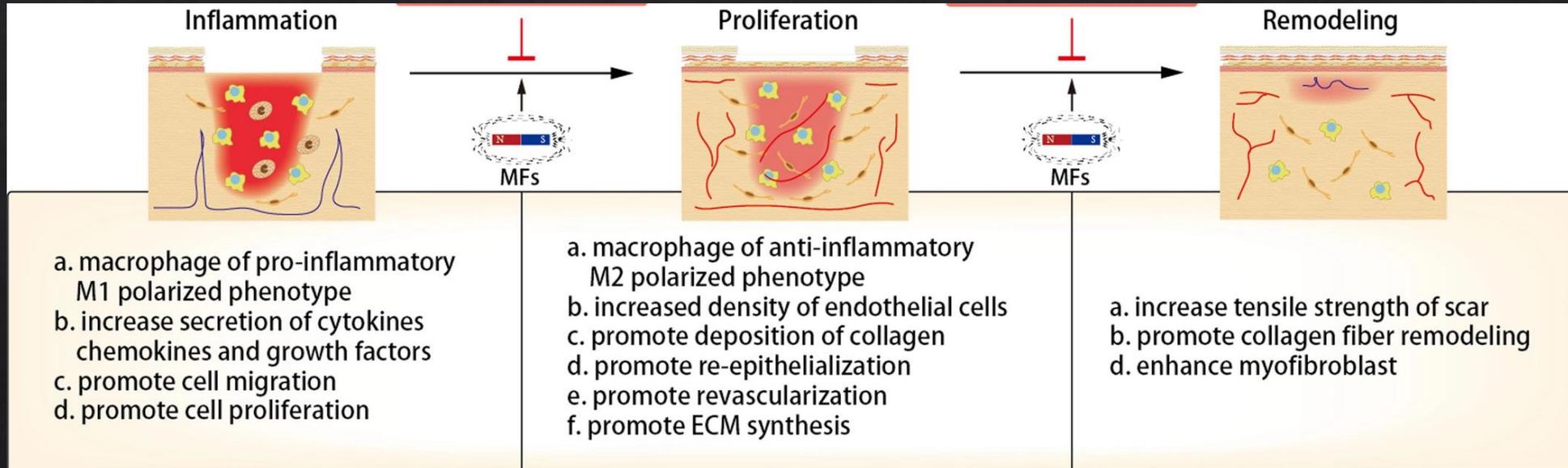
# LASER THERAPY



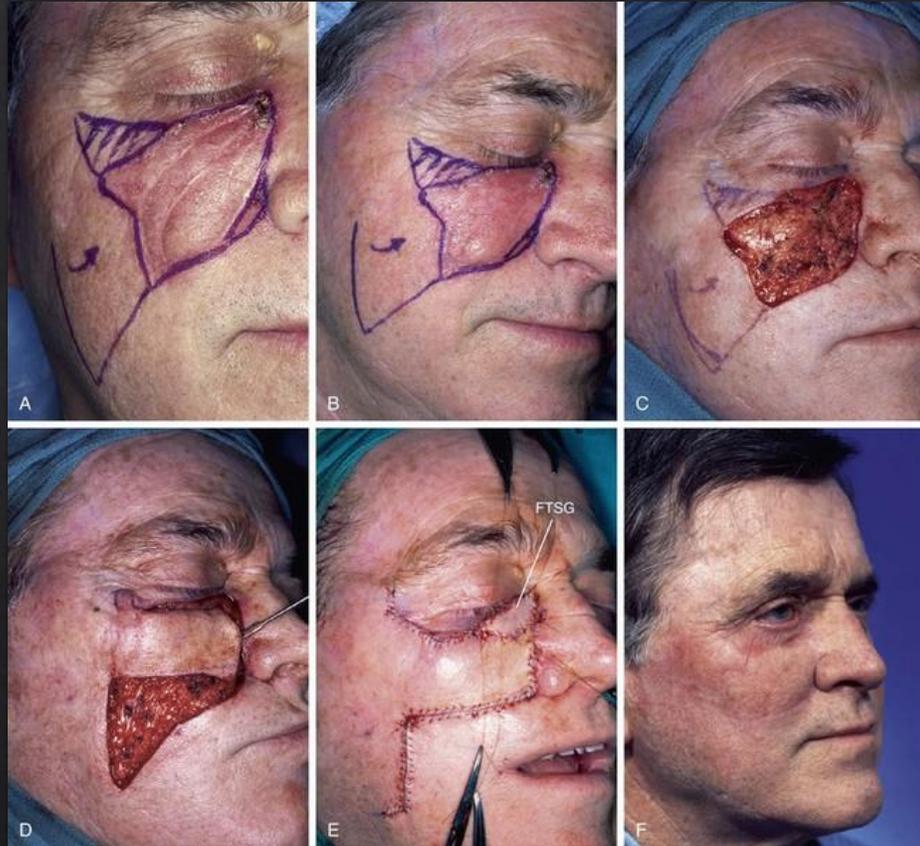
## How Does Magnetic Therapy Work?

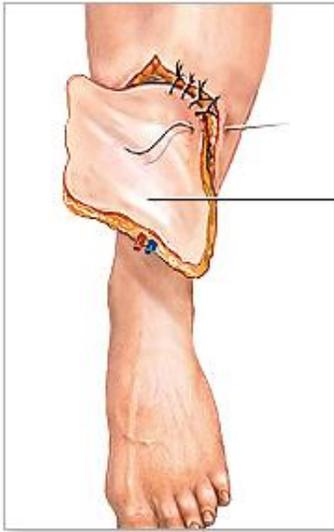


# Magnet therapy



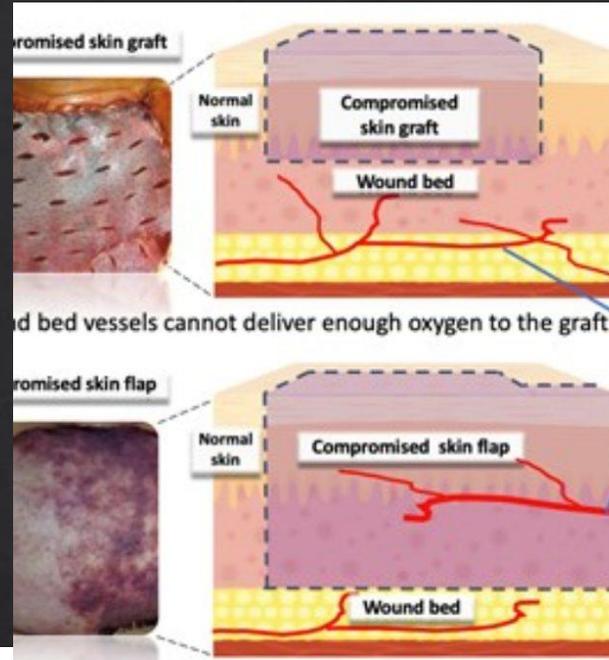
# FLAP AND GRAFT





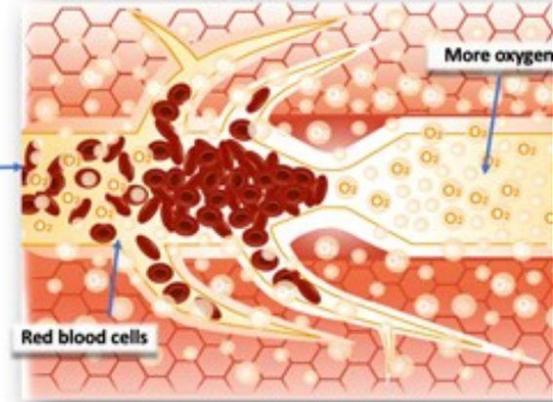
Full thickness skin graft with artery and vein

ADAM.



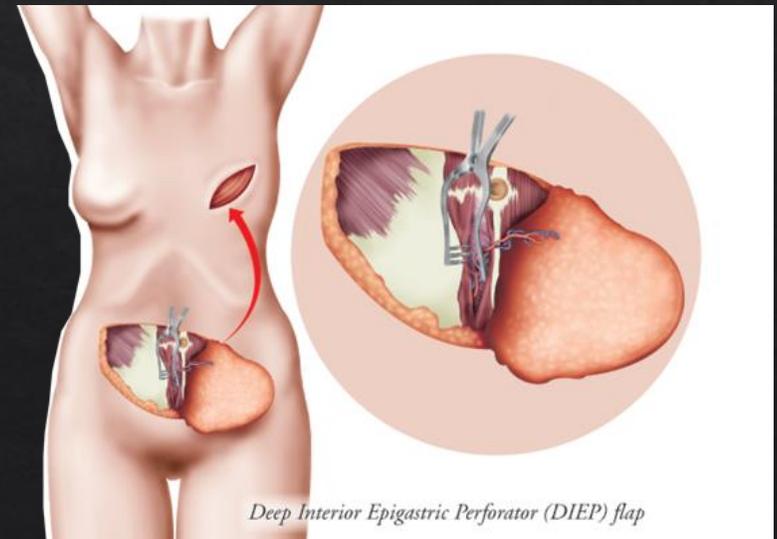
cannot receive enough oxygen through its blood vessels

With hyperbaric oxygen therapy, your blood delivers 10 to 15 times more oxygen and nutrients to your body, including the wound bed receiving the skin graft or flap and the flap. More oxygen helps your flap graft heal



## Flaps versus Grafts

graft	flap
Limited to transplantation of skin	Can carry other tissues
Depends on recipient site on nutrition	Has its own blood supply
Cosmetic –may discolor or contract	Better color take and less likely to contract
Less adaptable to weight bearing	Most adaptable to weight bearing
Less able to survive on a bed with questionable nutrition	Can be used on a bed with questionable nutrition
Requires pressure dressing	Does not requires pressure dressing
Cannot bridge defects	Can bridge defects



Deep Interior Epigastric Perforator (DIEP) flap



THANKS

