OPTIMIZING MOHS FROZEN SECTIONS

(From a Technician's Point of View)

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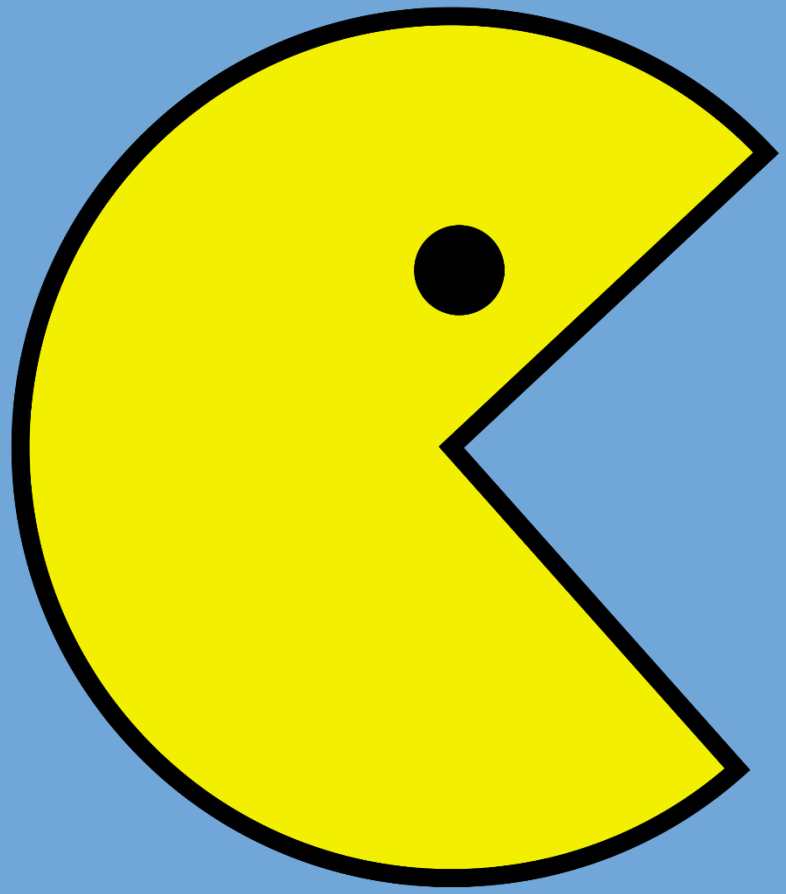
ASMH Current Past President 2016 - 2018

How do you Optimize a Mohs Frozen Section?

- Grossing
- Embedding
- Complete representative margins
- Stain quality
- Specimen Sections
- Tissue artifacts

Whole Mount / Bi-Sected

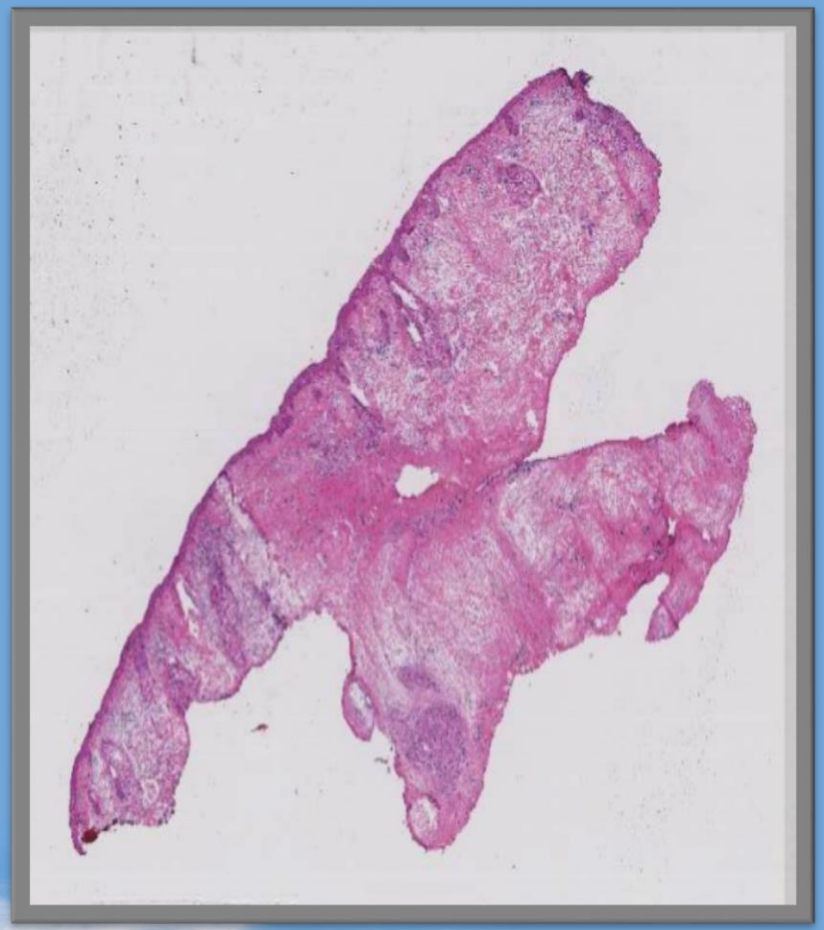
Original Whole Mount

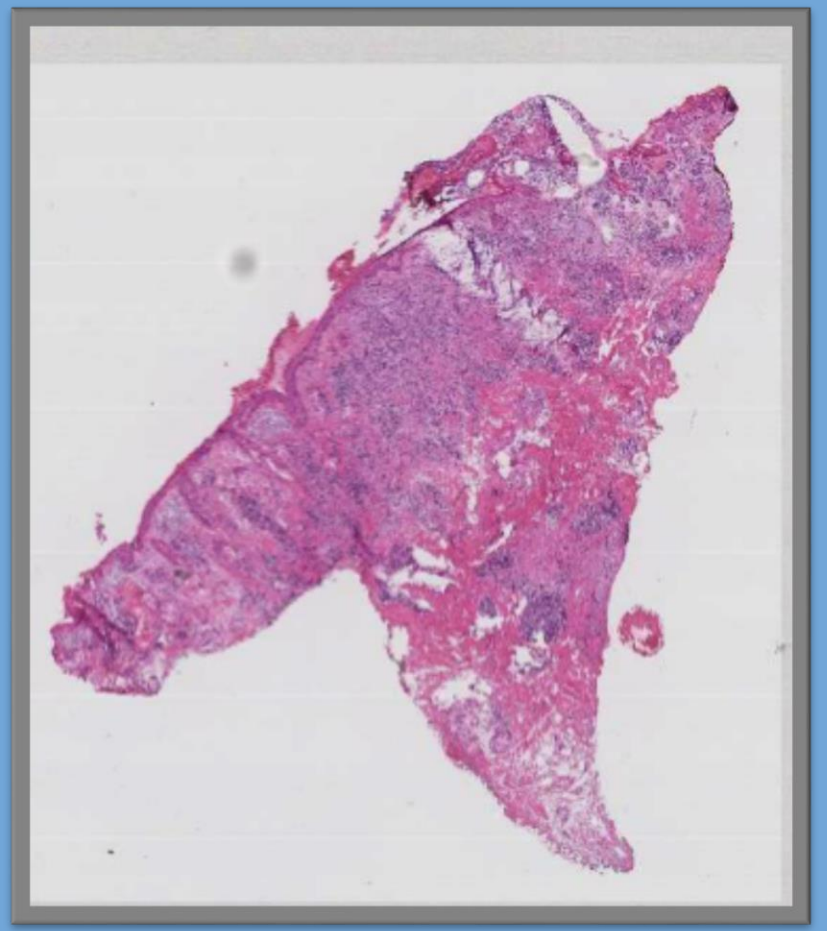


Embedding Related Problems

- Hyper Extended Epidermis.
- Missed or Skipped Epidermis
- Misplaced Epidermis
- Gaps in Dermis and Subcutaneous Tissue
- Misplaced Ink Margin

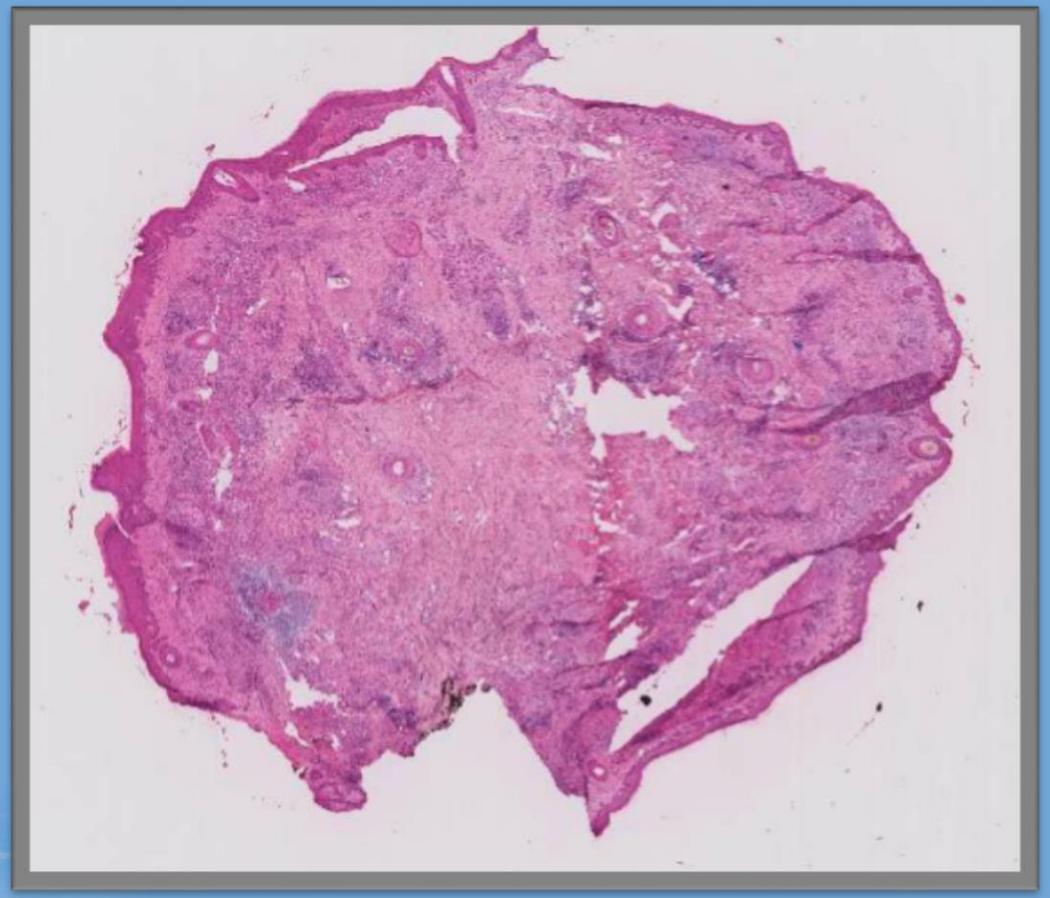
Hyper Extended Epidermis





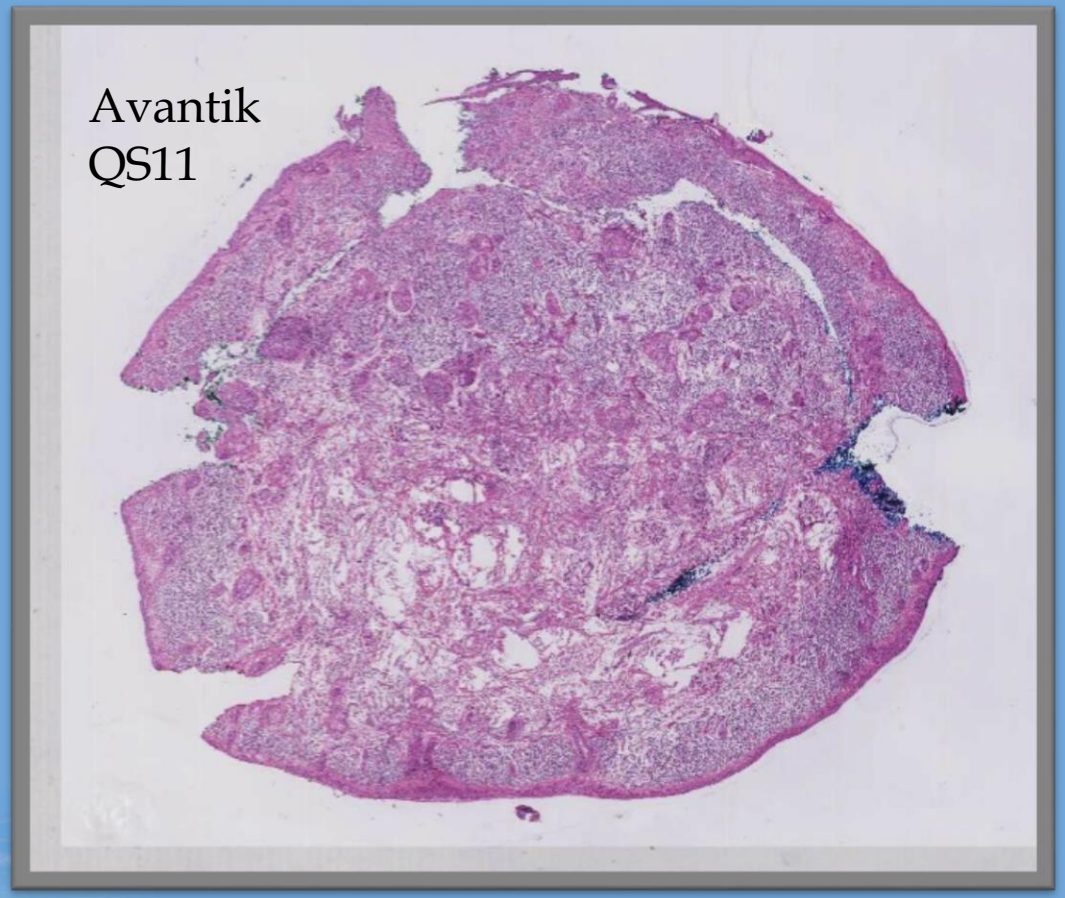
Missed Epidermis

Misplaced Epidermis, Nick in Blade & Wrinkles



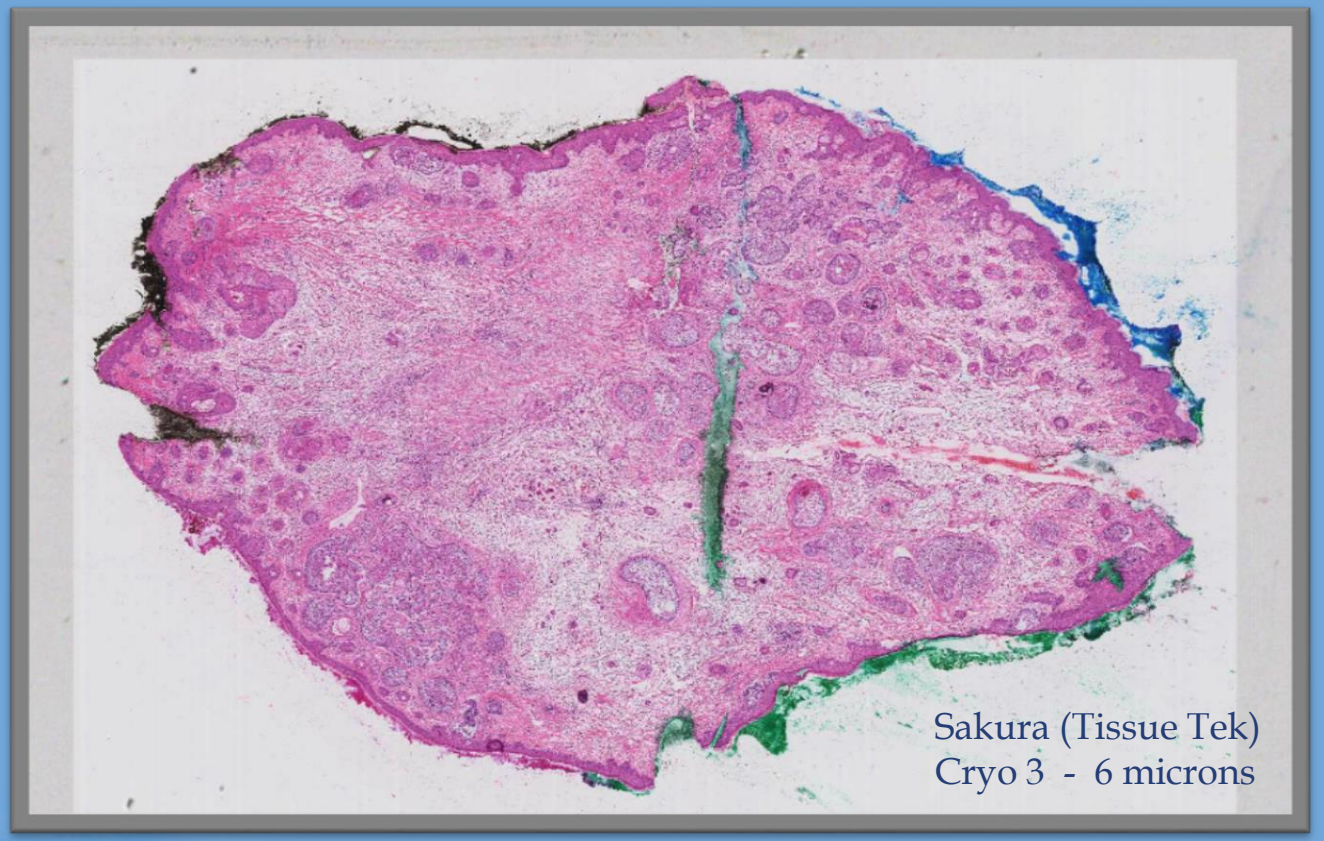
Gap In Deep Margin

(due to deep relax score)



Misplaced Ink Margin

(due to deep relax score)



Sakura (Tissue Tek)
Cryo 3 - 6 microns

Section Artifacts That Make You Want to Scream

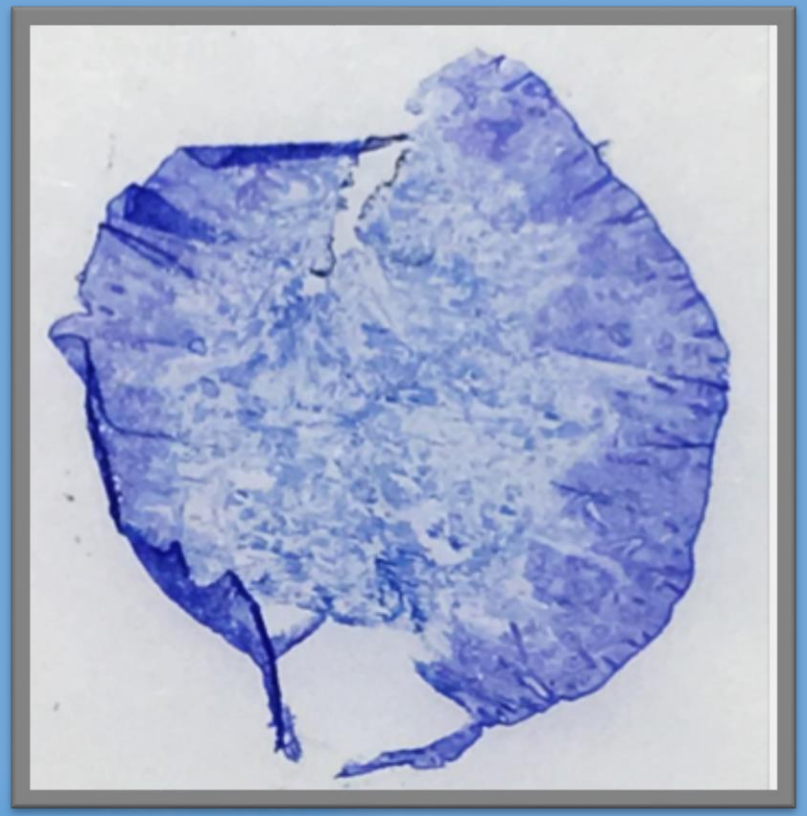
(Hopefully not at your Technician)

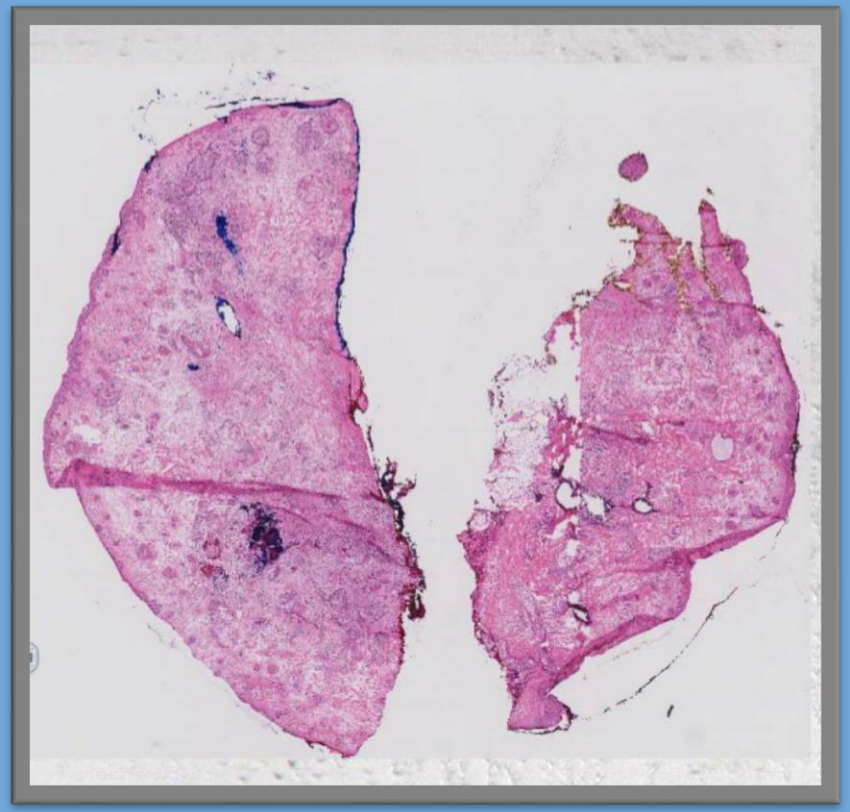
Artifacts

- Wrinkles and Folds
- Thick /Thin Sectioning
- Poor dehydration
- Air Bubbles
- Incomplete Section

Wrinkles and Folds

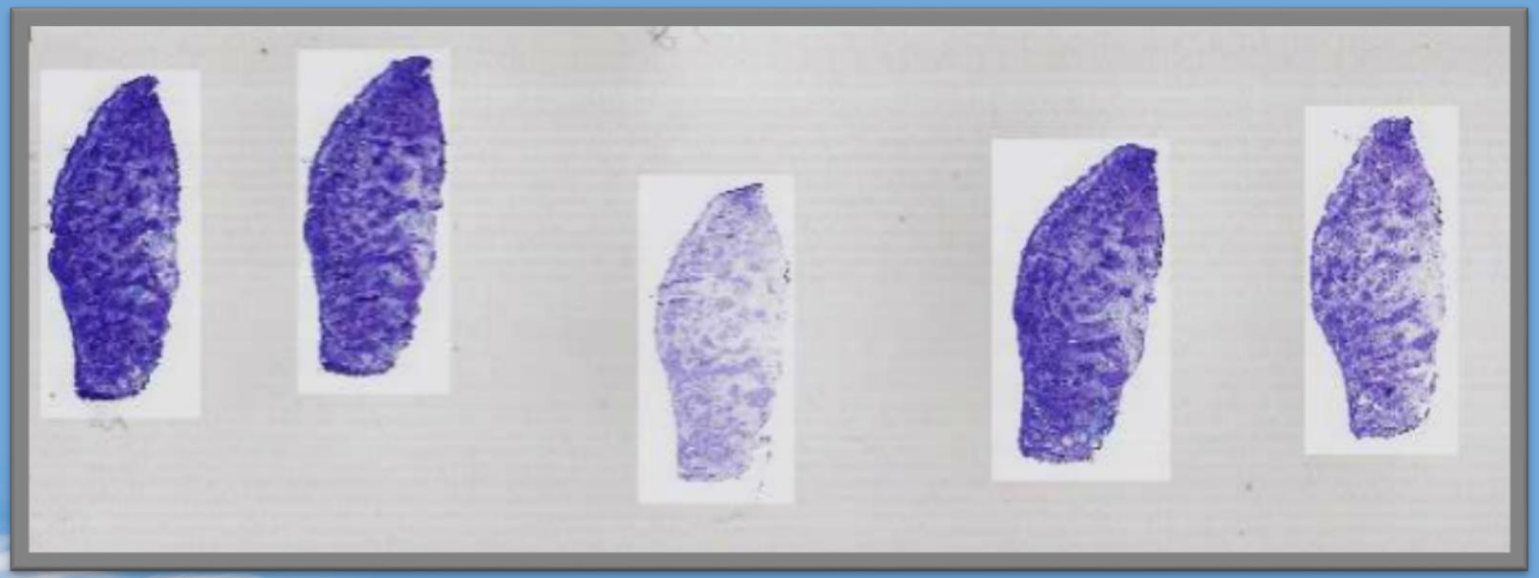
Wrinkles and Folds





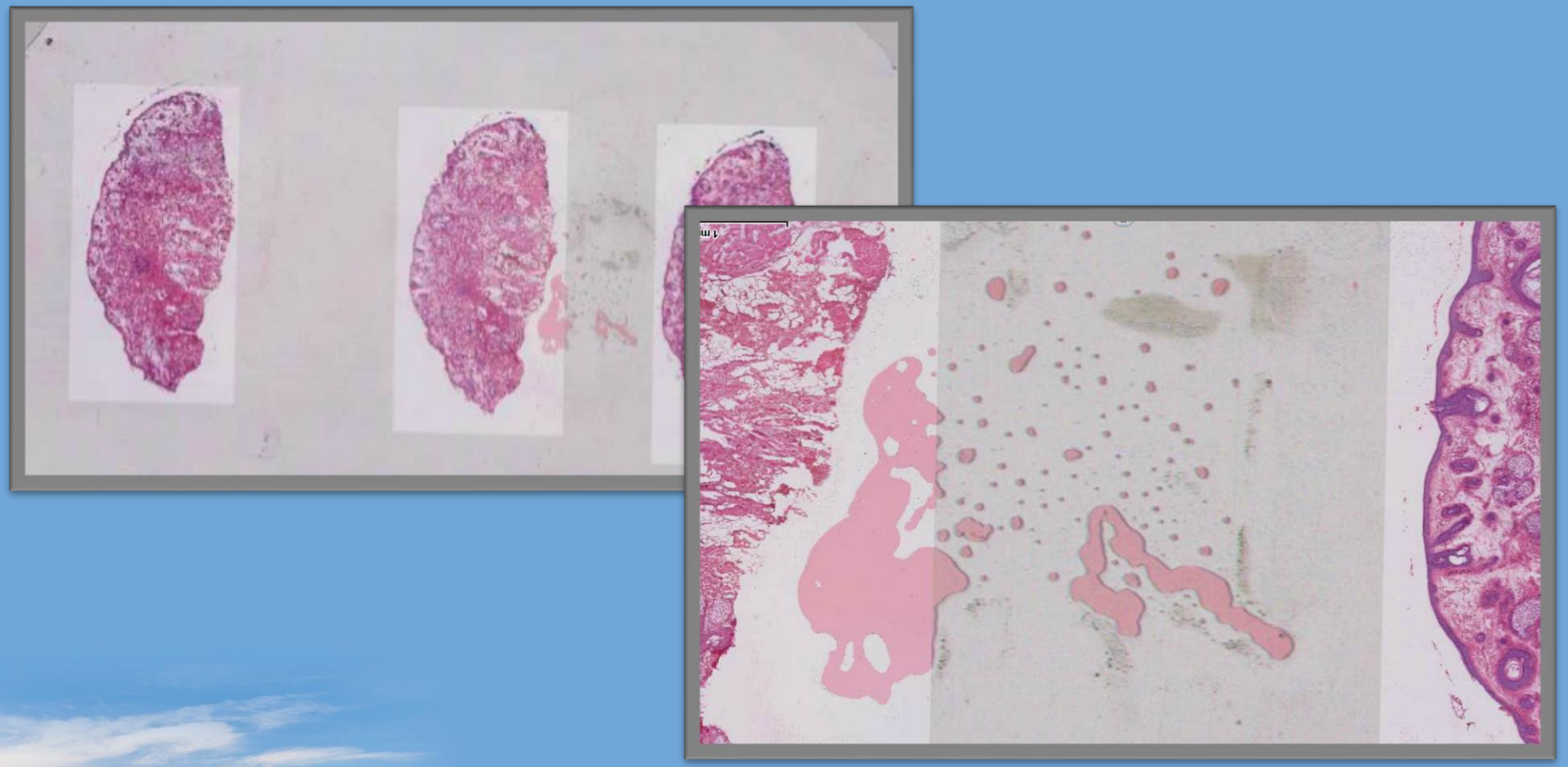
Thick / Thin Sectioning

- Dull blade
- Stage too close to microtome
- Change of micron setting
- Cryostat too warm
- Blade angle adjustment



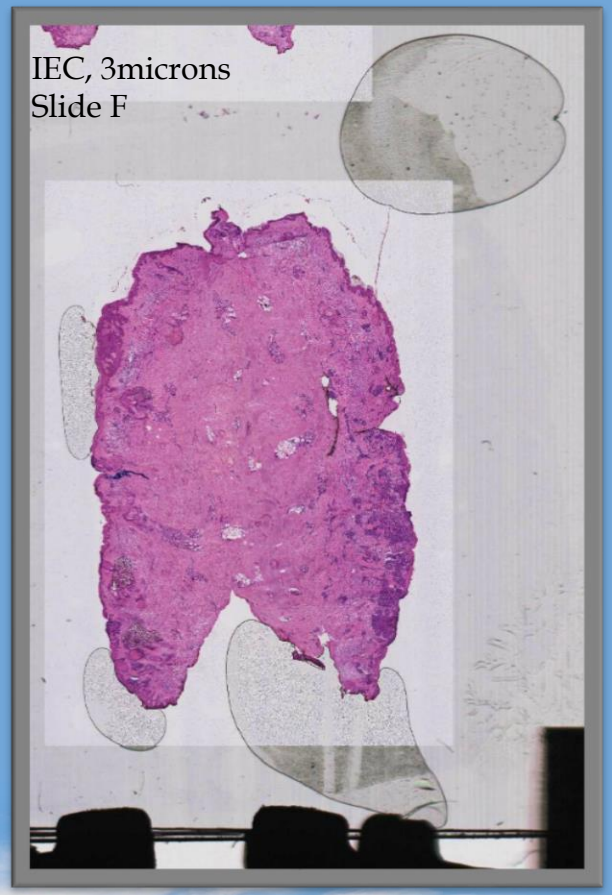
Poor Dehydration

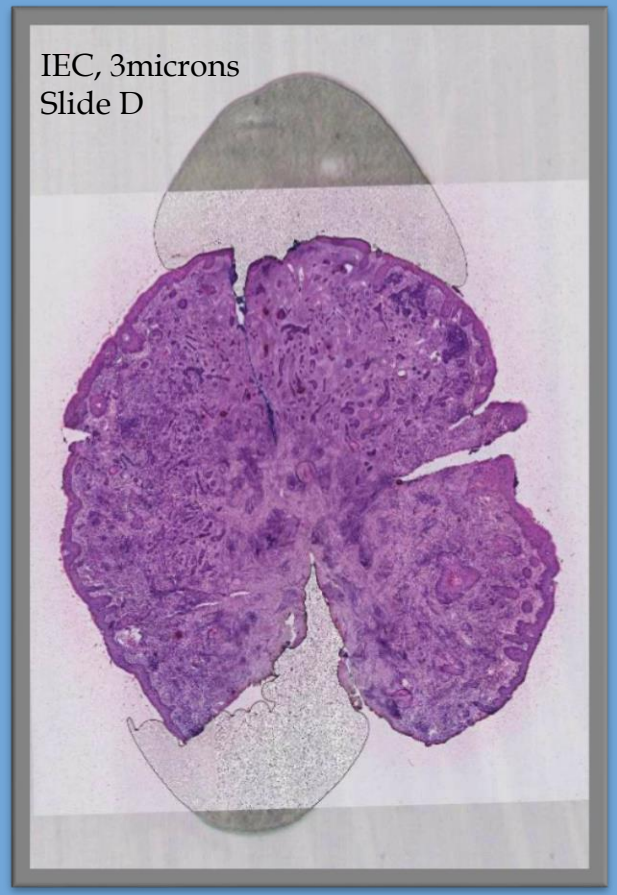
Leica 1510 S – 6 microns



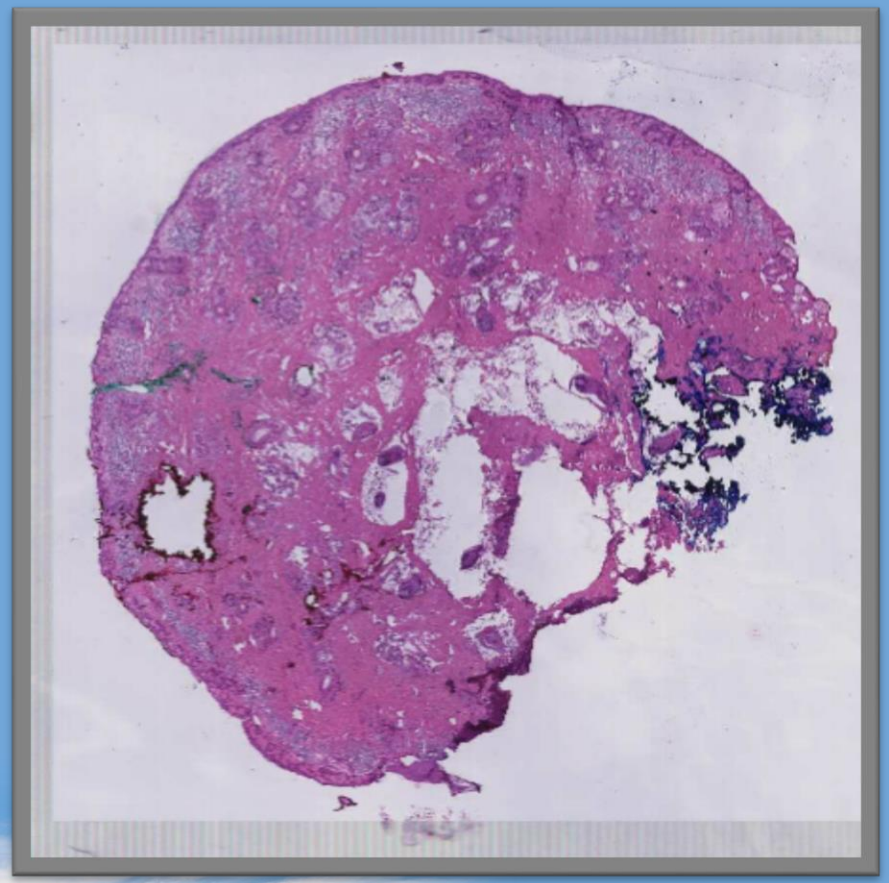
Air Bubbles

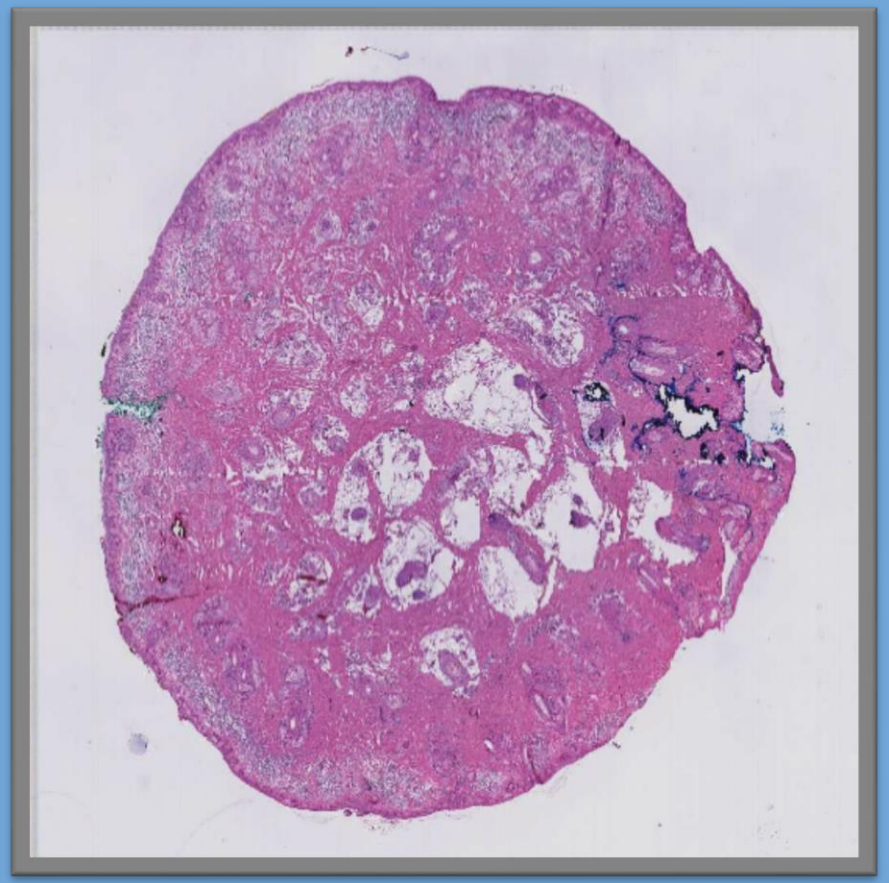
IEC (International Equipment Company) 3 microns





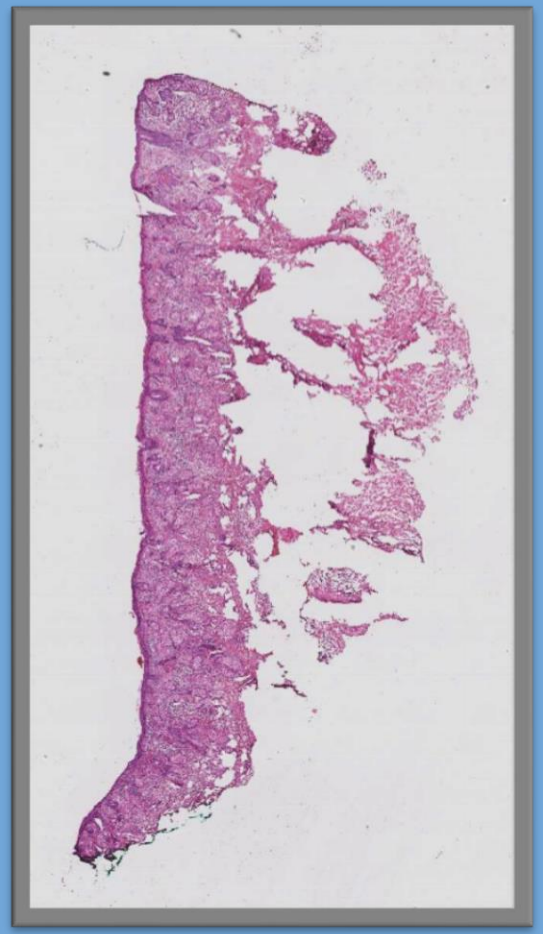
Poorly Aligned Object Holder Resulting In Incomplete Epidermis





Incomplete Deep Margin

Leica CM 1510 S

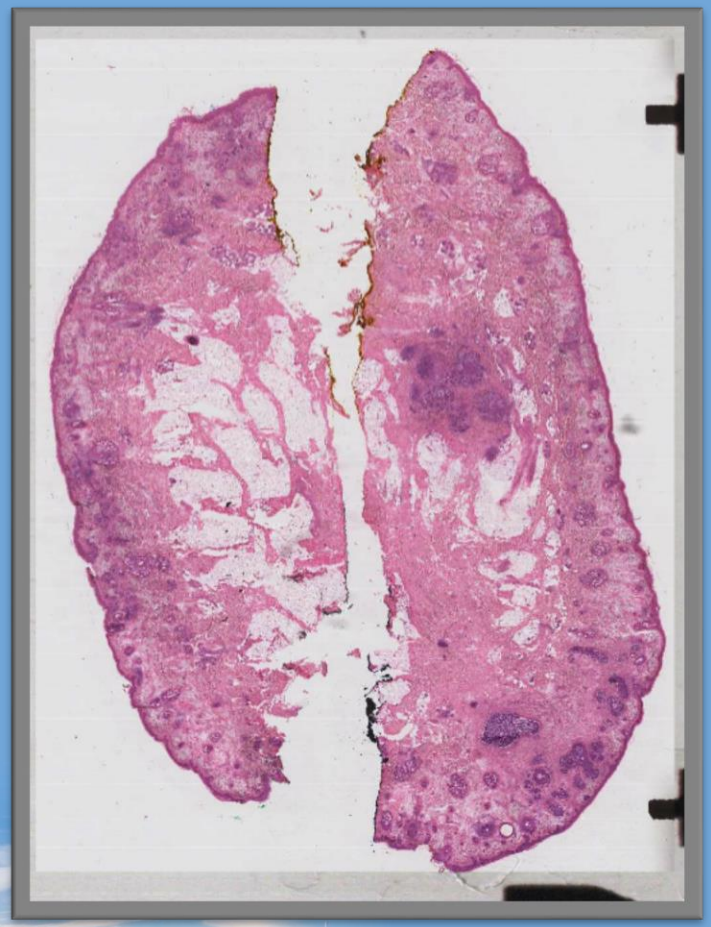


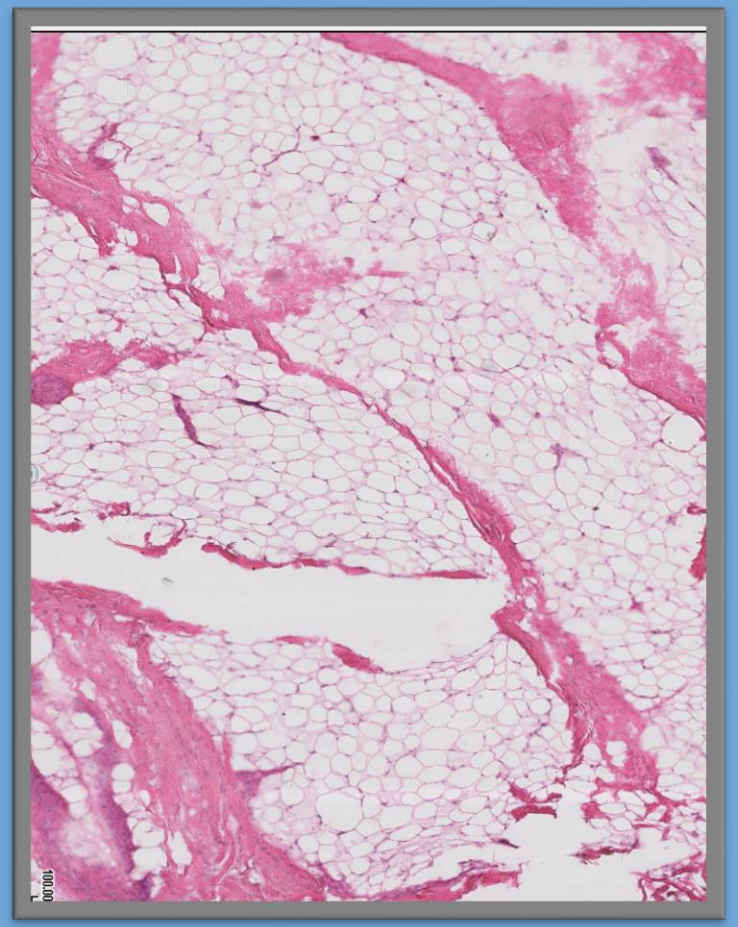
What can I do to prevent "Incomplete Deep Margins"?

Apply LN_2 to a Rolled up 4x4 Piece of Gauze and Apply Directly to Problem Area of Specimen

Quality Representative Section Following Application of LN_2

Leica CM1850 4 microns





Quality Representative Section Following Application of LN_2

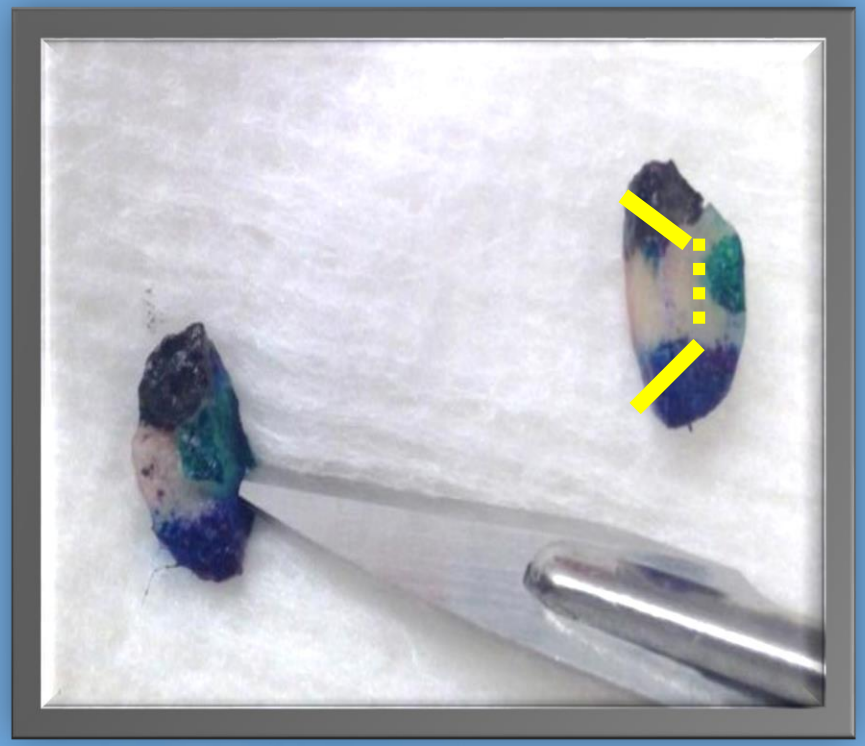
Leica CM1850 – 16 microns

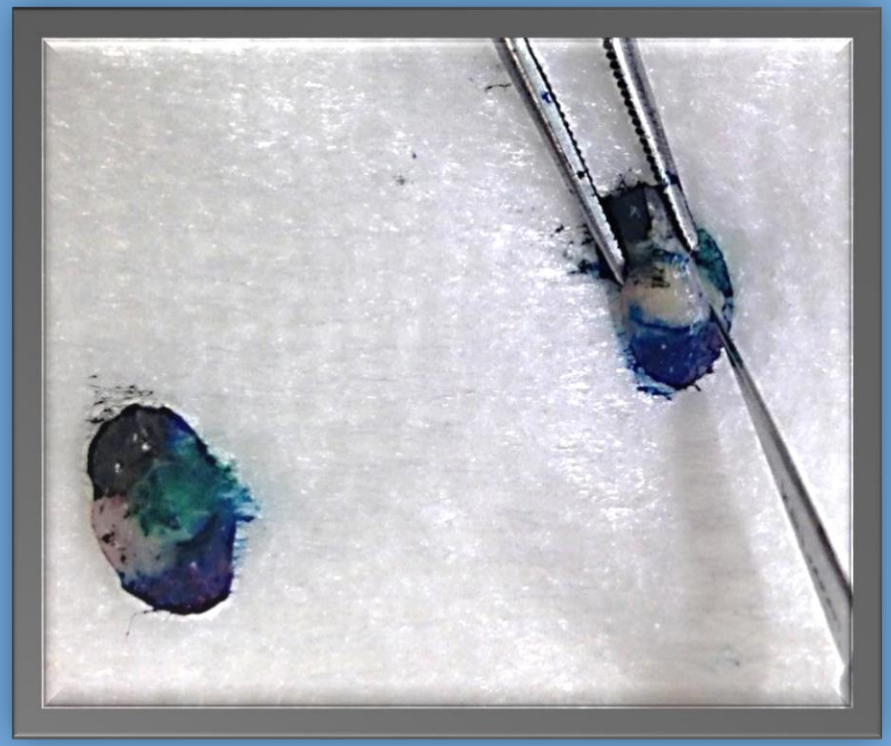
Embedding

- Strategic Relax Cuts & Scores
- Transitioning Epidermis
- Cartilage

RELAX CUTS & SCORES

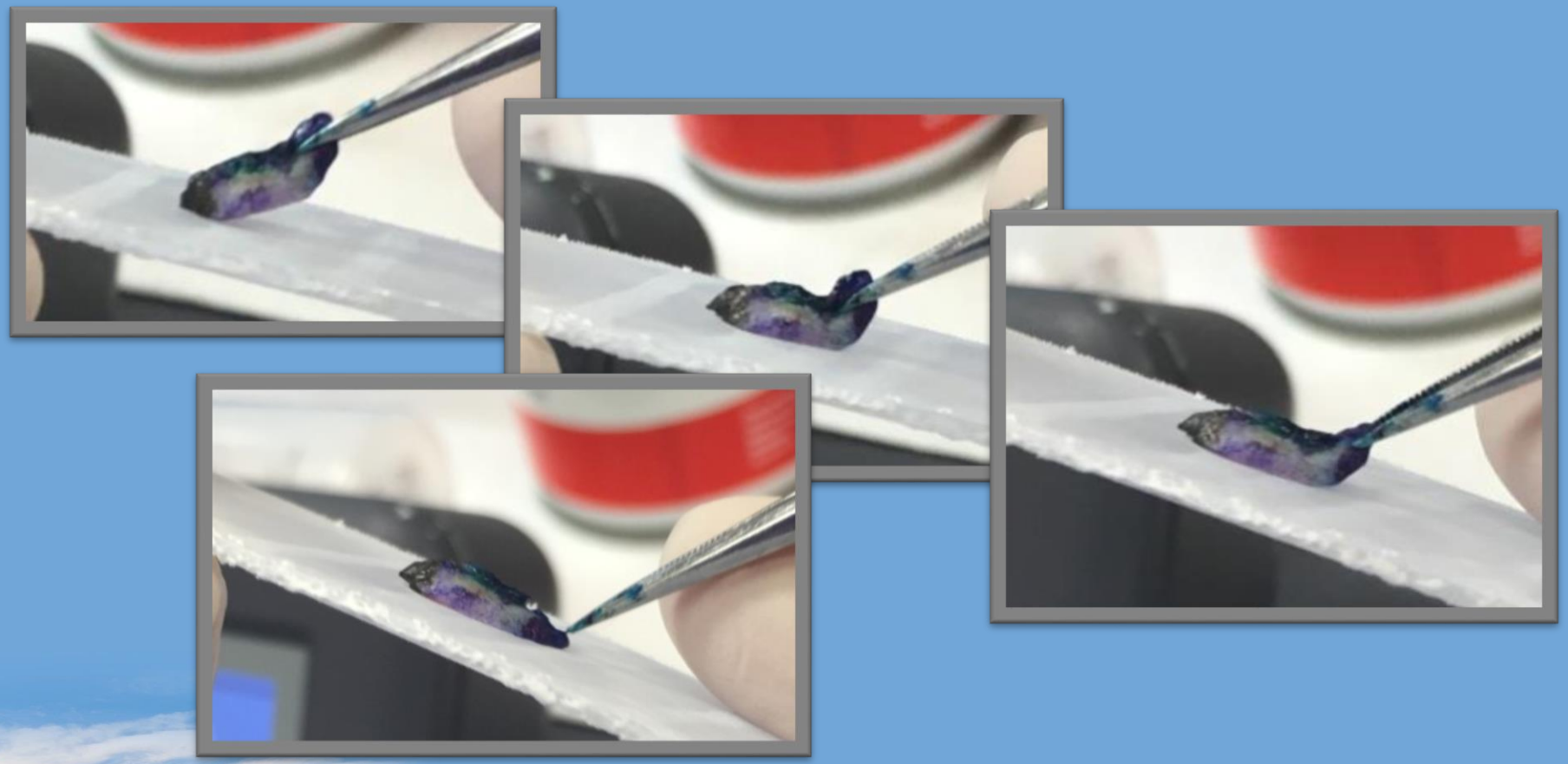
(Bi-sected Specimen)



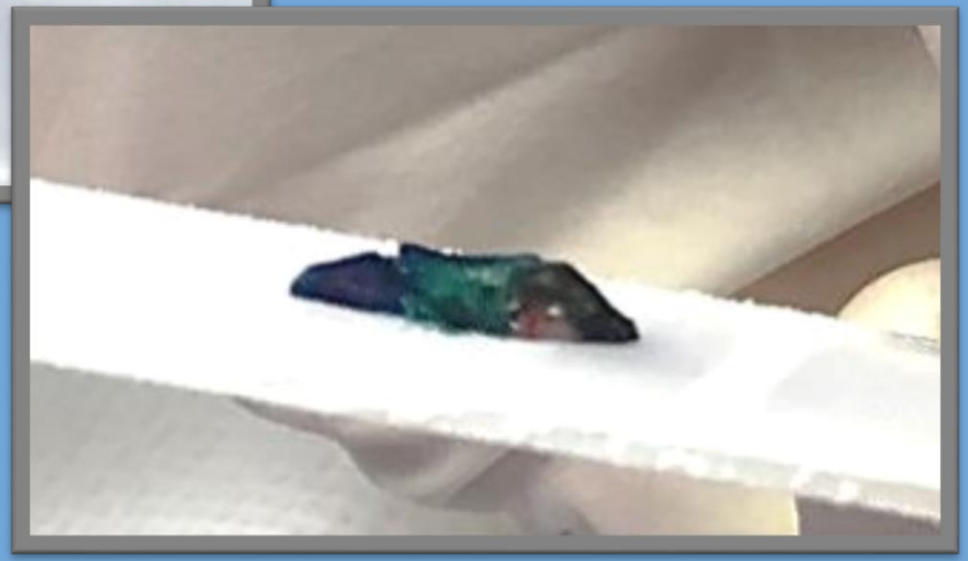


Embedding

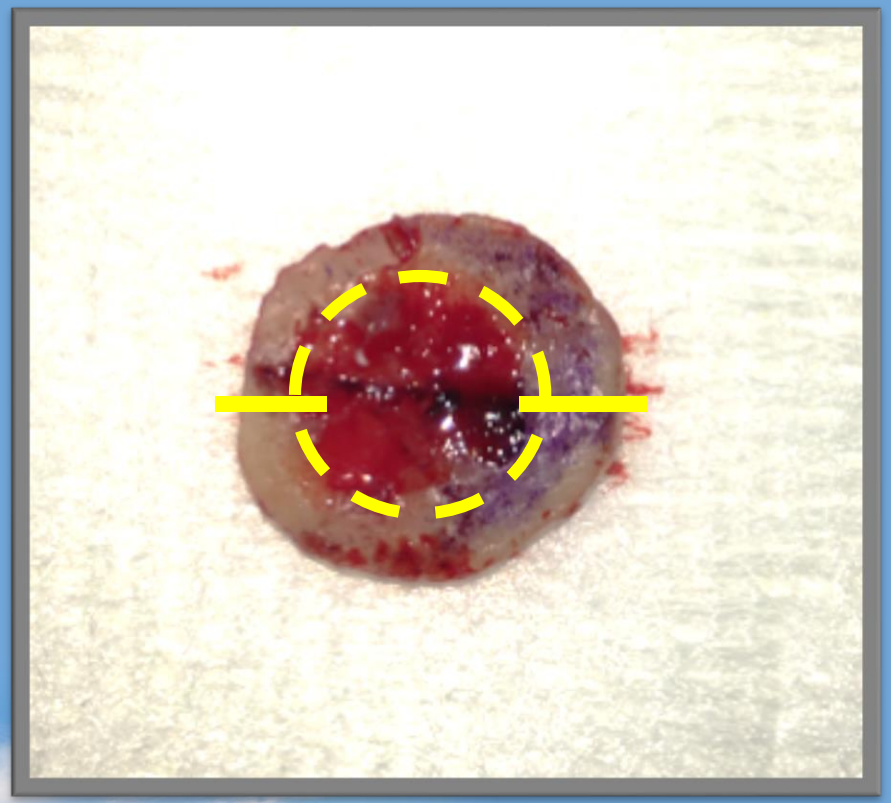
(Adhering Epidermis Margin)

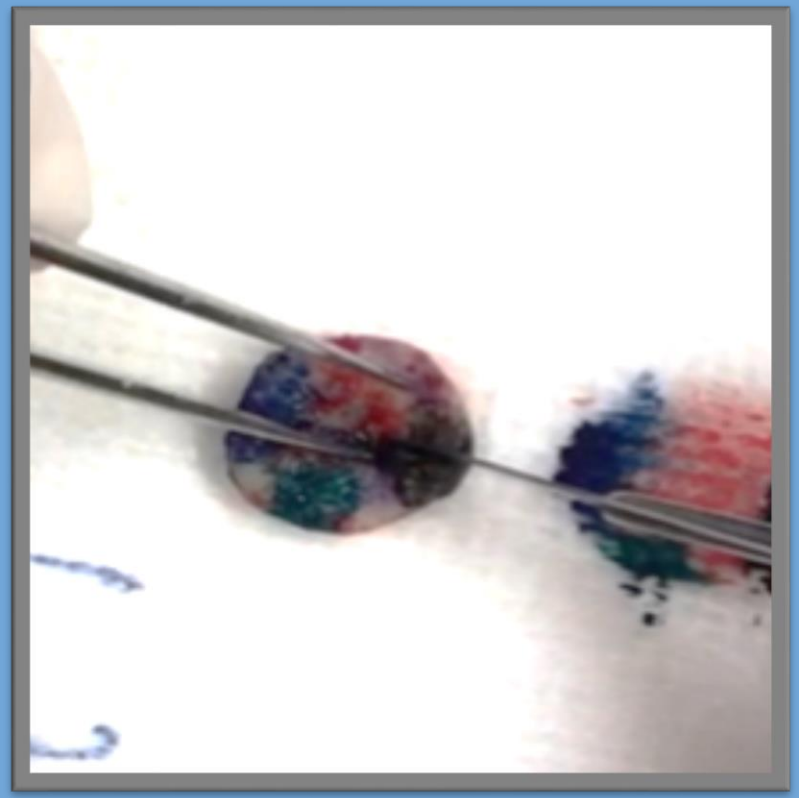


Epidermis and Medial Margins

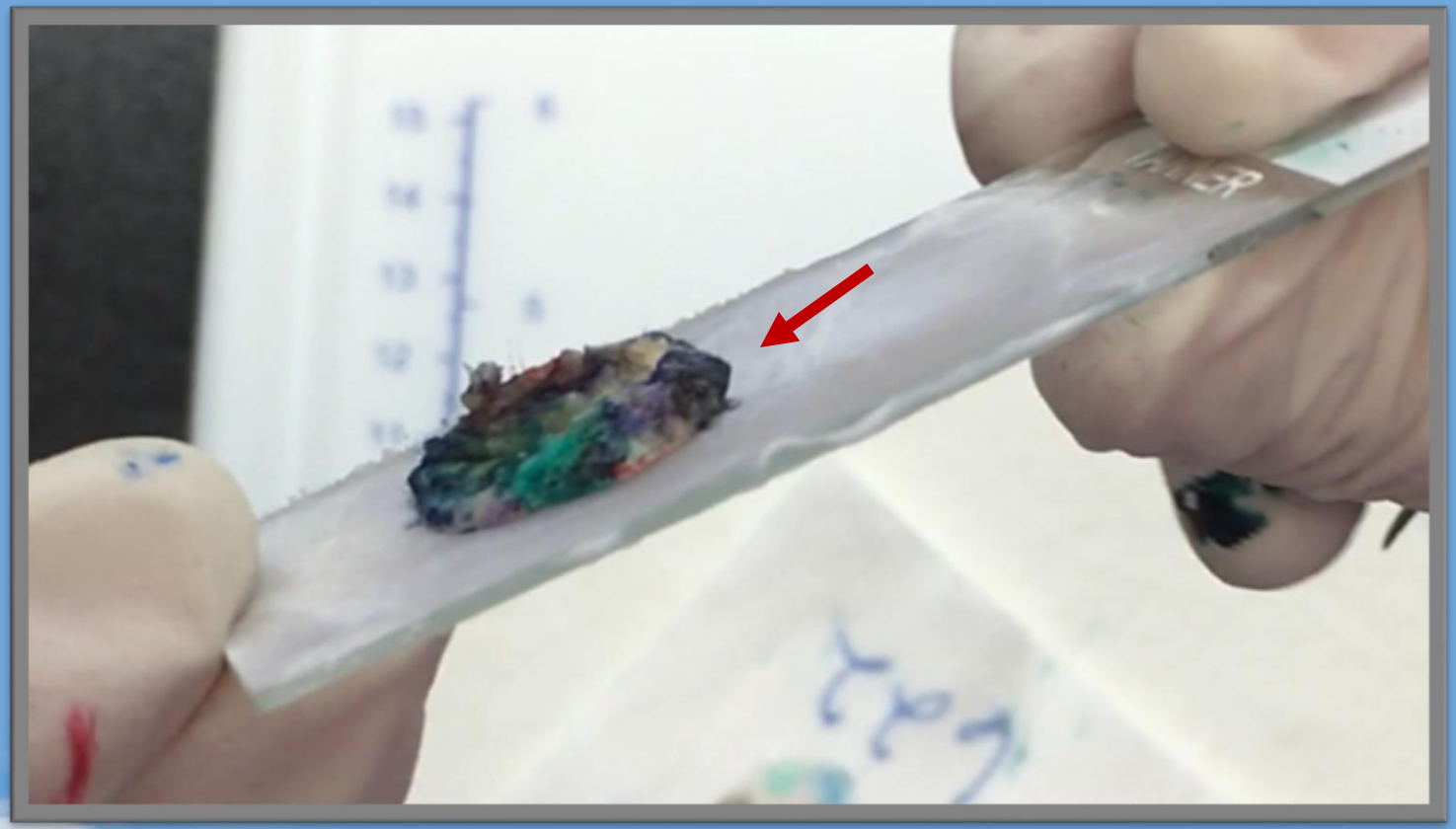


Relax Cuts and Scores

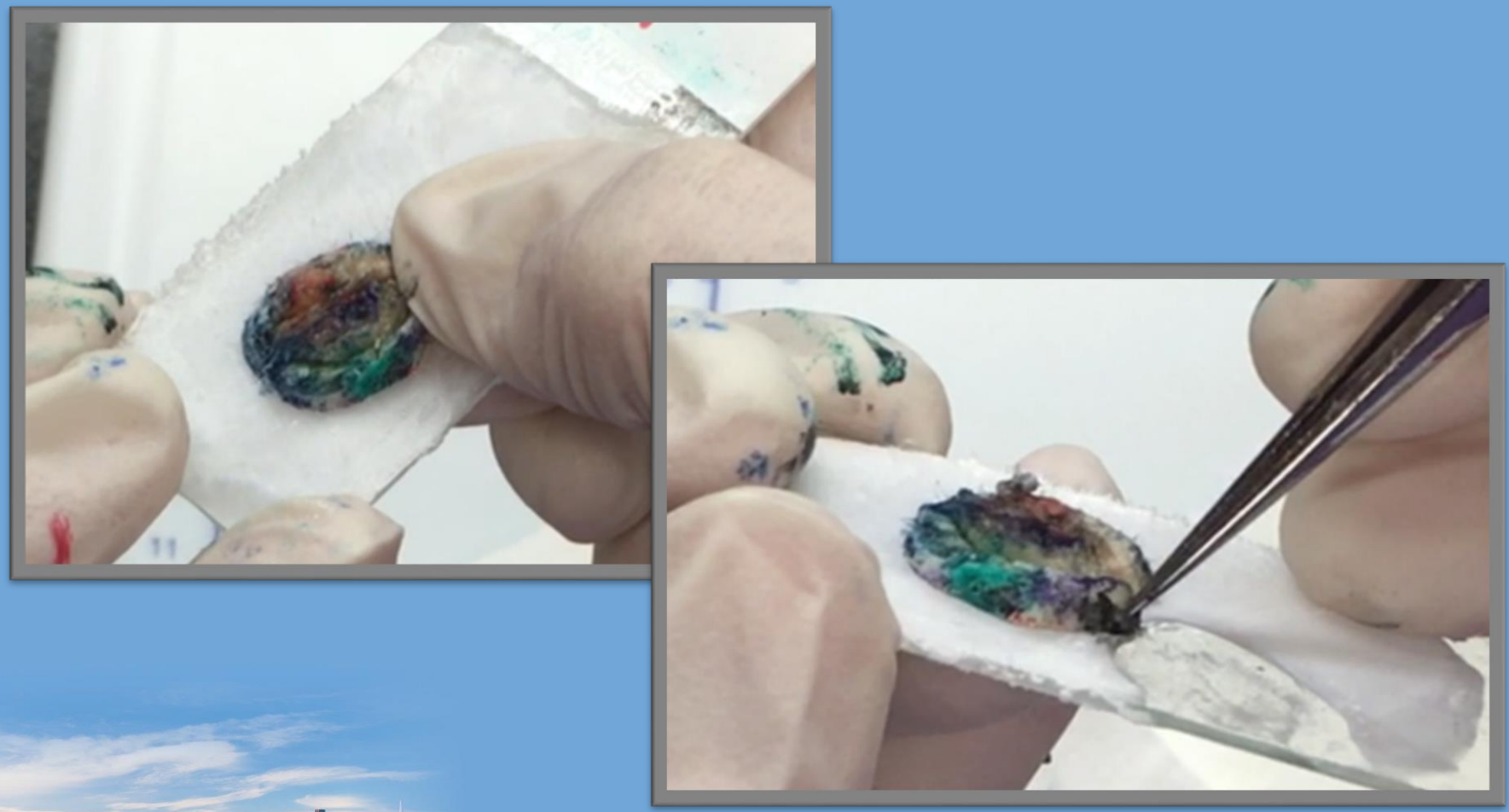




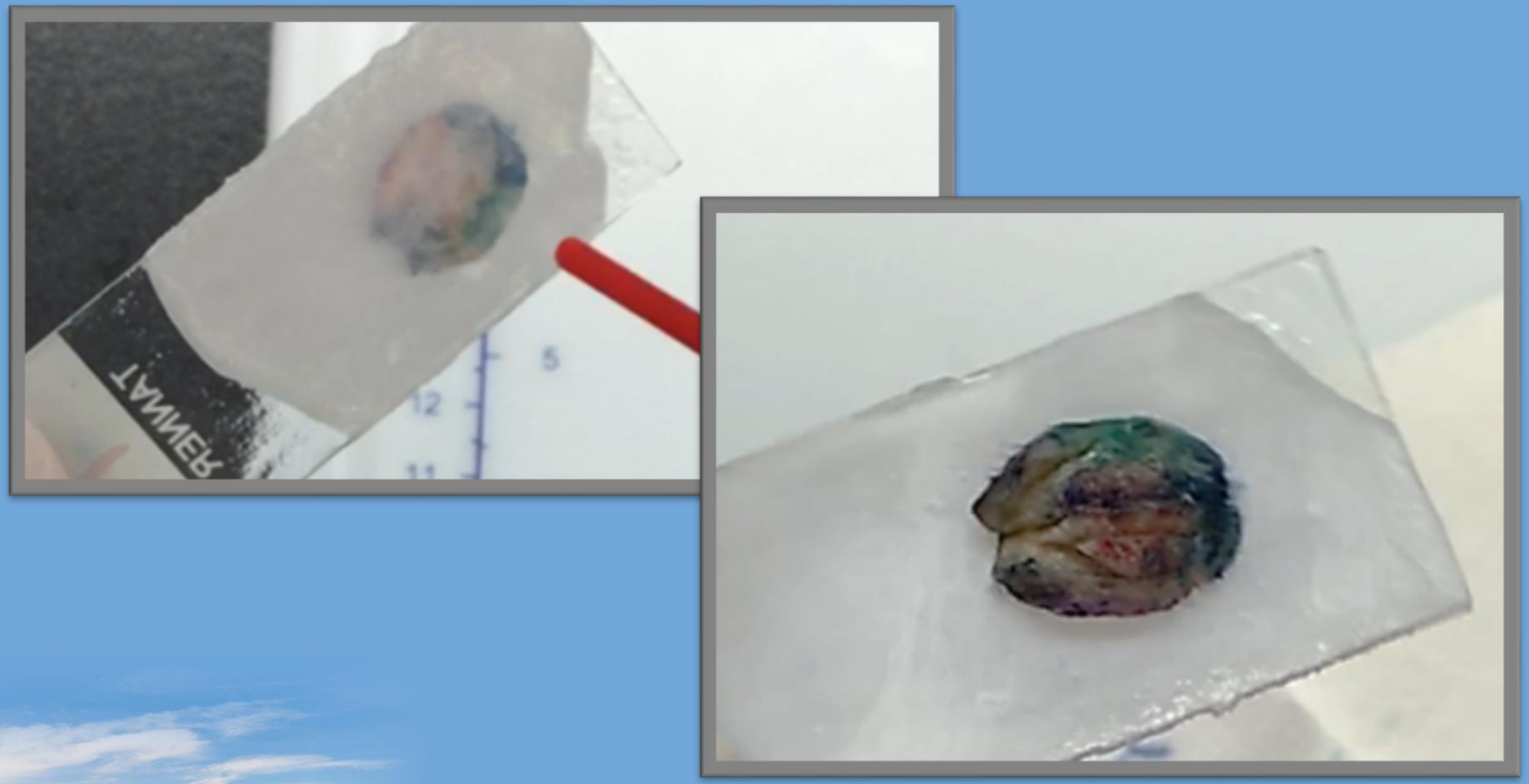
Ensure that all margins are embedded flat



Spot Warm / Transition Epidermis

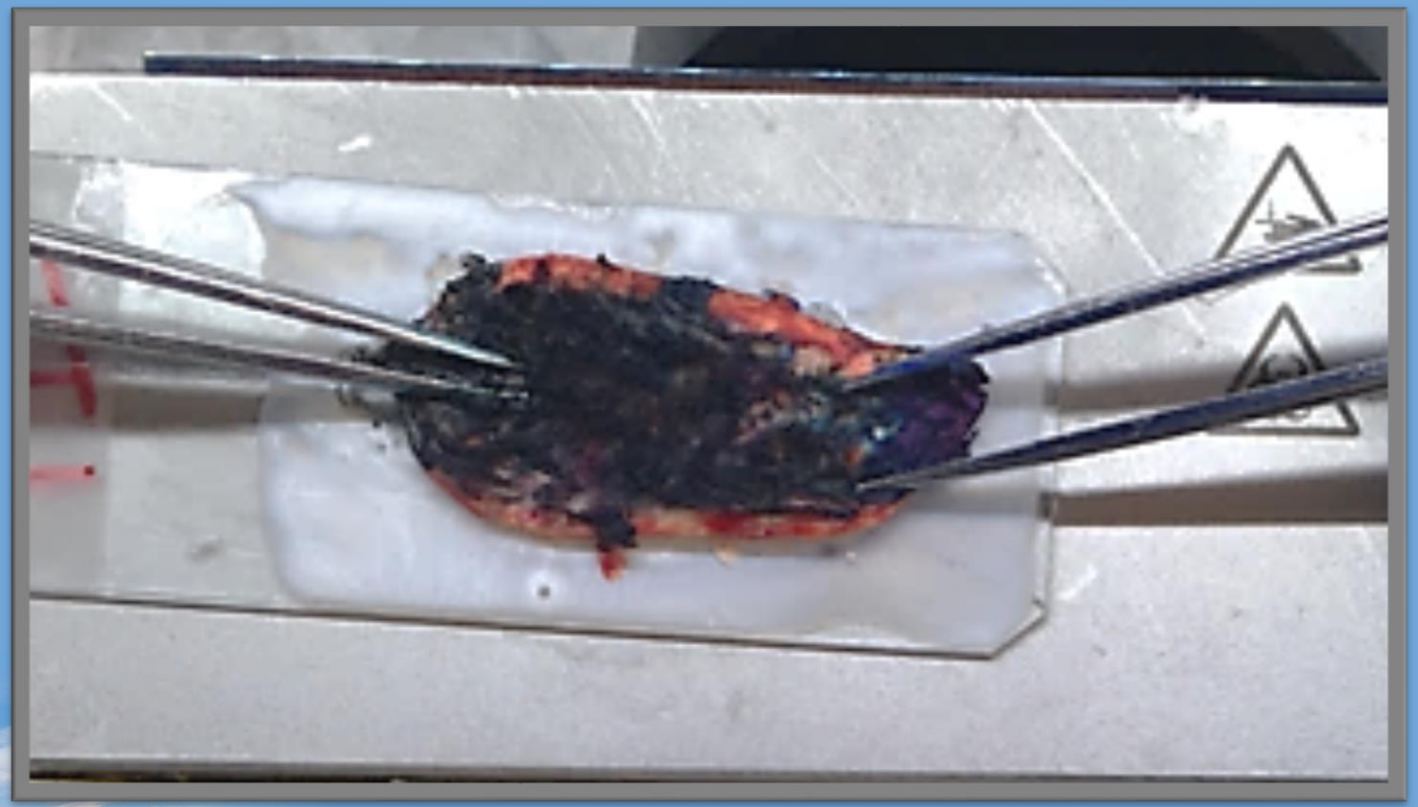


Margins are Correctly Embedded

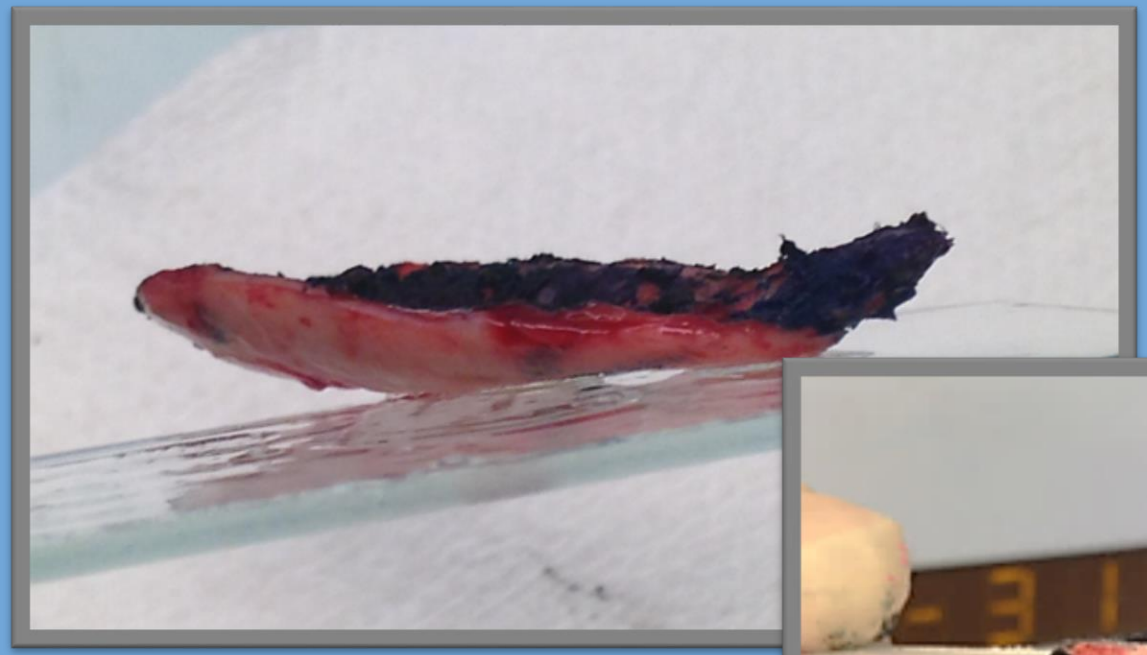


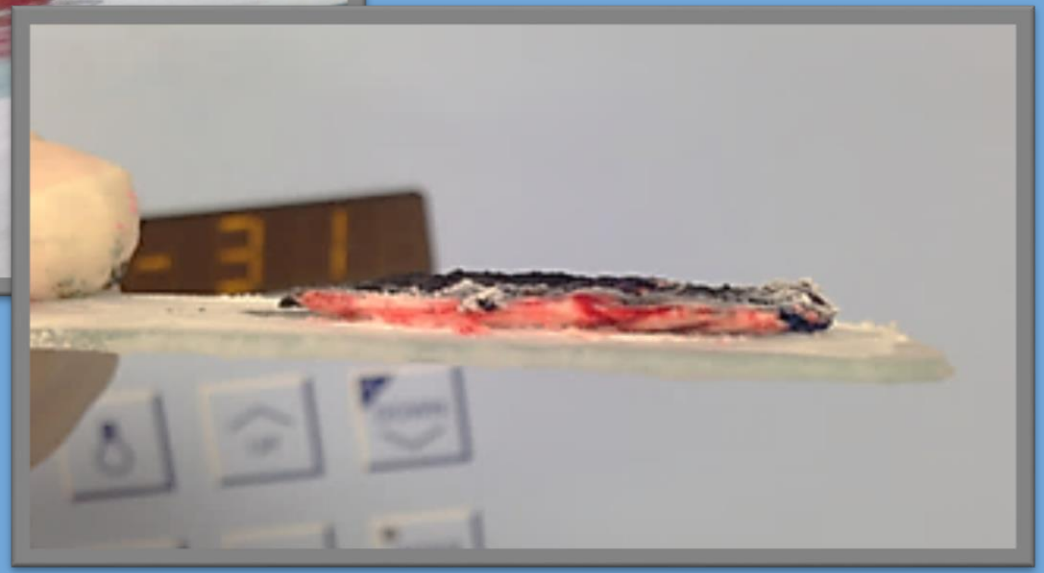
Cartilage

Apply Pressure as the Specimen Freezes to Acquire a Complete Representative Margin.

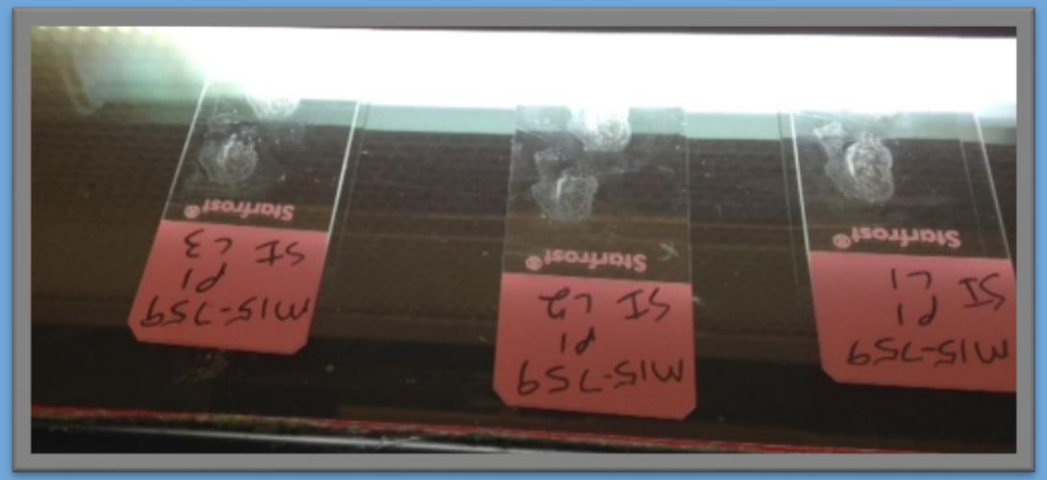


Relax Scores Allow Specimen to Transition to An Even Plane





Prevent Loss Of Cartilage During Staining



Model No. XH-2002

For space conscious laboratory
10 ¼" x 7" (26 cm x 18 cm)
Surface holds about 23 slides
Shipping weight: 10 lbs

Lab Scientific

H&E and T-BLUE

STAIN PROTOCOLS

H&E is the stain protocol used in all Mohs Laboratories for all types of tumors.

Some Mohs Surgeons however prefer T-blue over H&E when staining for Basal Cell Carcinoma. This is a matter of personal preference based on training.

Stain Protocols

HEMATOXYLIN AND EOSIN

1. 95% Alcohol – 20 sec.
2. Water – 20 sec.
3. Hematoxylin (Gill 3) – 20 sec.
4. Hematoxylin (Gill 3) – 20 sec.
5. Water – 20 sec.
6. Water – 20 sec.
7. Bluing Reagent – 20 sec.
8. Water – 20 sec.
9. 95% Alcohol – 20 sec.
10. Eosin Y – 20 sec.
11. 95% Alcohol – 20 sec.
12. 100% Alcohol – 20 sec.
13. Clearing Reagent – 20 sec.
14. Clearing Reagent – 20 sec.

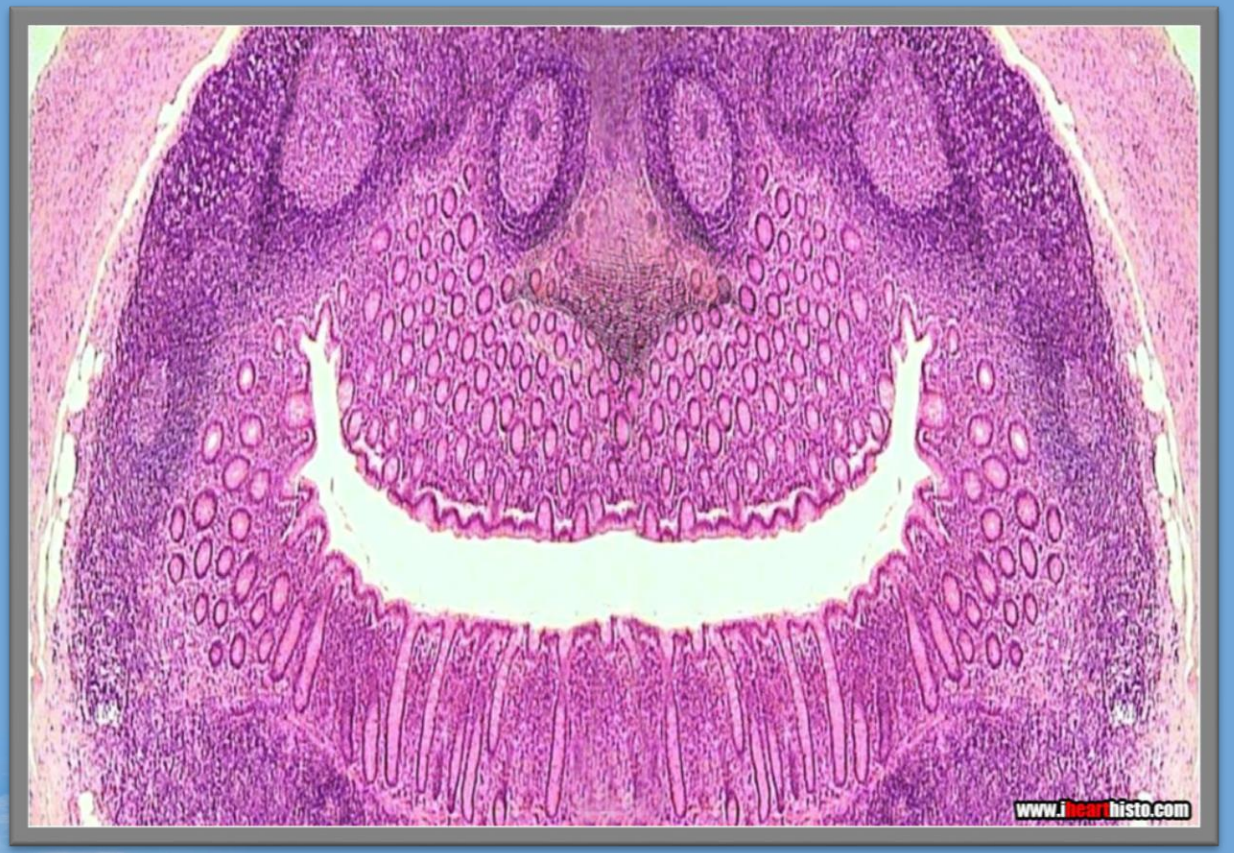
TOULIDINE BLUE

1. Isopropanol, ACS grade–20 sec.
2. Toulidine Blue Stain – 20 sec.
3. Toulidine Blue Stain – 20 sec.
4. Toulidine Blue Stain – 20 sec.
5. Toulidine Blue Stain – 20 sec.
6. Isopropanol, ACS grade–20 sec.
7. Isopropanol, ACS grade–20 sec.
8. Isopropanol, ACS grade–20 sec.
9. Isopropanol, ACS grade–20 sec.
10. Clearing Reagent– 20 sec.
11. Clearing Reagent– 20 sec.
12. Clearing Reagent– 20 sec.
13. Clearing Reagent– 20 sec.
14. Clearing Reagent– 20 sec.

Primary Goal

The primary goal is to provide a quality representative “complete” margin of the area of the specimen that last came in contact with the patient.

I hope you enjoyed this presentation!



Acknowledgement

I would like to express my appreciation to the ACMS Physicians and Laboratory Staff of US Dermatology Partners – Tyler for their support with the preparation of this presentation.

My Physicians are:

Dr. Larry Anderson

Lawrence L. Anderson, MD

Board-Certified Dermatologist

Fellowship-Trained Mohs Surgeon

Locations

TEXAS

Tyler - Dominion Plaza

Dr. Bill Grabski

William J. Grabski, MD

Board-Certified Dermatologist

Fellowship-Trained Mohs Surgeon

Locations

TEXAS

Tyler - Dominion Plaza

Tyler - Beckham

Dr. Shanna Meads

Shanna B. Meads, MD

Board-Certified Dermatologist

Fellowship-Trained Mohs Surgeon

Locations

TEXAS

Tyler - Dominion Plaza

Tyler - Beckham

It is an honor and a privilege to work with talented individuals that strive for quality patient care.

Thank You!
Jeanie Wade, HT (ASCP)

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U.S. DERMATOLOGY partners

ASMOH 23rd Annual Meeting SAN FRANCISCO