

# Feeding Care Before and After Animal Surgery

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## *Abstract*

Metabolism shifts hard during surgery times, hitting animals tough. Feeding right - before and later - lowers risks: bloating drops, stomach contents stay put, blood sugar stays steady. What follows digs into why fasting timelines differ, depending on whether it is a horse, cow, or young cud-chewer. After cutting, gut support matters; tube feeding sometimes steps in, along with dense, energy-rich formulas made for recovery. Getting nutrients in the right way, at the right moment, changes how fast healing happens. Choices at the food bowl echo through recovery rooms. Care shaped by need moves bodies back toward balance.

**Keywords:** Clinical nutrition, pre-operative fasting, post-operative recovery, enteral nutrition, hypoglycemia, surgical stress.

## **Introduction**

Surgery is more than a localized procedure; it is a systemic event that places significant stress on an animal's body. While surgical techniques have advanced, the importance of nutrition in surgery recovery cannot be overstated. Proper nutrition acts as a foundation for metabolic stability during anesthesia and serves as the primary fuel for post-surgical healing. Feeding management is divided into two critical phases: the pre-operative phase, focused on safety and complication prevention, and the post-operative phase, focused on restoring energy balance and gastrointestinal (GI) function.

## **Pre-Operative Feeding Management and Justification**

The primary goal of pre-operative feeding management is to ensure the animal is in a safe physiological state for general anesthesia. This typically involves a period of controlled starvation.

- **Starvation Protocols by Species:**

- \* **Horses:** For horses, it is recommended to withhold food but not water for 6 to 12 hours prior to inducing general anesthesia.

- **Adult Cattle:** Adult cattle require a more rigorous protocol, including fasting for 18 to 24 hours and deprivation of water for 12 to 18 hours.

- **Calves:** Calves require slightly shorter periods, typically 12 to 18 hours for food and 8 to 12 hours for water.

- **Scientific Justification for Fasting:**

- \* **Bloat Prevention:** Reducing rumen content is essential to minimize the risk of bloat, which can compromise both the surgery and the animal's recovery.

- **Airway Protection:** Controlled fasting helps reduce the risk of regurgitation and subsequent aspiration, ensuring the airway

remains clear during the procedure.

- **Nausea Management:** These protocols minimize the occurrence of vomiting during the induction of or recovery from anesthesia.
  - **Lung Ventilation:** A reduced abdominal volume improves diaphragmatic movement, allowing for significantly better lung ventilation while the animal is under anesthesia.
- **Special Considerations for Young Animals:**
    - \* **Hypoglycemia Risk:** Young animals have minimal energy stores, putting them at an increased risk for hypoglycemia as the duration of anesthesia increases.
    - **Modified Protocols:** Consequently, nursing ruminants are typically anesthetized without prior fasting to protect their blood glucose levels.
    - **Dextrose Supplementation:** For ruminants less than 2 months of age, it is recommended to add 1.25% to 2.5% dextrose to the intravenous electrolyte solution (delivered at 10 mL/kg/h) to maintain adequate blood glucose.

### Post-Operative Feeding Strategies

Once surgery is complete, the focus shifts to nutritional support to counteract the catabolic state induced by surgical stress.

- **Critical Success Factors:**
  - \* **Diet Selection:** The effectiveness of post-operative support relies heavily on the selection of an appropriate, highly digestible diet.
  - **Caloric Intake:** It is vital to ensure the patient's actual intake

meets their total daily calorie requirements for healing.

- **Early Intervention:** Encouraging food consumption as soon as possible after surgery is considered critical for a successful outcome.
- **Routes of Administration:**
    - \* **Enteral Nutrition:** This is the preferred route whenever possible. It provides intraluminal agents that stimulate the GI tract, improve motility, and help prevent post-operative ileus.
      - **Bacterial Translocation:** Enteral feeding also serves a protective role by reducing the risk of bacterial translocation across the gut wall.
      - **Parenteral Nutrition:** This route is reserved for cases where the enteric route is not viable.
  - **Clinical Dietetics and Diet Types:**
    - \* **Gastrointestinal Diets:** These should be highly digestible with low residue and carbohydrate digestibility greater than 90%. They utilize protein of high biological value from limited sources and include balanced fibers and prebiotics.
      - **Critical Care/Convalescence Diets:** These are designed for patients with significant malnutrition or those requiring tube feeding. They are energy-dense (4 to 4.5 kcal/g) and often contain increased omega-3 fatty acids.
      - **Texture Considerations:** Liquid or mousse formats can be helpful for patients that find lapping easier than chewing solid food.
      - **Fat Sensitivity:** High fat content should be managed carefully, as it can delay gastric emptying or cause

malabsorption in dogs with existing GI compromise.

## Conclusion

Nutrition is of utmost importance following surgical intervention. While pre-operative fasting is necessary to reduce complications like bloat and improve ventilation, post-operative care must prioritize the early reintroduction of energy-dense, highly digestible nutrients. By managing these two phases effectively and actively increasing voluntary feed intake, the veterinary team can ensure a faster and more robust recovery for the animal.

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