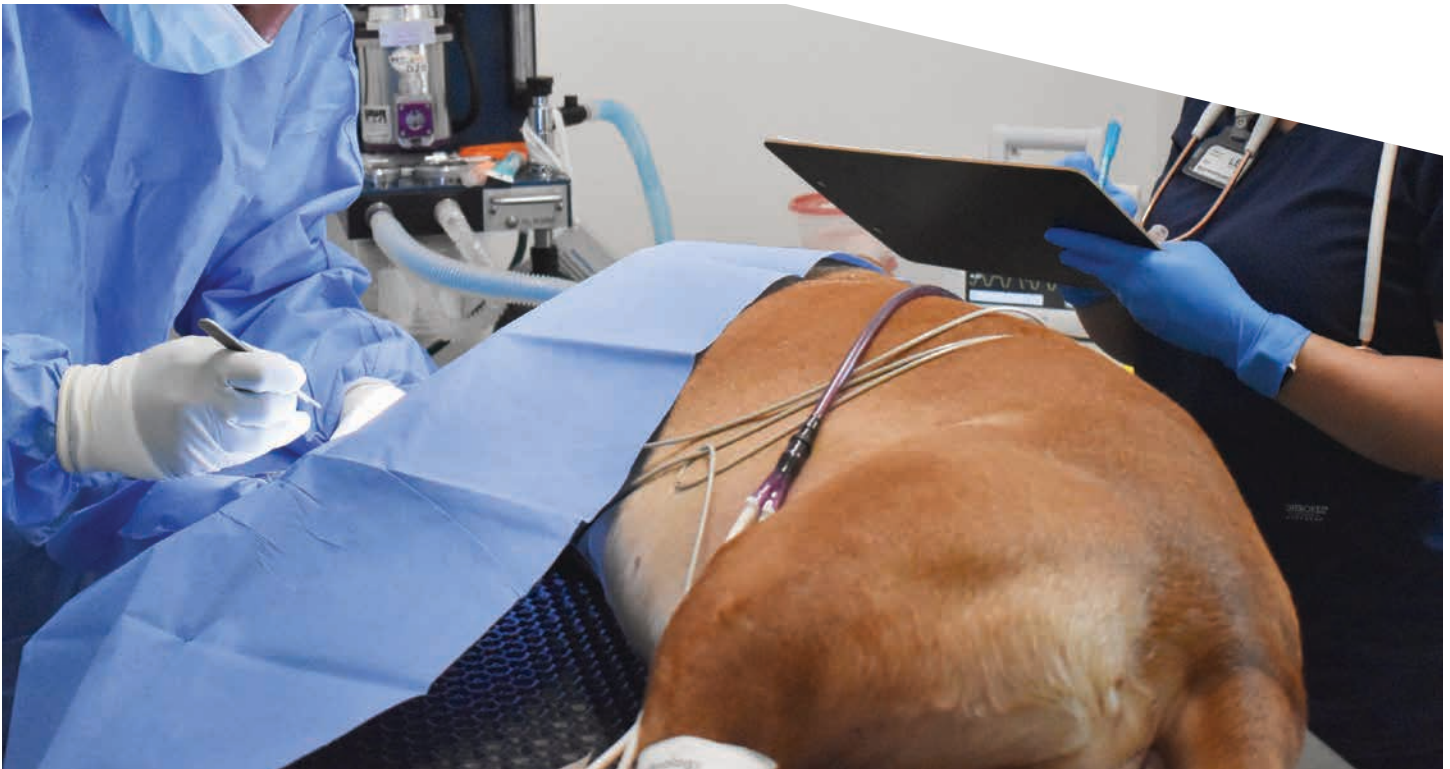




## CHAPTER 5



chapter 5

# Surgery Introduction

## Equipment & Supplies

### Operating Room Setup

Setting up the operating room is crucial to the efficiency and completion of the procedure as well as the safety of the pet. Depending on what procedure is being performed, different equipment will be needed. You will always need the operating table, anesthesia monitoring system, breathing system, anesthesia machine, emergency drugs, sterile instruments needed for the procedure and products needed for the correct level of sterilization.

It is very important to remember that the surgical suite is an aseptic area. As such, only “clean” procedures should be performed and appropriate PPE (personal protective equipment) is required to enter. The door should remain shut at all times unless actively entering or exiting the suite to prevent contamination.

## Types of Operating Tables

The V top table is typically used to perform most surgical procedures such as ovariohysterectomies, castrations, and mass removals. The table needs to be adjusted to the size of the pet and positioned for the stability.

The wet table can be used to perform procedures such as dental cleaning, and other minor surgical procedures such as biopsies. This table allows water to drain and is very useful for any procedure involving usage of water.

## Anesthetic Monitoring

Throughout the entire procedure, the pet's ECG, respiratory rate, blood oxygen levels, blood pressure, temperature, capillary refill time, mucous membrane color and IV fluid rate will be monitored. It is the technician/assistant's job to ensure that all values are in a normal range. If any of the values become abnormal, notify the doctor immediately. Before the procedure begins, the leads and monitoring equipment will be hooked up to the pet and plugged into the monitoring system in an organized manner. The patient's information such as name, breed, age, weight and sex should also be input into the system to ensure records are kept correctly.

## Anesthesia Machine

**Endotracheal tubes** are used to connect the pet's airway to the breathing system. The tube will need to be sized and measured to ensure it sits in the correct place during the procedure.

A black or green rubber **reservoir bag** will also need to be placed on the breathing circuit and should be the correct size for the pet based on the pet's weight.

**Oxygen tanks** should be checked prior to the procedure. Tank should be changed if less than 500psi of O<sub>2</sub>. The breathing system should also be leak tested before each procedure to ensure no anesthetic leaks into the environment and the pet remains properly sedated.

**Soda Lime** (brand names: Sodasorb; SodaSthesia) is used to filter out carbon dioxide. A log of the duration of each procedure should be kept and is used to determine when the soda lime will need to be replaced. Some brands contain granules that turn purple as they become exhausted, showing it is time to change them. This needs to be checked before the procedure and replaced as needed.



*fig. 01*  
V Top Table



*fig. 02*  
Wet Table



*F-Air Canister*



*Reservoir Bags*



*Oxygen Tank*



*Endotracheal Tubes*



*Soda Lime*

**F-Air canisters** are a type of scavenger system which filters out the anesthetic and keeps it from entering the operating room environment. F-air canisters increase in weight with each use and need to be replaced after a 50-gram increase. The F-Air can should be weighed and replaced as needed before each procedure.

## Emergency Drugs

These drugs are generally kept in the crash cart. The crash cart should be readily available in case of an anesthetic emergency.

**Atropine:** Parasympatholytic - Prevents heart rate from slowing during anesthesia (most often given if pet's blood pressure or heartrate is low during surgery)

**Epinephrine:** For treatment of anaphylactic shock (most often used in resuscitation, and can be used to increase heartrate or stop bleeding)

**Naloxone:** Opioid antagonist (reverses effects of opioids)

**Dopamine:** Increases blood pressure and heart rate

**Doxapram (Dopram):** Respiratory Stimulant (most often used in case of decreased respirations)

**Lidocaine:** Local anesthetic, also used for treatment of cardiac arrhythmia and abnormal heart rhythms

## Surgical Supplies for Specific Procedures

**Spays/Neuters:** These procedures are sterile and require a surgical scrub, a sterile pack of instruments, a sterile gown, gloves, cap, mask, booties, suture and blade that need to be prepared for the doctor prior to the operation. Staff in the surgical suite assisting or monitoring anesthesia should wear appropriate PPE (personal protective equipment) including a cap, mask, and booties at all times.

**Dental Prophylaxis:** Your technician or doctor will need a set of gloves, mask, cap, a dedicated jacket or gown to cover their scrubs, and appropriate eye protection. Any personnel directly assisting with a dental should also wear appropriate PPE to minimize bacterial contamination and spread through the hospital (cap, mask, clothing cover). The instruments used in the dental should be sterilized prior to the procedure.

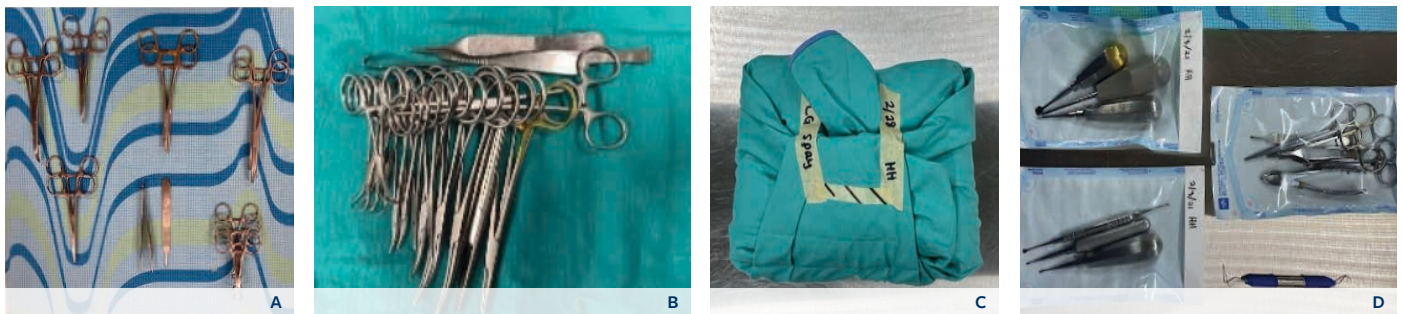
**Mass Removals:** Mass removals are a sterile surgery that will require scrub, a sterile pack of instruments, a sterile gown, gloves, cap, mask, booties, suture and blade. Staff in the surgical suite assisting or monitoring anesthesia should wear appropriate PPE (personal protective equipment) including a cap, mask, and booties at all times. If the owner would like a histopathology submitted, a sample cup needs to be labeled so it can be sent to the laboratory.

**There is no time to waste when a pet is anesthetized, so all setup must be completed prior to induction.**

# Sterilizing Surgical Instruments and Wrapping Packs

In most veterinary practices, an autoclave is used for steam sterilization. Each instrument needs to be thoroughly cleaned by hand washing then placing in an ultrasonic soniclean bath. The instruments then need to be lubricated (in instrument milk) and packaged prior to sterilization.

**Spay/Neuter Packs:** Always consult with your doctor on the contents of each pack, but they should all include the necessary instruments, radiopaque gauze, towels or drape, and an “OK strip” placed in the thickest part of the pack (sterilization indicator) (AAHA standard). The instruments should be organized as shown in picture B. Then the gauze and OK strip will be added and then the pack will be tightly wrapped and labeled as shown in picture C. Using indicator tape to seal the pack, the label should include the initials of who wrapped the pack, the date wrapped and the type of pack.



The pouches in picture D are indicated for a dental cleaning with extractions. The instruments are thoroughly cleaned and then organized into pouches. These specific pouches have sterilization indicators on the front and back of the pouch. If these were not available, a sterilization strip should be inserted into the pouch prior to sterilization. Each pouch is labeled with the date and initials of who packed it.


These pouches can also be used to sterilize individual instruments, special instruments, gauze, and other items that are not easily wrapped or do not need to be wrapped in a typical pack.

# Surgical Record Keeping

## Checking in Surgical Patients

**Pre-Anesthesia Nursing:** Prior to each procedure, the pet's vitals, weight and general wellbeing need to be gathered and recorded. Upon check-in, the owner should be asked a series of questions including:

- How is the pet doing today?
- Any coughing, sneezing, vomiting or diarrhea in the past 48 hours?
- Is your pet currently on any medications? If so, when were they last given and the dosage?
- When did your pet last eat? \*Pets should be fasted the day of surgery
- What is the best phone number to reach you today and when are you available to pick-up?

 **Surgical Consent Form**

Today's Date: \_\_\_\_\_

Pet's Name: \_\_\_\_\_ Owner's Name: \_\_\_\_\_

Best Phone Number to Reach You Today: (\_\_\_\_) \_\_\_\_\_

In an emergency situation, our best effort will be made to contact you as soon as possible.

**Consent for Surgery and Resuscitation**  
*Please read and check the box(es) that apply.*

I am the owner/agent of the above-named pet and have the authority to execute this consent. I hereby consent and authorize the performance of the following procedure(s):

Dental  Spay  Neuter

*Please read and initial beside one choice below.*

I also authorize the use of appropriate sedatives, anesthetics, medications, and/or treatments the doctor deems advisable or necessary for the health, safety, and well-being of my pet while they are under the care and supervision of NewDay Veterinary Care.

I certify that I understand there are risks and potential complications associated with all anesthetics and surgical procedures and that results cannot be guaranteed. All necessary precautions will be taken to ensure the safety of my pet while under anesthesia, however, I am aware all surgical and medical procedures carry an inherent risk. Therefore, a decision needs to be made regarding a resuscitation order. I understand my options should my pet's welfare become life-threatening and choose one of the following:

\_\_\_\_\_ Please **initiate resuscitation** for my pet (CPR) **Additional charges may be incurred.**

\_\_\_\_\_ Please **DO NOT resuscitate** my pet (DNR)

**Acknowledgment**  
*This information applies to all pets receiving anesthesia or sedation. Please read and initial each.*

\_\_\_\_\_ **Pre-anesthetic Bloodwork.** This is required for every pet receiving general anesthesia or sedation to help avoid complications. Although we perform thorough physical exams prior, some conditions are only detectable through blood testing. If your pet's values are abnormal, your veterinary team will contact you for permission to perform additional diagnostics. In some instances, the procedure may be postponed ensuring your pet is stable and safe enough for the procedure.

\_\_\_\_\_ **IV Catheter and Fluids.** An intravenous catheter is placed on every pet undergoing anesthesia to allow for immediate IV access for medications and help maintain blood pressure. Please note that your pet's leg will be shaved to accommodate an IV catheter. **Cost is included in procedure.**

\_\_\_\_\_ **Pain Management.** Medication(s) for pain management will be dispensed as needed for each case. **If administered, additional charges will apply.**

**Form continues on reverse ▶**

**Vaccinations & Care**  
*Please check any vaccines and/or care offerings your pet needs today.*

CANINE VACCINES		FELINE VACCINES	
<input type="checkbox"/> Rabies Vaccine	\$26	<input type="checkbox"/> Rabies Vaccine	\$26
<input type="checkbox"/> DAPP Vaccine	\$36	<input type="checkbox"/> FVCRP Vaccine	\$34
<input type="checkbox"/> Bordetella Vaccine	\$28	<input type="checkbox"/> FeLV Vaccine	\$38
<input type="checkbox"/> Leptospirosis Vaccine	\$22	<input type="checkbox"/> Feline Rabies Vaccine	\$38
<input type="checkbox"/> Lyme Vaccine	\$40	<input type="checkbox"/> FeIV / FIV Vaccine	\$46
<input type="checkbox"/> Canine Influenza Vaccine	\$42		

**TESTS AND CARE OFFERINGS**

<input type="checkbox"/> Intestinal Parasite Screening	\$38	<input type="checkbox"/> Pedicure	\$16
<input type="checkbox"/> Heartworm Test	\$46	<input type="checkbox"/> Ear Cleaning	\$24-44
<input type="checkbox"/> Pedicure	\$16		
<input type="checkbox"/> Nail Dremel / Grinding	\$24		
<input type="checkbox"/> Ear Cleaning	\$24-44		
<input type="checkbox"/> Anal Gland Expression (if needed)	\$30		

**When did your pet last eat?**  
*Circle one day and one meal.*

Day: Today / Yesterday  
Meal: Breakfast / Lunch / Dinner

**Medication & Vaccination History**

Has your pet ever had an adverse reaction to any medication or vaccines?  Yes  No

If yes, please describe: \_\_\_\_\_

If yes, a diphenhydramine injection prior to vaccinations is **required** (additional charges apply). This injection will help minimize possible vaccine reactions.

I fully understand the terms of the treatment plan for the services presented to me. I understand if I do not pay this account as agreed, I will be responsible for the costs of collection, including attorney's fees and court costs.

Signature \_\_\_\_\_ Date \_\_\_\_\_

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A **Surgical Consent Form** should be filled out by the owner and signed prior to the procedure. This will help you keep track of important information, and will clearly state what was authorized, that the owner consents to the pet's surgery, as well as acknowledgment of risks.



## Post-Anesthesia Nursing


Post anesthesia nursing is crucial to the pet's safety and requires your complete attention and focus. After the procedure has been completed, the pet's coat should be cleaned and dried if it's wet or has blood on it. The goal is to have the pet looking better than when they came in. After the pet has been cleaned, the anesthetic agent should be shut off and the pet can begin waking up. At this time, the pet should continue to be monitored and once the pet has swallowed three times and is in control of its tongue, the endotracheal tube can be pulled gently out (called extubation). The time of extubation should be recorded as well as when the pet is sternal (laying on its chest/belly) and then walking. After the pet is walking, the vitals and pain score (AAHA standard) should be recorded once more and on a regular basis until discharge to the owner's care. If the temperature is low due to the anesthesia, a warming mechanism should be put in place until the pet reaches a normal temperature.

The pet should be fully awake and alert at the time of discharge. The IV catheter should be removed and the surgical site should be cleaned before going home. If medications are needed before discharge, they should be given and recorded in the medical record and on discharge instructions.

# Discharging Surgical Patients

When discharging surgical patients, the owner should be made aware of: the procedure performed, medications needed for aftercare, swelling prevention techniques or possible complications, date of suture removal appointment (or drain removal), and common occurrences after anesthesia, such as inappetence.

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## Home Care Instructions After Surgery

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Your pet is recovering from surgery which requires continued nursing care at home to ensure a successful recovery. Home care mainly involves restriction of activity because your pet does not understand the significance of the recovery period. Most patients become active in a short period of time following surgery and starting pain medication, therefore their confinement is very important. This means:

- No running, jumping or climbing
- No playing with other pets or rough play
- No swimming or bathing – keep incision site(s) clean and dry

Leash walks only for short breaks outside. If your pet needs to be left alone unsupervised during the recovery period, they should be confined to a crate or other small area. Excessive activity often leads to injury or serious complications. This could mean added discomfort for your pet and additional expense for you.

Unless otherwise instructed, your pet's incision does not require any special attention. Observe the incision site daily for signs of redness, swelling or discharge. The incision site should be improving each day. Please do not hesitate to contact us if you notice any abnormalities or become concerned.

We strongly recommend your pet wear an E-Collar **at ALL times** during the recovery period to prevent them from licking at the incision site. **Licking usually leads to chewing and possible removal of sutures/staples, which can occur in a matter of minutes!** Call us ASAP if this occurs because it can result in severe infection and/or added discomfort. You may remove E-Collar for meals.

Sutures or staples ARE / ARE NOT present. If present, sutures or staples need to be removed in 7-10 days, unless otherwise directed by the doctor.

If your pet has a bandage, it is very important that you keep the bandage clean and dry. Cover the bandage with plastic when going outside or if there is a possibility for it to get wet. If the bandage does become wet, dirty, develops an odor or is removed by your pet, call the hospital as soon as possible for a recheck/rebandage.

**FEEDING INSTRUCTIONS**  
Restrict access to food at least 2 hours after you return home then feed ¼ to ½ of a normal meal. Don't be alarmed if your pet is not interested in eating that evening but rest assured their appetite should return to normal within 24-48 hours. Resume a normal feeding regimen the day after their procedure unless instructed otherwise.

**MEDICATIONS**  
Please administer medication(s) exactly as prescribed to aid in pain management, inflammation and/or infection.


Your pet may seem more quiet than normal for a day or two after surgery but should gradually improve each day. While some discomfort is expected, if you feel your pet is experiencing excessive discomfort or pain or if their condition changes or suddenly worsens, please call us immediately. If calling after normal clinic hours, contact our local veterinary emergency hospital.

**EMERGENCY HOSPITAL NUMBER**

Thank you for trusting us with the care of your pet!

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Please Call Your NewDay Veterinary Care Team with Any Questions or Concerns

  
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A set of discharge instructions such as the one pictured should be sent home with the client. This document should go over keeping the pet calm, when and how much to feed their pet, the importance of keeping the e-collar on and monitoring their pet after surgery (common occurrences after anesthesia including nausea and raspiness or coughing), when and if suture removal is needed and a reminder to finish all medications provided.

After going over all necessary information with the owner, make sure to ask them if they have any other questions or concerns. Once you have fully answered all of their questions, have them sign each document and keep a copy on file.





## Charging for Common Surgical Procedures

**Ovariohysterectomy:** The ovariohysterectomy package ranges based on weight and does not include additional items such as suture, additional surgery and anesthesia time, go-home medications and an e-collar.

**Castration:** The castration package also ranges based on weight and does not include additional items such as suture, additional surgery and anesthesia time, go-home medications and an e-collar.

**Dental Prophylaxis:** Dental packages can range based on treatment needed for the pet. At some locations, dental radiology is also available. Extractions, gingivectomies, odontoplasty and more advanced dental procedures involving orthodontics are also available at select locations.

**Mass Removal:** Mass removal procedures are priced based on the size of the mass and the time required to remove the mass. A general anesthesia charge will also be required to complete this procedure.

This manual is an basic overview of some of the tasks used daily in the clinic. Not everything could be covered in this edition. Look for this to be updated and expanded in the future.



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