

The Lone Surgeon – Tips for Maintaining Aseptic Technique When Performing Solo Rodent Survival Surgeries

Who is a Lone Surgeon?

The Lone Surgeon is someone who performs survival surgical procedures without the help of a surgical assistant. Therefore, they must fulfill many roles during a surgical procedure, all while maintaining proper aseptic technique.



The Lone Surgeon is also the:

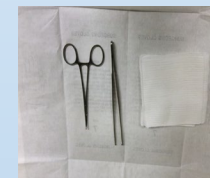
- Researcher
- Anesthetist
- Surgical Assistant
- Record-keeper

Tips for maintaining aseptic technique procedures during rodent survival surgery



Instruments

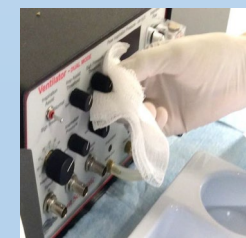
- Instruments must be sterile (autoclaved, Ethylene oxide gas, or cold sterilants) at beginning of surgical session
- Wrap instruments in a surgical drape. Fold the drape closed so that it can be opened while maintaining sterility on the inner surfaces.
- Implanted devices (electrodes) must be sterilized (e.g., gas or cold sterilants).
- Use the leftover sterile paper from donning sterile gloves (if worn) as extra sterile surface area.



- A hot bead sterilizer can be used to re-sterilize instruments between animals or in the event of a contaminated instrument.

For equipment within the operative site that needs to be manipulated during surgery:

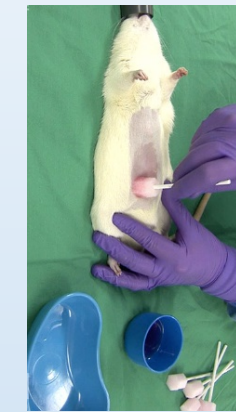
- Cover knobs and other controls with sterile gauze, sterilized aluminum foil, or plastic cling wrap.



Surgeon Prep



- Clean gown or lab coat, surgical face mask, and hair cover should be worn.
- Sterile surgical gloves need to be worn if fingers will touch surgical site.
- Remove any large or protruding rings and other jewelry.



Animal Prep

- Place heating pad under animal to maintain normal body temperature.
- Apply sterile ophthalmic lubricant to prevent corneal drying.
- Clip hair from incision site; vacuum or use tape to remove loose hair.
- Perform 3 scrubs, alternating between chlorhexidine or povidone iodine with alcohol to disinfect skin.

Draping

- Covering animal with a sterile drape helps to maintain a sterile field around the area of incision.
- Can use small sterilized towels, gauze or plastic cling wrap (not sterile, but studies have shown this to have very minimal contamination).



Sterile Tip Technique

- Only tips of instruments (scalpel, scissors, forceps, hemostats, drill bits, etc.) contact the surgical site.
- Need to have defined area for laying instruments down (sterile area vs. non-sterile area) when not in use.
- Sterile surgical gloves are not necessary.



Recordkeeping

Records of surgical procedure must be documented:

- Use check boxes instead of writing out common procedures or steps. Also, prefilled sections prevent the need for excess writing during the surgery.

What is aseptic technique?

A collection of procedures to decrease the potential for contamination of the surgical site.

Why is aseptic technique important?

To preserve the welfare of the animal

- Wound infections can cause pain and distress, and if severe, can result in the breakdown of the surgical wound. Generalized infections can result in severe illness or the death of the animal. Even low-grade infections can change an animal's physiology, thereby potentially interfering with specific research goals.

Presurgical Planning

- Is the site clean and organized? Remove all unnecessary equipment from immediate area.
- All needed supplies (drugs, sutures, gauze, swabs) on hand and ready for use? Any drugs that are expired?
- Are instruments autoclaved? Are packs complete with all tools needed for the procedure?
- Is the hot bead sterilizer accessible and turned on?
- All equipment and instruments in good working order? Vaporizers in-date? Proper waste anesthetic gas management?

Operative Site

An ideal operative area is clean, neat, and comprised of components that can be sanitized. The area is dedicated to rodent surgery. The location is not directly beneath supply ducts and is in a low traffic area.