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## Instructions for Use

Rev. 2/27/2024

# Tunneler

*Ergonomic stainless-steel instrument for the retrograde placement of  
MILA Length-Adjustable Esophagostomy Tubes.*



### Indications for Use

The MILA Esophagostomy Tube Tunneler is for the retrograde placement of MILA Length-Adjustable Esophagostomy Feeding Tubes or Silicone Esophagostomy Feeding Tubes in small animal patients requiring long-term enteral feeding due to prolonged anorexia, oral, pharyngeal, facial, or nasal trauma, or other masticatory disorders.

### Contraindications

- |   |  |
|---|--|
| Infection or trauma at the intended ostomy site | Preexisting laryngeal hemiparalysis              |
| Recent esophageal surgery                       | Esophageal injury or stricture                   |
| Megaesophagus                                   | Cervical spine disorder or injury                |
| Esophagitis                                     | Coagulopathy                                     |
| Uncontrolled vomiting                           | Tumors or other lesions in the neck or esophagus |

### Potential Complications

- |   |                                 |
|---|---------------------------------|
| Tube malposition                                    | Tube dislodgment                |
| Tube blockage                                       | Esophageal trauma or irritation |
| Infection, cellulitis, or abscessation at the stoma |                                 |

## **Supplies Needed**

*(not included)*

|   |                          |                         |
|---|--------------------------|-------------------------|
| Clean clippers<br>with size 40 blade  | Sterile gauze            | Surgical scrub supplies |
| Permanent marker  | #10 or #11 scalpel blade | Hemostats or Carmalts   |
| 2-0 nylon suture  | Scissors                 | Bandage materials       |
| Triple Antibiotic Ointment, Betadine Ointment, or a MILA Guardian Disc (Item DR7)       |                          |                         |
| MILA Length-Adjustable Esophagostomy Feeding Tube<br>(Items E1030, E1430, E1450, E1830) |                          |                         |
| or  |                          |                         |
| Silicone Esophagostomy Feeding Tube<br>(Items SE2030, SE3044)                           |                          |                         |
| Optional: Fenestrated drape (such as MILA Item PPD)                                     |                          |                         |

**Refer to this symbol, , for warnings and precautions throughout the instructions.**

### ***Instructions***

*Read through all steps before the procedure.*

*These instructions do not include procedures or guidelines for establishing cardiovascular stability or general anesthesia before esophagostomy tube placement.*

### ***Preparation***

1. Place the patient under general anesthesia and ensure that the endotracheal tube is secure. Position the patient in right lateral recumbency with the head flexed slightly ventrally and downward to stretch the neck for easy access.

**TIP:** A small rolled towel placed under the neck can help position the head and neck for easier placement.

- The esophagostomy tube can be placed on either side of the neck, but placement on the left side is often easier as the esophagus lies slightly left of the midline. Place the tube on the right side if there are any contraindications present on the left side.

2. Clip and surgically prep the lateral cervical region from the mandible to the thoracic inlet.

** A sterile drape may be used but can obstruct the view of the head and mouth during feeding tube insertion. If proceeding without a drape, take care to keep instruments in a sterile field when not in use.**

3. Select a tube size appropriate for the patient. Remove the tube from the package and inspect it for any damage or missing components. Do not use it if damaged or incomplete.
  - For best results, a tube 30cm or longer should be used with the MILA Tunneler.
4. Measure the feeding tube from the center of the neck (at the intended ostomy site) to the caudal esophagus (approximately at the 7<sup>th</sup>-8<sup>th</sup> or 8<sup>th</sup>-9<sup>th</sup> intercostal space). Mark the location on the tube with a permanent marker or note the centimeter measurement mark on the tube.
  - The measurement markings on the tube are in 2cm increments.
5. If using a MILA Length-Adjustable Esophagostomy Tube, remove the Y-port and skirt from the proximal end of the tube. Trim the flared end of the tube and attach it to the barbed end of the Tunneler.

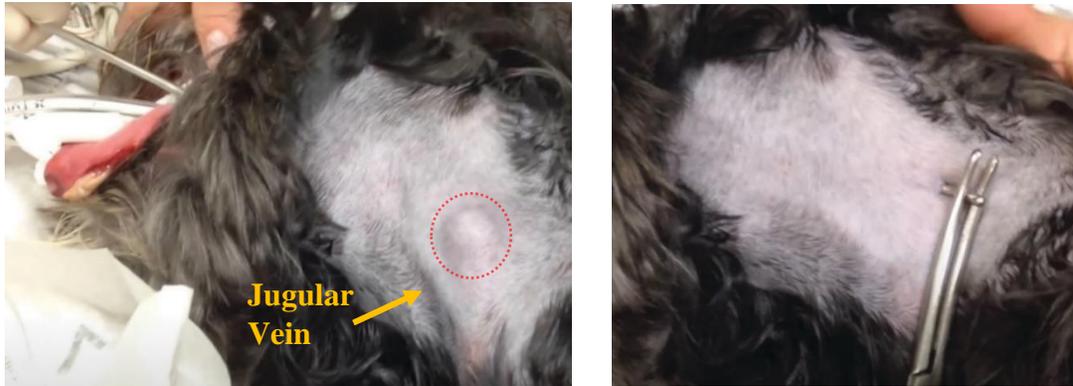
### ***Retrograde Esophagostomy Tube Placement***

6. Feed the distal (fenestrated) end of the tube into the mouth and down the esophagus until it reaches the caudal esophagus.

⚠ Use of a mouth gag can help to keep the jaws separated during this procedure. However, the use of mouth gags in cats has been associated with post-anesthetic blindness<sup>1</sup>. Use minimally and with caution.

7. Ensure the Tunneler's size matches the tube's size. The 14Fr Tunneler can be used for both 10Fr and 14Fr tubes. Insert the Tunneler into the mouth to the cervical esophagus. Turn it laterally so that the tip presses toward the skin at the intended ostomy site.
8. Palpate the tip of the Tunneler through the skin. Incise the skin, subcutis, and esophagus to expose the tip of the Tunneler. Make the incision just large enough to accommodate the Tunneler. Push the introducer tip through the skin. Grasp the tip with hemostats to prevent retraction if necessary.

⚠ **Avoid the jugular vein.**

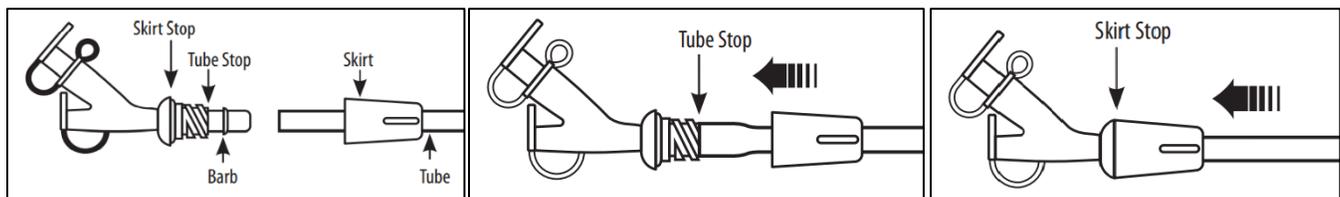


9. Gently pull the Tunneler and tube through the incision until the tube flips and the proximal end is oriented cranially. Ensure that the pre-measured mark on the tube is at the exit site.
10. Detach the Tunneler and cut the tube to the desired length. Leave enough of the tube exposed so that the hub can be secured to the bandage. Clean the proximal end of the tube in preparation for hub attachment.

#### 11. Hub Attachment

➤ *For MILA Length-Adjustable Esophagostomy Feeding Tube (Items E1030, E1430, E1450, E1830)*

Feed the tube back through the narrow end of the skirt. Firmly seat the tube onto the Y-port over the barb and up to the threads. Screw the skirt into place (up to the skirt stop). Close all ports.



➤ *For Silicone Esophagostomy Feeding Tubes (Items SE2030 and SE3044)*

Using firm pressure, insert the female luer barbed adapter into the proximal end of the tube and secure the cap in place.



<sup>1</sup>Reiter, A. M. (2014). Open wide: Blindness in cats after the use of mouth gags. *The Veterinary Journal*, 201(1), 5–6. <https://doi.org/10.1016/j.tvjl.2014.05.013>

12. Confirm correct tube placement by lateral radiograph or per hospital protocol. The distal tip should lie in the caudal third of the esophagus.

- NOTE: Silicone esophagostomy tubes are not radiopaque. The use of contrast media may be necessary to confirm proper placement.

**⚠ Do not administer anything or flush water through the tube until proper placement is confirmed.**

**⚠ Avoid placing the tube to the depth of the gastroesophageal junction as tube movement can cause irritation and can predispose the patient to gastric reflux.**

## Securement

13. *Optional:* Place a loose purse-string suture around the tube at the stoma site.

14. Secure the tube in place using the included suture wing, anchor and finger trap sutures, or per hospital protocol.

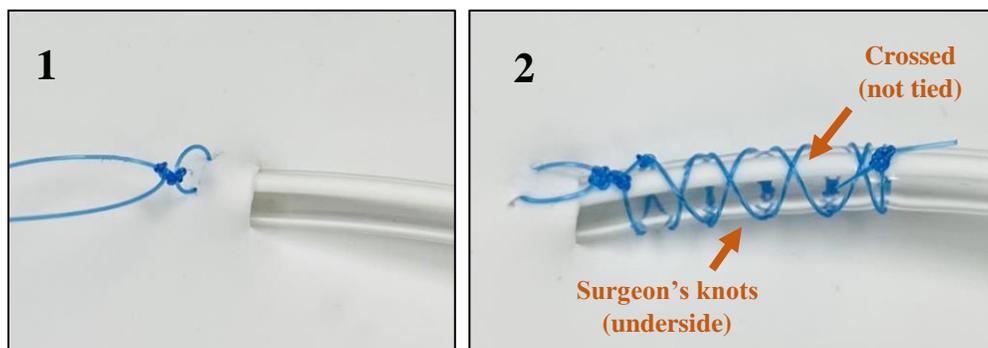
### Suture wing:

- 1) Tie a surgeon's knot in one of the grooves of the suture wing to secure the wing in place on the tube.
- 2) Do not cut the suture – use the loose ends to suture the wing to the skin under the groove.
- 3) Repeat on the other side. Suture the wings to the skin through the eyelets. Take care to avoid over-tightening the sutures on the skin.



### Anchor and Finger Trap Sutures:

- 1) Tie an anchor suture close to the exit site. Make sure the loose ends of the suture are the same length. **TIP:** Place the tip of a hemostat or other small cylindrical object between the skin and the surgeon's knot to prevent it from clinching down, thus creating a loop.
- 2) Cut the needle off the suture. To tie the finger trap suture around the tube, alternate tying surgeon's knots on one side and crisscrossing the suture on the other side. Make sure to pull the knots tightly to cinch down on the tube.



15. Flush the tube with water through one port, then close both ports to prevent the intake of air.

### Approximate Priming Volumes

Y-port: 0.3mL

10Fr: 0.5ml per 10cm

14Fr: 1mL per 10cm

18Fr: 1.5mL per 10cm

16. Apply a small amount of betadine ointment, antibiotic ointment, or a MILA Guardian Disc (Item DR7) to the stoma site. Wrap the neck lightly with bandage material per hospital protocol and secure the port to the outer wrap.
17. Record tube placement in the patient's medical record (see page 6).

### ***Feeding Recommendations***

- Commercially available liquid diets and medications work best.
  - o If using a homemade diet, ensure that enough water is added and that it is blended sufficiently to completely liquify the food.
  - o If suspensions or liquid medications are not available, pulverize the tablets or capsule contents and mix with enough water to fully dissolve. Note that some tablet coatings do not dissolve well and may clog the tube.
- Flush the tube with 5-10mL of tepid or room-temperature water before and after the administration of food or medications.
- Monitor the patient closely during feeding for any signs of discomfort or nausea (e.g., hypersalivation, lip-licking, etc.).

### ***Stoma Care***

- Daily Care
  - o Change the neck wrap and monitor the stoma for any signs of swelling, erythema, or infection.
  - o Lightly clean the stoma and surrounding skin with a dilute betadine or chlorhexidine solution. Allow sufficient contact time and then wipe with sterile water on sterile gauze. Allow the site to air dry before applying a new dressing and wrap.
  - o If a MILA Guardian Disc was placed, monitor the stoma as usual, and change the outer wrap daily.
- Weekly Care
  - o The Guardian Disc can be changed once every 7 days or more frequently if the site is exudative.
  - o Monitor the sutures to check knot integrity and any signs of skin reaction.

### ***E-Tube Removal***

1. Cut and remove the sutures.
2. Make sure both ports are closed.
3. Fold the end of the tube to occlude the lumen to prevent any residual contents from coming out of the tube.
4. Apply gentle pressure to the stoma site with one hand and pull the tube cranially until completely removed.
5. Apply a light bandage. The stoma should close in 1-2 days.

### ***Tunneler Sterilization***

The MILA Esophagostomy Tube Tunneler must be thoroughly cleaned and sterilized prior to reuse. Follow hospital procedures for surgical instrument sterilization. Steam, autoclave, or ethylene oxide (ETO) sterilization is recommended.

[CLICK HERE](#) to view the Procedural Video  
*courtesy of Dr. JD Foster, VMD, DACVIM*

*DISCLAIMER: These instructions are for supplemental education and guidance only and do not substitute professional veterinary medical advice.*

**Questions or comments?**

Call us at 859-957-1722 or 888-645-2468  
(Monday-Friday 9am-5pm EST)

or email us at [ProductSupport@milaint.com](mailto:ProductSupport@milaint.com)



## Esophagostomy Feeding Tube Placement Record

*Place or transcribe into the patient's medical record.*

Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ Time: \_\_\_\_\_ : \_\_\_\_\_ am pm

Patient Name: \_\_\_\_\_ ID Number: \_\_\_\_\_

Owner: \_\_\_\_\_ Veterinarian: \_\_\_\_\_

Canine  Feline  Other \_\_\_\_\_ Weight: \_\_\_\_\_

Indication or reason for placement: \_\_\_\_\_

Surgeon: \_\_\_\_\_

Tube Size: \_\_\_\_\_ Fr Depth of placement: \_\_\_\_\_ cm MILA Lot number: \_\_\_\_\_

Placement confirmed by radiograph:  YES  NO Radiograph interpreted by \_\_\_\_\_

Comments: \_\_\_\_\_

Prescribed diet: \_\_\_\_\_

Feeding to begin \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_ @ \_\_\_\_\_ : \_\_\_\_\_ am / pm

Date & time of removal: \_\_\_\_\_ Removed by: \_\_\_\_\_

Reason/cause of removal: \_\_\_\_\_

# SYMBOL GLOSSARY

|   |  |
|---|--|
|    | Batch code/ Lot number                 |
|    | Caution                                |
|    | Consult instructions for use           |
|    | Contains or presence of phthalate DEHP |
|    | Date of Manufacture                    |
|    | Does not contain natural rubber latex  |
|    | Does not contain phthalate DEHP        |
|    | Do not re-sterilize                    |
|    | Do not reuse                           |
|   | Do not use if package is damaged       |
|  | Keep away from sunlight                |
|  | Keep dry                               |
|  | Non-pyrogenic                          |
|  | Non-sterile                            |
|  | Not MRI safe                           |
|  | Prescription only                      |
|  | Temperature limits                     |
|  | Sterilized using ethylene oxide        |
|  | Sterilized using steam or dry heat     |
|  | Use-by Date                            |