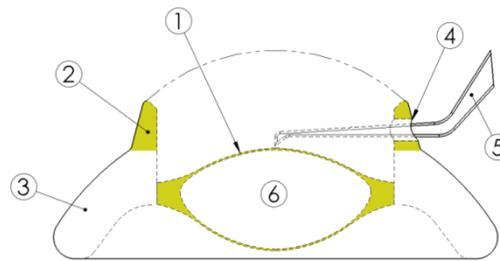
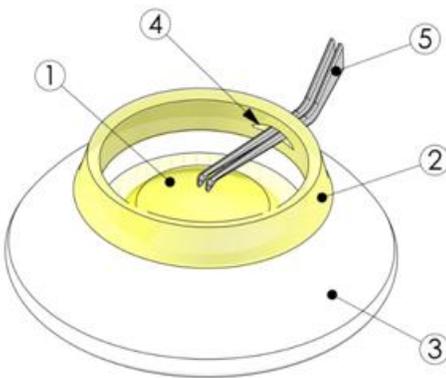


Watch an instructional video: www.youtube.com/user/BionikoDesign

By presenting the main challenges of a capsulorhexis scenario, the **RHEXIS** task allows users to learn, train and perfect the fine motor skills required to properly use the wound as a fulcrum point for instrument movement; a fundamental skill in ophthalmic surgery.



1- LENS CAPSULE
2- LIMBUS RIDGE
3- SCLERA
4- WOUND
5- INSTRUMENT
6- CORTEX

Do not use dry. Stain and lubricate with water drops as instructed below.

The **RHEXIS** model has an "open-sky" configuration, without a complete corneal dome. However, the model has a **limbus ridge (2)** that simulates the first few millimeters of the cornea where incisions can be practiced. The **limbus ridge (2)** is designed to promote posterior incisions and show evidence of incorrect manipulation of instruments. If hand-locking technique is poor or the instrument is pulled up, the ridge will tear. The **lens capsule (1)** allows performing a CCC, requiring proper tearing and regrasping technique to be completed. The **cortex (6)** is made of a fragile material that will show signs of disruption with improper technique.

You will need: **RHEXIS** (box of 10); **ORBIT Model Eye Holder**, broad tip sharpie (for staining), cotton swab, water dropper and surgical instruments (knife, cystotome, Utrata forceps).

1. Load- Insert the **RHEXIS** model in the **ORBIT Model Eye Holder** (compatible with **BASIC-ORBIT** and **FLEX-ORBIT**). Be careful not to damage delicate structures when inserting the models. Always press on the sclera. Refer to your **ORBIT** and accessories instructions for use.
2. Stain- Use a broad-tip sharpie, to color the tip of a dry cotton swab; **add a couple of water drops** to the capsule and then gently remove the excess water with the stained swab. This will lubricate the model and lightly stain the capsule. **DO NOT** apply the sharpie directly to the capsule, or over-stain it, as this may have a detrimental effect on capsule properties.

3. Incision- Make an incision on the limbus with your knife of choice. Entry depth, angle and incision width can be demonstrated and practiced.

NOTE: The model promotes the user to create and work from a posterior incision. This is a good practice which lowers the chance of touching the corneal endothelium. The more anterior the incision, the more sensitive the wound becomes to manipulation of the instrument. Breakage of the limbus indicates that either the incision was made too anterior or forceful manipulation occurred.

4. Flap creation- Start a capsule tear with a cystotome.

NOTE: Make the flap broad so it is easy to grasp with the forceps. The capsule in the model is more fragile than the real capsule and requires a fuller bite with the forceps.

5. Capsulorhexis- Manipulate the Utrata forceps of choice through the port to create a continuous circular tear on the capsule.

NOTE: The model promotes frequent regrasping and gentle manipulation of the forceps. Breakage of the capsule flap can result if a long tear is attempted without regrasping. The capsule may be cut by the forceps if the pinching force is too high.

NOTE: The wound should be used as a fulcrum point for instrument movement. Improper instrument control will cause stress and damage to the limbus ridge.

6. Assess- Evaluate the task by reviewing the following parameters:

- **Incision integrity:** The integrity of the wound relates to good technique in manipulation of instruments through ports, a fundamental skill of ophthalmic surgery.
- **Rhexis size:** Consistent rhexis size is an indicator of good technique and understanding of scale.
- **Rhexis centration:** Although an offset is sometimes desired (nasal and superior) in real cases, for the purposes of task training and evaluation, a centered rhexis is convenient for scoring with simple instrumentation. A centered rhexis shows control of the surgical landscape.
- **Completion time:** Although in real surgery situations quality is more important than speed, at a basic skill training level, time to completion is a good indicator of a learning curve. As familiarity with steps and confidence with the technique increases, a decrease in time to completion is expected.

7. Remove model- If using an **ORBIT**, insert a closed instrument behind the model and leverage it out of the socket. If using the posterior segment or any other accessory, please refer to its instructions for use.

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

NOTE: Models are best used with the aid of an experienced surgeon/instructor and the use of an operating microscope (OPMI).

Instructions for care

Follow these recommendations to maximize the life of your models:

- Store in a **cool, dry** and **dark** place (a drawer will be fine). Extended exposure to some indoor lights or sunlight (UV) may affect material properties. Prolonged exposure to humidity or high temperatures may adversely affect material properties.
- Do not place **heavy objects** on top of the model's box. Prolonged compression may deform the models.



FAQ

- **Q:** Where is the cornea?

A:The **RHEXIS** model has an "open-sky" configuration, without a complete corneal dome. This allows the first CCCs to be practiced without the constraints of an incision. However, the model has a limbus ridge that simulates the first few millimeters of the cornea where incisions can be practiced. This allows the user to practice the realistic limitation of manipulating the instruments through ports.

- **Q:** The limbus ridge breaks easily. Is there something wrong ?

A:For educational purposes the limbus ridge is designed to promote posterior incisions and show evidence of forceful manipulation of instruments. A limbus tear indicates the user or instructor should check if incisions are being made too anterior or if instruments are not being manipulated correctly. The incision should be the fulcrum of instrument movement, and integrity of the limbus will show if this has been done efficiently.

- **Q:** The capsule breaks easily. Is there something wrong?

A:For educational purposes the capsule is designed to promote frequent regrasping and gentle manipulation of the forceps. Breakage of the capsule flap indicates the user or instructor should check for regrasping or forceps pinching force.

- **Q:** Can I remove the lens cortex?

A:Although the **RHEXIS** model is not meant to practice cataract removal techniques, its cortex can be fragmented and removed through the **RHEXIS** with surgical instruments. Please be advised that use of phacoemulsification equipment with the model is done at your own risk.