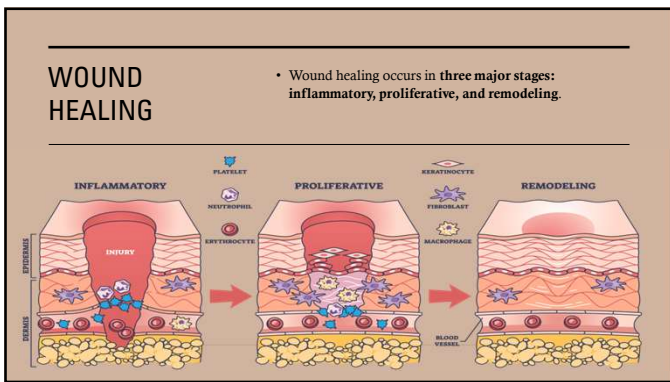
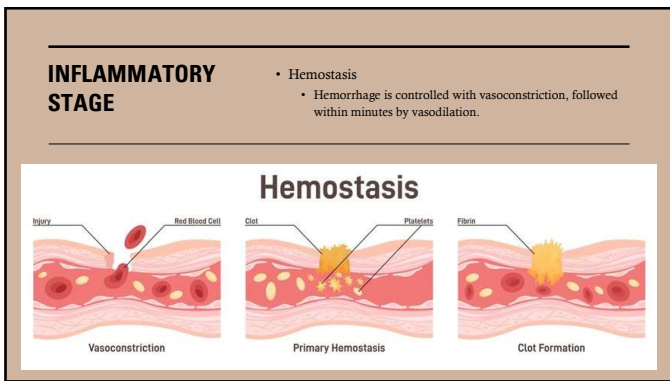




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INFLAMMATORY STAGE

Chemotaxis- the movement of organisms, such as bacteria or leukocytes, toward or away from a chemical substance in their environment.

Leukocytosis- increased white blood cell concentration.

Margination- a biological process where white blood cells (leukocytes), particularly neutrophils, move from the center of the bloodstream toward the endothelial lining (wall) of blood vessels to adhere and eventually emigrate into tissue.

Diapedesis- the passage of blood cells through the intact walls of the capillaries, typically accompanying inflammation.

4

INFLAMMATORY STAGE • Debridement Phase

Promotes wound closure and healing

Wound cleaning and debridement

Expression of growth factors

Contributes to inflammatory resolution

Tissue resident macrophage

Monocyte-derived macrophage

Recruited circulating monocyte

Activated macrophage

Stromal fibroblast

Stromal activated myofibroblast

"Forward" and "back" talk between cell types

5

PROLIFERATIVE STAGE

Acute stage Proliferation stage

a. Release of growth factors

b. Synthesis of new matrix

Red blood cell

Fibrin-platelet clot

Release of cytokines and growth factors

Fibroblast

Collagen

Elastin

Macrophage

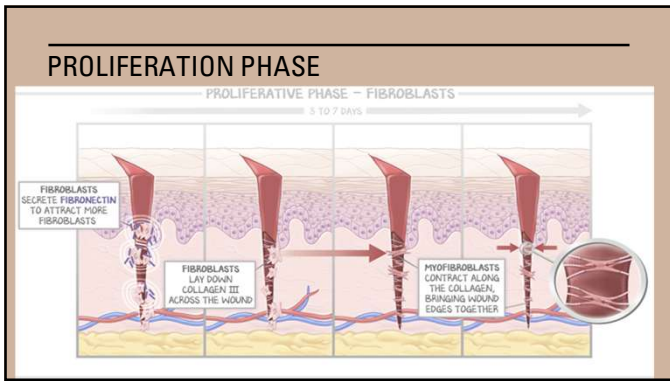
polymolecular Matrix

Macrophage

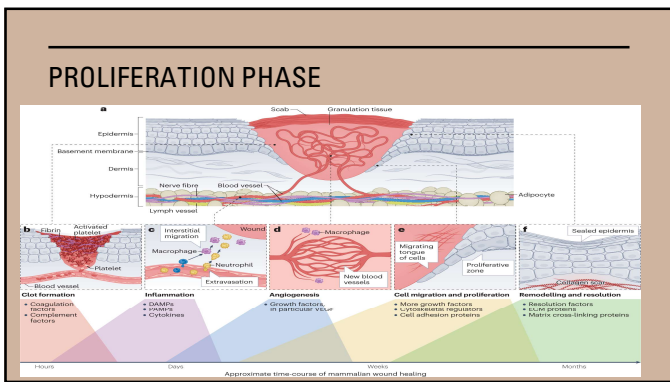
Growth factors

NO2P

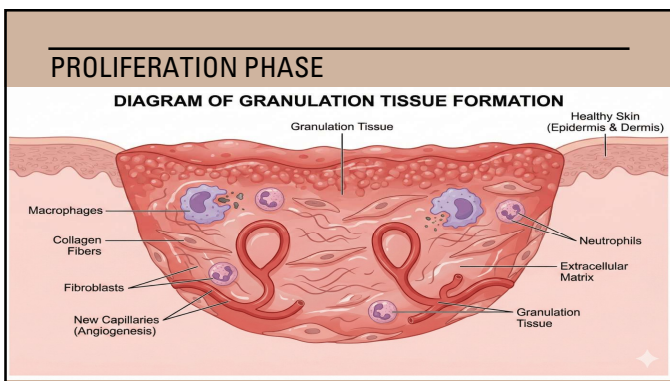
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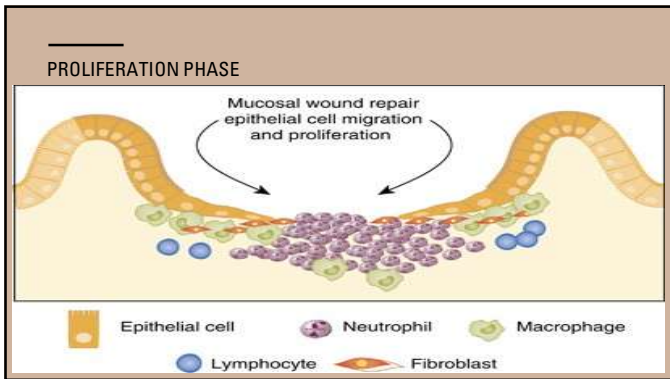
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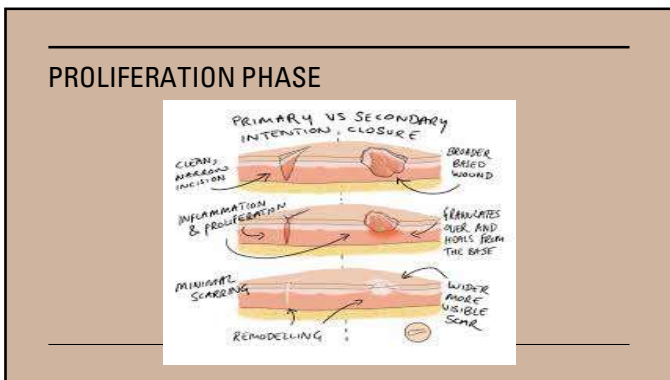
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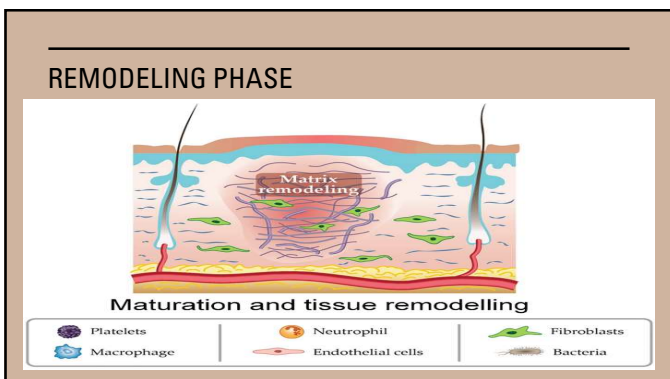
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SYSTEMIC FACTORS IMPACTING WOUND HEALING

Age

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SYSTEMIC FACTORS IMPACTING WOUND HEALING

BODY CONDITION

14

SYSTEMIC FACTORS IMPACTING WOUND HEALING

Nutrition

IS GRAIN-FREE BAD FOR DOGS?

A Complete Adult Rabbit Diet

- Water: Unlimited
- Hay: 4 cups
- Pellets: 1/2 - 1/3 cup
- Leafy Greens: 4-6 cups
- Fruit: 2-4 teaspoons

15

FACTORS IMPACTING WOUND HEALING



DIABEETUS


SORRY I CAN'T COME IN TO WORK TODAY

I HAVE A BUG

16


FACTORS IMPACTING WOUND HEALING

Medications



Chemotherapy

17



FACTORS IMPACTING WOUND HEALING

NSAID's are OK!

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LOCAL FACTORS IMPACTING WOUND HEALING

- Tissue Perfusion and viability

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LOCAL FACTORS IMPACTING WOUND HEALING

- Hematoma
- Seroma
- Mechanical factors

20

LOCAL FACTORS IMPACTING WOUND HEALING

Red skin

Discharge

Swelling

21

LOCAL FACTORS IMPACTING WOUND HEALING



22

LOCAL FACTORS IN WOUND HEALING

- Gentle tissue handling
- Strict aseptic technique
- Sharp anatomic dissection
- Meticulous hemostasis
- Obliteration of dead space
- Avoidance of tension
- Preserved vascularity
- Careful approximation of tissues

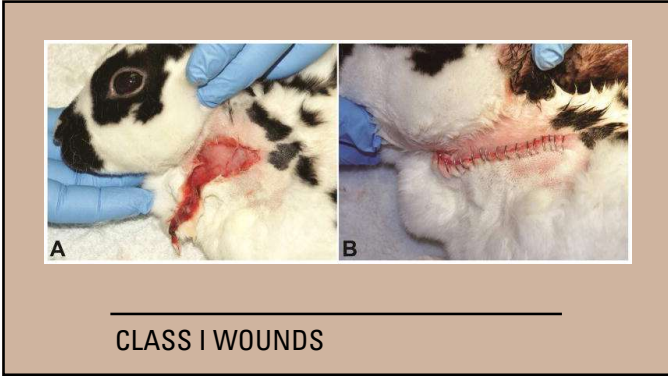
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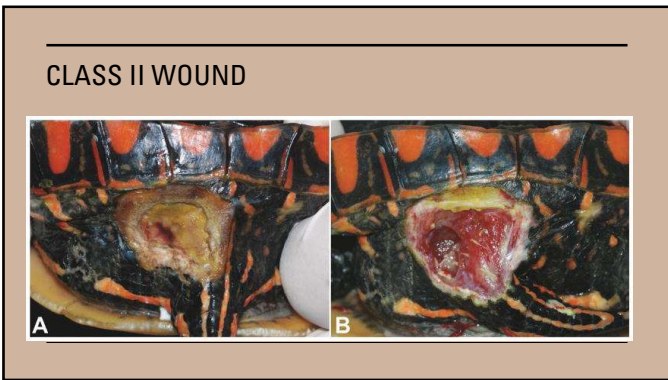
WOUND CLASSIFICATION

A wound may be open (e.g. a tear or puncture) or closed (e.g. a bruise).

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CLASS IV WOUND


- Significant treatment delay
- Foreign object lodged in wound
- Necrotic tissue, pus, fecal matter present



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QUIZ TIME


Shout out the answer



29

NAME THE WOUND CLASS

Hx: Adult Mute Swan hit by a rock at the local park 30 minutes ago



30

NAME THE WOUND CLASS

Hx: 3-year-old, female, spayed, Persian cat; cut with scissors by owner trying to remove matted fur 1 hour ago.



31

NAME THE WOUND CLASS

Hx: 4-year-old adult Python snake. Owner noticed a decreased appetite over the last 3 weeks. Owner reports rat intended for food is still alive in the snake's enclosure.



32

NAME THE WOUND CLASS

Hx: 2-year-old, intact male Corgi got into a fight with a St. Bernard at the dog park 1 hour ago.



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QUESTIONS?

- Contact: FRMoon4080@yahoo.com
- Enter "Conti 2026" into subject line



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REFERENCES

- Winker, K.P. Jul 2023 | Modified Sept 2024 *General Principles of Wound Healing in Small Animals* Merckvetmanual.com
- The Wish Clinic Team Aug 2025 *Understanding the Wound Healing Process- a Comprehensive Approach* thewishclinic.com
- Inflammation-and-neoplasia - Wound Healing PDF (S3-US-WEST-2.AMAZONAWS.COM)
- TOZER, M. OCT 2023 EMS ANATOMY AND PHYSIOLOGY-HEMOSTASIS EMBRACETHEELEMENTS.COM
- CHEGG MAY 2026 *WHAT CHARACTERIZES CHEMOTAXIS* CHEGG.COM
- [HTTPS://WWW.INTECHOPEN.COM/CHAPTERS/80424](https://www.intechopen.com/chapters/80424)
- [HTTPS://WWW.FLUIDPHYSIO.COM/POST/PROLIFERATION-THE-NEXT-PHASE-OF-HEALING](https://www.fluidphysio.com/post/proliferation-the-next-phase-of-healing)
- PENA, A. AND MARTIN, P. MARCH 2024 *Cellular and molecular mechanisms of skin wound healing* Nature.com

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REFERENCES

- Armstrong, D. Nov 2025 *What is Granulation Tissue?* DiabeticFootOnline.com
- Leoni, G., Neumann, PA., Sumagin, R. *et al.* Wound repair: role of immune-epithelial interactions. *Mucosal Immunol* **8**, 959-968 (2015)
- Gupta, A. (2021). Classification of Wounds and the Physiology of Wound Healing. In: Kumar, P., Kothari, V. (eds) *Wound Healing Research*. Springer, Singapore. https://doi.org/10.1007/978-981-16-2677-7_1<https://pmc.ncbi.nlm.nih.gov/articles/PMC4663678/>
- <https://www.sportsmedreview.com/blog/introduction-and-comparison-of-corticosteroids/>
- <https://bowwowinsurance.com.au/pet-care/diseases-conditions/wounds-in-dogs-and-cats/>
- https://anicellbiotech.com/dog_bite_wound/

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