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VISION GIFT

# A Scroll Inside a Tube Inside a Chamber: A Method for Sterile Post-Processing Evaluation of Preloaded DMEK Grafts

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# Financial Disclosures

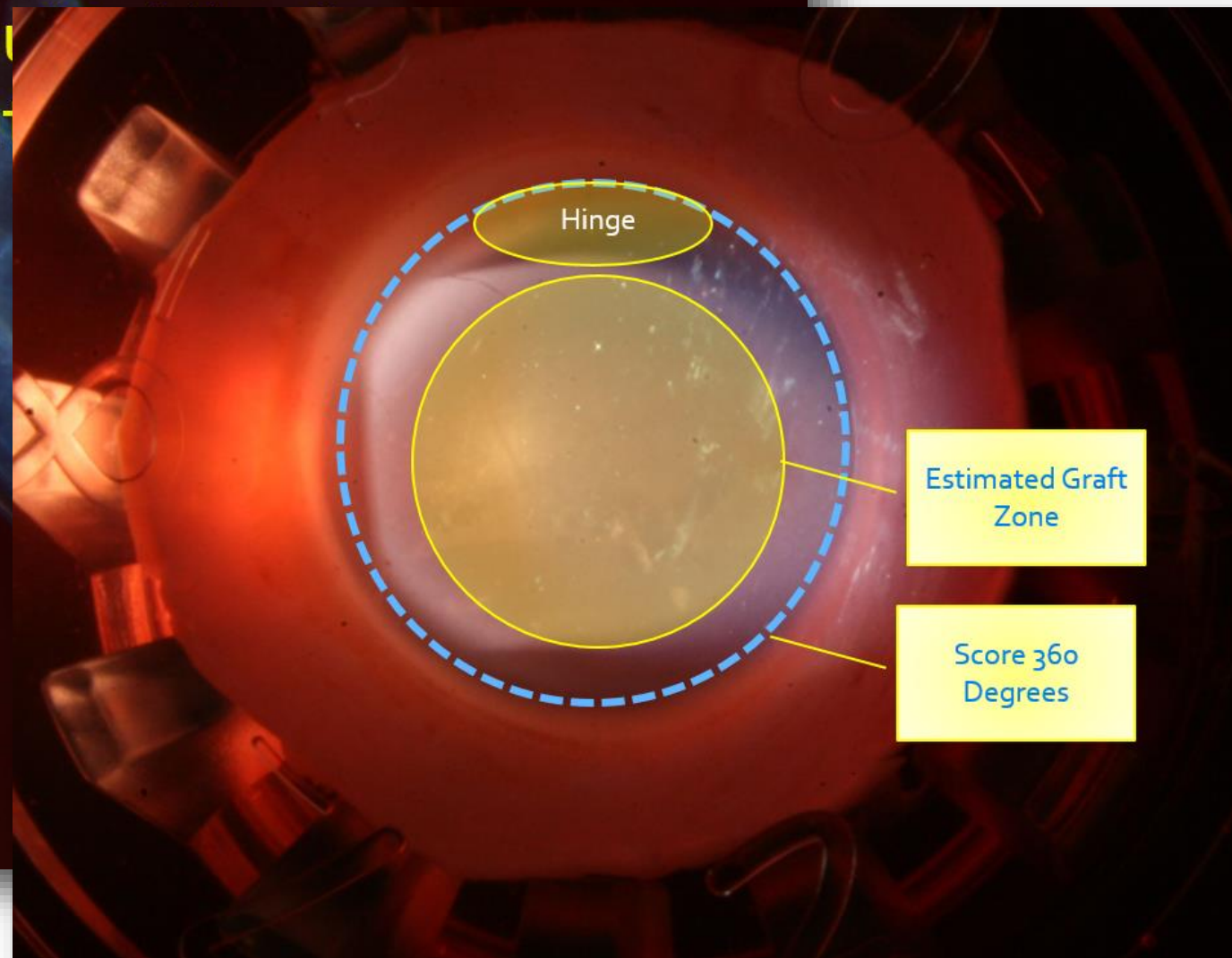
- The authors have no financial disclosures relevant to this talk.

# Evaluation DMEK Grafts Suitability



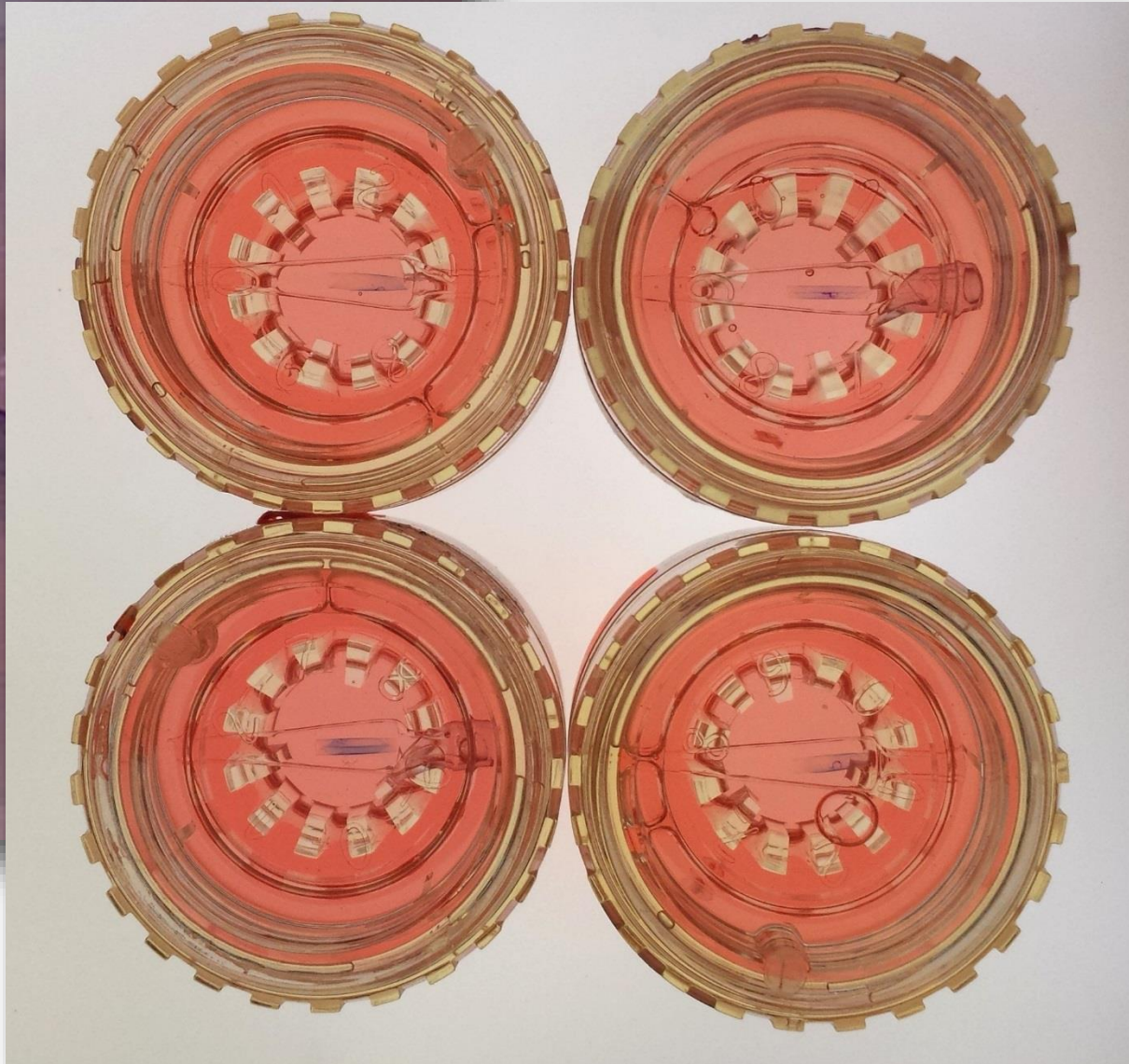
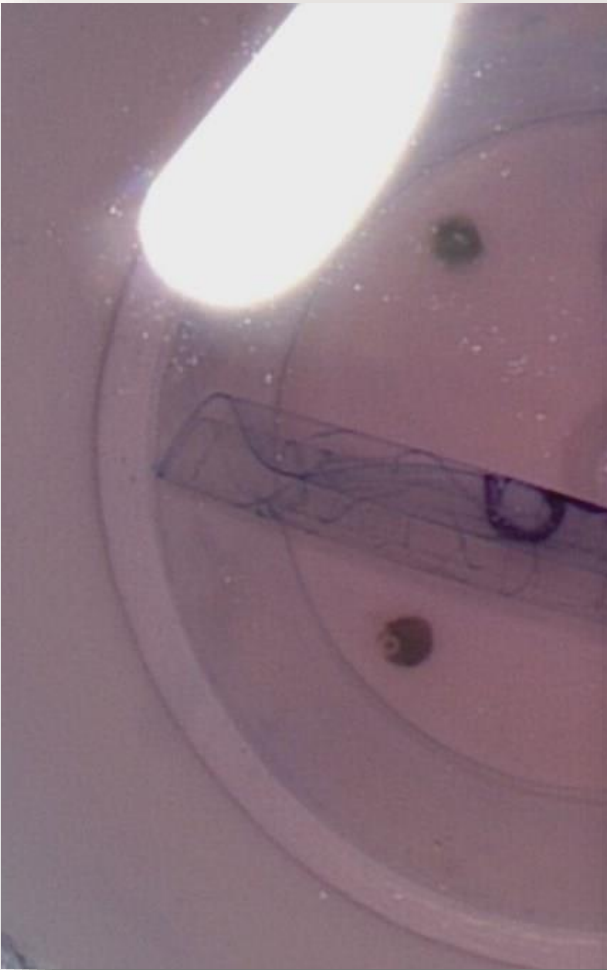
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## Is this s transplan





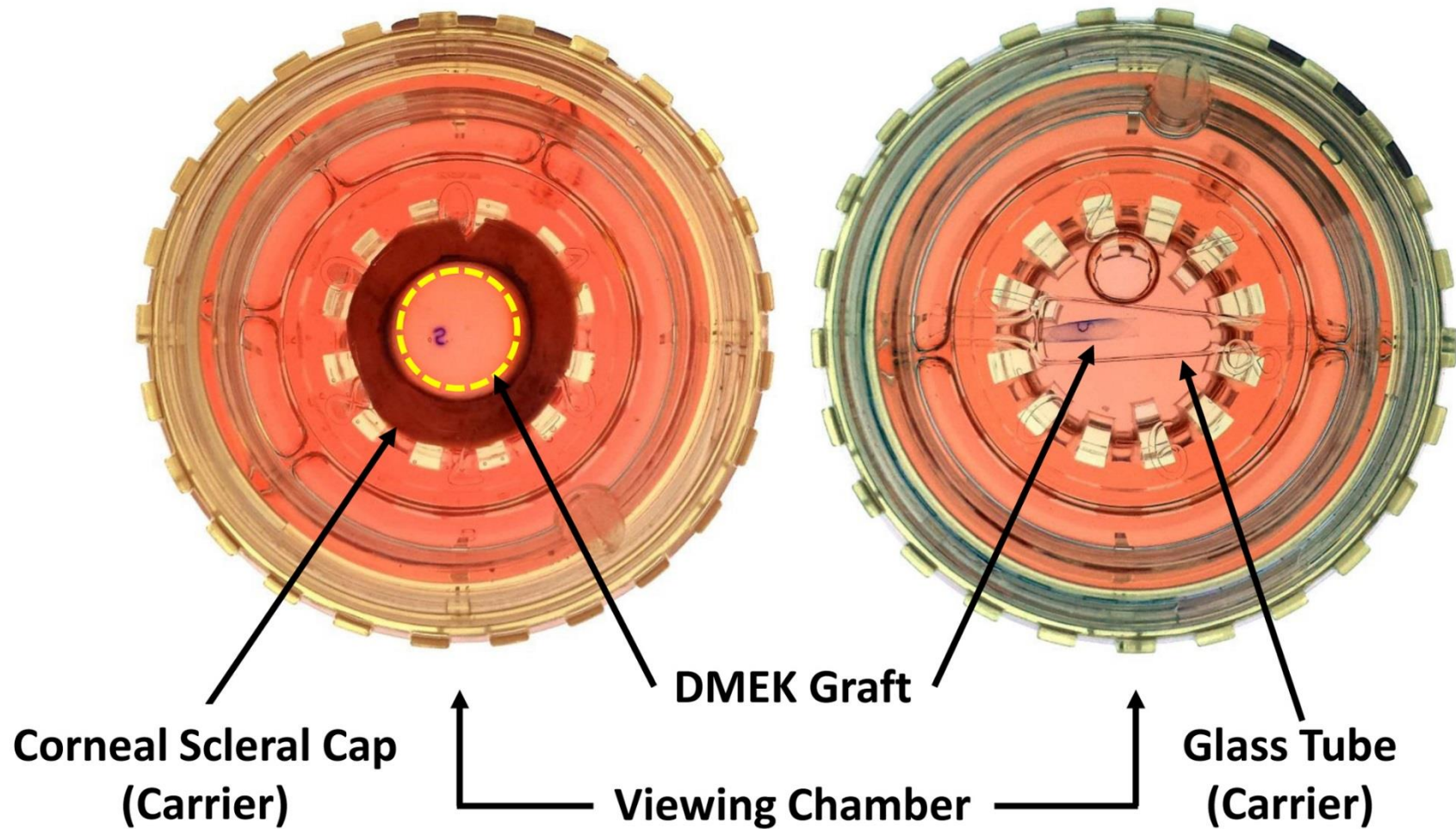
# A Scroll Inside a Tube Inside a Chamber



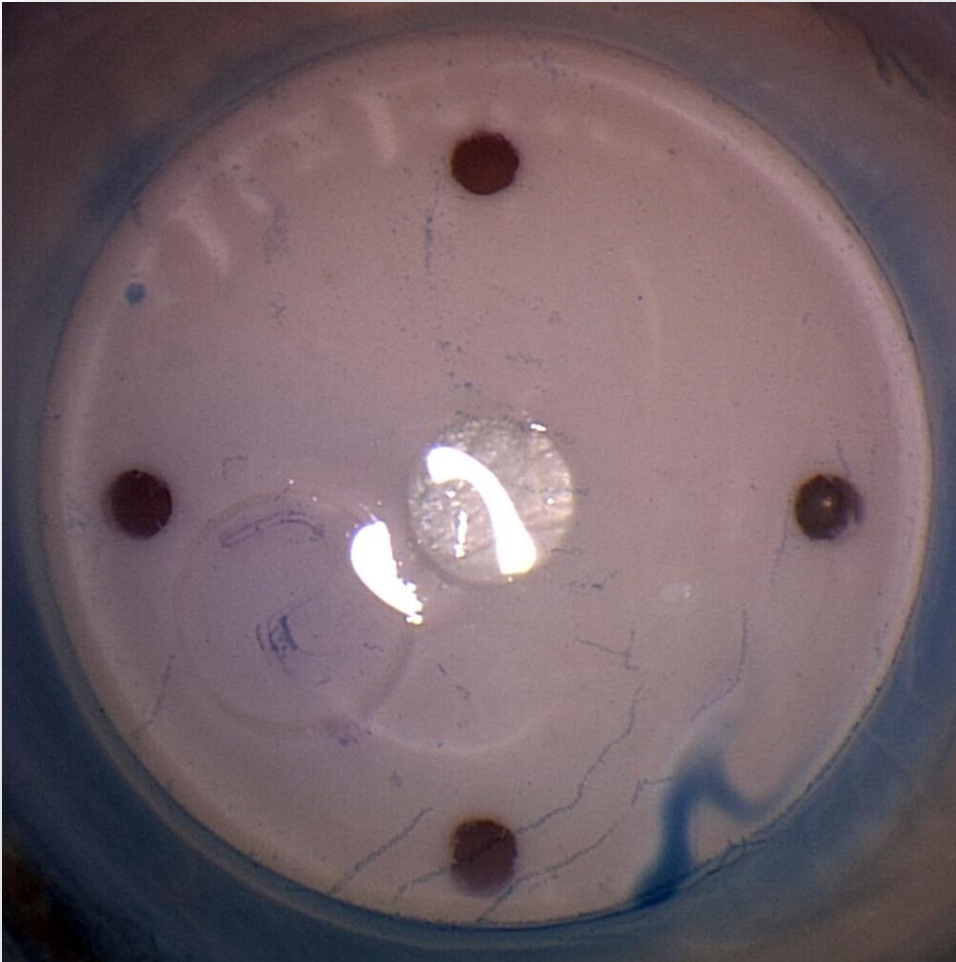


# Preloaded tissue provided in a familiar setting

## Pre-stripped and Preloaded DMEK



# Methods



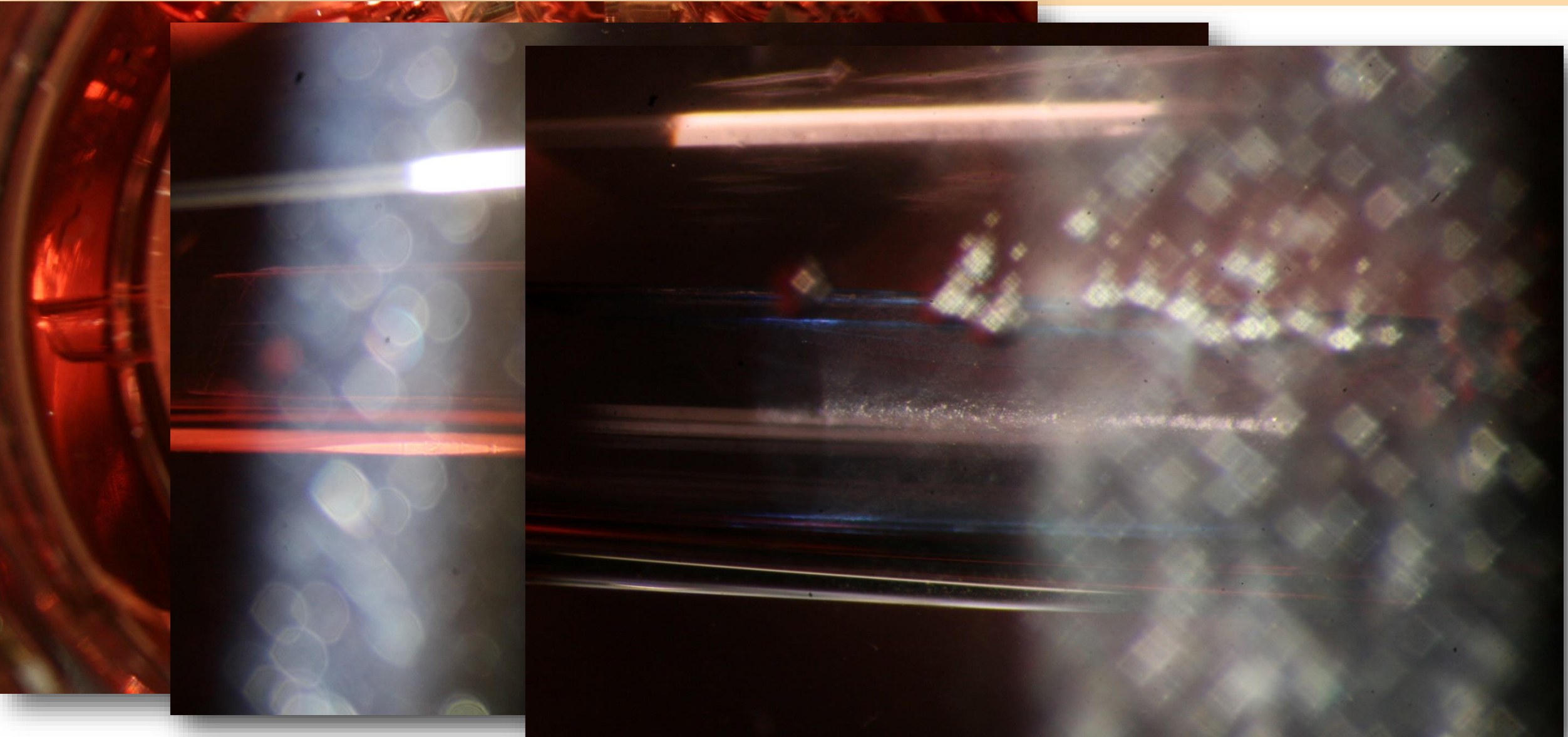
1. Peel tissue
2. Apply S-stamp
- ← 3. Trepinate
- 4. Load injector** →
5. Slit lamp and specular microscopy evaluations
6. Analyze with Calcein-AM



# Methods (Video)

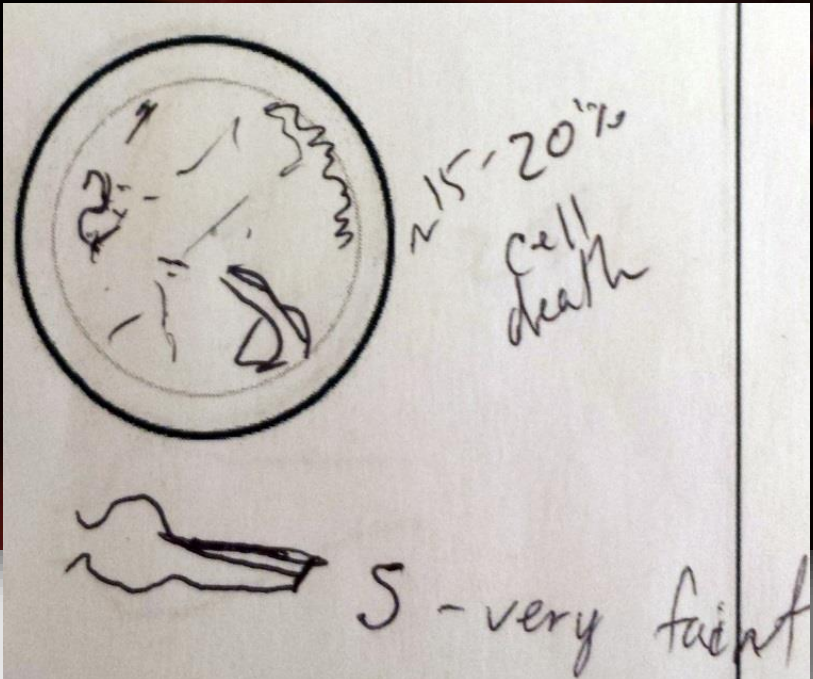
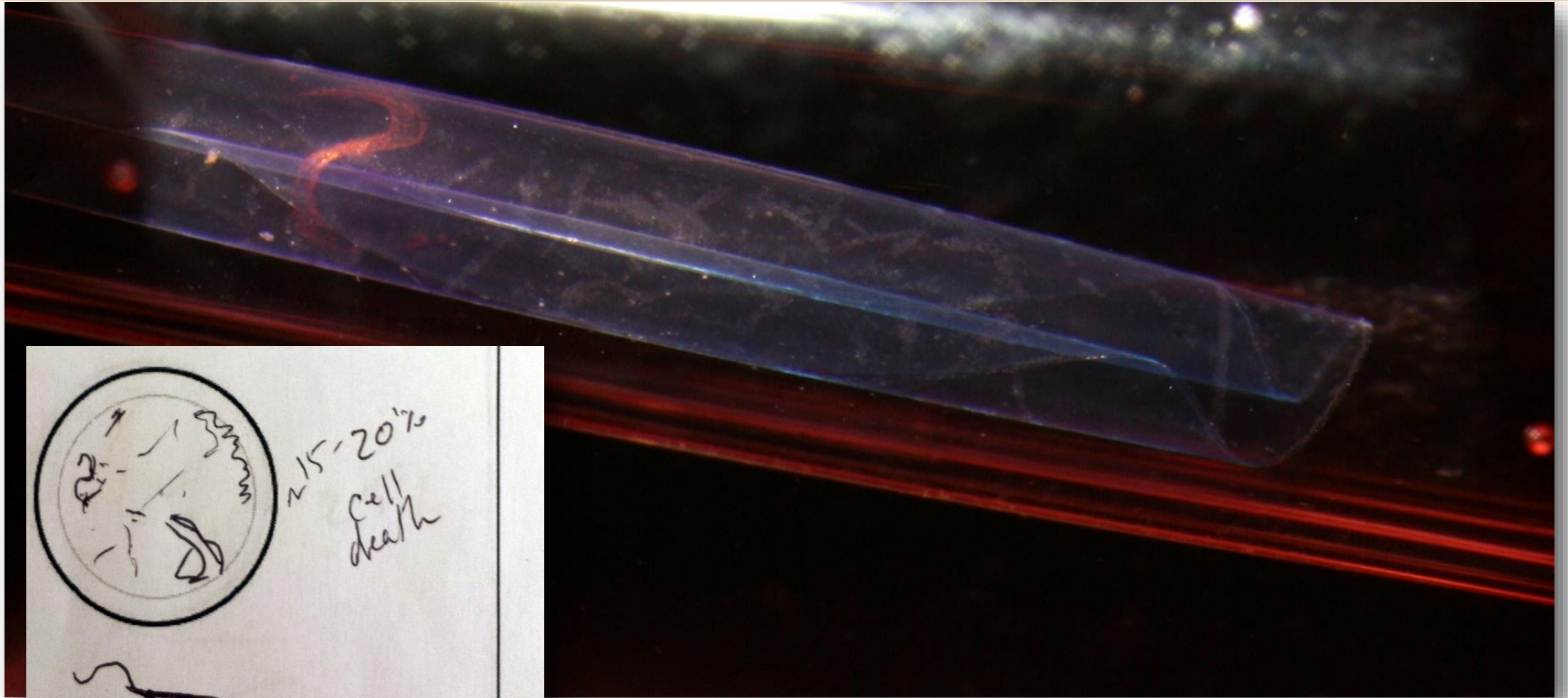


# Slit lamp microscopy

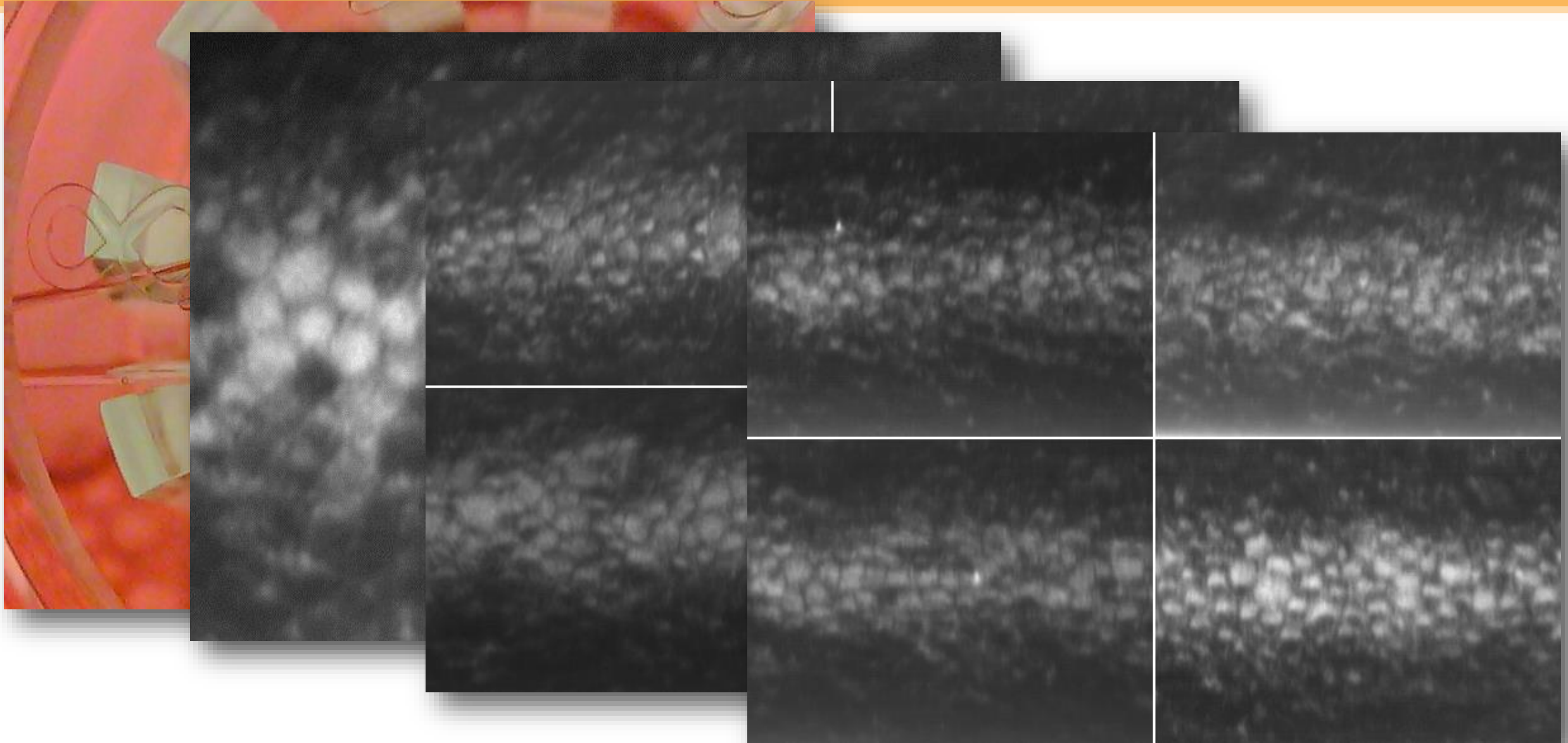




## Slit lamp microscopy includes damage estimate



Specular microscopy can be obtained

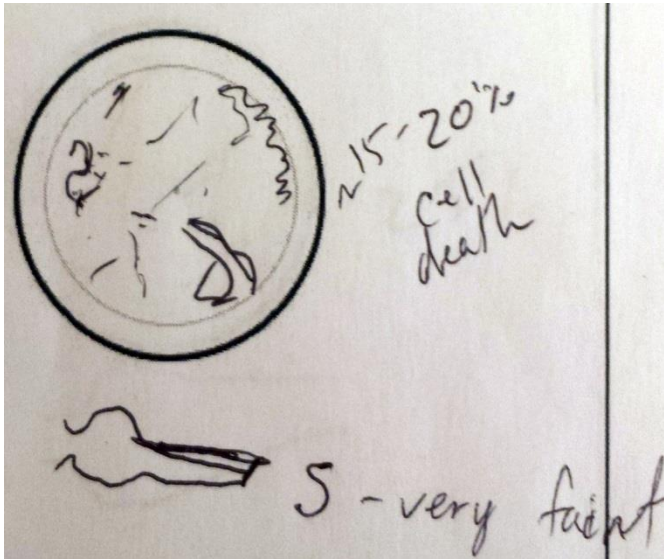




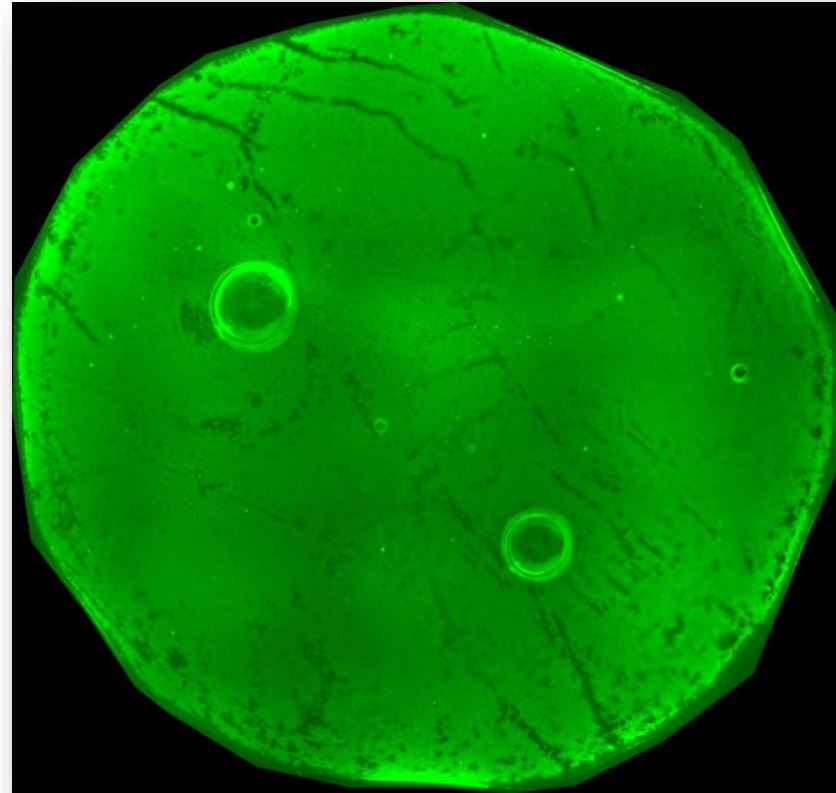
# Unloading scrolls for analysis (Video)

# Verification of slit lamp and damage estimation

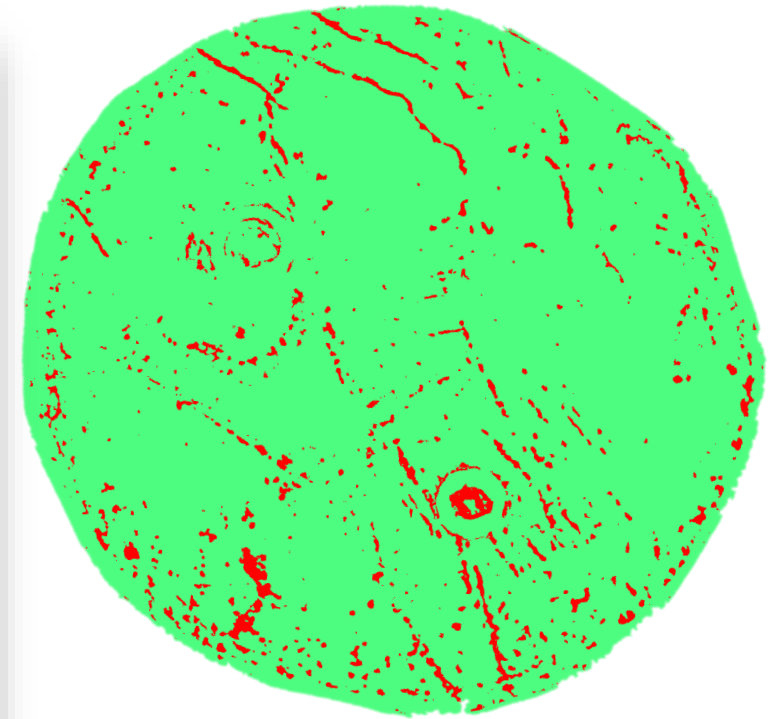
Slit-lamp



Calcein-AM



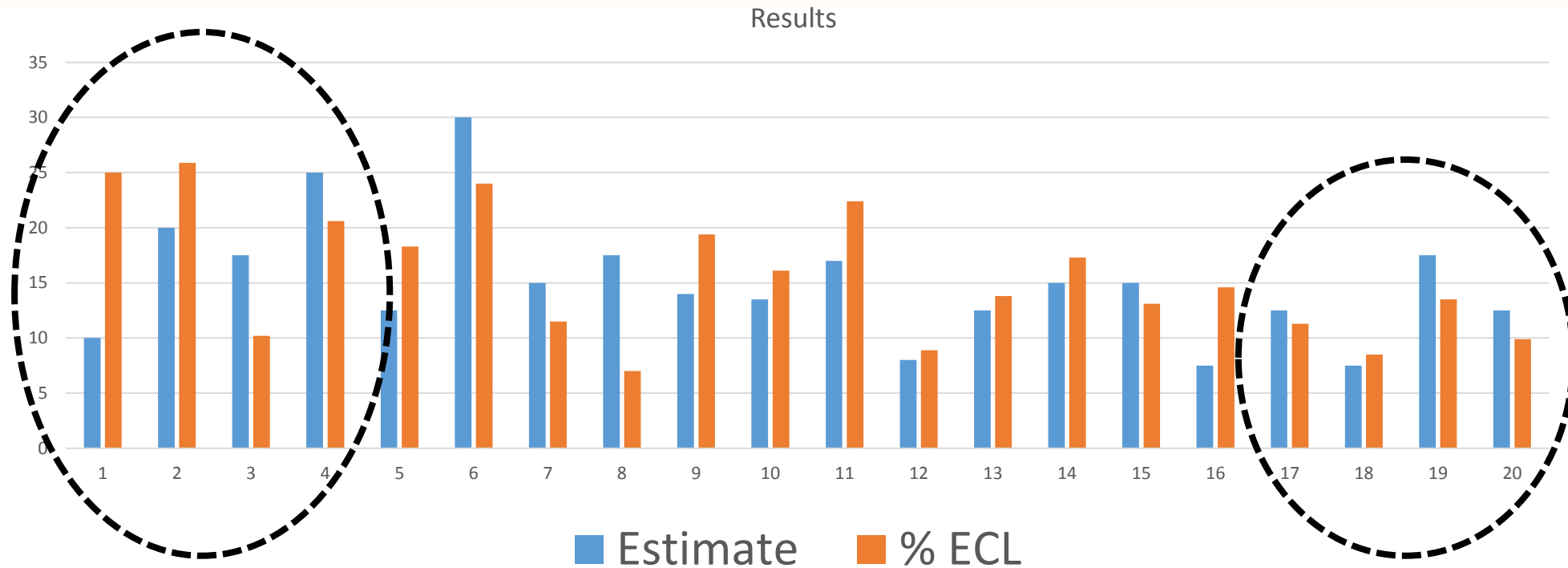
FIJI Segmentation



10.2% ECL



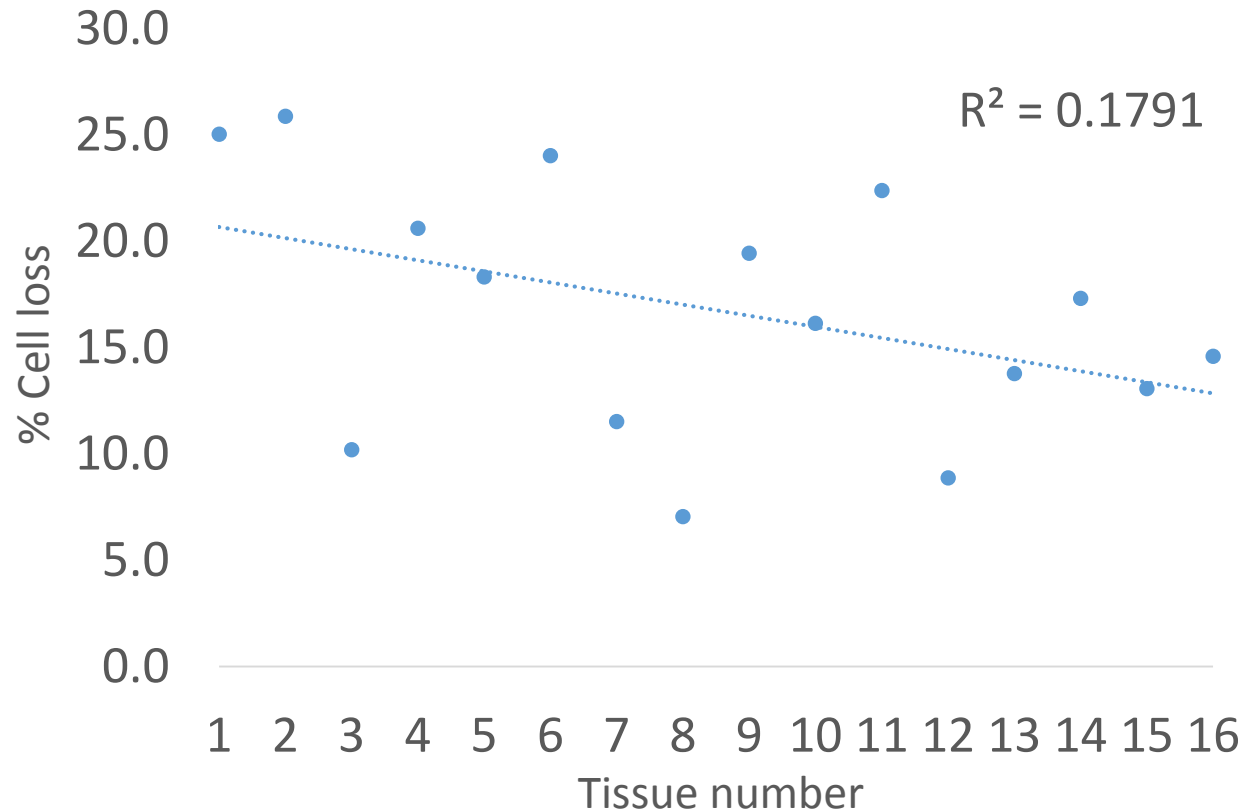
# Data analysis



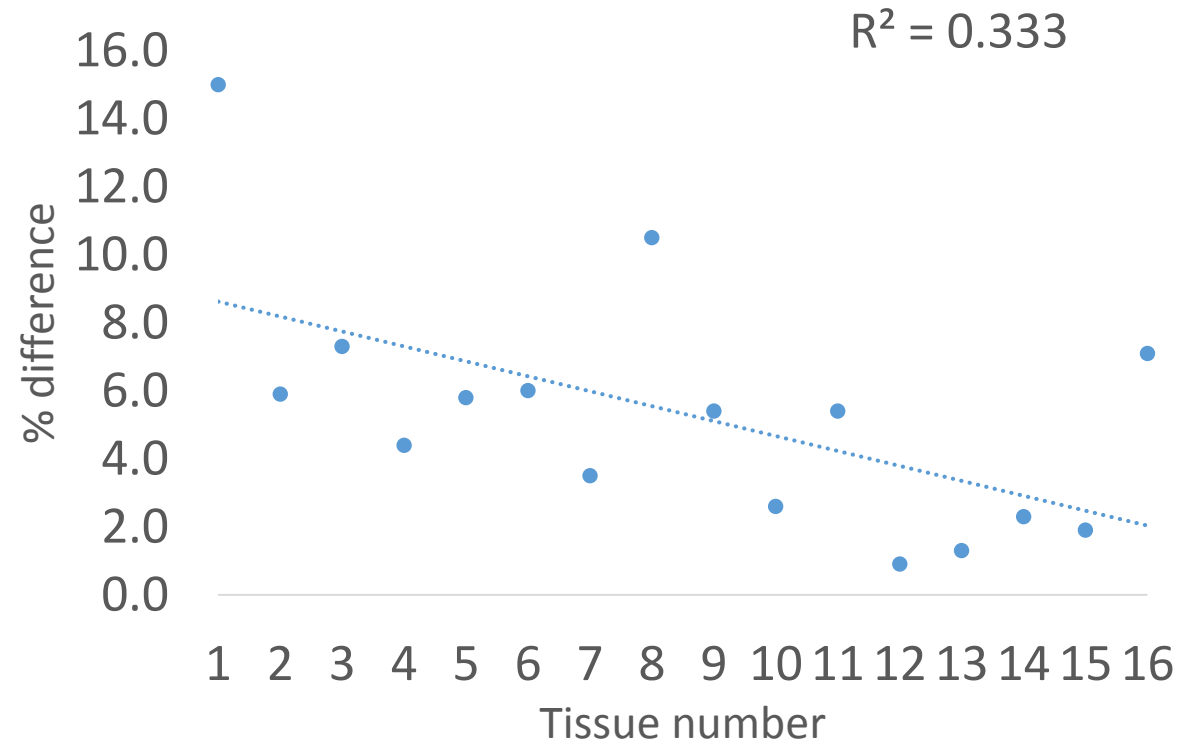
	% ECL Estimate	% ECL Measured	Difference
Avg	15	15.6	4.7
SD	5.6	5.8	3.5
Median	14.5	14.2	4.2

# Graft damage and estimation of damage improves over time

Tissue damage

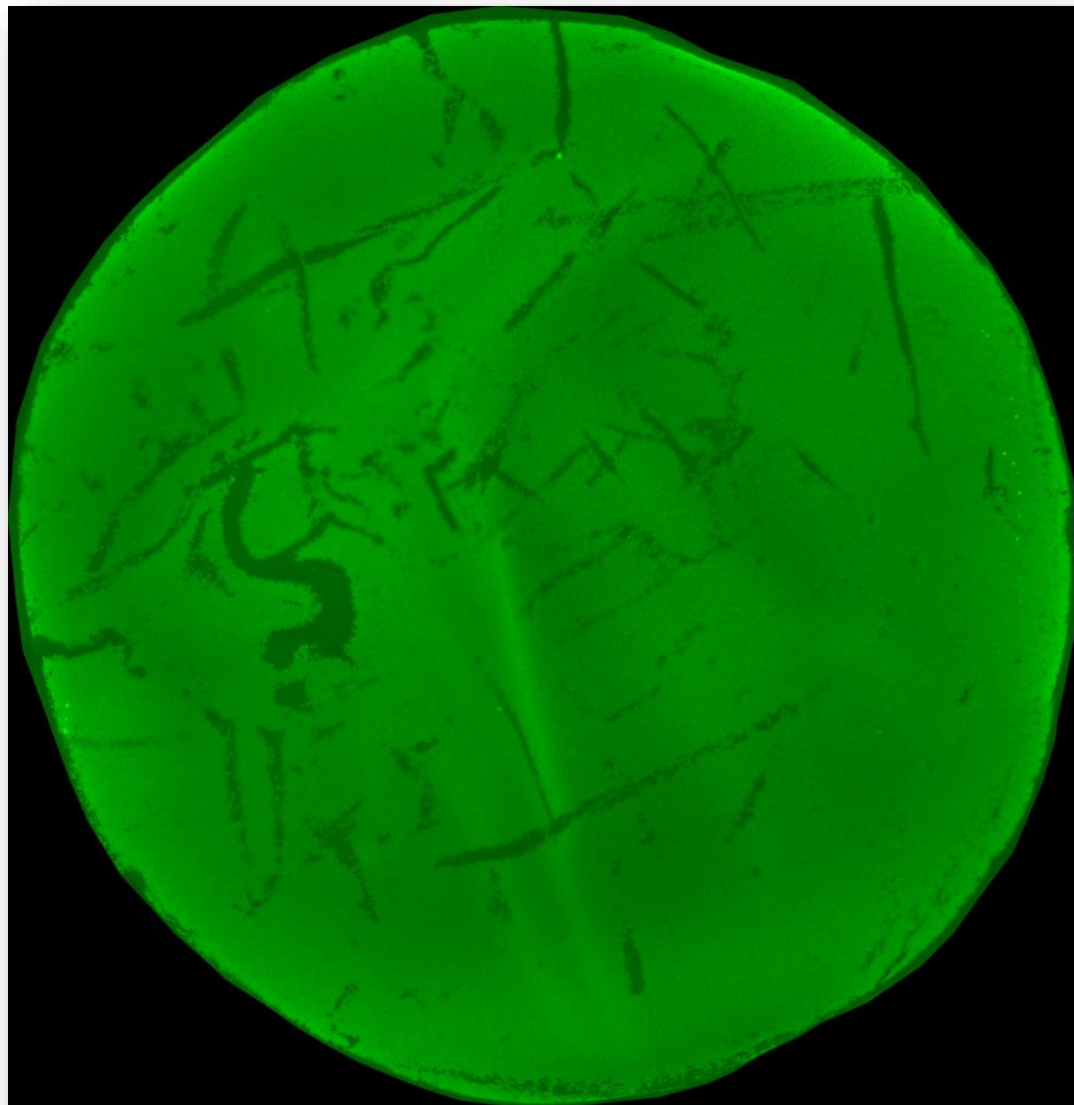


Difference in estimated and actual ECL

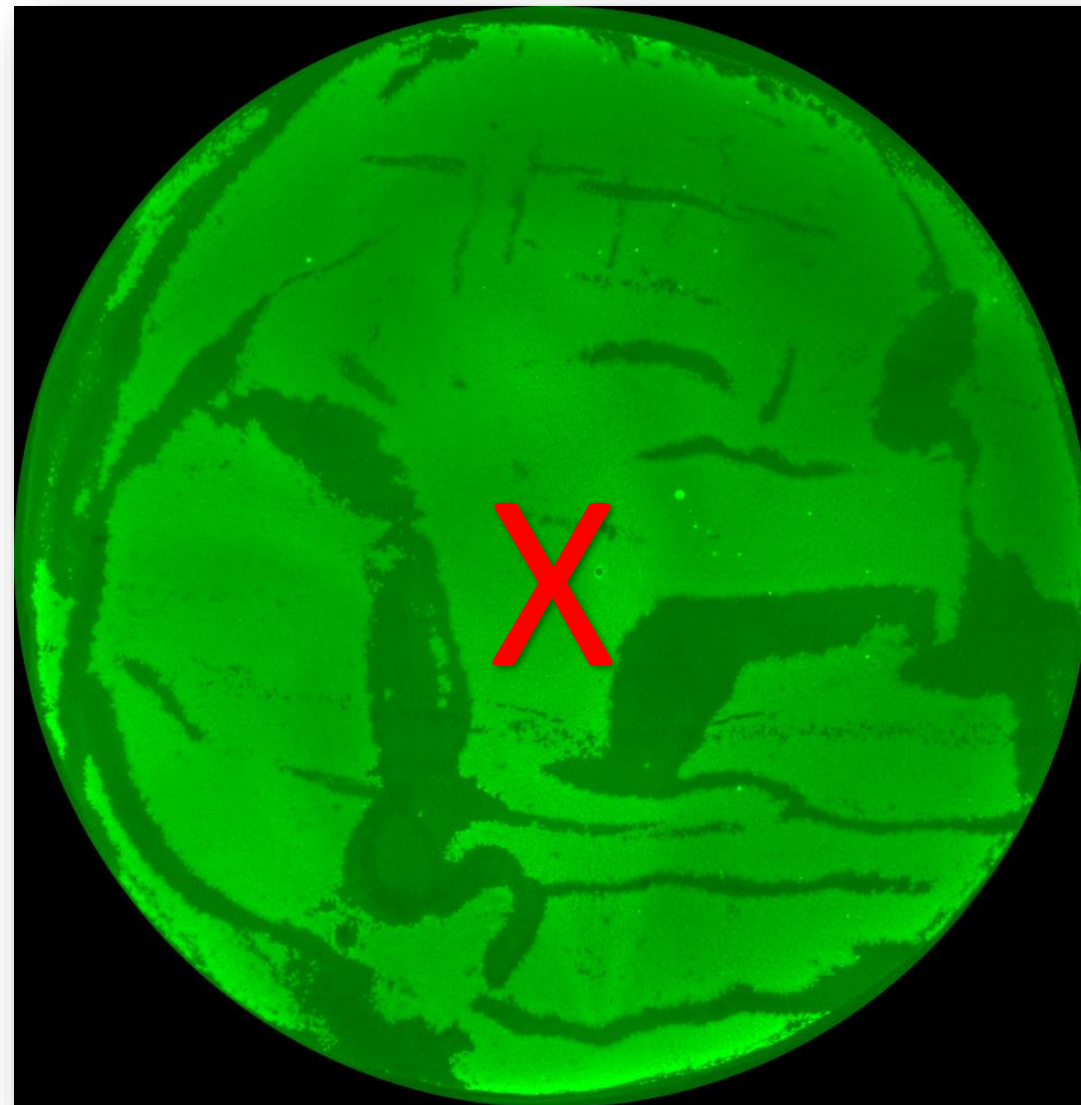




## Final steps in processing can cause damage (Video)

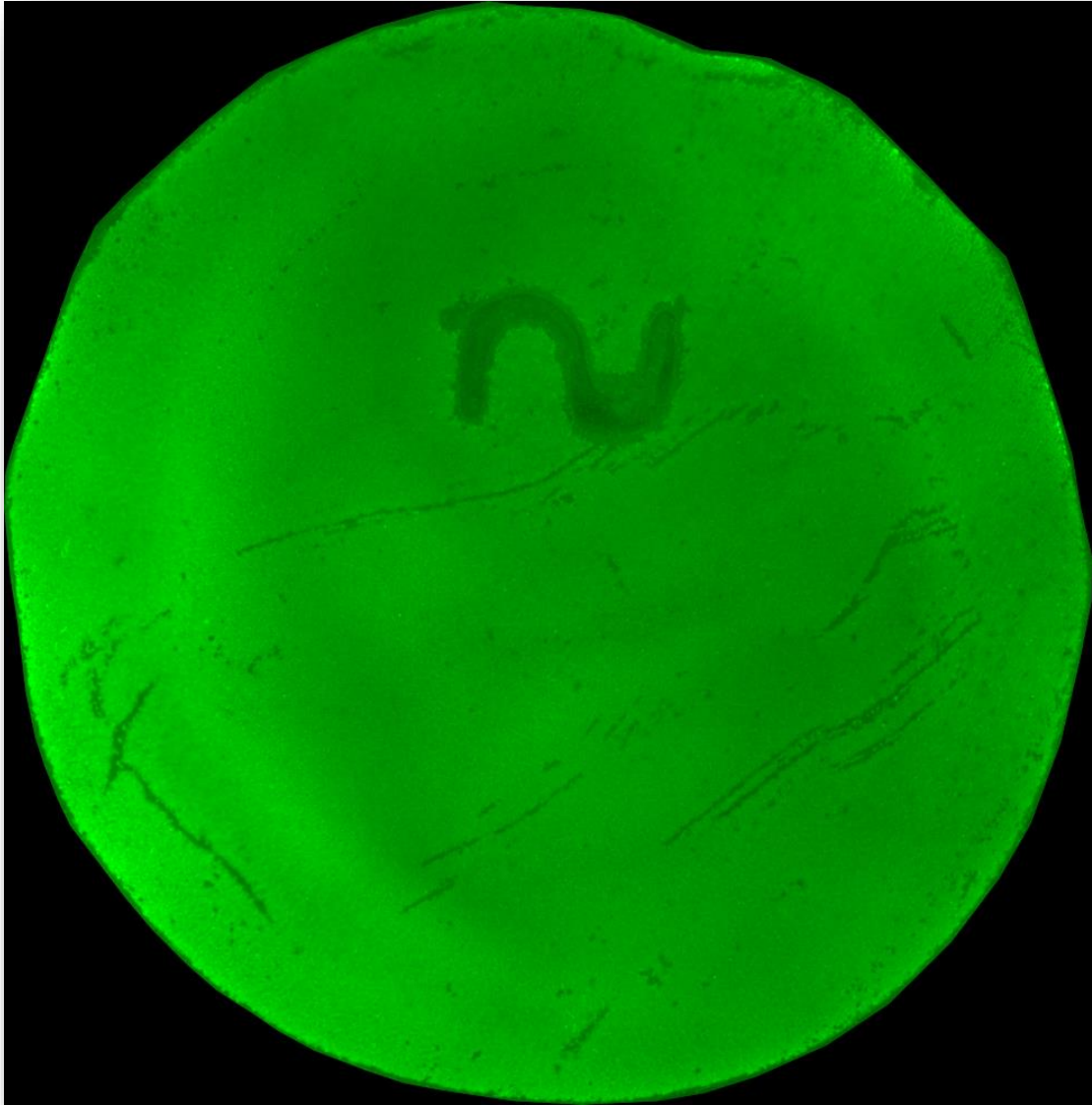


10.7%

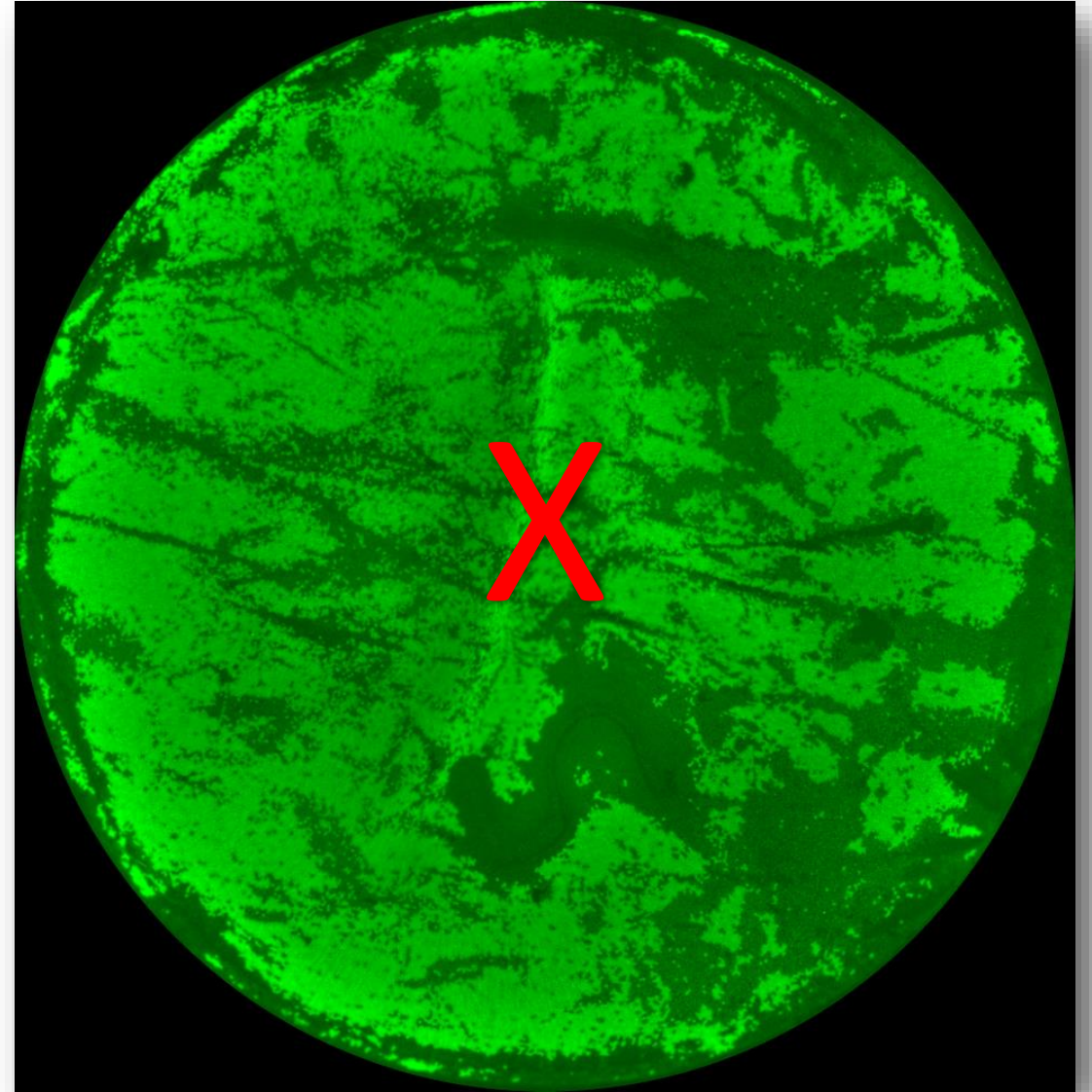


29.8%





6.9%



50.4%

# Conclusion

- Preloaded grafts can be evaluated using methods required by EBAA Medical Standards to assess the health of DMEK grafts inside an injector and viewing chamber.
- There is a learning curve experienced by technicians evaluating preloaded DMEK grafts
- A validated method for evaluating preloaded tissue provides a novel and valuable service to surgeons by:
  - Assuring the surgeon the graft being transplanted has been evaluated in its final state and determined suitable for transplant
  - Saving time in the operating room by eliminating the tissue preparation portion of surgery
  - Saving costs associated with materials needed to prepare tissue prior to transplant

# THANK YOU

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Distribution department at LVG

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