

# Adhesive Bonding in Veterinary Medicine: A Review of the Latest Advancements

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## 1. Introduction

Veterinary medicine increasingly demands advanced and minimally invasive treatments aligned with modern animal care standards. Traditional techniques such as sutures and metal implants can cause tissue trauma, infection, and limited healing. Adhesive bonding technologies offer a versatile alternative, providing rapid, biocompatible, and less invasive solutions across fields including wound repair, orthopedics, dentistry, ophthalmology, and hoof care. This review highlights the latest adhesive systems, their properties, clinical applications, and future innovations such as biomimetic and drug-eluting adhesives.

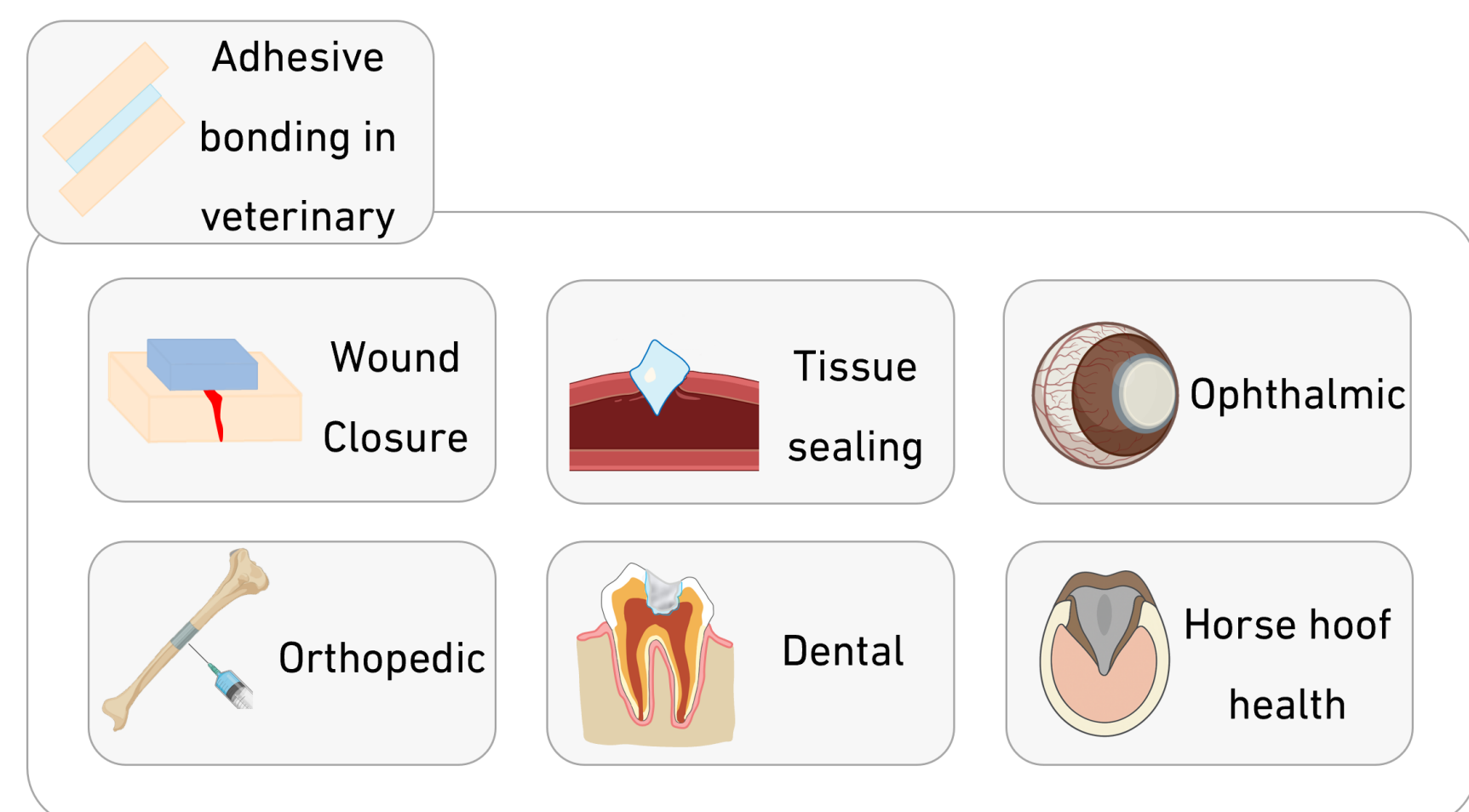


Figure 1. Main clinical areas of adhesive bonding applications in veterinary medicine

## 2. Adhesive bonding materials and their properties

Adhesive Type	Key Properties	Veterinary use
Cyanoacrylates	Fast curing Topical use	Wound Closure
Protein-based	Biocompatible Low strength	Internal tissue sealing
Hydrogels	Scaffolding Mechanical tunability	Regenerative Drug delivery
Medical cements	Long-term stability* Mechanical strength	Orthopedic Dental
Structural adhesives	Mechanical strength Chemical resistance	Hoof repair & shoeing

\*Depending on the formulation

## 3. Clinical case studies

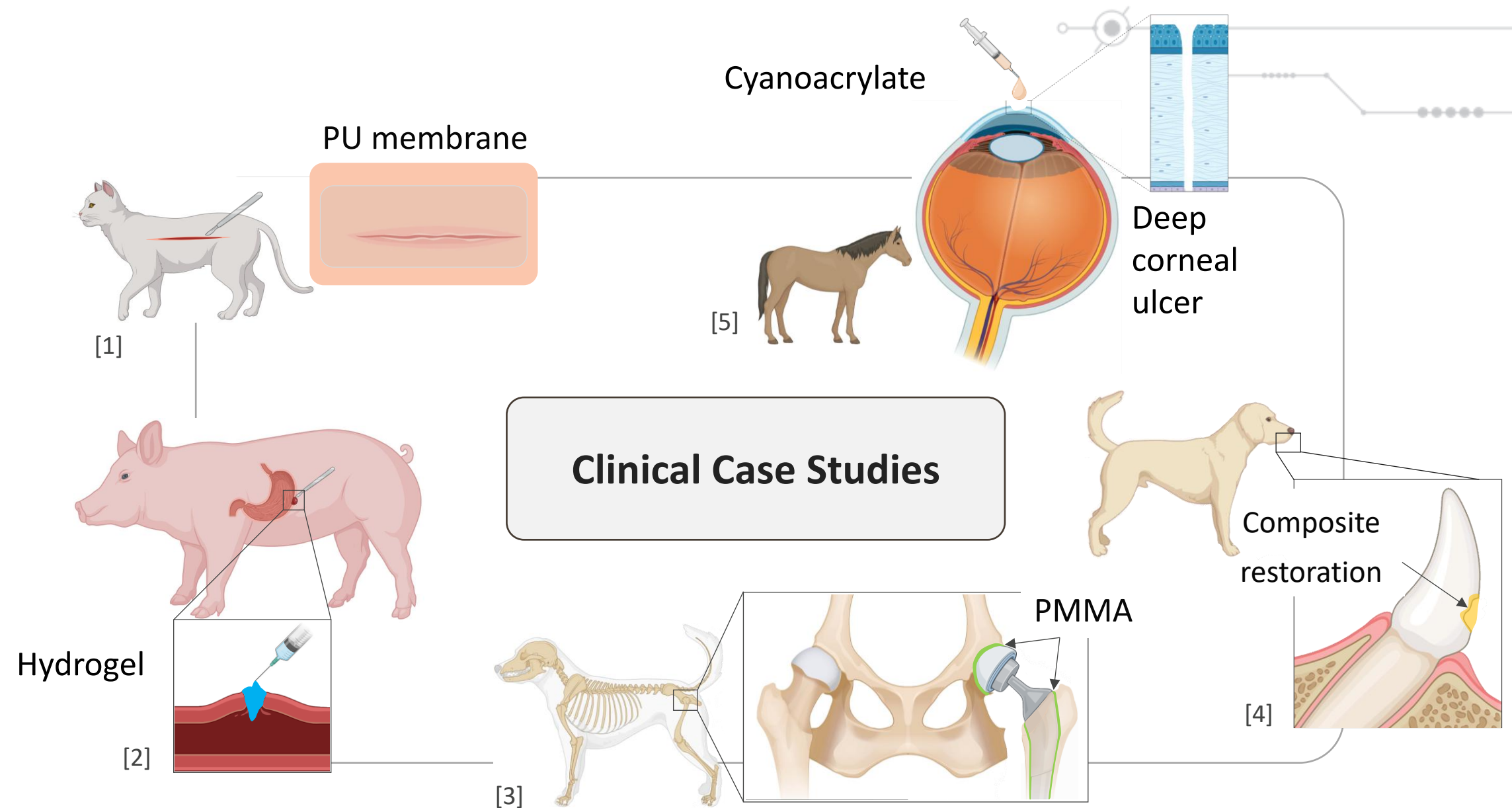


Figure 2. Clinical Applications of adhesive-based techniques in veterinary medicine

## 4. Future trends

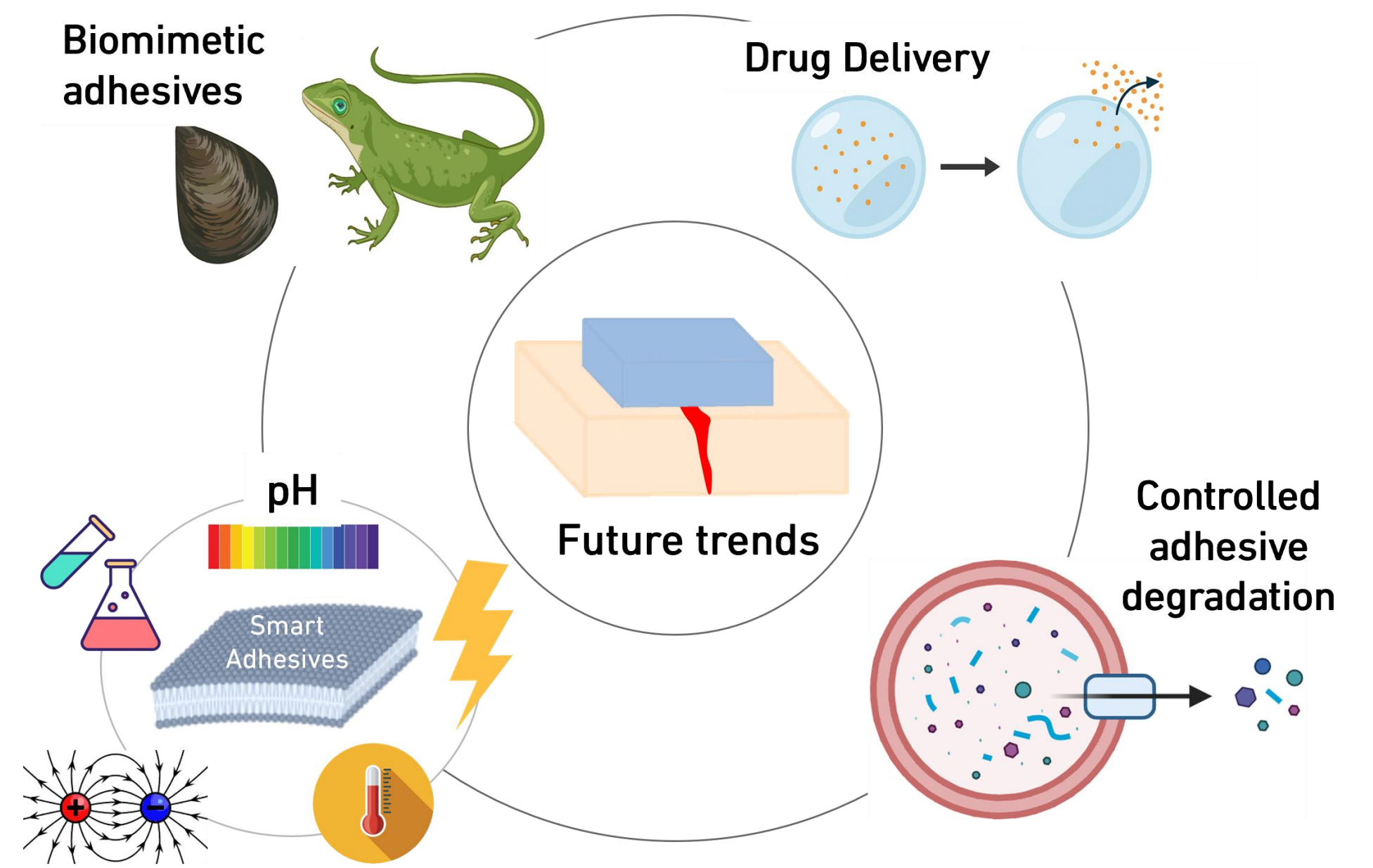


Figure 3. Emerging trends in veterinary adhesive technologies

## 5. Conclusion

- Adhesive technologies are enabling **less invasive, species-specific** veterinary treatments.
- Advancements in biomimetics and smart materials are closing the performance gap with traditional fixation methods.
- Need for **standardized testing and long-term biocompatibility studies** in veterinary contexts.

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