**EXOS** is a comprehensive eye-banking task trainer encompassing both excision and enucleation tasks. Its modular design is based on a **Posterior segment** model with rectus muscles and optic nerve for enucleation and a detachable **CORDELIA** model for excision. The **CORDELIA** (sold separately), can be replaced to practice multiple excisions on a single posterior segment.

The **CORDELIA** anatomy includes a **scleral layer (1)** and **choroid layer (2)**. These layers are separated posterior to the **limbus (3)**, simulating the **supra-choroidal space (4)**, and are attached at the **spur (5)**, allowing a realistic excision to be performed. After trephination and dissection of the scleral layer, the user can practice stabilizing the scleral rim while detaching the tissue at the spur with minimal stress to the endothelium. **Cornea (6)** and **iris (7)** features provide additional landmarks that add to the model’s realism. The **structural ring (8)** at the base of the model maintains the model’s shape and the **notches (9)** mate with the **EXOS** posterior segment to prevent unwanted rotation of the model during trephination.

**INSTRUCTIONS FOR USE**

Do not use dry. Lubricate with water. Do not use BSS. Soak CORDELIA for aprox 5 minutes in luke warm water (aprox 95F) immediately before use.
1. Open all the FLEX-ORBIT screws and lubricate cavity surfaces.
2. Insert the EXOS model with the OPTIC NERVE (5) on the nasal side.
3. Insert posterior screws to secure the model BASE (6) to the FLEX-ORBIT. Confirm RECTUS MUSCLES (3) are properly positioned; screws should pass between them (see figure).
4. Keep anterior screws retracted. This allows for the EXOS model to move freely inside the FLEX-ORBIT without restriction, allowing traction with muscle hooks.
5. Fix the FLEX-ORBIT in place by pressing downward on a smooth surface to engage the suction-cup.

NOTE: Lift the suction release tab to remove FLEX-ORBIT from surface. DO NOT PULL ON THE ORBIT!

**EXCISION SIMULATION**

1. **Remove CORDELIA** model by squeezing GLOBE (4) lightly and leveraging out.
2. **Soak CORDELIA** for aprox 5 minutes in luke warm water (aprox 95F) immediately before use.
   (Note: cornea looks "milky" when hydrated)
3. **Re-attach soaked CORDELIA** model to the EXOS. Do this by placing the CORDELIA under two MUSCLE INSERTIONS (2) first and then carefully lifting the other two insertions over the CORDELIA with the aid of a muscle hook or paper clip (see video). Press firmly on all sides and make sure there are no gaps between the posterior segment and the CORDELIA.
4. Insert EXOS model in the FLEX-ORBIT. (See setup instructions above)
5. Lubricate CORDELIA model surface. (Tip: lubricate often)
6. **Trephinate the sclera** to gain access to the supra-choroidal space. (Tip: Pre-stain trephine edge)
7. **Complete the scleral incision** parallel to the limbus with scissors. Take care to cut the scleral layer without perforating the choroid layer underneath. (Note: the choroid layer on the model is not black. Careful inspection is necessary to ensure there is no damage to the choroid layer during dissection).
8. **Check 360 degree separation** of the scleral layer.
9. **Detach the cornea from spur**. Stabilize the scleral rim using dressing forceps and gently grasp and push the choroid/iris layer away with tissue forceps until separation is complete. Minimize stress and manipulation of the cornea during separation. (Note: Spur attachment is firm, as with young donors or dark eyes)
10. Open FLEX-ORBIT screws and remove the EXOS. (Tip: Squeezing FLEX-ORBIT helps)
11. Discard used CORDELIA model by squeezing GLOBE (4) lightly and leveraging out.
12. If enucleation procedure practice is not practiced, reuse the POSTERIOR SEGMENT with a new CORDELIA model to repeat the excision procedure.

*Please refer to FLEX-ORBIT instructions for use*
1. Insert EXOS model in the FLEX-ORBIT. (See setup instructions above)
2. Lubricate the EXOS model and FLEX-ORBIT cavity with water. (Note: Do not pre-soak posterior segment)
3. Hook and cut RECTUS MUSCLES (3), clamping the last muscle to secure the eye.
4. Cut the OPTIC NERVE (5) with enucleation scissors and extract the eye.

*Note: Enucleation task can be performed after excision step 9 above*

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**FAQ**

- **Q:** How can I use the EXOS if I don’t have a FLEX-ORBIT?
  
  **A:** Although EXOS is designed to be used with the FLEX-ORBIT, it could potentially be used with other donor-eye holders if there are means to secure the base.

- **Q:** Do I need to soak or lubricate the model?
  
  **A:** For best results the posterior segment of the EXOS should NOT be soaked before use. Use local lubrication (dropper bottle) as needed. When performing an excision on the CORDELIA model you should soak the CORDELIA separately for at least 5 minutes and re-attach (see video).

- **Q:** Is there a conjunctival layer?
  
  **A:** The model currently does not have conjunctiva. This is in our list of future developments.

- **Q:** How can I tell if the CORDELIA has been soaked enough time?
  
  **A:** The cornea looks “milky” when hydrated.