

KitoShield for Veterinary Use

Chitosan ointment is a **natural, food grade** product derived from chitin. It offers **significant advantages for treating various conditions** in animals, including wound healing, fungal infections, bacterial infections, and post-surgical recovery.



Active ingredient:
Chitosan 2.5%



Key advantages :



Bio-organic and Food Grade

Eliminates the risk of poisoning if the animal licks the treated area, unlike steroid creams.



Antimicrobial

Provides effective antibacterial and antifungal action.



Wound Healing

Promotes faster wound healing and reduces dead skin cell formation in comparison to traditional treatments.



KitoShield for Veterinary Use

Chitosan ointment is a natural, edible product derived from chitin. It offers significant advantages for accelerating wound healing due to fungal infections, bacterial infections, and other injuries. **Please read and follow the instructions below carefully prior to usage.**

APPLICATION GUIDELINES

1. **Shave** the area where required, for cats ensure this includes removal of fungal growth.
 - This step is specific for cats. For dogs and other animals, this is not mandatory.
2. **Clean** the area using pet safe antiseptics.
3. **Apply** thin layer of chitosan ointment.
 - Avoid getting the ointment on the animal's coat, particularly for cats as they may find it irritating and injure themselves trying to remove it.
4. **Put collar** on the animal to avoid licking. However, do not be concerned if the animal ingests the ointment as it is food grade and will assist in gut health.
5. **Clean and re-apply** ointment 1-3 times a day or according to doctor's instruction.



Use Cases:

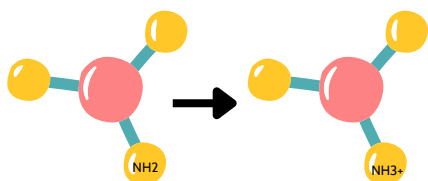
- Fungal Infections
- Abscesses
- Ulcer
- Hotspot (Acute Moist Dermatitis)
- Open Wounds and Stitches

Additional Notes:

Monitoring: Observe the animal closely for any signs of irritation or adverse reactions.

Veterinary Consultation: Always consult your veterinarian regarding the use of chitosan ointment and to determine the most appropriate treatment plan for your animal.

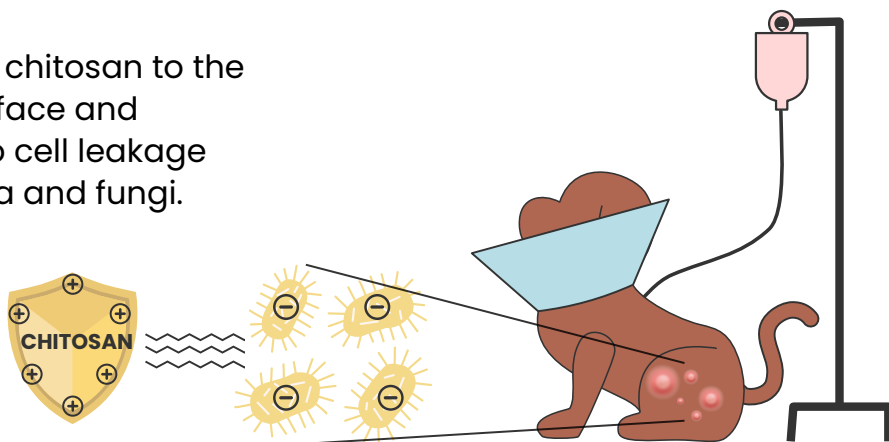
How It Works:



at acidic pH, the **NH₂** (amino group) in chitosan structure changes to **NH₃⁺**. Leading chitosan to acquire a cationic nature.

Against bacterial and fungal infections

Binding of the positively charged chitosan to the negatively charged bacterial surface and fungal cell membrane, leading to cell leakage and ultimately, killing the bacteria and fungi.



Reference

Kulawik, Piotr & Jamróz, E. & Ozogul, Fatih. (2019). Chitosan role for shelf-life extension of seafood. Environmental Chemistry Letters. 18. 10.1007/s10311-019-00935-4.

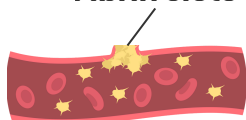
Disclaimer: This manual provides general guidelines. It's essential to follow your veterinarian's specific instructions for the correct use and dosage of chitosan ointment.



In wound healing and post-surgical recovery



Fibrin clots



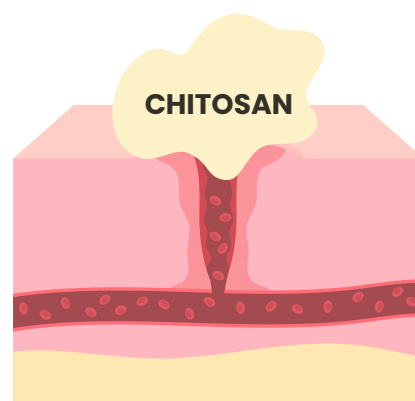
Red blood cells adhere to chitosan because of their opposite charges which causes bleeding to stop (Hemostasis).

The cationic nature of chitosan causes the aggregation of red blood cells and platelets which accelerates the formation of fibrin clots.

During skin regeneration

Major roles of chitosan during skin regeneration includes: forming barrier against infection, encouraging natural blood clotting, and providing scaffold for cell growth, which in turn strengthens new tissue and minimizes scarring.

Chitosan accelerates wound healing and minimizes scar by depolymerizing into N-acetyl glucosamine, which initiates the production of fibroblast. Fibroblast is responsible in secreting collagen proteins and stimulates increased level of hyaluronic acid.



References

Feng P, Luo Y, Ke C, Qiu H, Wang W, Zhu Y, Hou R, Xu L, Wu S. Chitosan-Based Functional Materials for Skin Wound Repair: Mechanisms and Applications. *Front Bioeng Biotechnol*. 2021 Feb 18;9:650598. doi: 10.3389/fbioe.2021.650598. PMID: 33681176; PMCID: PMC7931995.

Jayakumar, R., Prabakaran, M., Kumar, P. S., Nair, S. V., & Tamura, H. (2011). Biomaterials based on chitin and chitosan in wound dressing applications. *Biotechnology Advances*, 29(3), 322–337. <https://doi.org/10.1016/j.biotechadv.2011.01.005>

Katalinich, Michael, "Characterization of Chitosan Films for Cell Culture Applications" (2001). *Electronic Theses and Dissertations*. 245. <http://digitalcommons.library.umaine.edu/etd/245>

Le, L. T. T., Giang, N. N., Chien, P. N., Trinh, T. X., Long, N., Van Anh, L. T., Nga, P. T. Q., Zhang, X., Nam, S., & Heo, C. Y. (2023). Enhancement of wound healing efficacy by chitosan-based hydrocolloid on sprague Dawley rats. *In Vivo (Athens)*, 37(3), 1052–1064. <https://doi.org/10.21873/invivo.13180>



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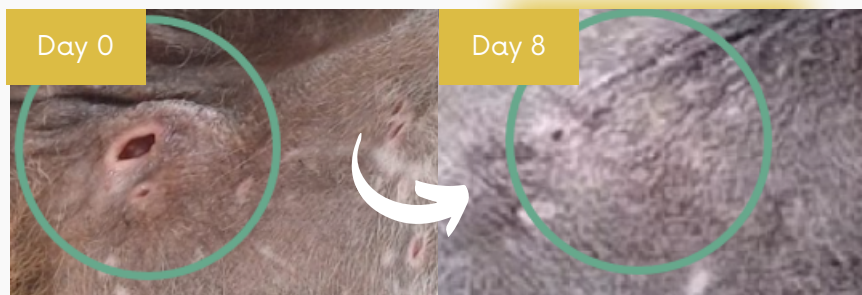
Case Reports

▼ **Case:** Open Wound

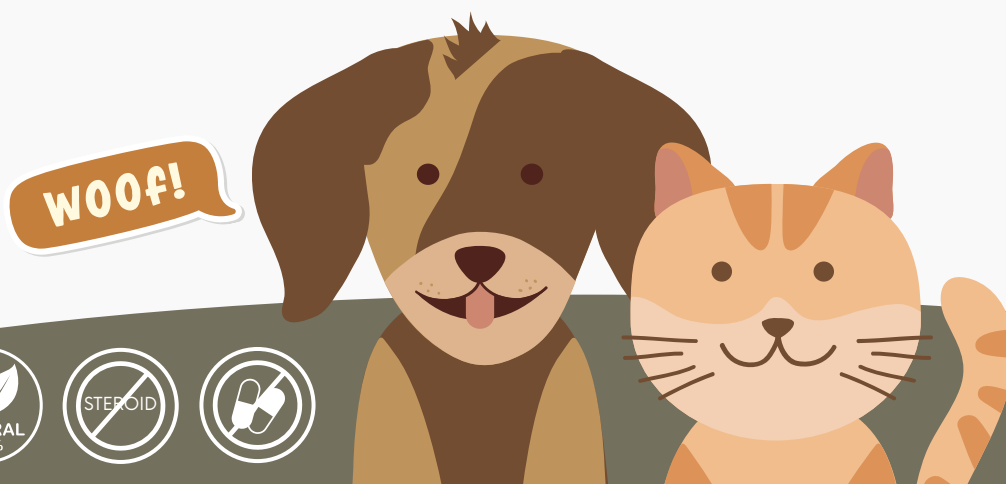


▶ Wound healed within 10 days. Chitosan helps the hair/fur to be re-grow rapidly.

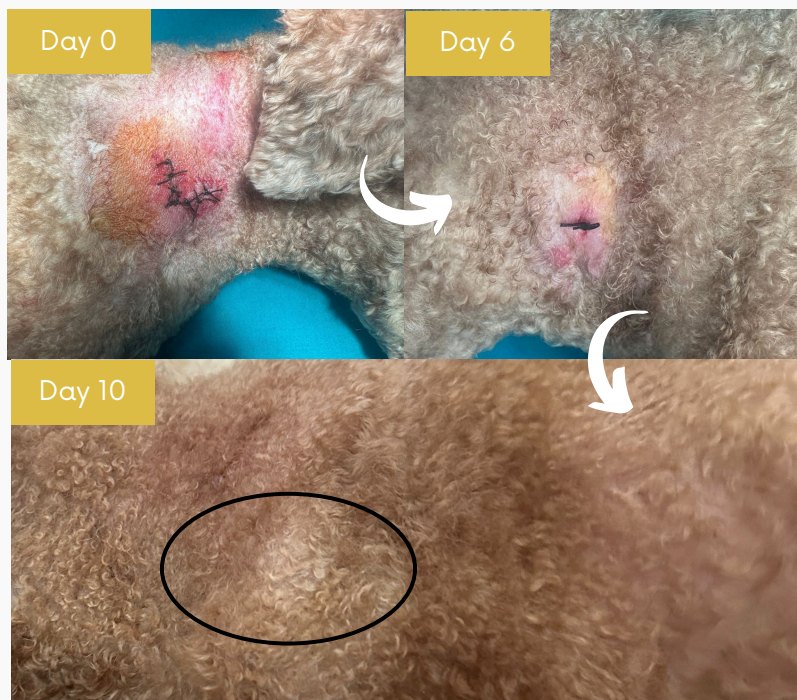
▼ **Case:** Dog's Abscess (Bacterial)



▶ Dog's abscess wound healed in 7 days.



▼ Case: Dog's Stitch Wound



- ▶ Stitch wound healed within 6 days and the skin recovered in 10 days.

▼ Case: Cat's Abscess



- ▶ Abscess wound healed within 6 days along with the hair re-growth.

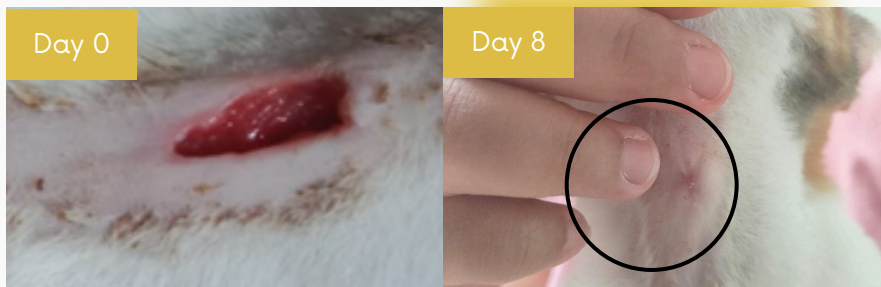
▼ Case: Acute Moist Dermatitis on Dog



- ▶ Dermatitis on dog healed within 6 days along with the hair re-growth.

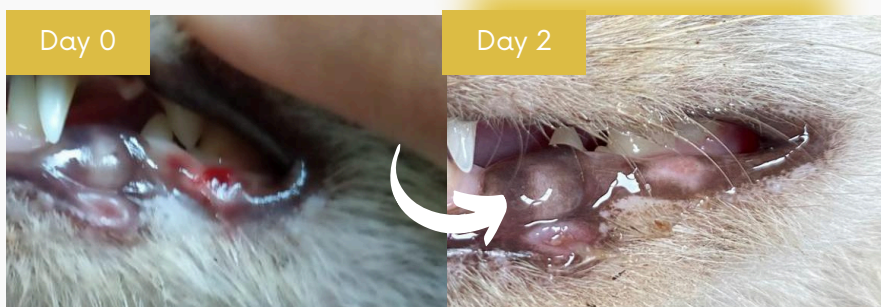


▼ Case: Cat's Abscess (Bacterial)



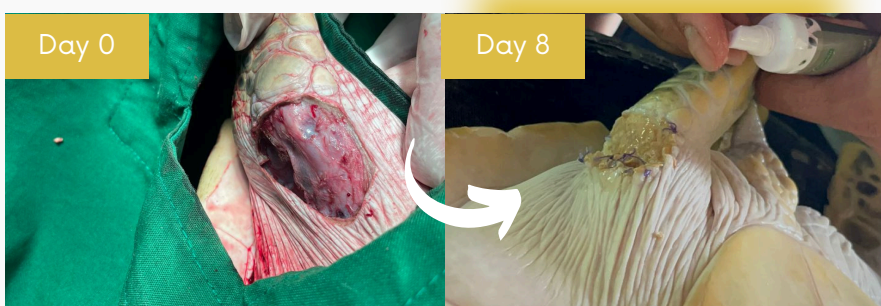
- ▶ Chitosan protects the abscess wound from infections and accelerate its healing time.

▼ Case: Mouth Ulcer on Cat

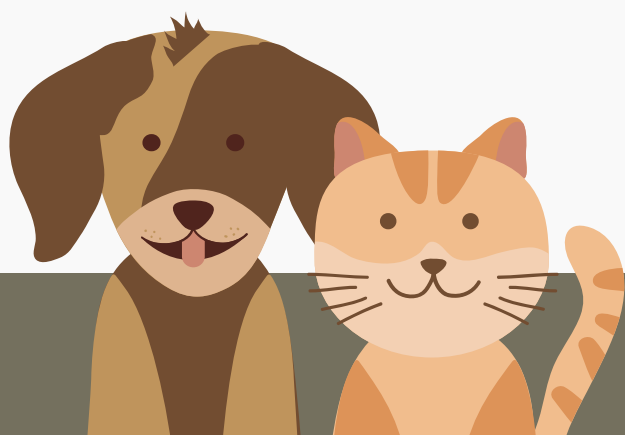


- ▶ Rapid healing in 2 days in the case of ulcer. The food-grade ointment from chitosan also assists in improving gut health.

▼ Case: Post-Surgery Wound on Turtle



- ▶ Cut down healing time by ~10 days compared to natural healing.



Active ingredient:
Chitosan 2.5%

