



Sterile Survival Surgery: Surgeon Preparation and Maintaining Sterile Technique

OLAR

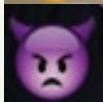
March 14, 2019

Objectives

- Illustrate proper sterile surgery technique
- Identify & correct mistakes leading to breaks in aseptic technique for survival surgeries
- Illustrate tips to perform sterile aseptic solo surgeries
 - Angel or devil icons indicate correct or incorrect technique



= Correct technique



= Poor technique

Prep Area

- Separate from surgical table
(i.e. apply eye lube,
prep surgical site)

Surgical Area

- Maintain sterile field
(nothing overhead)



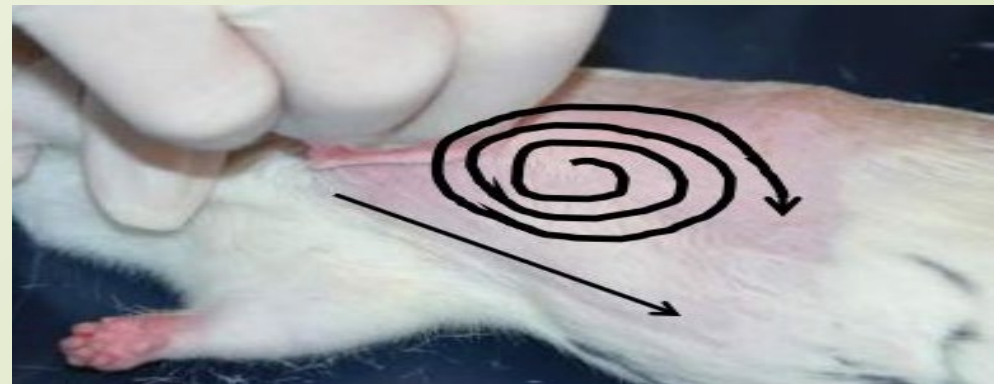
Instrument Preparation

- Instruments must be sterilized prior to surgery (i.e. autoclave)
- For non-USDA species
 - Hot-bead sterilizer may be used to re-sterilize instrument tips for up to 10 surgeries
 - *Only tips of instruments are considered sterile when using this method*
- 70% ethanol is **NOT** acceptable to sterilize instruments
- Supplies for survival surgery must be sterile & in date



Animal Preparation

- Animal should be prepped separate from surgical area
 - Clip hair from surgical site
 - Disinfect with 3 alternating applications of betadine/chlorhexidine then 70% EtOH or vice-versa
 - Start in center of proposed incision, scrub in circular motion outward
 - Apply sterile eye lube for surgeries >15 minutes
 - Move animal to surgical area and cover with sterile drape



Surgeon Prep

- Remove jewelry (watches, rings, dangly earrings)
- Ensure sleeves are at least two inches above elbows
- A & B. Open gown pack onto clean table by grabbing outside edges
- C & D. Open glove packet, let insert drop onto clean area
- Don face mask and bouffant



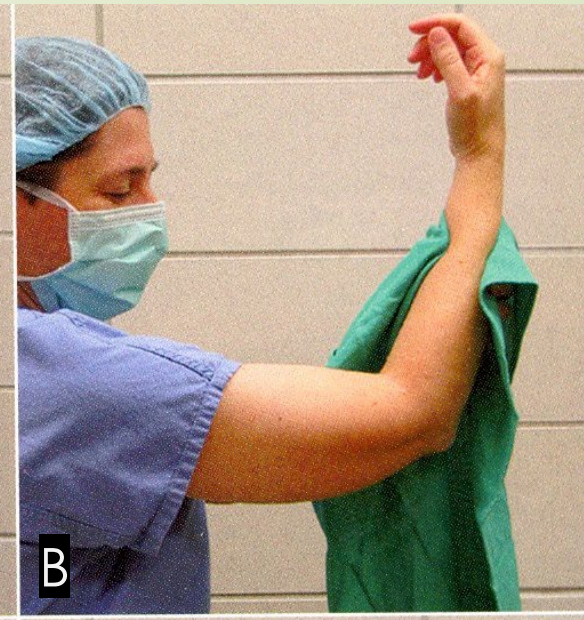
Scrubbing

- Wet hands, clean under nails
- A & B. Scrub (iodine or chlorhex) fingers to elbows
 - Wash each area (fingers, hands, forearms) in 4 planes, scrubbing 10x on each section
- C & D. Rinse such that water runs from fingertips to elbows



Drying Hands

- Use sterile towel in gown pack to dry hands
 - Use dabbing motion (not wiping)
 - Dry “clean to dirty” (fingertips to elbows) then switch hand to clean side of towel and dry other hand



Gowning

Required for USDA Species

- A. Grab gown touching only inside
- B & C. Inside of gown should be facing you, gently shake loose
- D. Place hands into sleeves and shrug gown on; keep hands inside sleeves
- Have assistant pull up and over shoulders and fasten in back



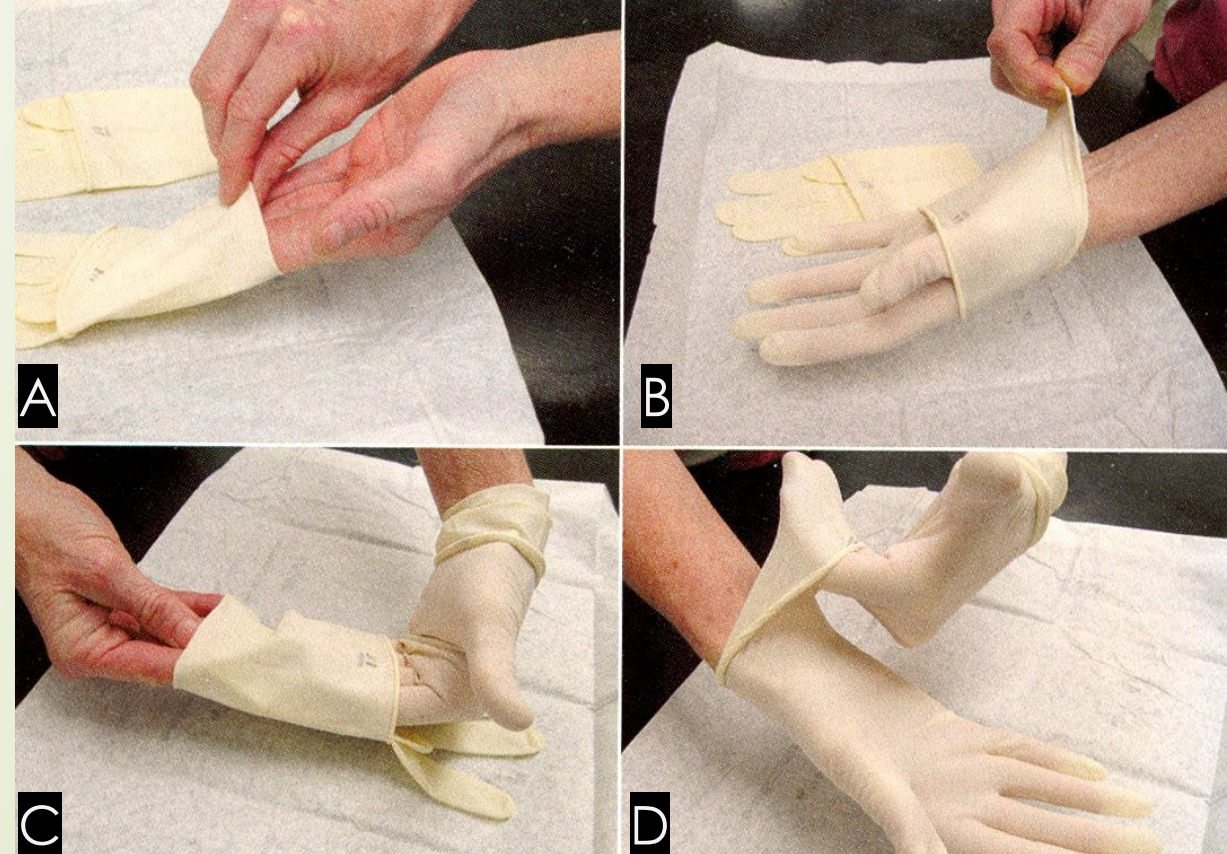
Closed-Gloving

- A & B. Dominant hand (in gown) grabs opposite sterile glove, place palm down, fingers facing body on wrist
- C. Grasp bottom of cuff and pull over hand
- D & E. Pull gently on sleeve of gown to help move hands into gloves and straighten out fingers; sleeves of gown should remain over most of palm
- Repeat technique with other hand



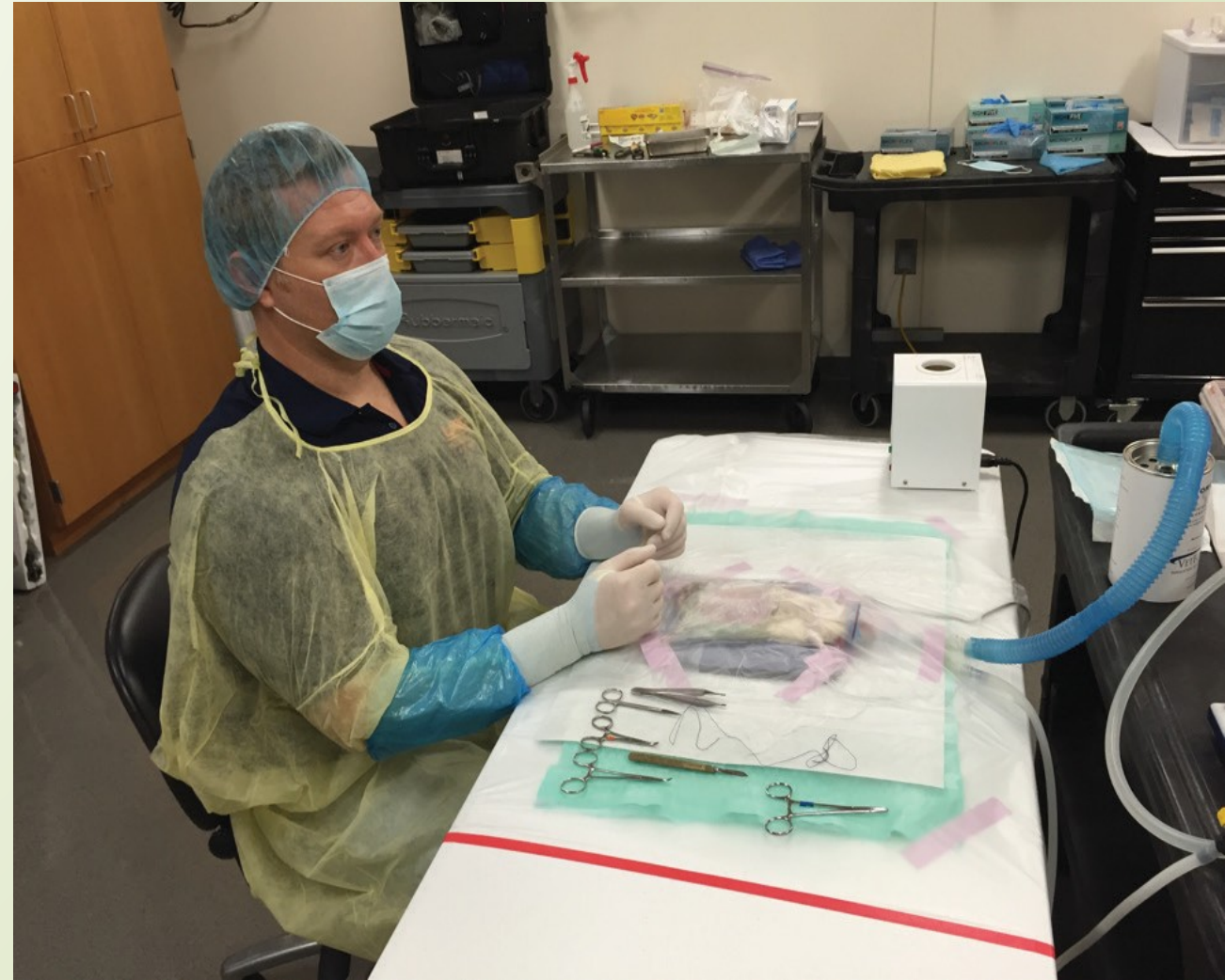
Open-Gloving

- A & B. Only touch inside of glove with bare hands
- C & D. Only touch outside of glove with gloved hands



Non-USDA Survival Surgeries (Rodents, Fish)

- Required PPE
 - Lab coat/Gown
 - Face mask
 - Bouffant
 - Sterile gloves



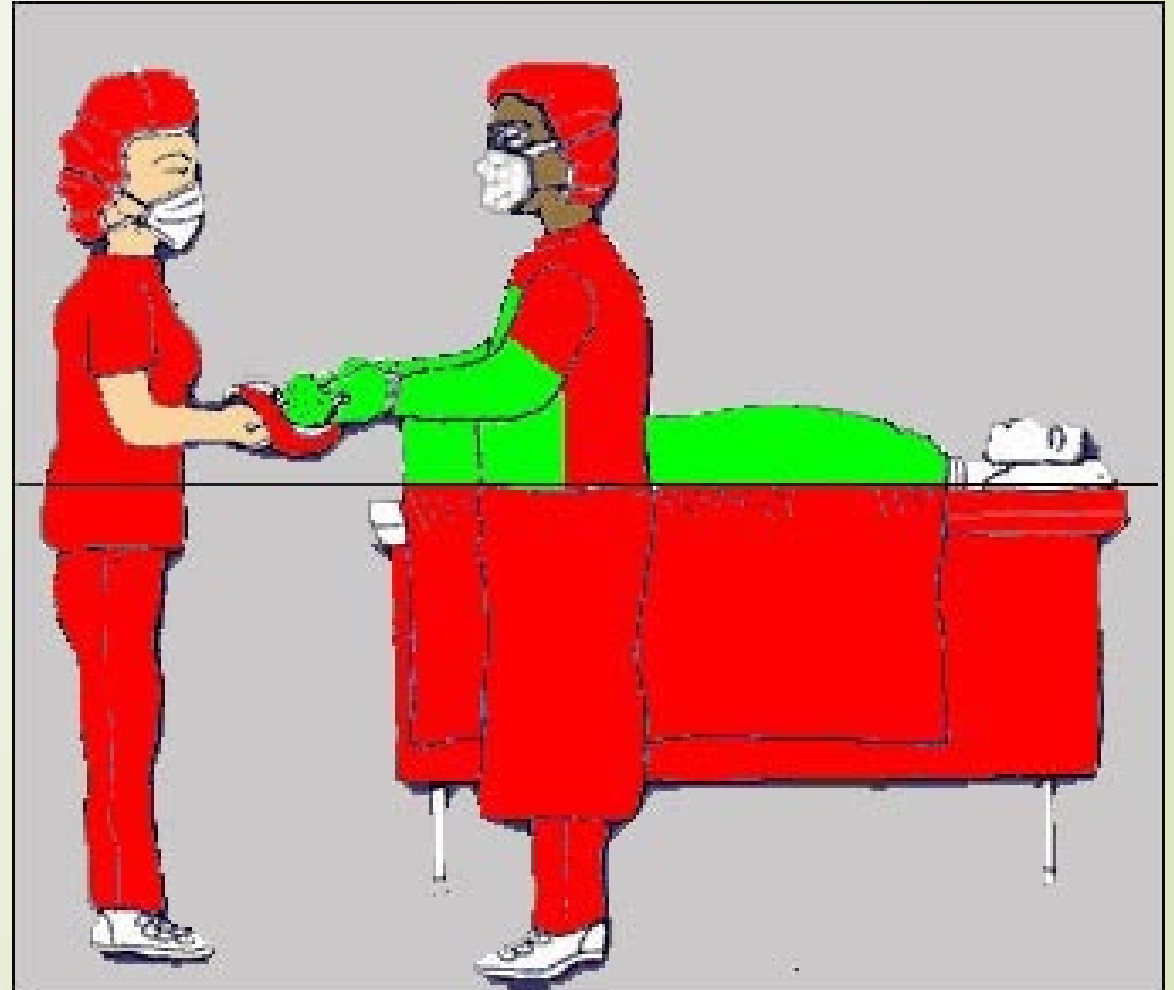
Maintaining Sterility

- Rest hands in front of you, together as you move around
 - Hold sterile part of gown (if gowned) to keep hands from straying
- Do not touch any non-sterile equipment as you move to operating theater
 - Including: non-draped tables, face, other people, etc.



Where Am I Sterile?

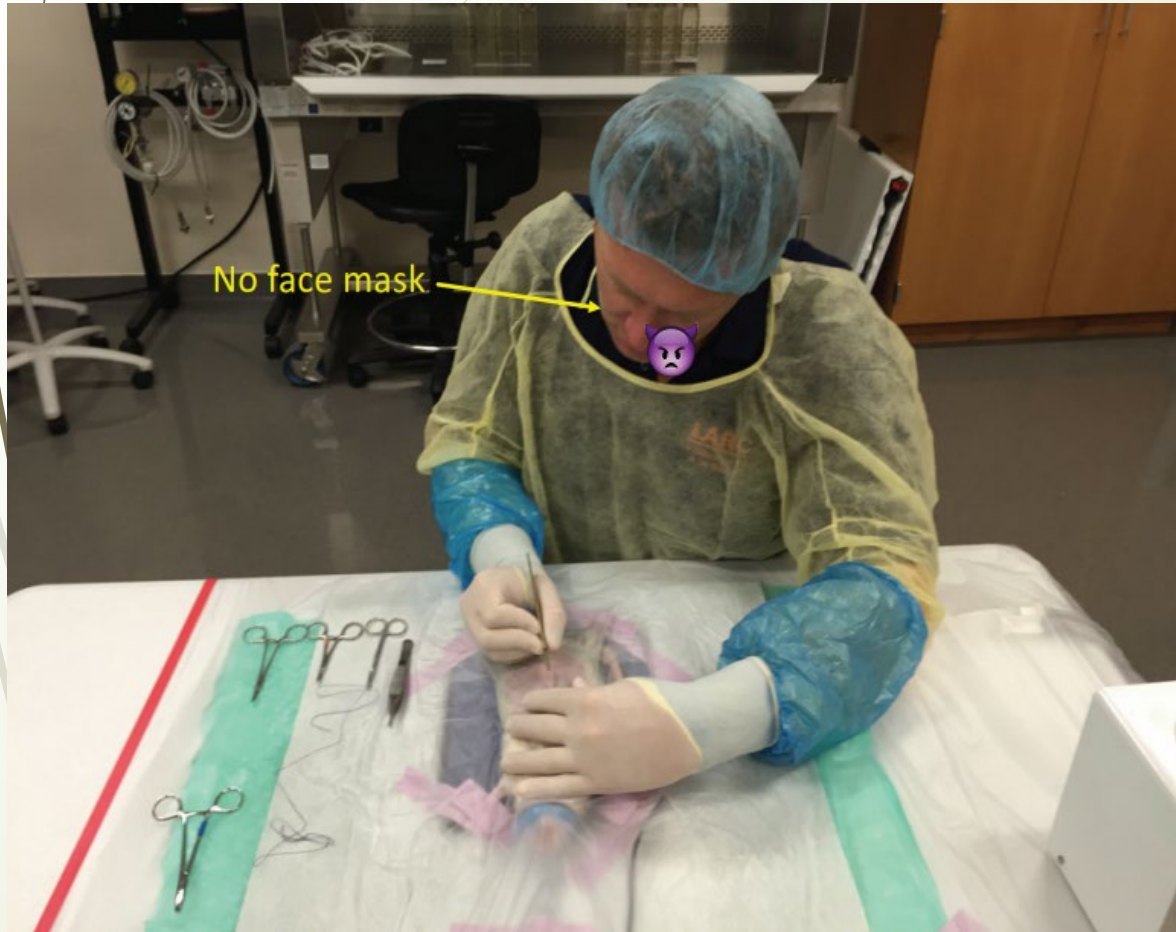
Green = Sterile
Red = Not sterile



Improper Sterile Technique



Improper Sterile Technique



What is wrong with her technique?

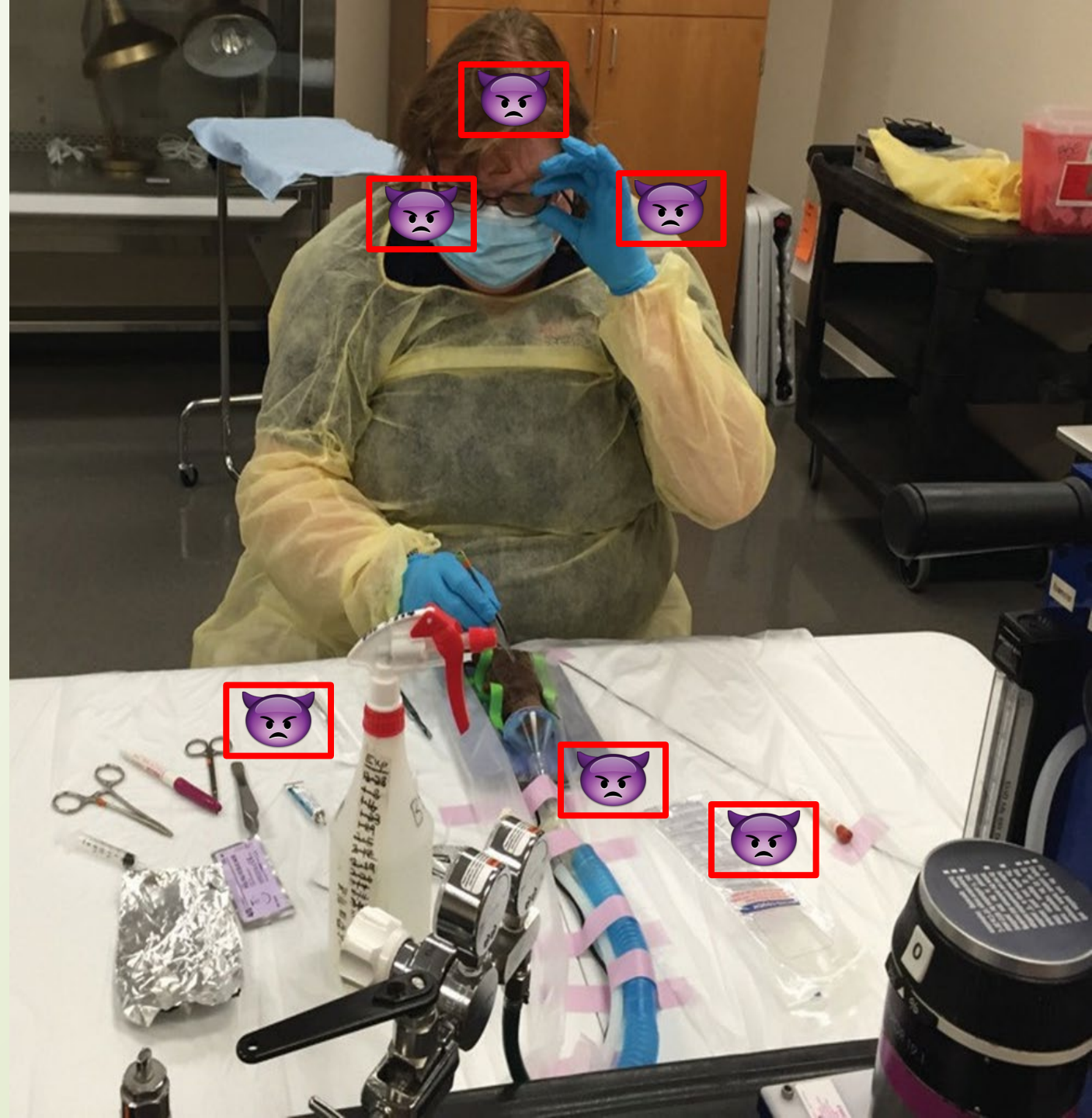
Not wearing hair cover

Touching glasses

Non-sterile gloves

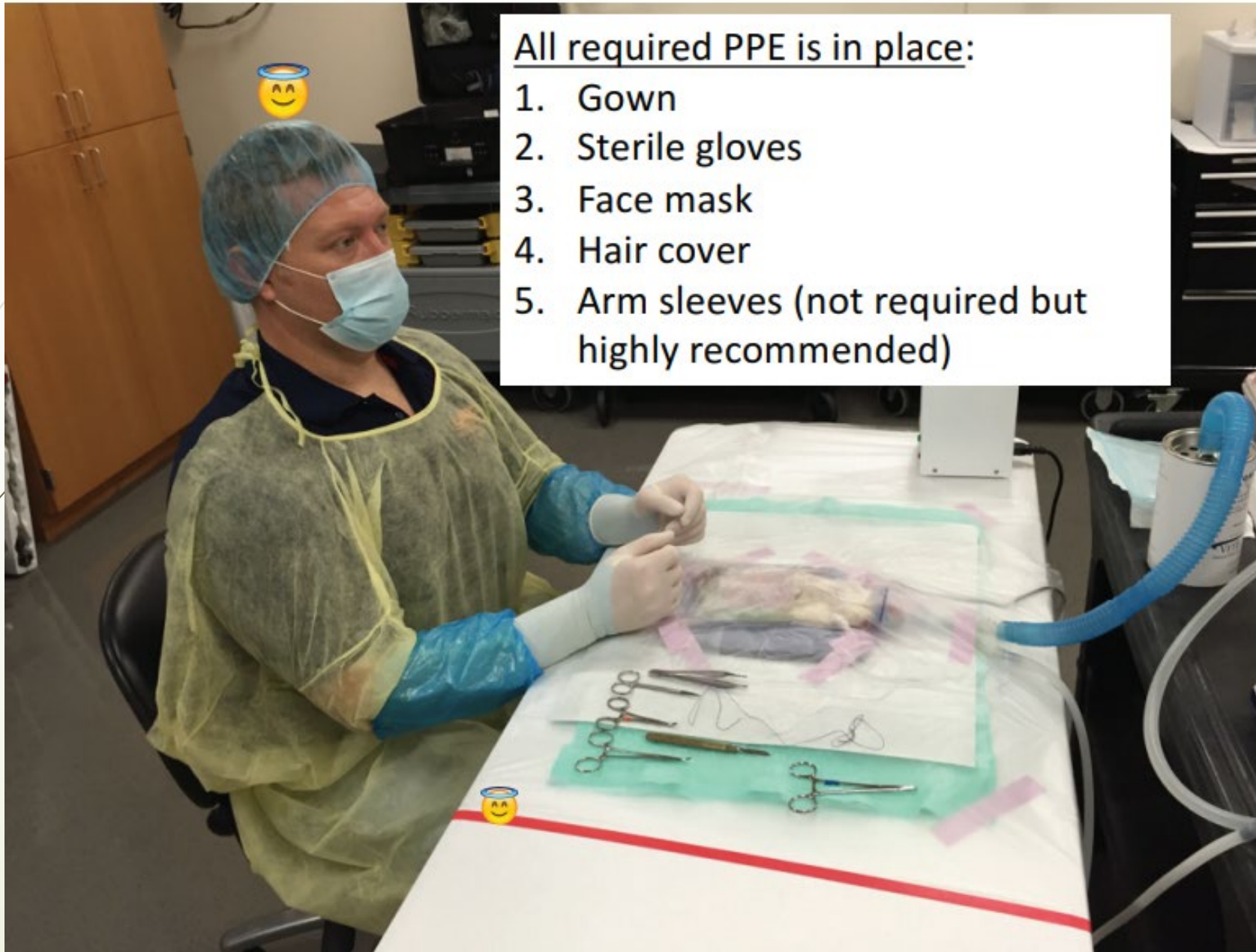
Animal and anesthesia tube not covered with sterile drape

Non-sterile items on sterile Press'n Seal



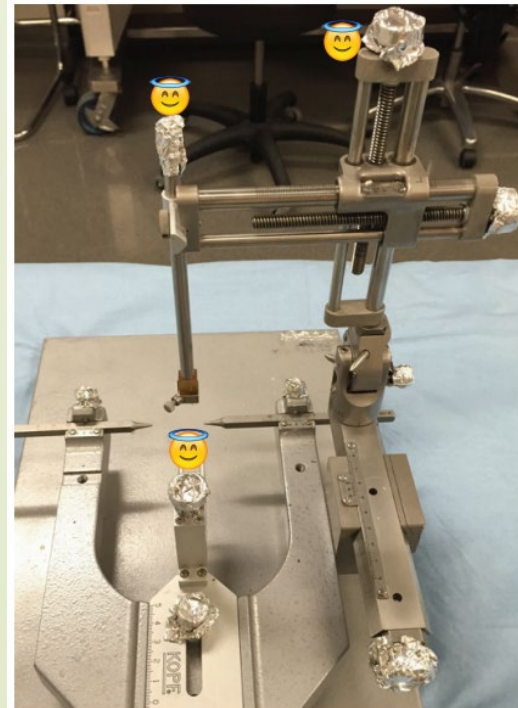
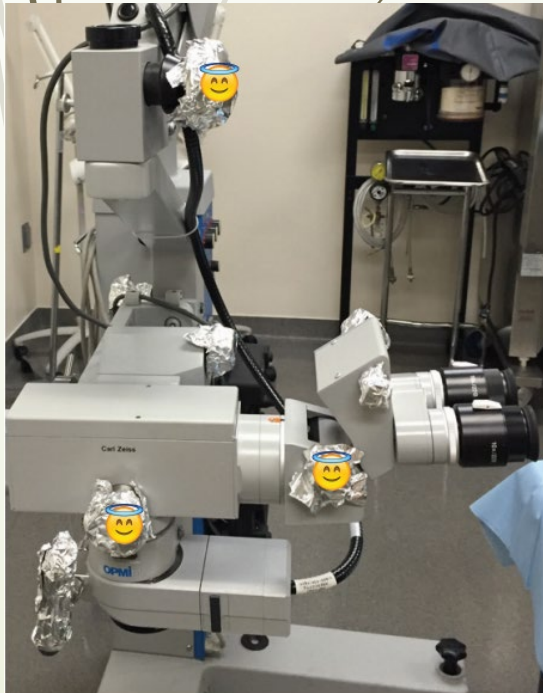
All required PPE is in place:

1. Gown
2. Sterile gloves
3. Face mask
4. Hair cover
5. Arm sleeves (not required but highly recommended)



Solo Surgeon

- Cover equipment with Press 'n Seal or autoclaved aluminum foil
 - Anesthesia dials to prevent cross-contamination
 - Stereotaxic apparatus parts
 - Knobs of surgical microscope
 - Light handles





Thank you!

References:

- The Dos-and-Don'ts of rodent Aseptic Surgery, Marcel Perret-Gentil, Laurie Long, Mitch Moore. The University of Texas at San Antonio
- WVU IACUC Policy: Care of Rodents Undergoing Survival Surgery
- <http://teachmesurgery.com/skills/theatre-basics/scrubbing-gowning/>

Questions?

