



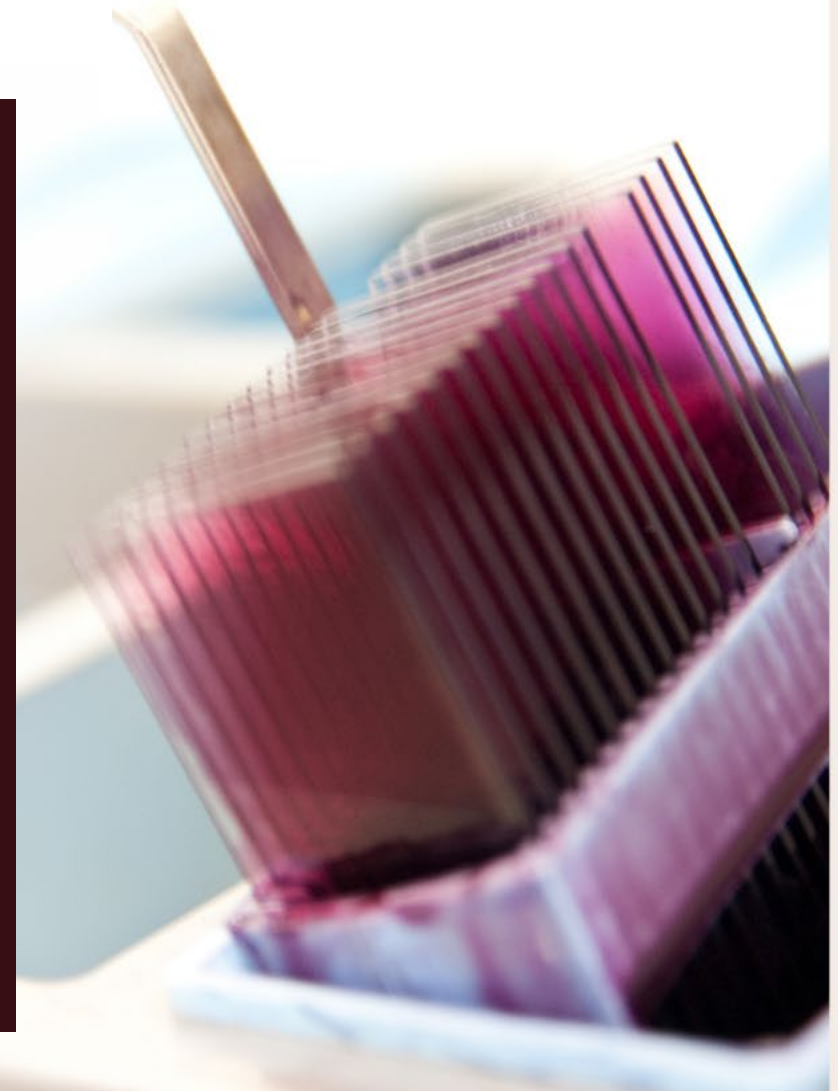
Fontana Masson

CME II - Troubleshooting Special Stains

ADELINE LEE VOON HUI

LEARNING OBJECTIVES

- Explain the **argentaffin (auto-reduction) reaction**
- Identify **melanin and other argentaffin pigments**
- Differentiate melanin from **pseudopigments** using adjunct methods
- Apply the stain appropriately in **diagnostic practice**



FONTANA MASSON?

identify argentaffin
granules

identify
melanin

HOW IT WORKS?

AT A GLANCE

Silver Reduction Stain

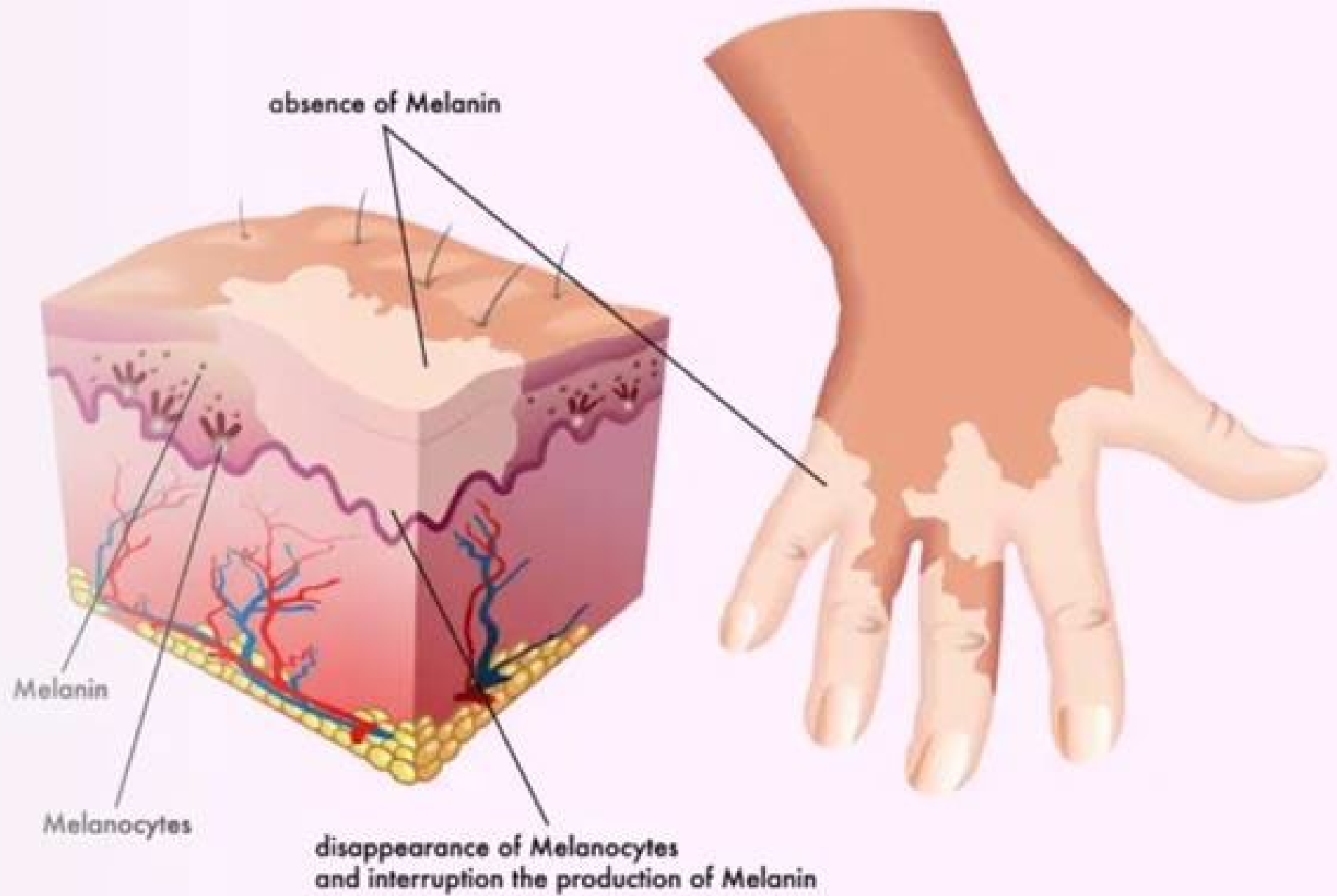
ammoniacal
silver nitrate



visible
black/brown
metallic silver



Vitiligo

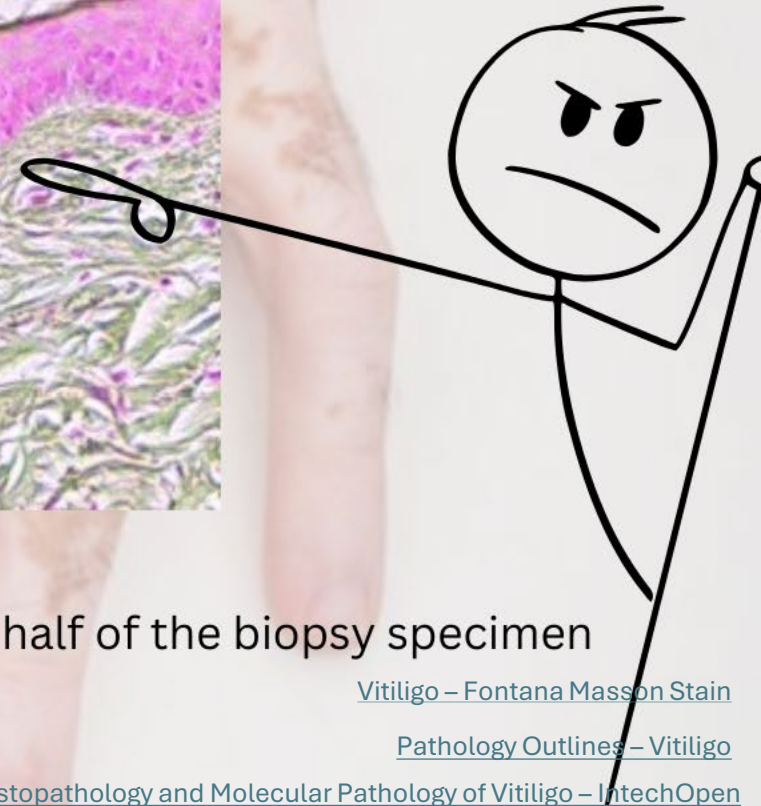
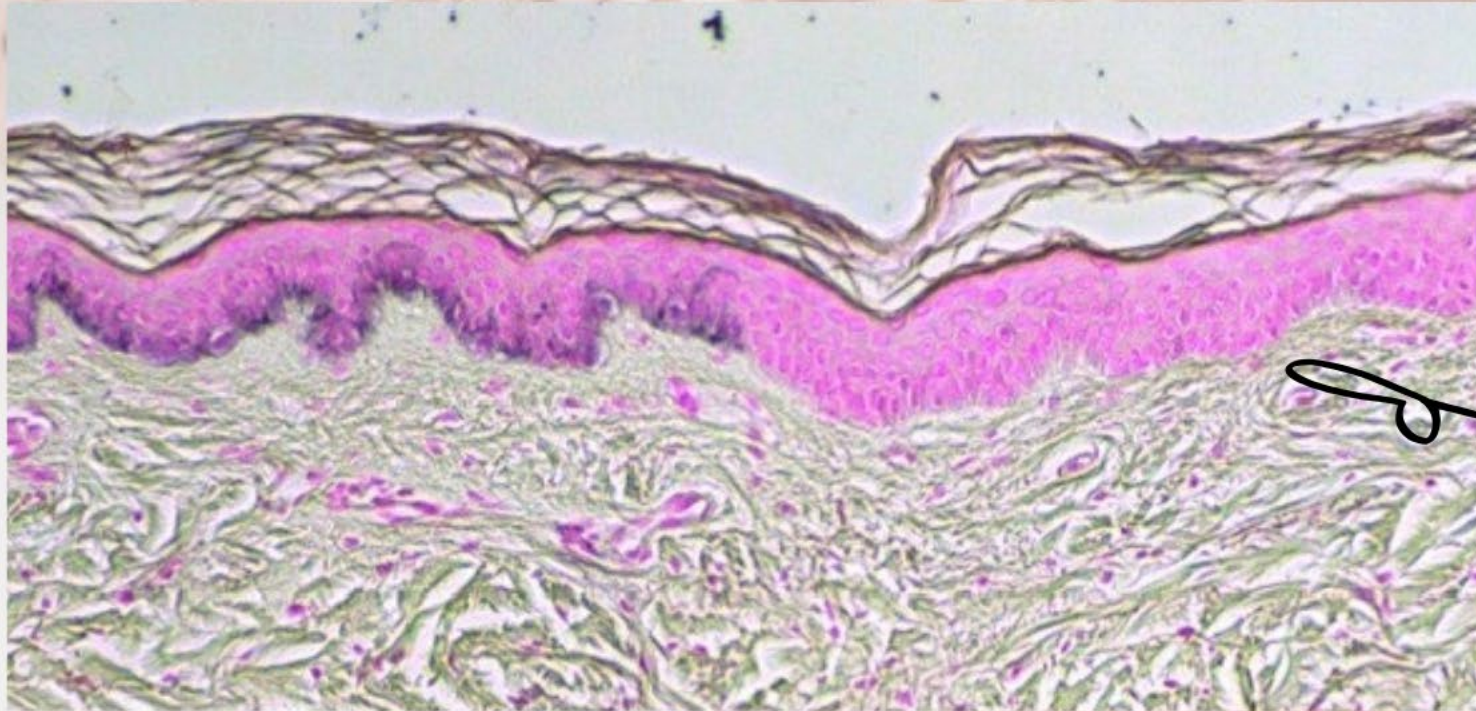


Vitiligo Symptoms and Stress Control

[Pathology Outlines – Vitiligo](#)

[Histopathology and Molecular Pathology of Vitiligo – IntechOpen](#)

Vitiligo



Fontana-Masson stain highlights the intraepidermal melanin loss in the right half of the biopsy specimen

[Vitiligo – Fontana Masson Stain](#)

[Pathology Outlines – Vitiligo](#)

[Histopathology and Molecular Pathology of Vitiligo – IntechOpen](#)

STAINING PROCEDURE

1. Deparaffinise

Dewax and hydrate to water



2. Silver Impregnation

- Pre-heated working silver Solution
- 20 minutes

3. Toning

- 0.2% Gold Chloride
- Flood and wash off

4. Clearing

- Sodium Thiosulphate
- 30 seconds

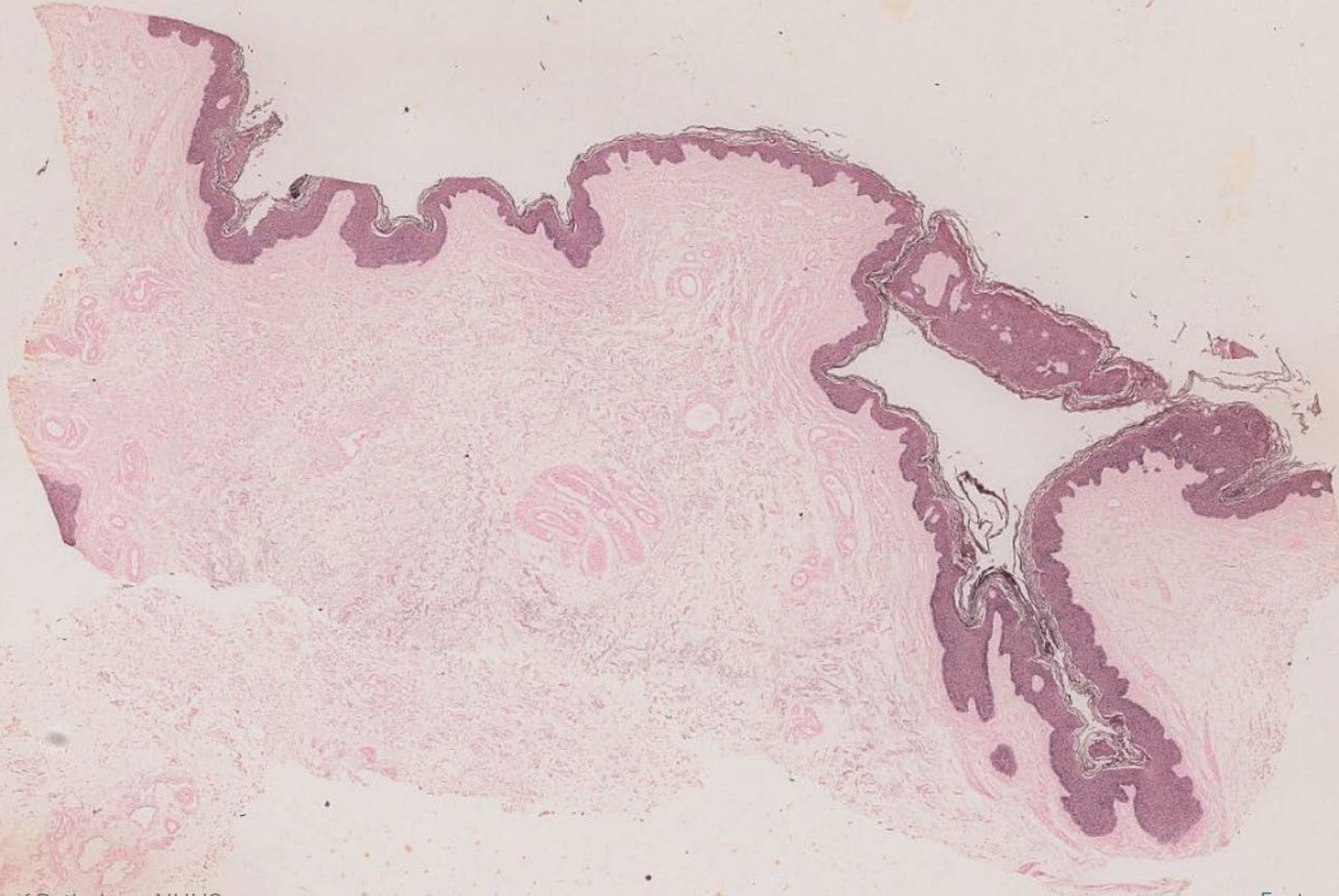
5. Counterstain

- Nuclear Fast Red
- 5 min

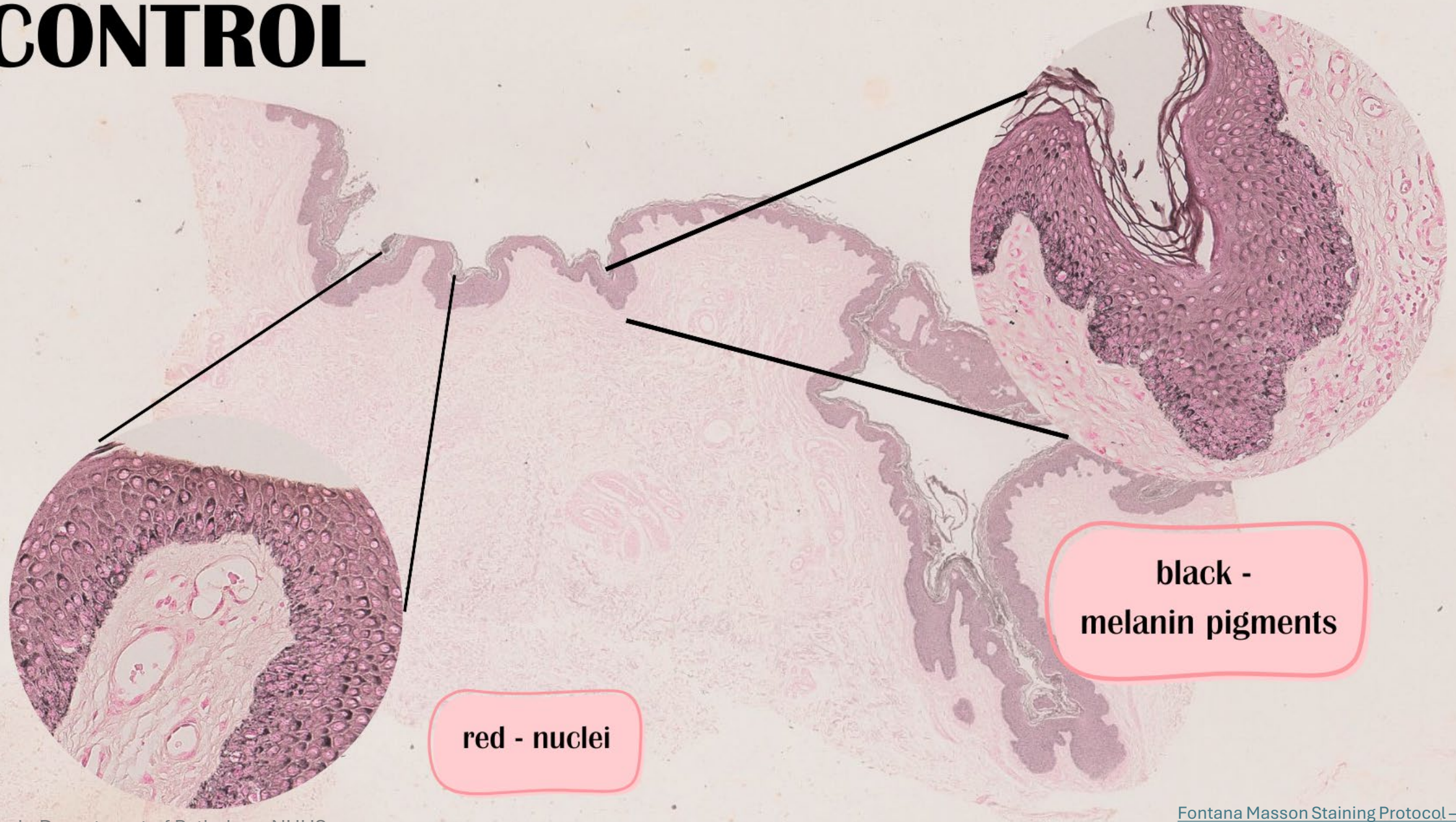


Add Solution B: Ammonium Hydroxide 28-30% drop by drop to the Silver Nitrate 10%.

CONTROL



CONTROL

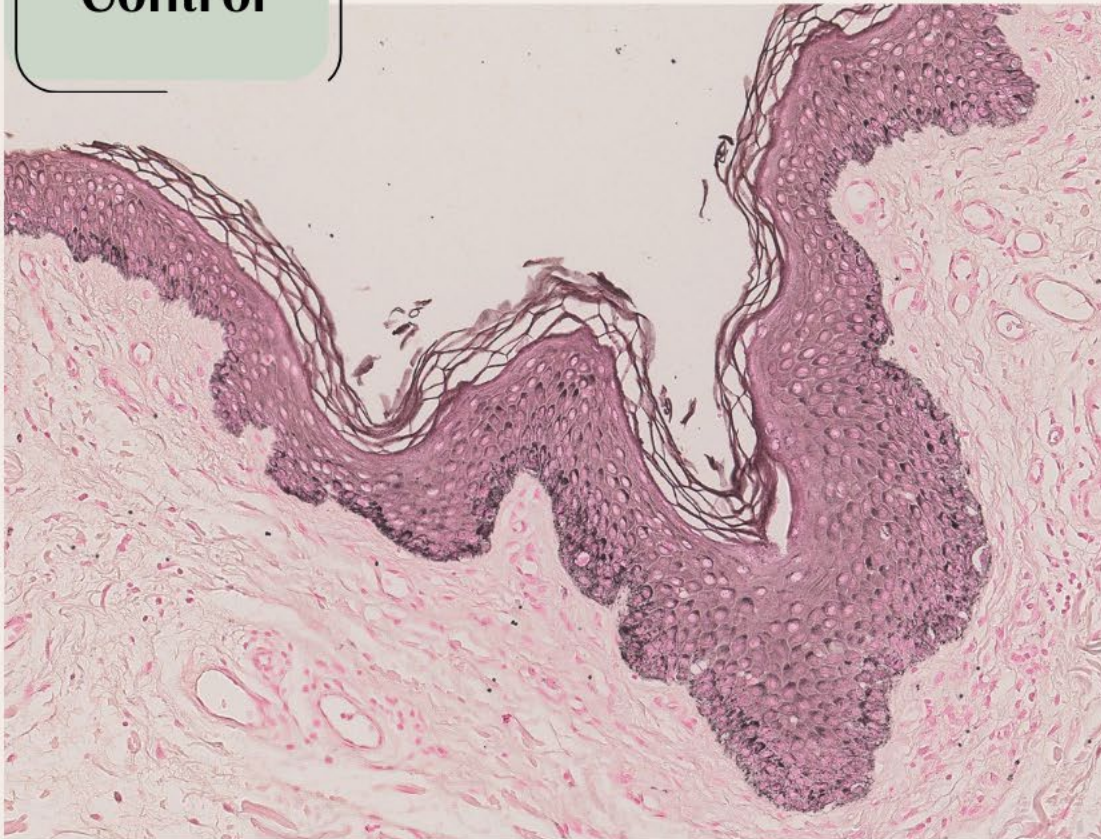


Troubleshooting

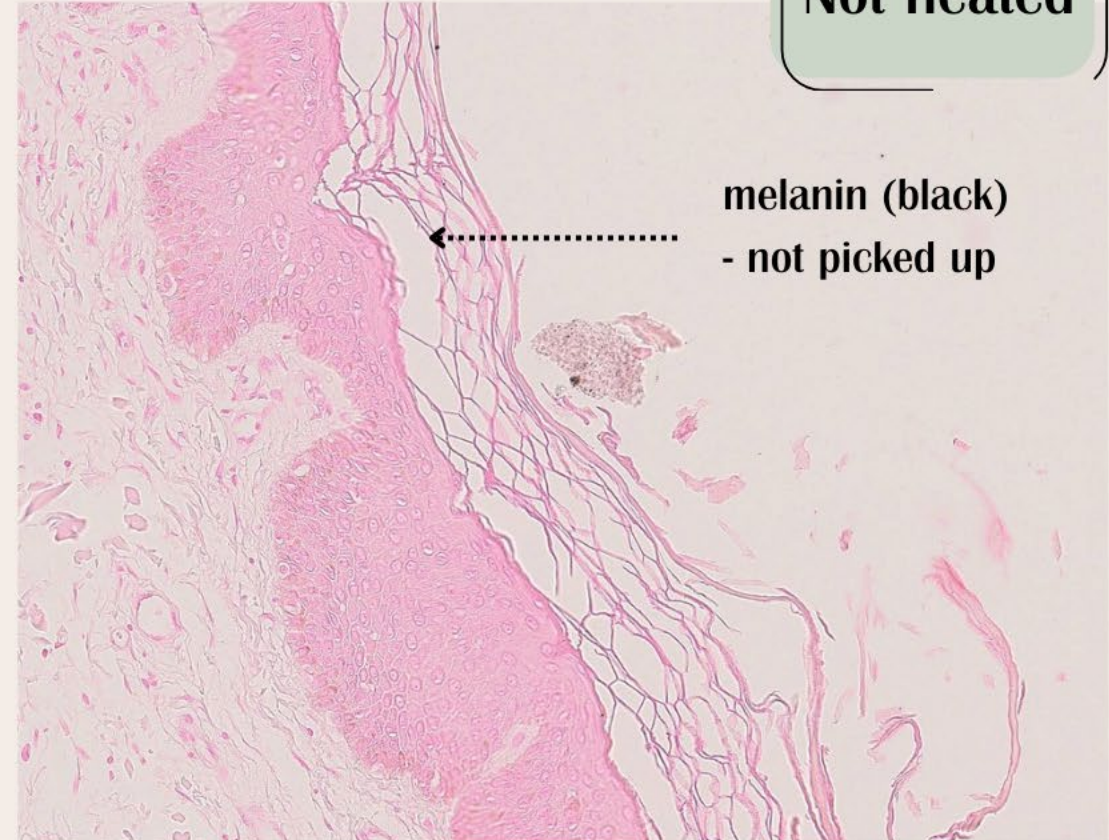


Heating - accelerates reaction, ensures complete and uniform staining

Control



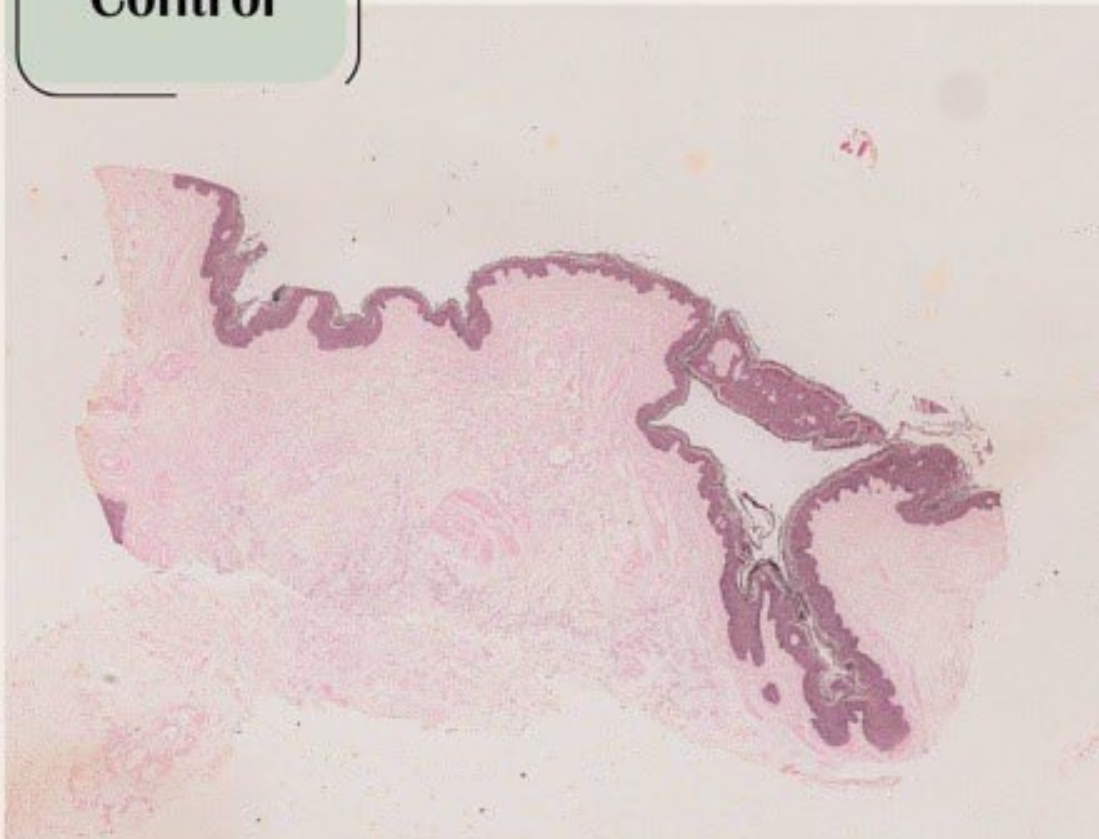
Not heated



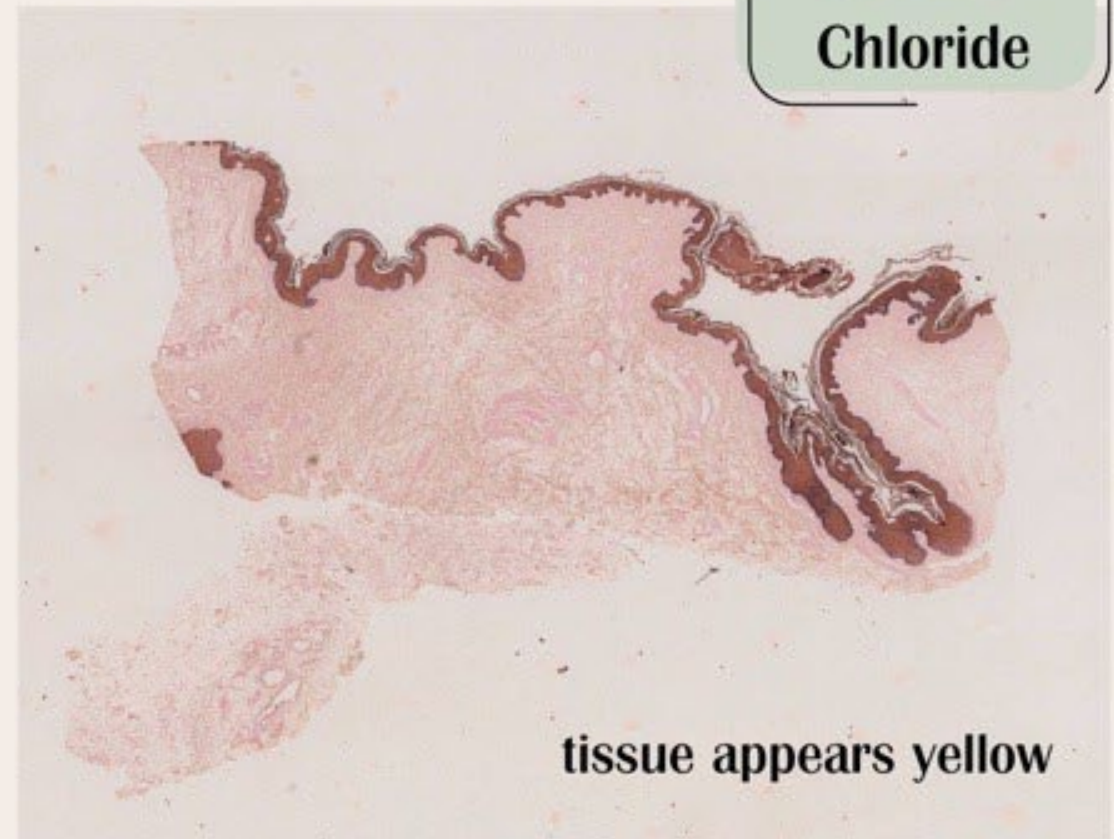
Troubleshooting

Gold Chloride - toner, improving contrast and visualization of melanin

Control



No Gold Chloride



Troubleshooting!

Gold Chloride - toner, improving contrast and visualization of melanin

Control

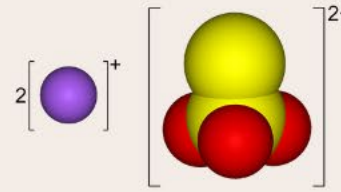


No Gold Chloride

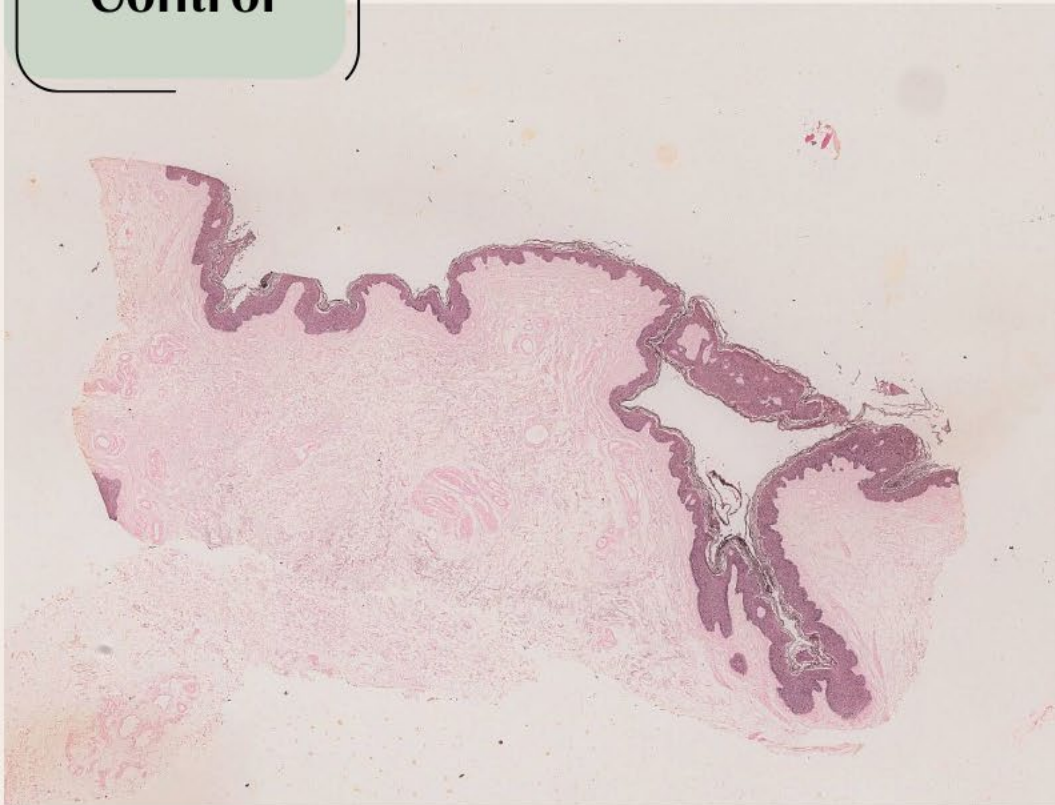


Troubleshooting

Sodium Thiosulphate - remove excess silver



Control

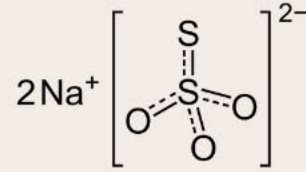


No $\text{Na}_2\text{S}_2\text{O}_3$



Troubleshooting

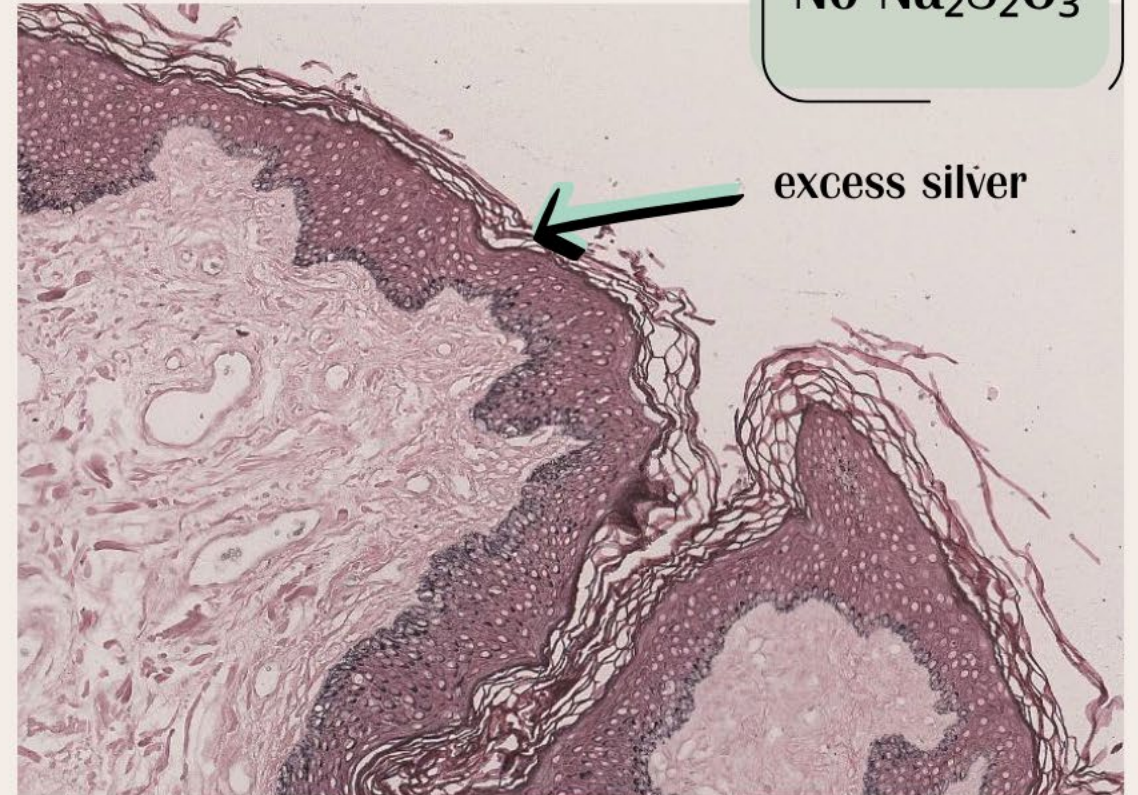
Sodium Thiosulphate - remove excess silver



Control



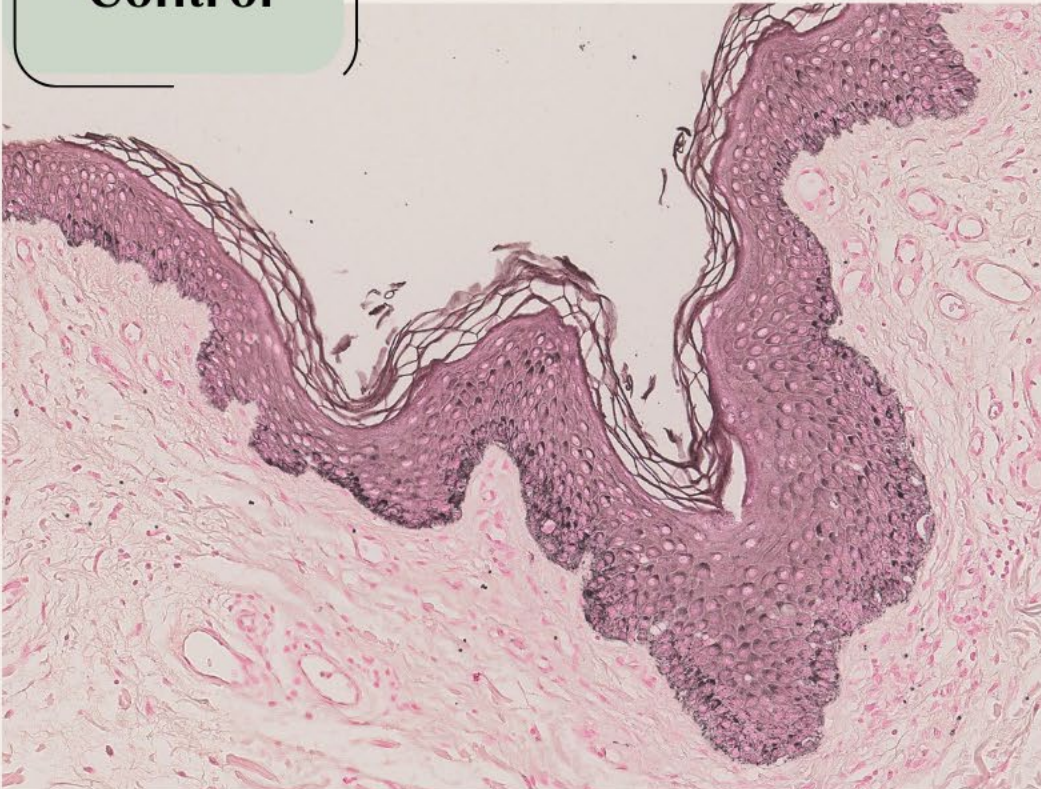
No $\text{Na}_2\text{S}_2\text{O}_3$



Troubleshooting

Working solution left overnight - loses reactive silver ions, becomes less effective

Control



left
overnight



minimal melanin pigments picked up

TAKE HOME POINTS

- Fontana–Masson highlights melanin and argentaffin substances
- Pigments appear black due to auto-reduction of silver
- Melanin bleach helps confirm true melanin
- Always interpret staining in correlation with morphology and controls

