



# Malignant Skin Growths with Dermoscopy Intro Part II

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- I have no disclosures.



# Learning Objectives

1

Apply a simplified  
dermoscopy  
algorithm (TADA)  
aimed at  
differentiating  
benign skin growths  
from skin cancer.

2

Increase confidence  
in deciding if a skin  
growth is  
worrisome for skin  
cancer and needs to  
be biopsied.

3

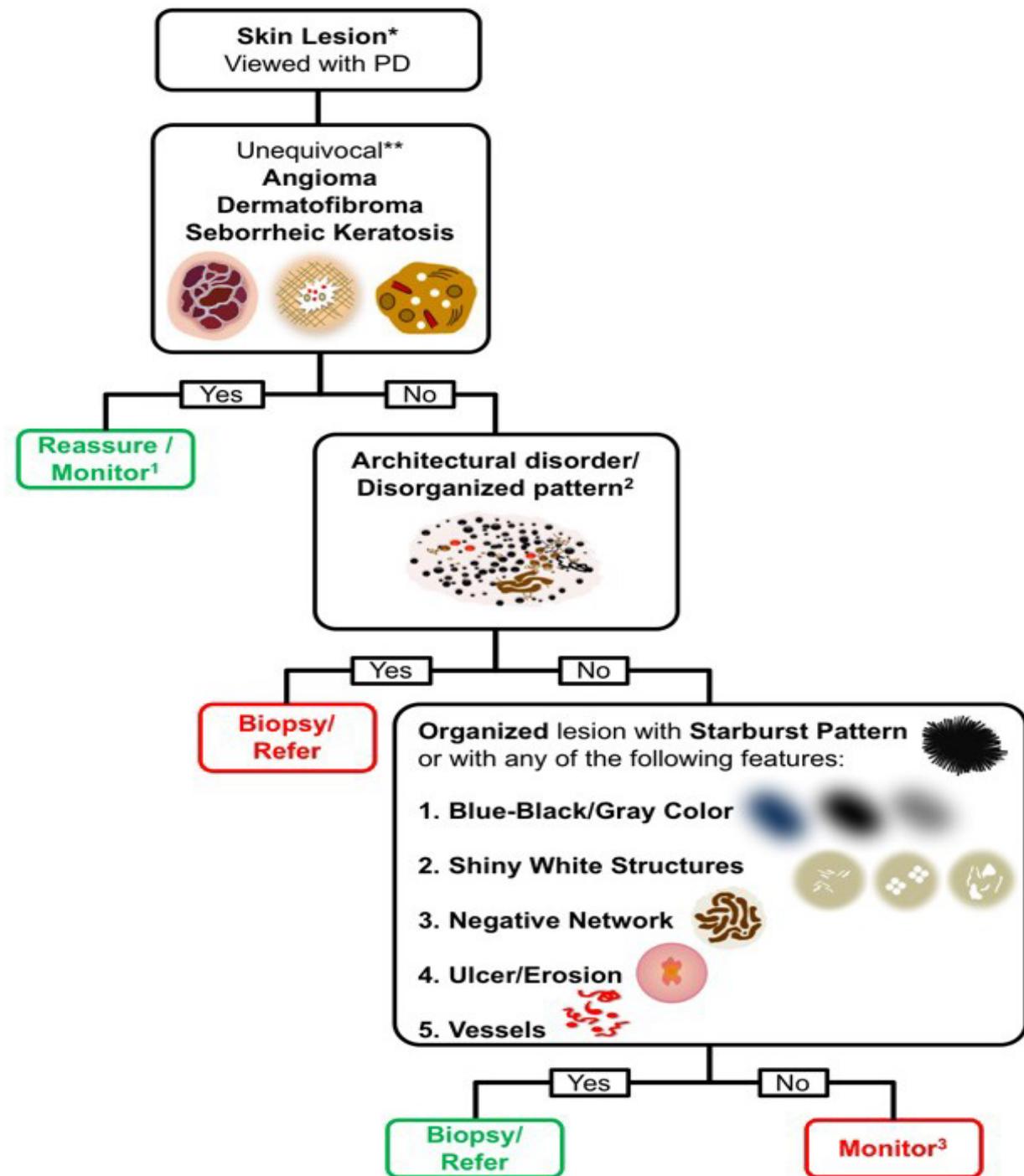
Become more  
comfortable  
operating a  
dermatoscope.



# Why Dermoscopy is Helpful

- Better visualization vs naked eye or plain magnification
- Helps determine if growth is vascular, keratinocytic, or melanocytic
- Differentiate nevus vs melanoma
- Reduces # of biopsies to detect melanoma
- Reduces biopsies of benign lesions





- \* Not for palms, soles, mucosal surfaces and nails.
- \*\* Best if able to use PD & NPD since SK and DF are easier to diagnose with NPD.
- <sup>1</sup> Patients should continue self-monitoring & changes in morphology or symptoms should raise concern.
- <sup>2</sup> Colors & structures distributed in an asymmetric/chaotic fashion.
- <sup>3</sup> Monitoring can include short-term monitoring, long-term monitoring or self-monitoring for change.

# Triage Amalgamated Dermoscopic Algorithm TADA

**Skin Lesion of Concern**



**Clinically**

**Red to Purple  
Dome-Shaped**



**Dermoscopically**

**Classic  
Angioma**



**Firm  
Dimpling**



**Classic  
Dermatofibroma**



**Keratotic  
Stuck-On**



**Classic  
Seborrheic Keratosis**



# Cherry Angiomas



Shutterstock

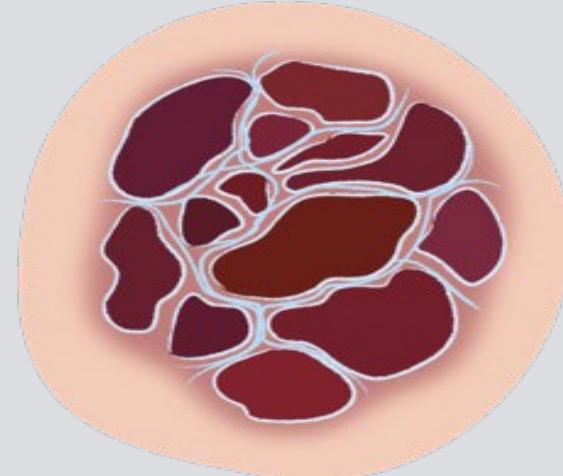


Shutterstock

# Angioma under Dermoscopy

- Lacunae sometimes separated by white septae

- Colors:
  - Red
  - Maroon
  - Blue
  - Black
  - Purple





<https://dermnetnz.org/imagedetail/6653-cherry-angioma-dermoscopy>



<https://dermnetnz.org/imagedetail/4959-cherry-angioma-dermoscopy>





<https://dermnetnz.org/imagedetail/5898-blue-cherry-angioma-dermoscopy>

# Dermatofibroma

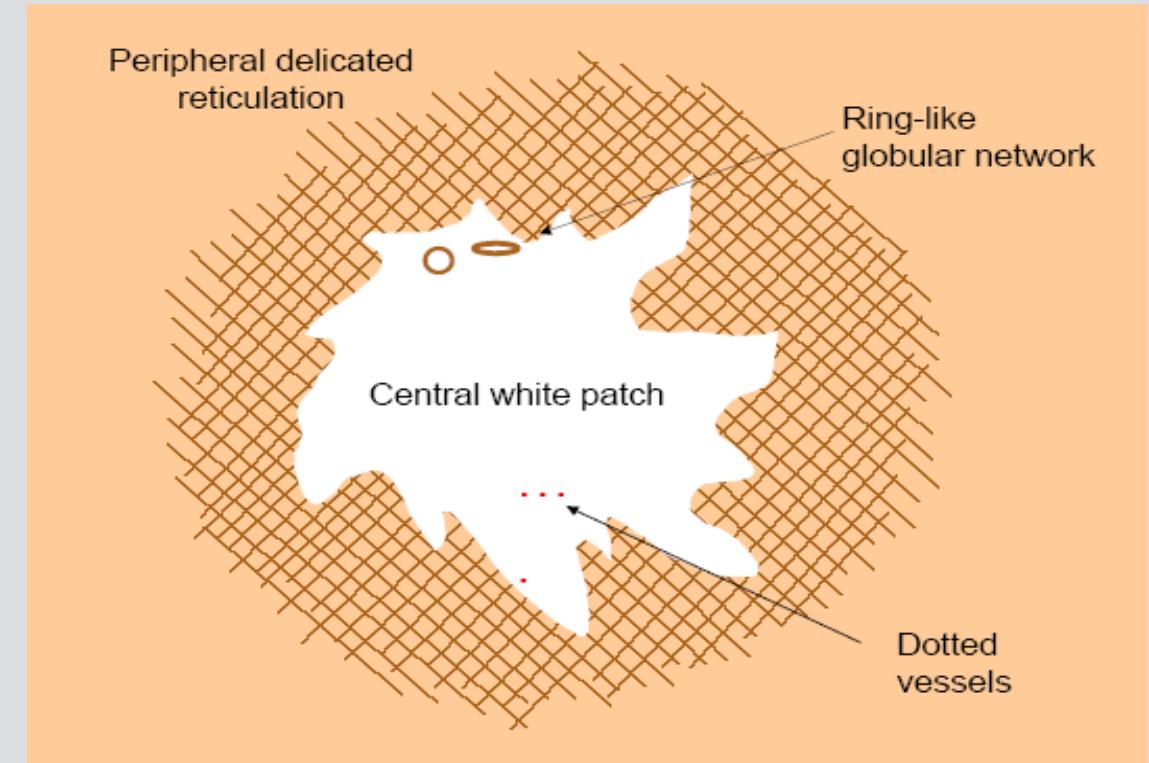


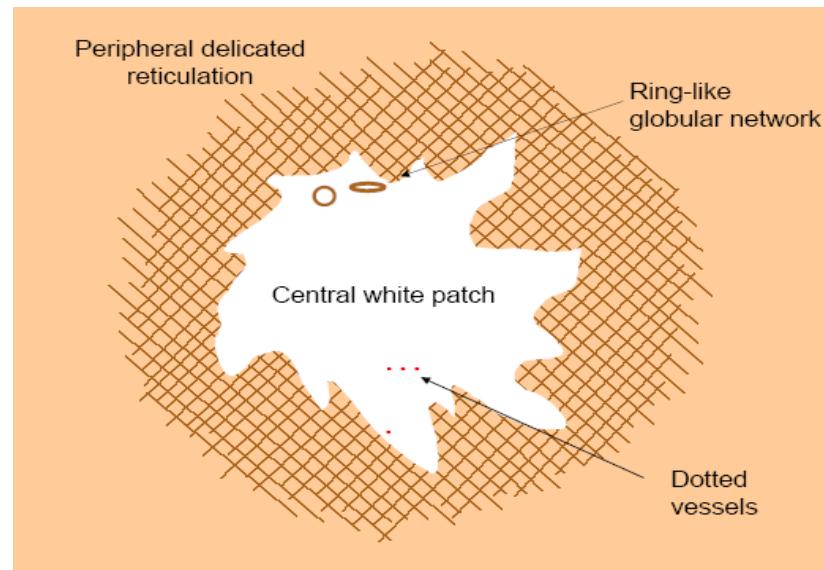
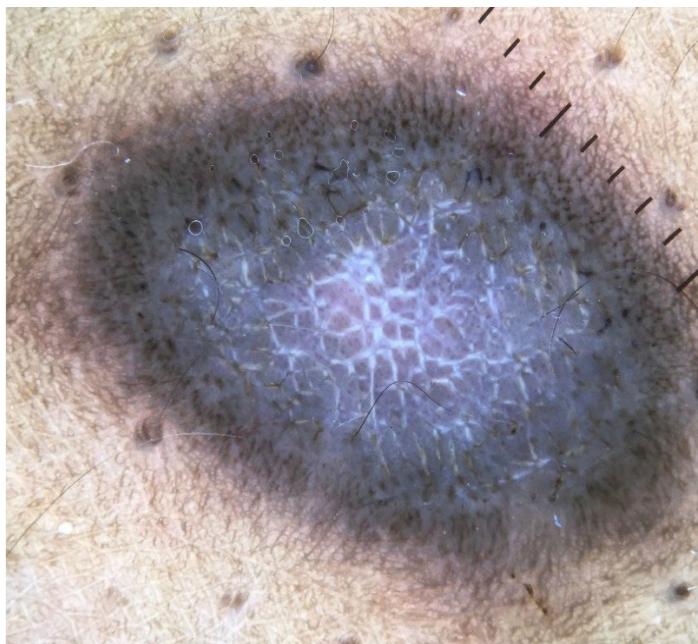
<https://dermnetnz.org/topics/dermatofibroma>

# Dermatofibroma under dermoscopy

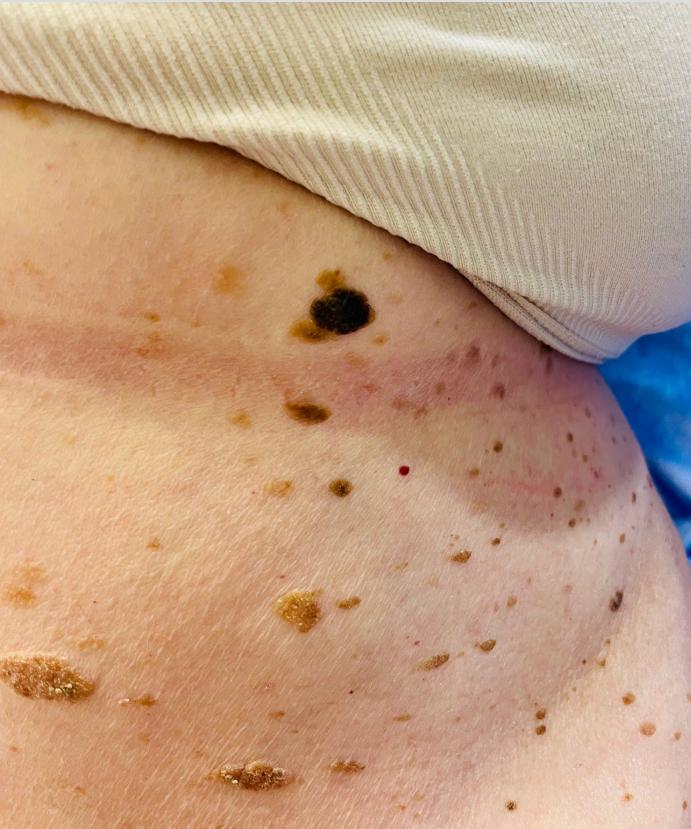
## Structures:

- Peripheral fine network
- Central white or pink scar-like area
- Ring-like globules
- Dotted vessels (central or diffuse)



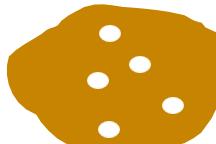


# Seborrheic Keratosis

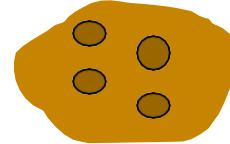


# Seborrheic Keratosis Under Dermoscopy

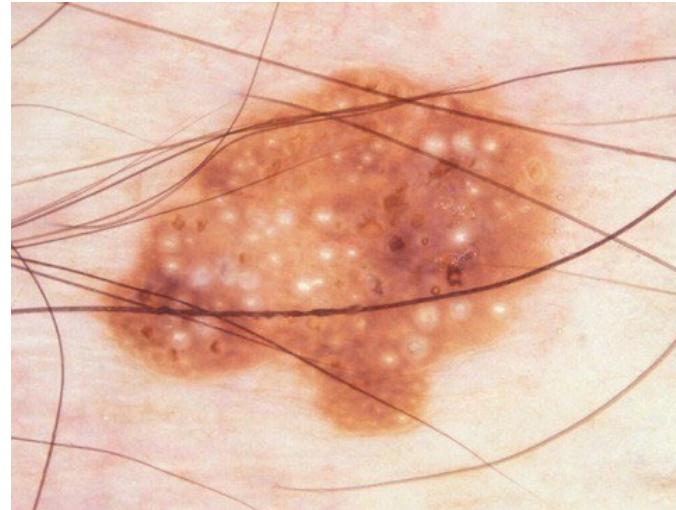
1. Sharply demarcated borders



2. Milia-like cyst



3. Comedo-like opening



4. Fissures & ridges (cerebriform)



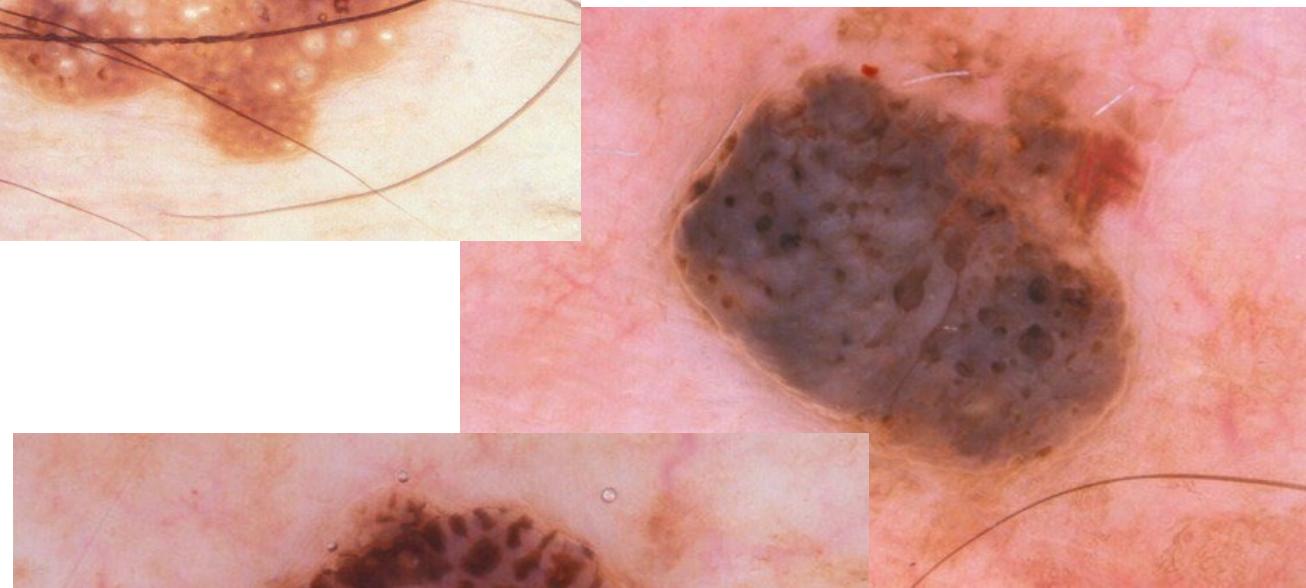
5. Fingerprint-like

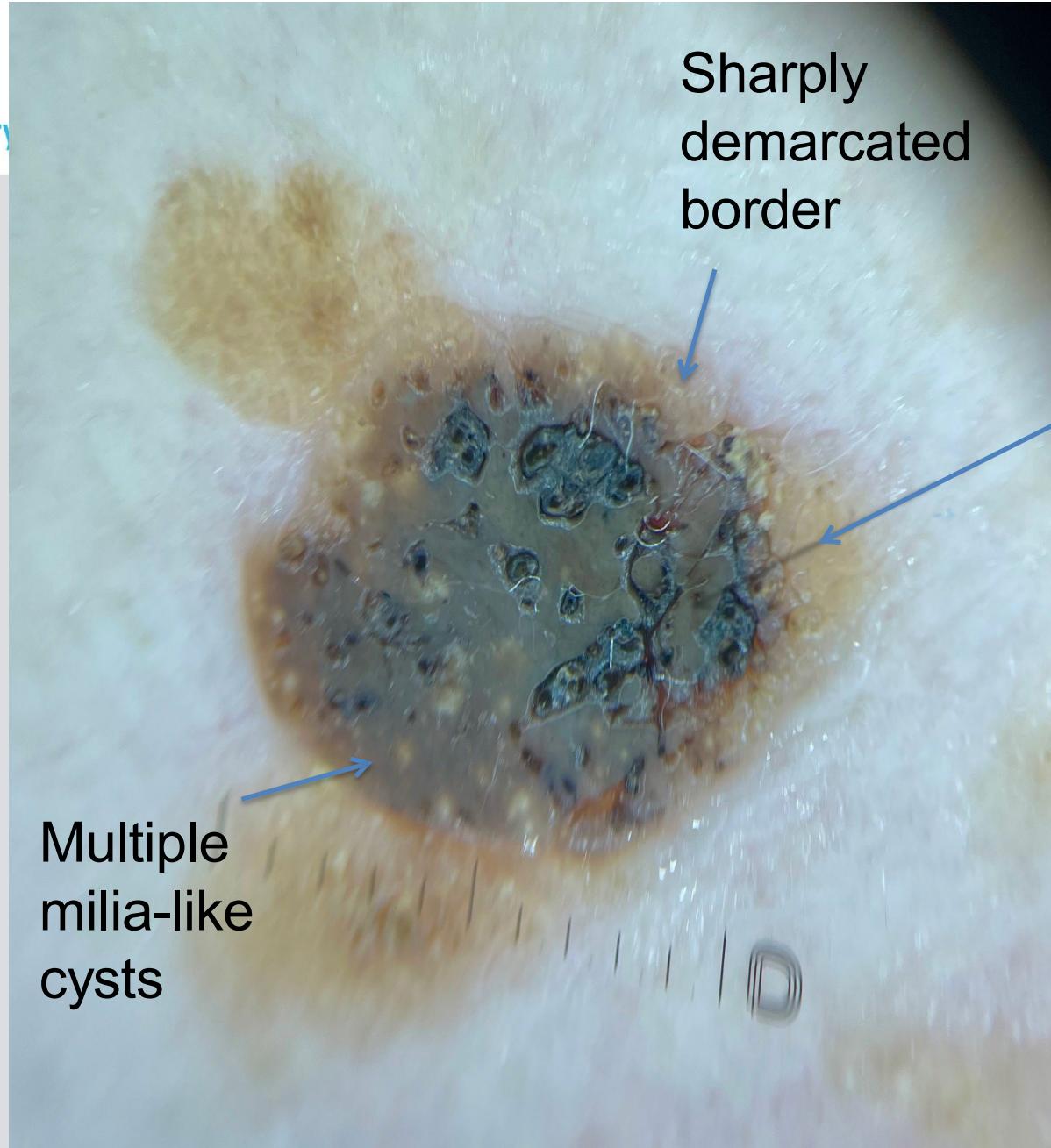


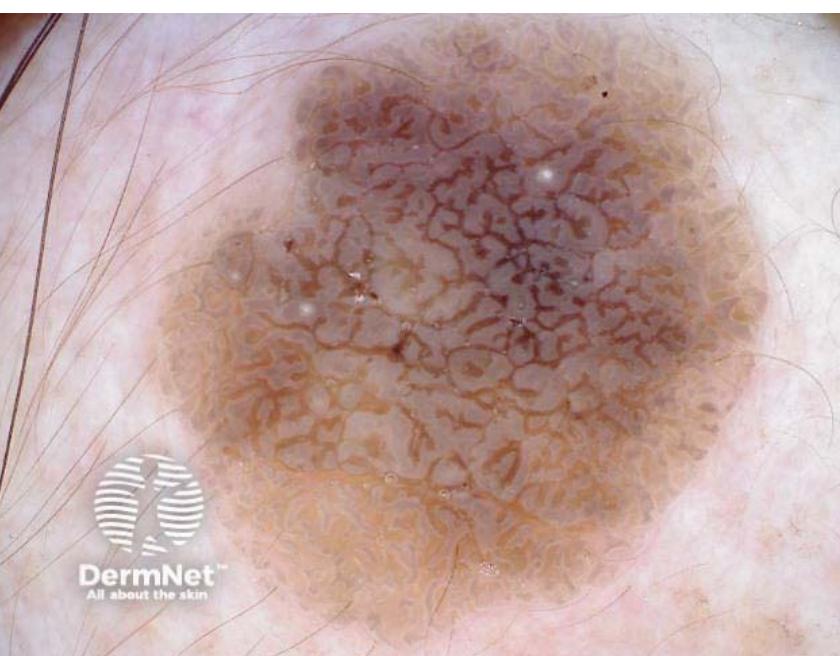
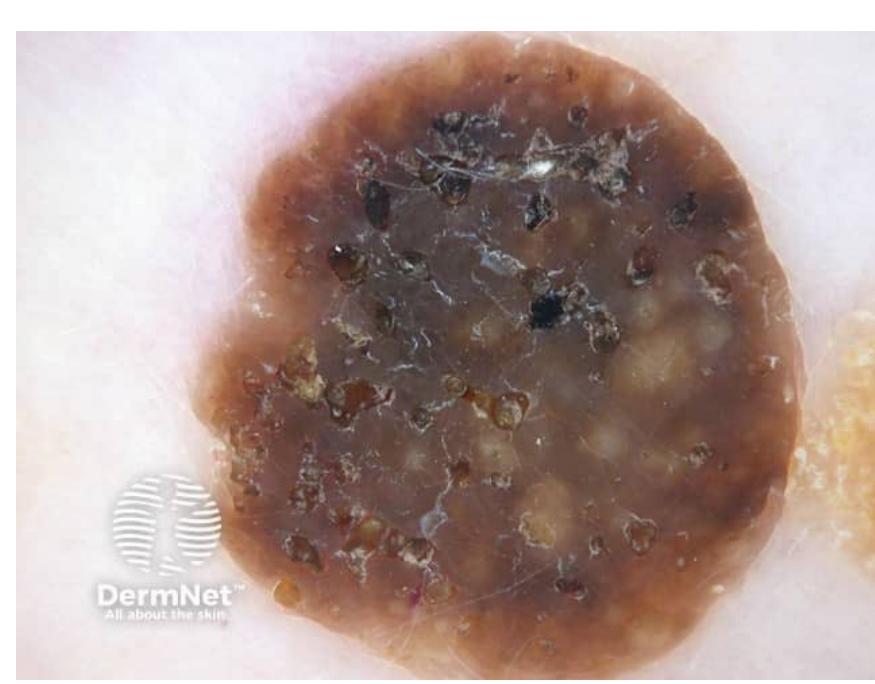
6. Hairpin vessels

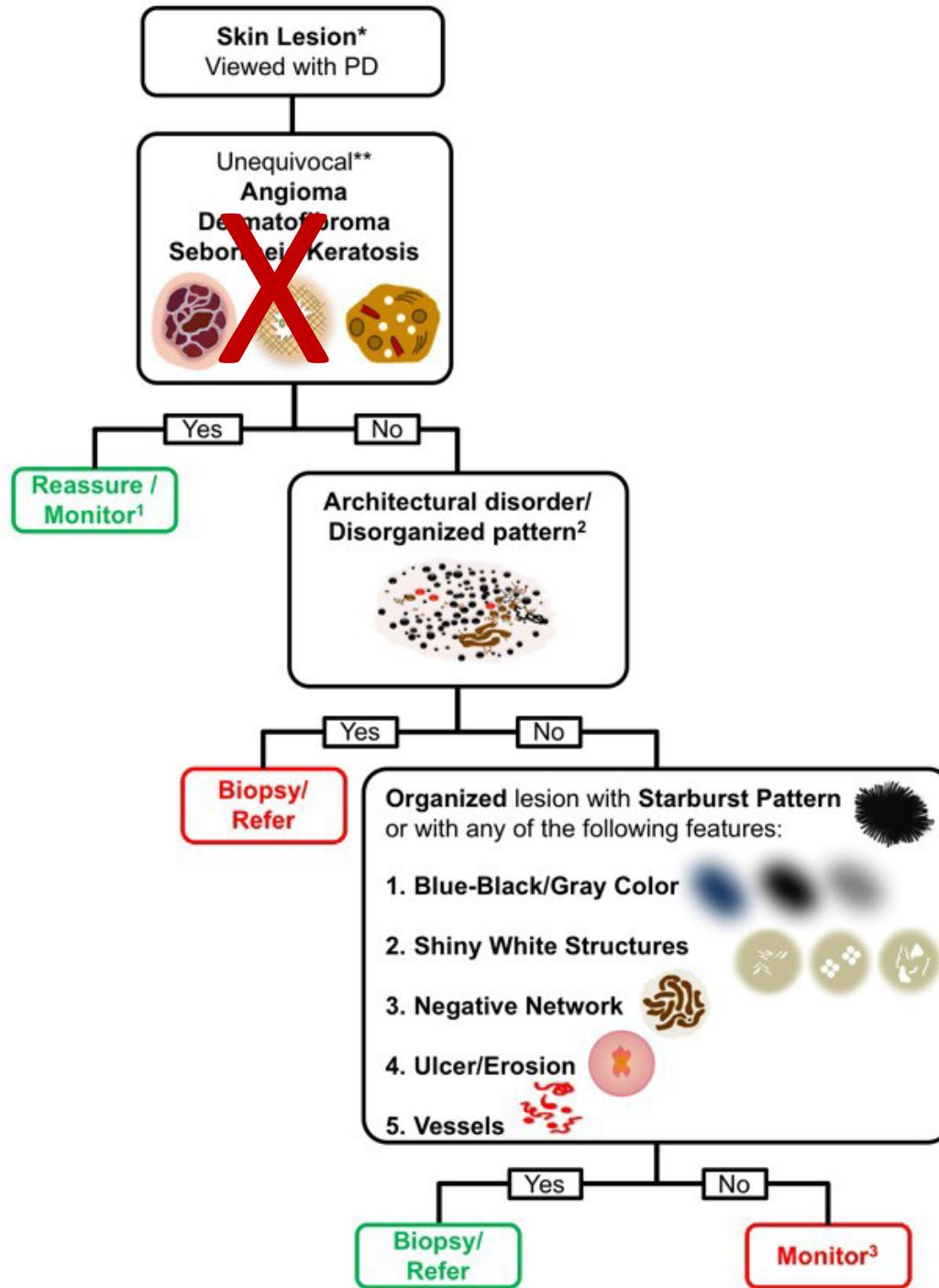


7. Moth-eaten borders

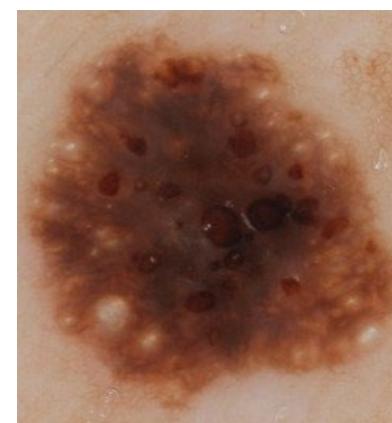
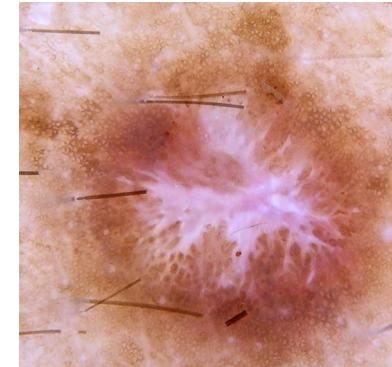








**First step:**  
“Slam dunk” benign lesions filtered out



# Keep this case in mind: Lower leg, lesion is growing

- Unequivocal angioma, SK, DF?

NO

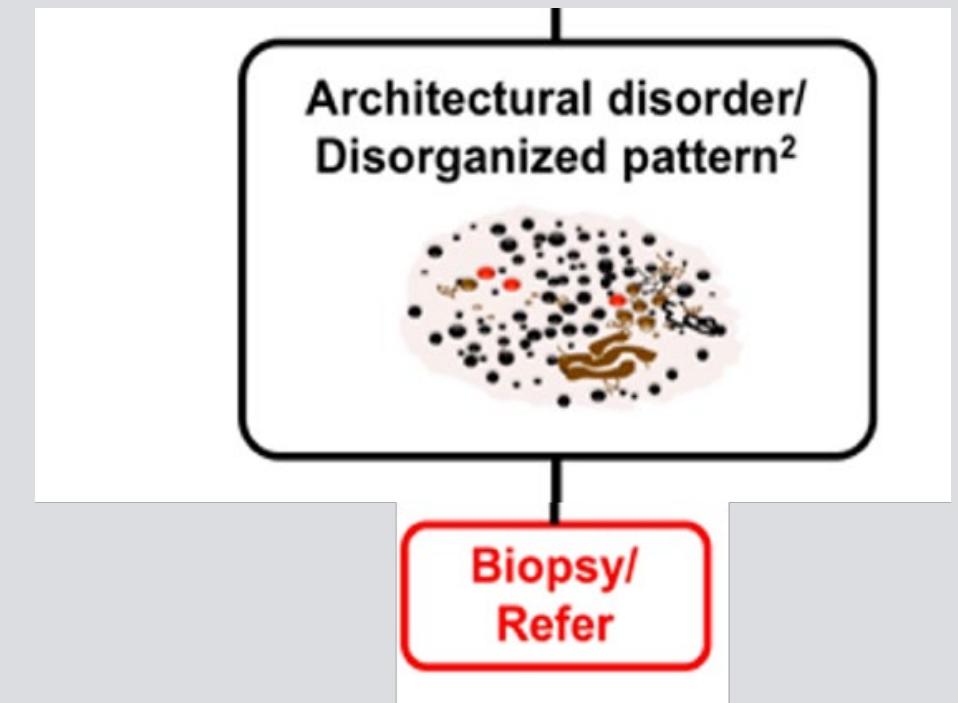
- Is this lesion organized or disorganized?

?



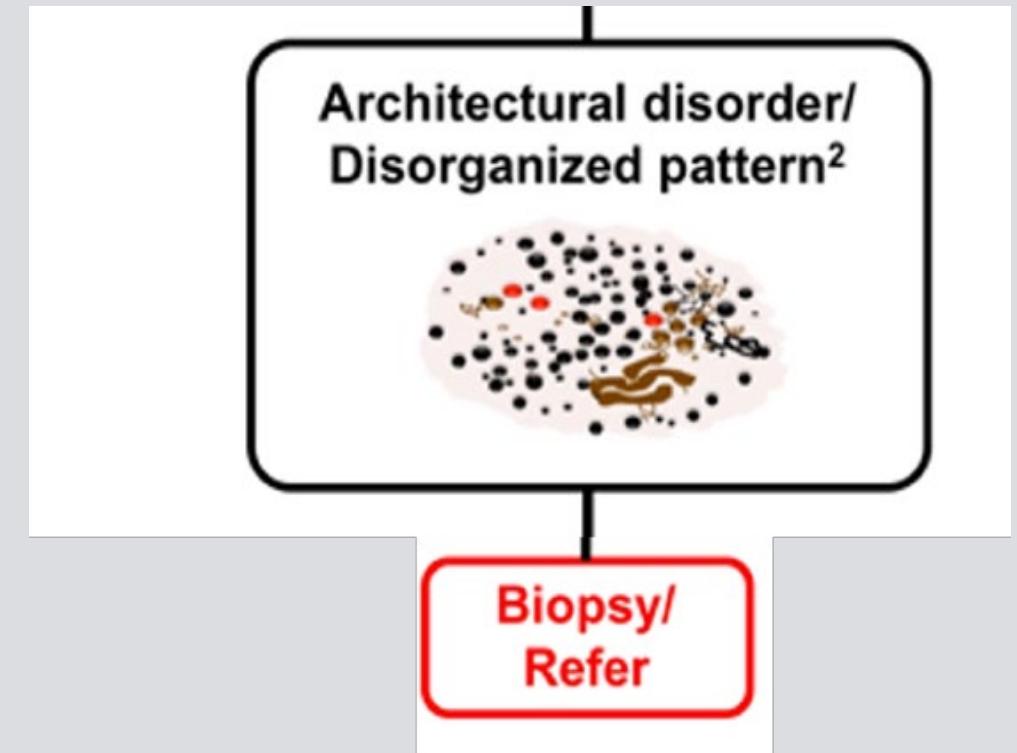
# What does disorganization or architectural disorder mean?

- Chaotic distribution of colors and structures within the lesion



# Most Skin Cancers are Disorganized

- Vast majority of skin cancers are detected at this level of the algorithm



# Disorganization Best Discriminates Nevus vs Melanoma

- Study of the dermoscopic criteria that most reliably discriminate nevi from melanoma
- Participants: Dermatologists, primary care physicians, dermatology residents, medical students
- Criteria related to overall organization had best discriminatory power and **interobserver agreement (Odds ratio 3.3-6.6)**

Carrera C et al. 2016. Validity and reliability of dermoscopic criteria used to differentiate nevi from melanoma: A web-based International Dermoscopy Society study. 152(7): 798-806.





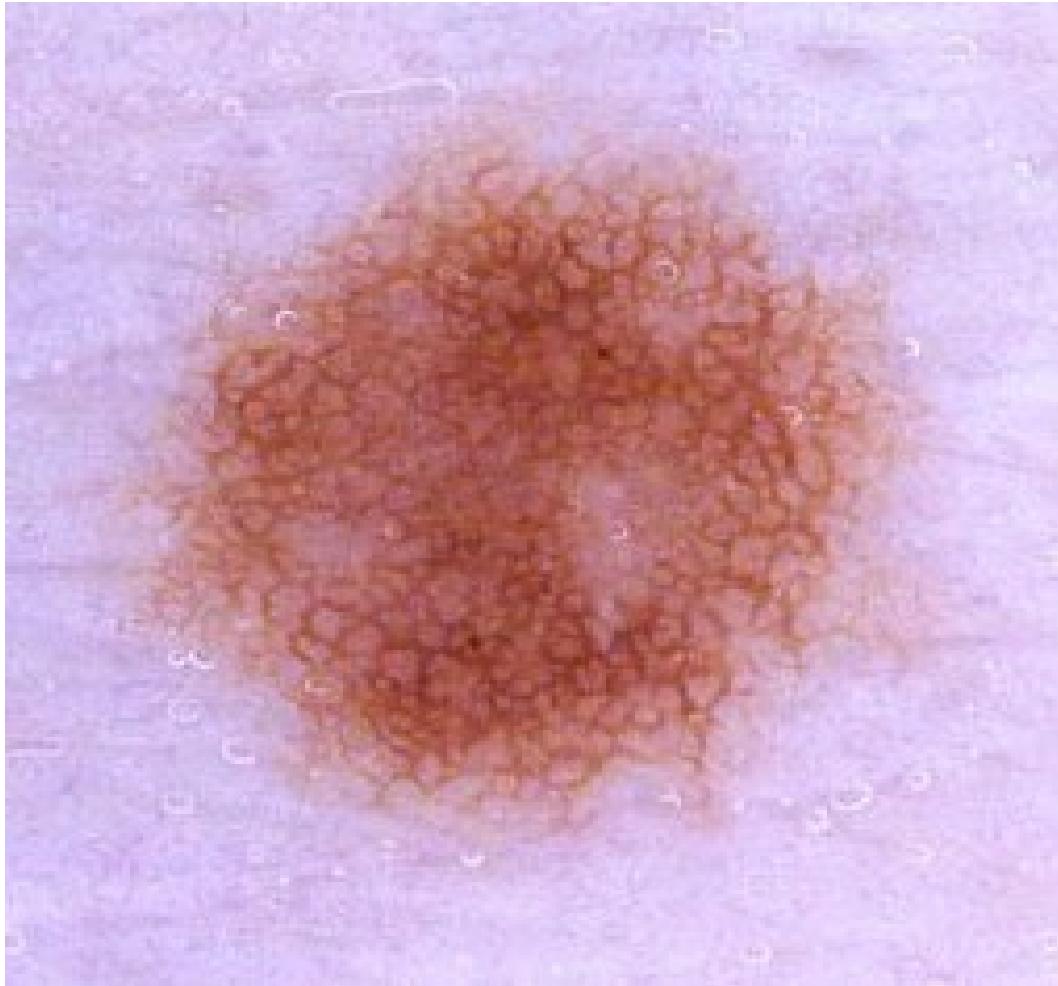
# Organized



# Disorganized

Without naming what's on each desk, we know intuitively which is which

Organized



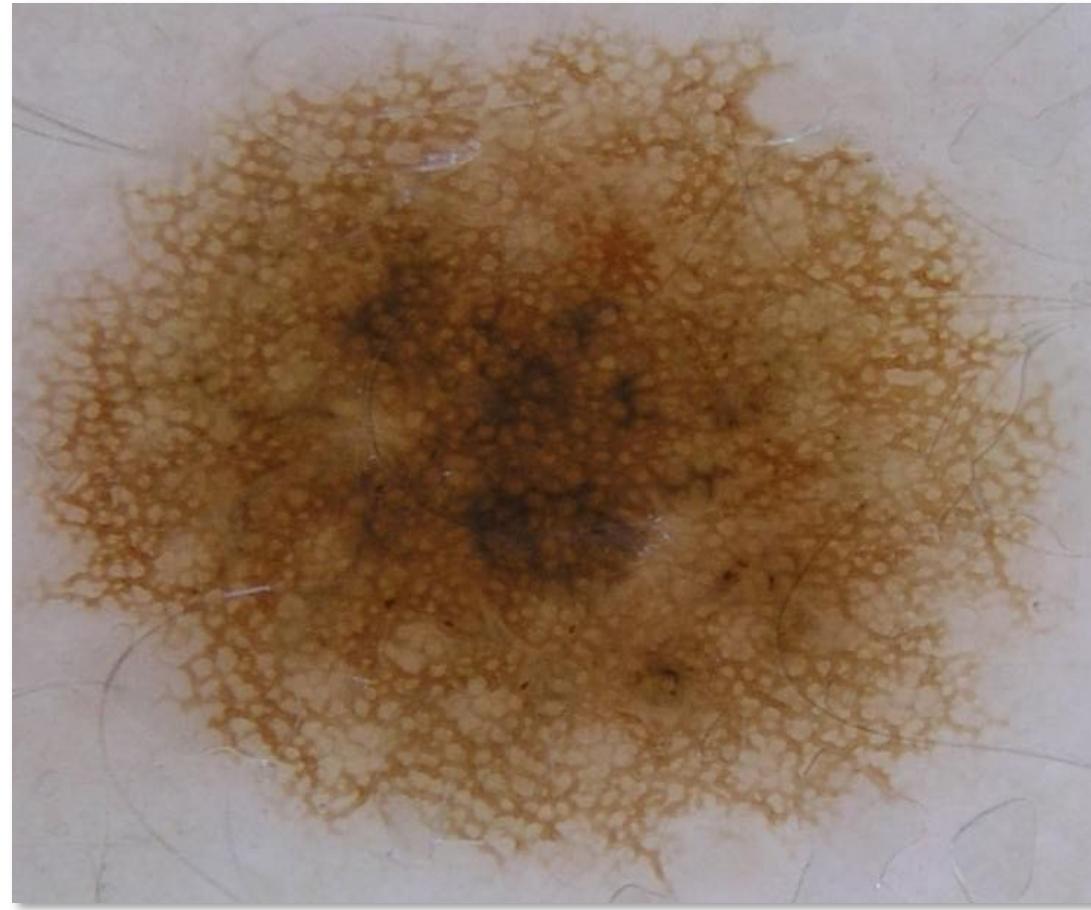
Melanocytic Nevus

Disorganized



Melanoma

Organized



Melanocytic Nevus

Disorganized



Melanoma

# Dermoscopy Focuses on Content (vs Shape)



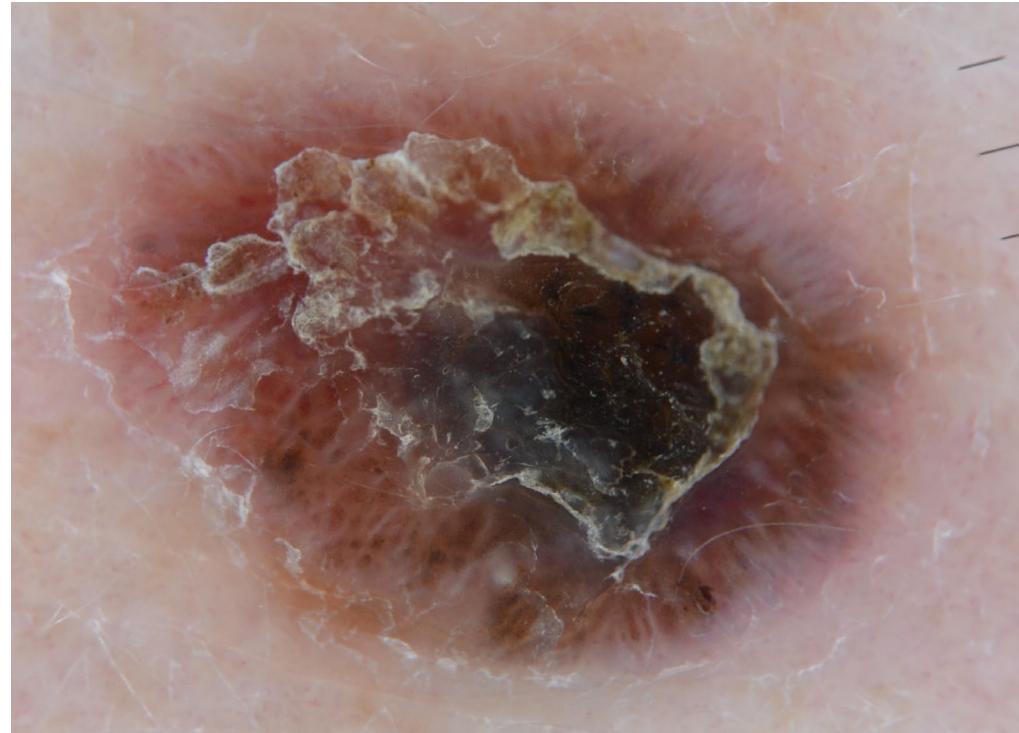
Organized



Disorganized

# Dermoscopy Focuses on Content not Shape

Disorganized pattern



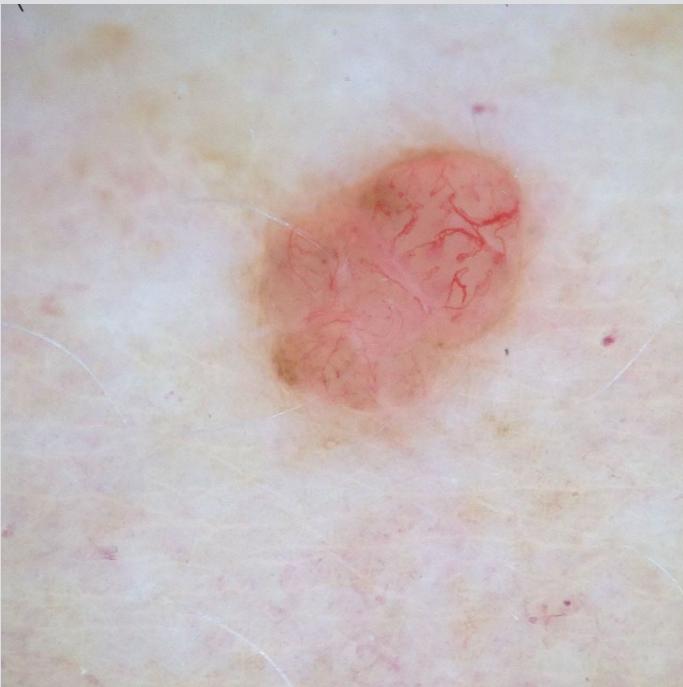
Symmetric shape

Organized pattern



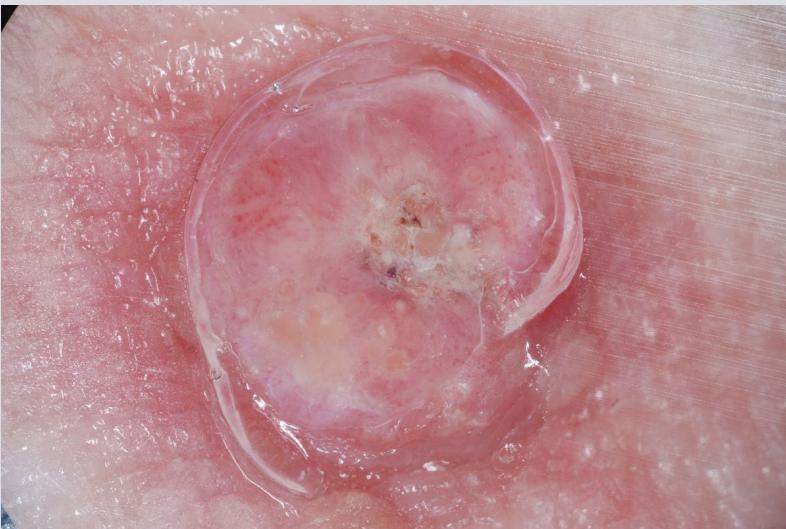
Asymmetric shape

# Disorganized: BCC



All images: [https://dermoscopedia.org/Glossary:Basal\\_cell\\_carcinoma#Related\\_files\\_.28images\\_.2F\\_graphics.29](https://dermoscopedia.org/Glossary:Basal_cell_carcinoma#Related_files_.28images_.2F_graphics.29)

# Disorganized: SCC



Keratoacanthoma. (2019, June 3). *dermoscopedia*. Retrieved 14:33, September 3, 2025  
from <https://dermoscopedia.org/w/index.php?title=Keratoacanthoma&oldid=16356>.



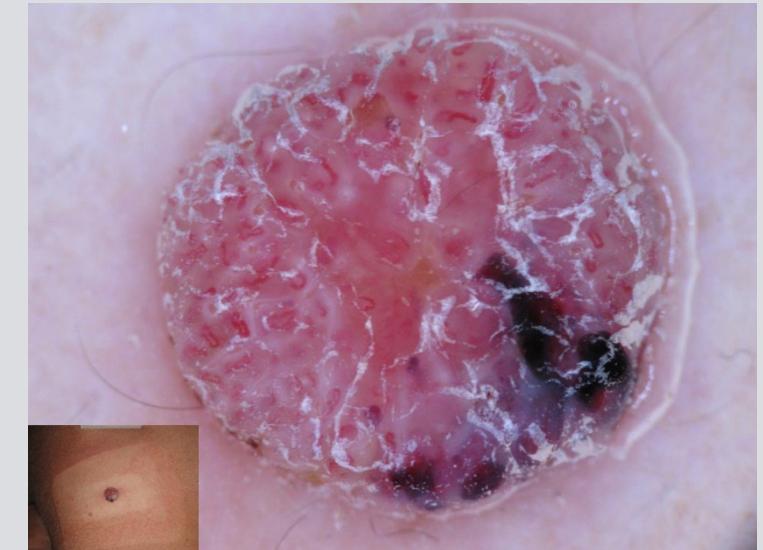
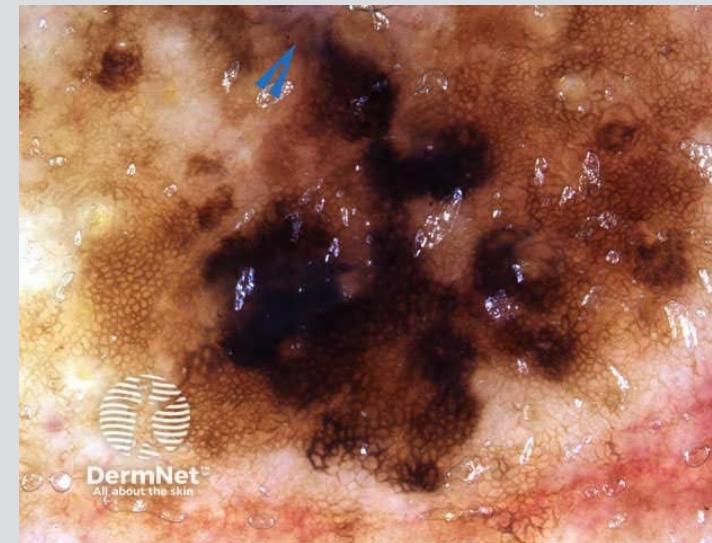
<https://dermnetnz.org/imagedetail/16237-white-structureless-areas-and-surface-keratin-in-squamous-cell-carcinoma-dermoscopy>



<https://dermnetnz.org/imagedetail/15550-poorly-differentiated-squamous-cell-carcinoma-dermoscopy>



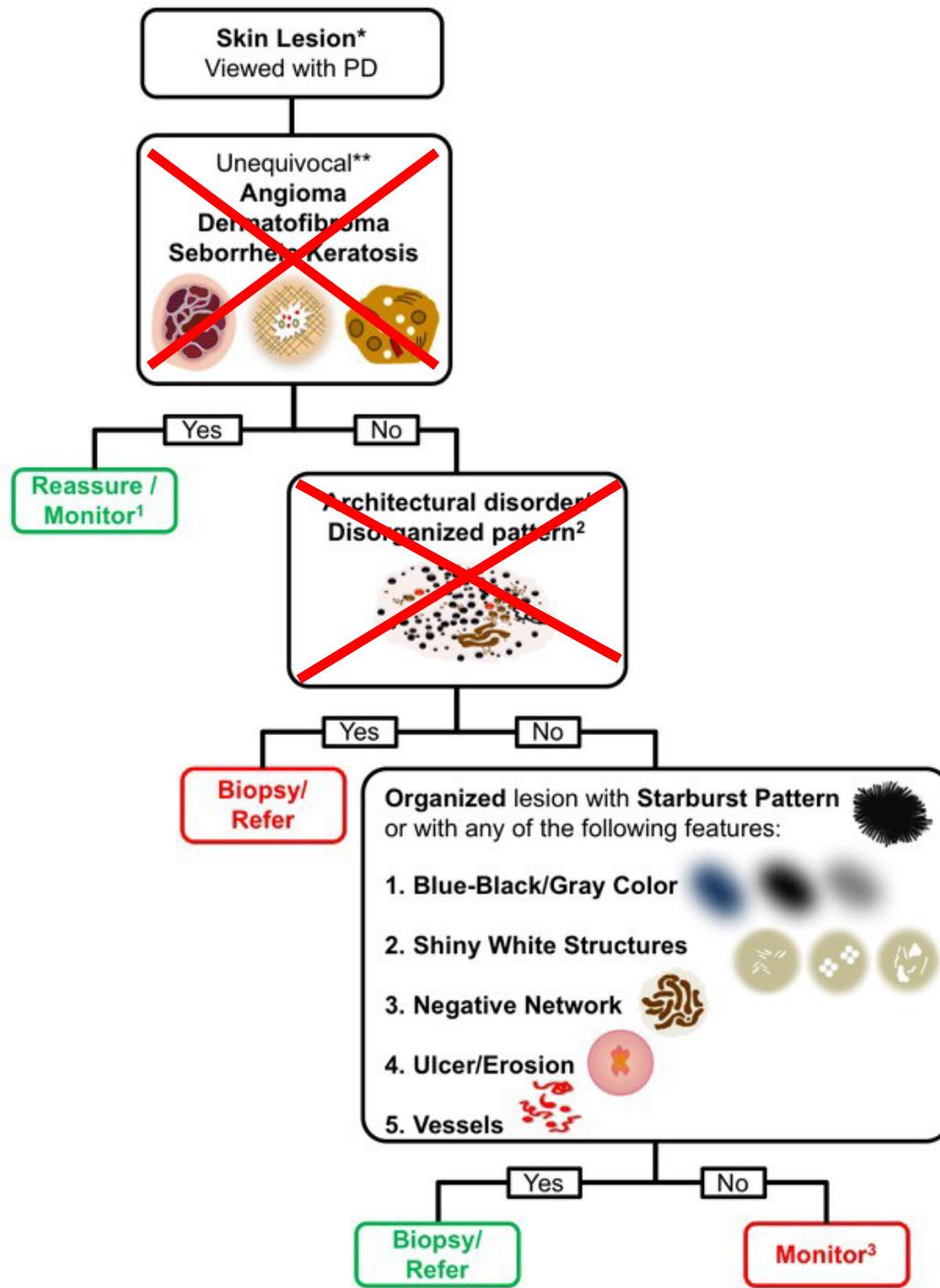
# Disorganized: Melanoma



<https://dermnetnz.org/imagedetail/20892-lentiginous-melanoma>

<https://dermnetnz.org/imagedetail/14159-melanoma>

[https://dermoscopedia.org/Amelanotic/\\_hypomelanotic\\_melanoma](https://dermoscopedia.org/Amelanotic/_hypomelanotic_melanoma)



If you thought this was disorganized: Bx/Refer

But what if you categorized this as organized?

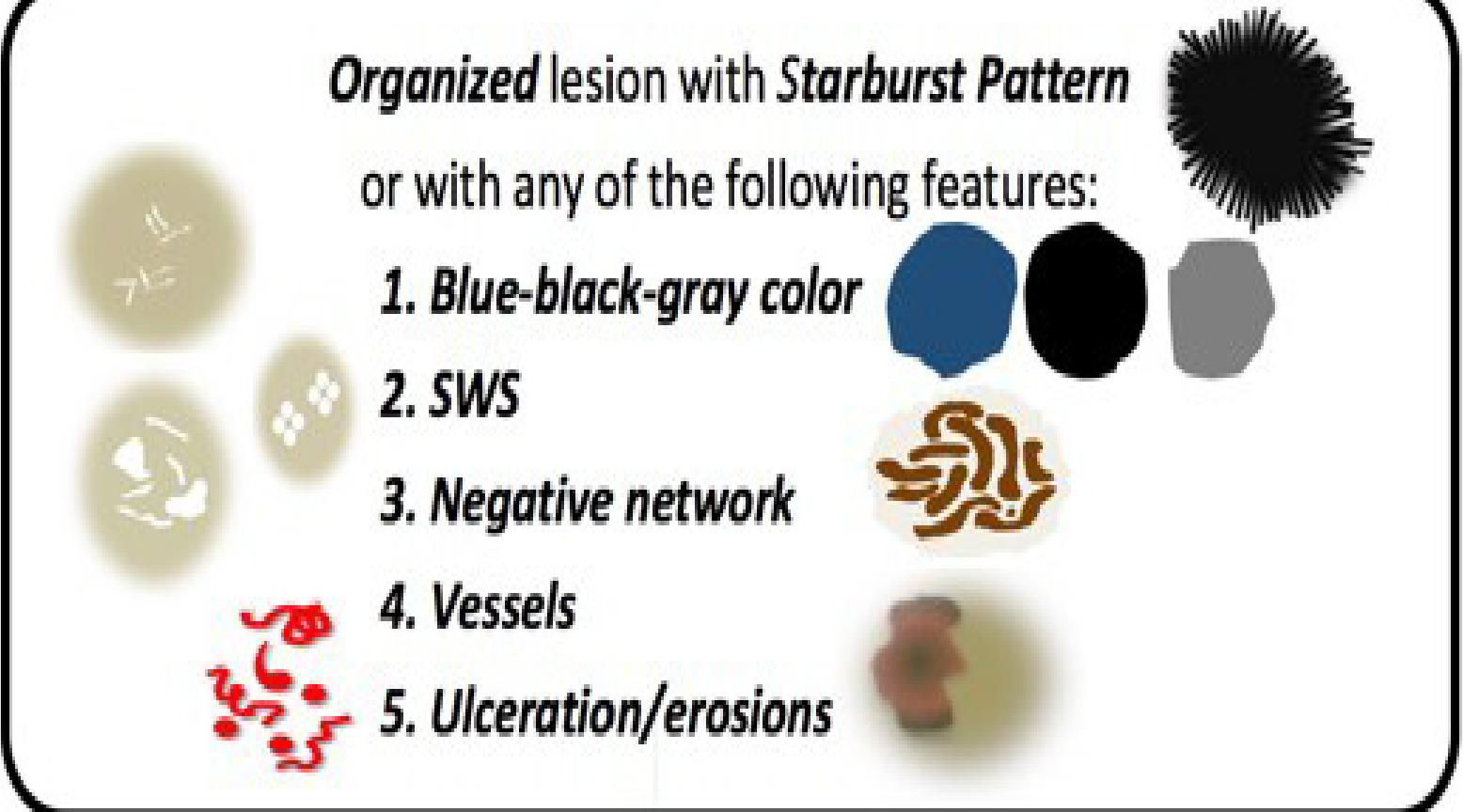


Some skin cancers will have more than one of these features

***Organized*** lesion with ***Starburst Pattern***

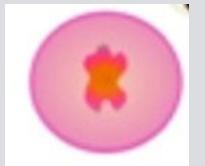
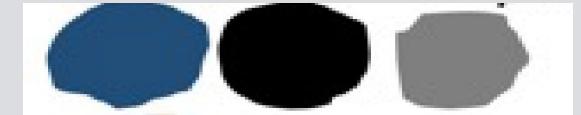
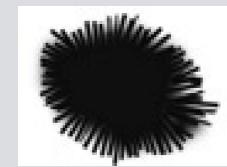
or with any of the following features:

1. ***Blue-black-gray color***
2. ***SWS***
3. ***Negative network***
4. ***Vessels***
5. ***Ulceration/erosions***



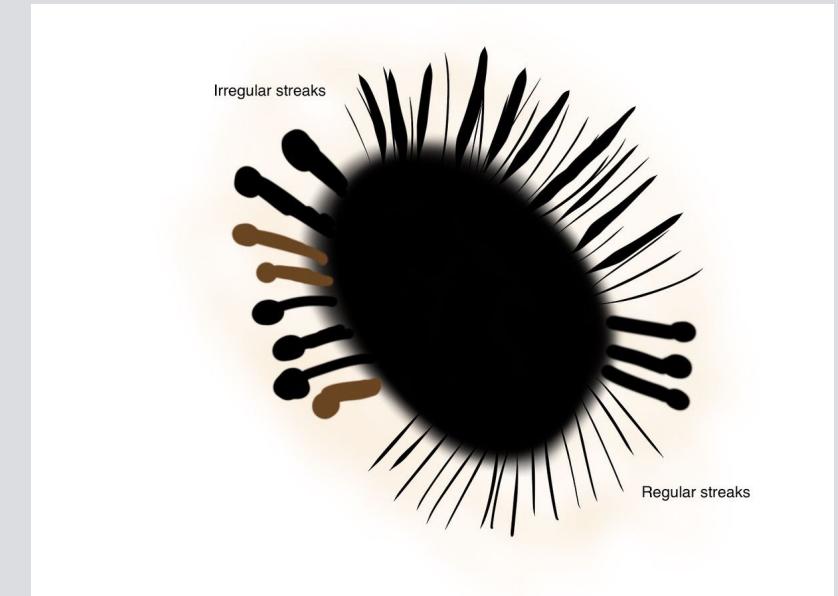
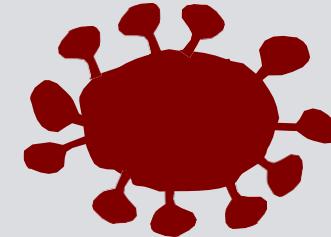
# Some Skin Cancers are Organized

- Melanoma
  - Spitzoid: starburst pattern or negative network
  - Nodular/Sun-damaged skin: blue/black/gray color
  - Amelanotic: Shiny white structures, vessels, ulceration
- Some BCC & SCC
  - Shiny white structures, vessels, ulceration



# Starburst Pattern

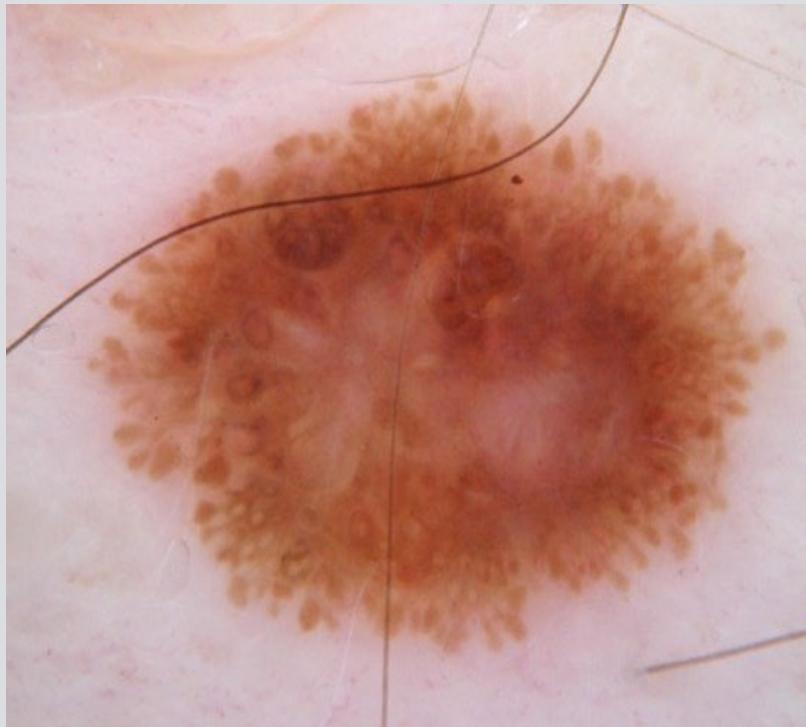
- Linear projections from periphery of lesion
- Whole or partial
- Only seen in melanocytic growths
- Indication of radial growth phase
- **Pseudopods** = bulbous (tennis rackets)
- **Radial streaming** = streaks without knobs on the end



Streaks. (2019, June 9). *dermoscopedia*. Retrieved 13:51, September 3, 2025 from <https://dermoscopedia.org/w/index.php?title=Streaks&oldid=16559>.



# Starburst Pattern



Images courtesy of Ashfaq Marghoob MD

# Starburst Pattern



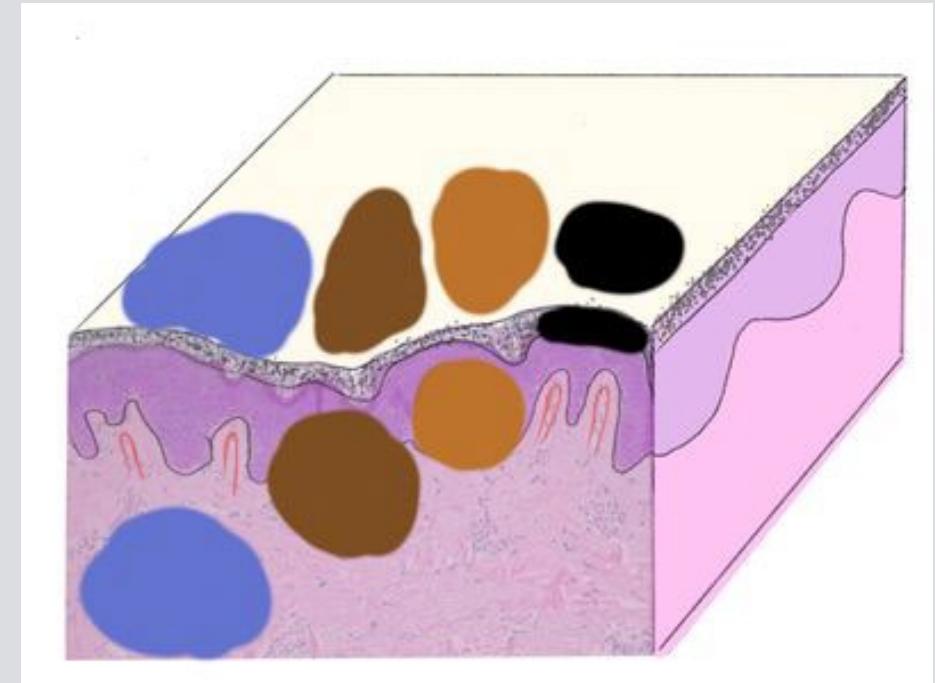
<https://dermnetnz.org/imagedetail/20790-starburst-pattern-dermoscopy>



<https://dermnetnz.org/imagedetail/19559-reed-naevus>

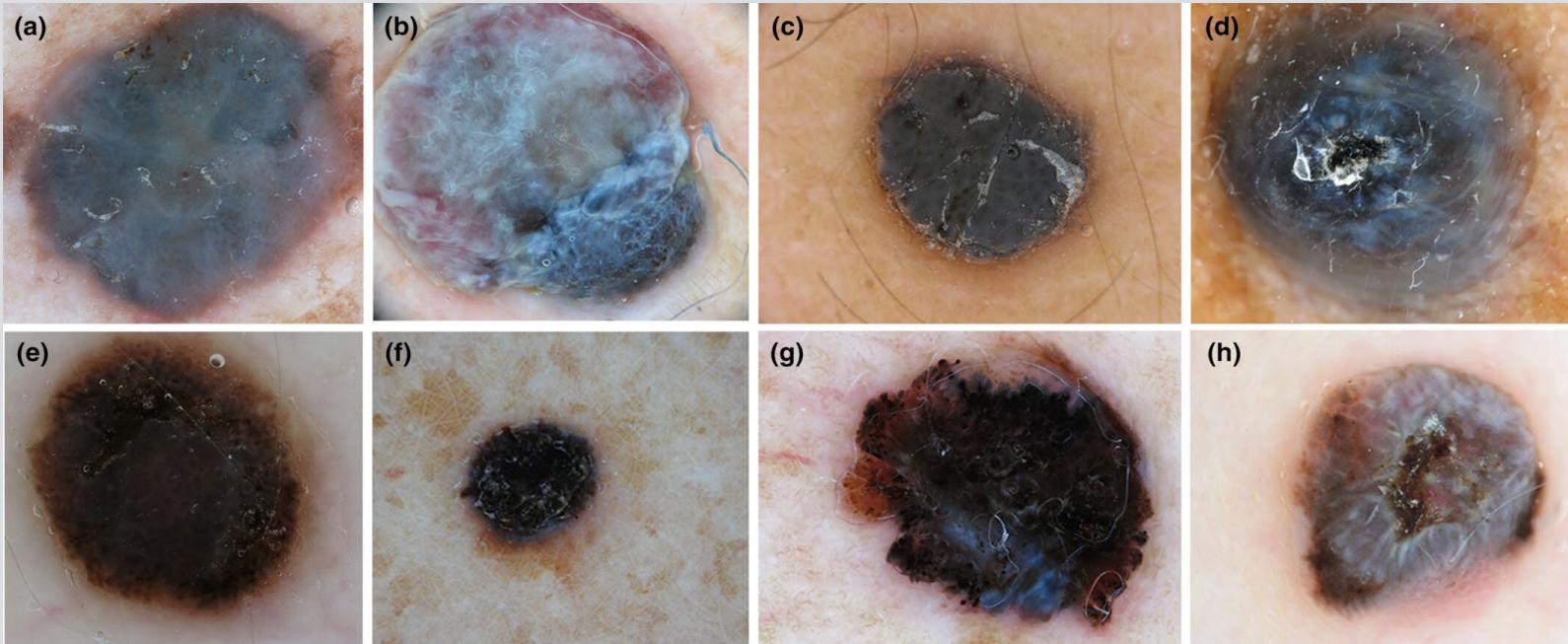
# Blue, black, gray color

- **Blue/Blue-Gray** = melanin in dermis
- **Black** = melanin in upper epidermis
- **Gray** = clue to inflammatory reaction, may be smudgy



02-Colors. (2023, October 31). *dermoscopedia*. Retrieved 16:59, September 3, 2025 from <https://dermoscopedia.org/w/index.php?title=02-Colors&oldid=21478>.

# Blue, black, gray color



**Longo C, Pampena R et al. 2023. Dermoscopy of melanoma according to different body sites: Head and neck, trunk, limbs, nail, mucosal and acral. JEADV 37(9):1718-1730, First published: 21 May 2023, DOI: (10.1111/jdv.19221)**

# Blue, black, gray color



<https://dermnetnz.org/imagedetail/20642-dermoscopy>

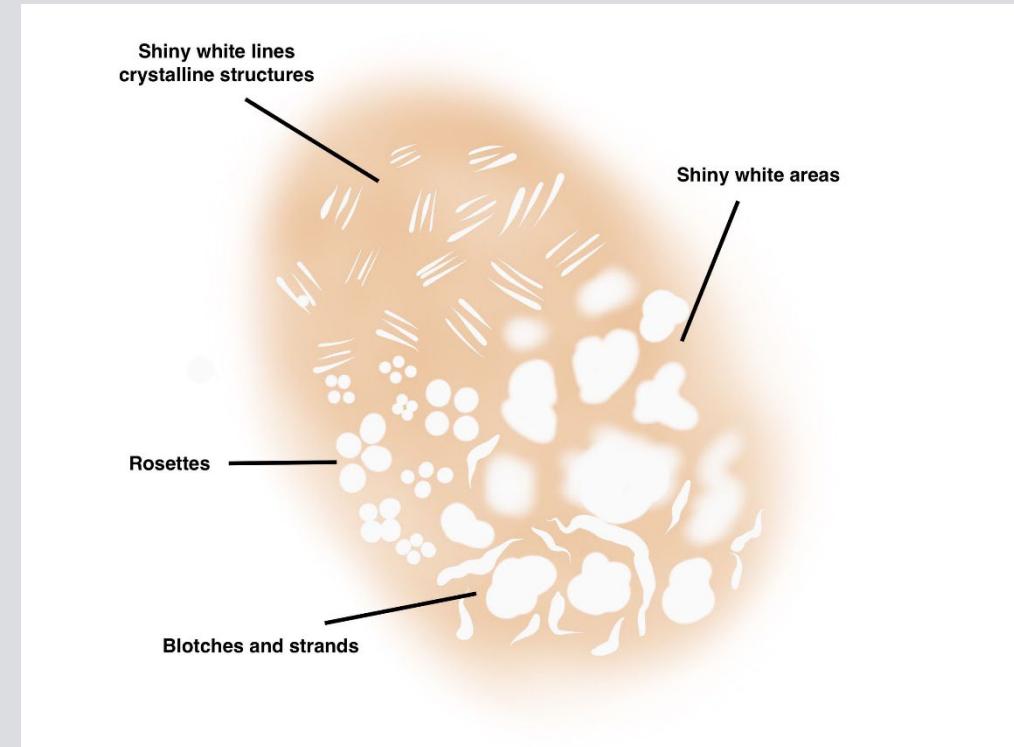


Blue white veil. (2019, May 21). *dermoscopedia*. Retrieved 15:40, September 3, 2025 from [https://dermoscopedia.org/w/index.php?title=Blue\\_white\\_veil&oldid=15863](https://dermoscopedia.org/w/index.php?title=Blue_white_veil&oldid=15863).



# Shiny white structures (SWS)

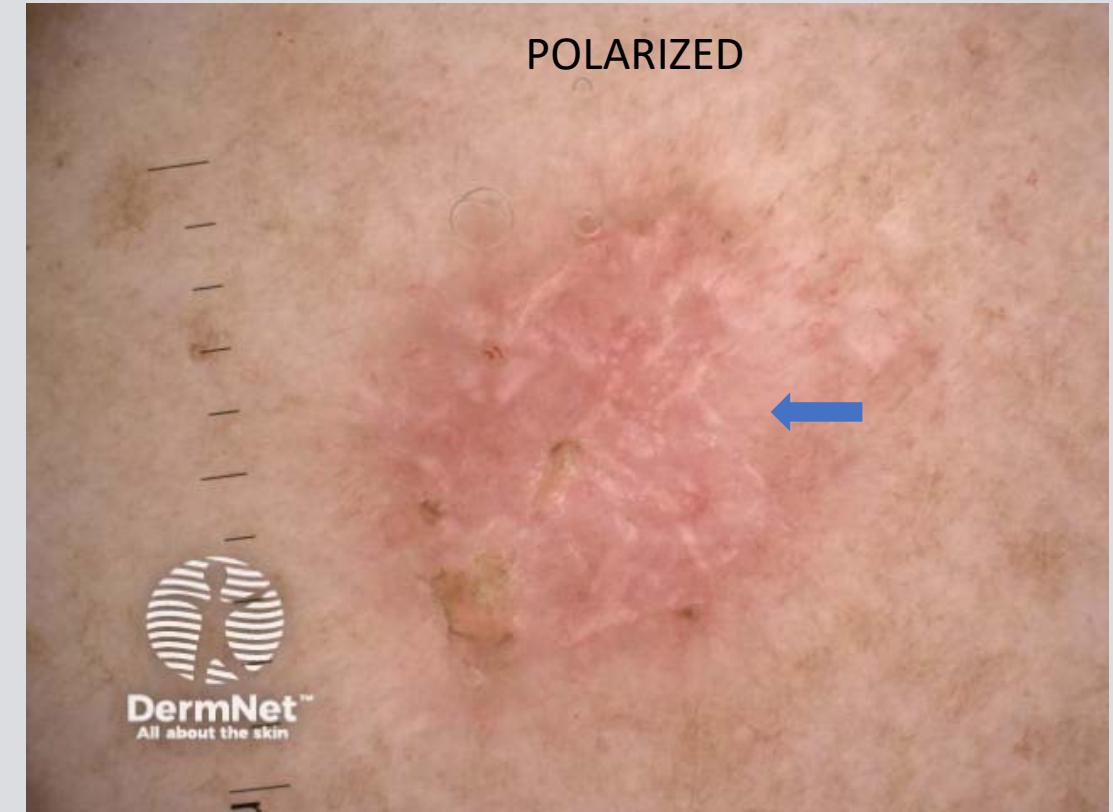
- Only seen with **POLARIZED LIGHT**
- Can be seen in BCC, SCC, and melanoma
- Indicate fibrosis, a marker of dermal invasion



Shiny white structures. (2023, April 17). *dermoscopedia*. Retrieved 17:01, September 3, 2025 from [https://dermoscopedia.org/w/index.php?title=Shiny\\_white\\_structures&oldid=20686](https://dermoscopedia.org/w/index.php?title=Shiny_white_structures&oldid=20686).



# SWS: BCC



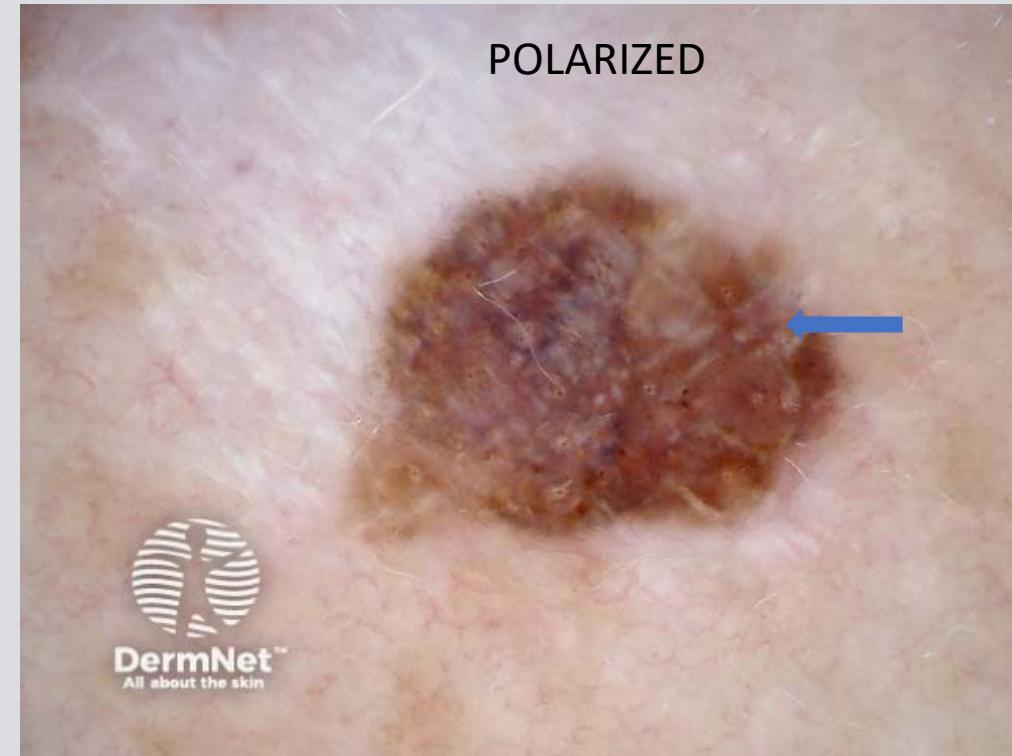
<https://dermnetnz.org/topics/perpendicular-white-lines-dermoscopy>

# SWS: SCC



<https://dermnetnz.org/topics/squamous-cell-carcinoma-dermoscopy>

# SWS: Melanoma



<https://dermnetnz.org/topics/perpendicular-white-lines-dermoscopy>

# SWS: What About Dermatofibromas?

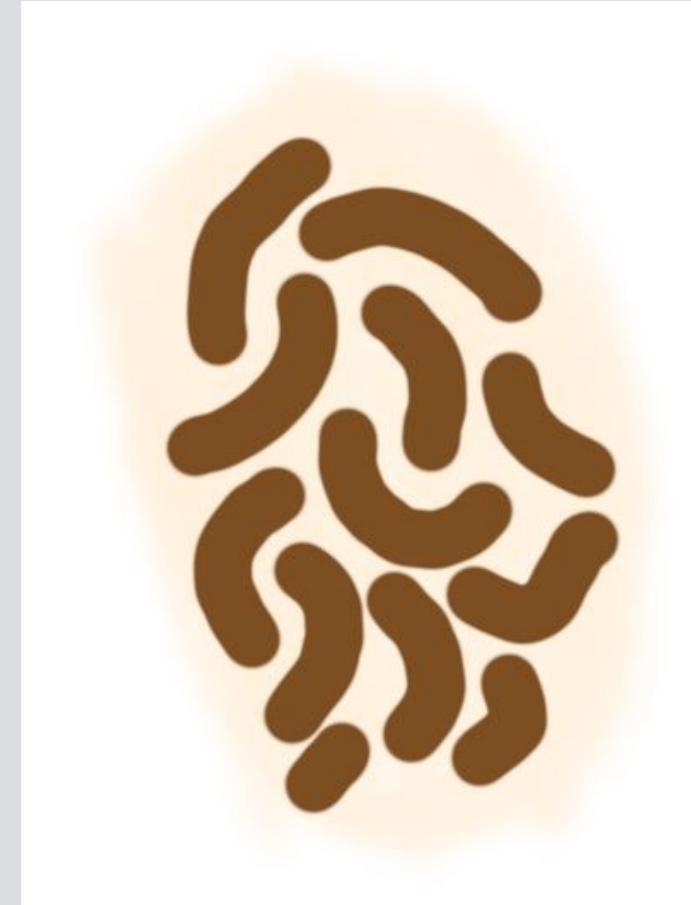
- Also have fibrosis, so can see SWS
- Already screened out obvious DFs as benign
- If you've gotten this far, it needs a bx



03-Dermatofibroma. (2023, March 21). *dermoscopedia*. Retrieved 16:31, September 3, 2025 from <https://dermoscopedia.org/w/index.php?title=03-Dermatofibroma&oldid=20458>.

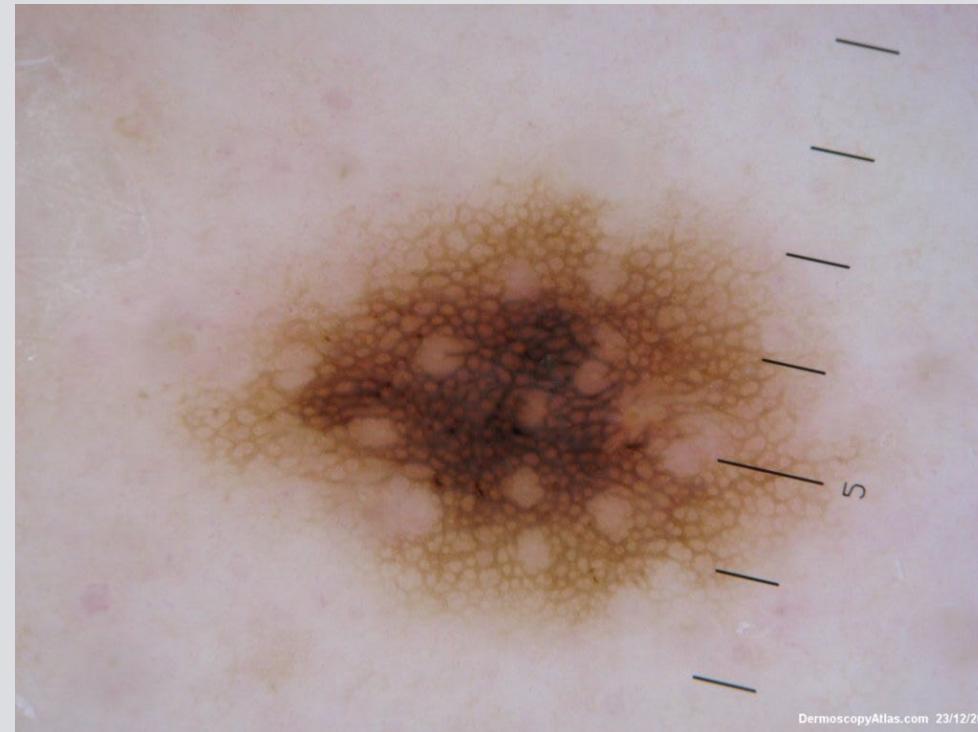
# Negative network

- Hypopigmented serpiginous or grid-like lines surrounding irregularly shaped pigmented structures



# But first, what is the network?

- Pigment network, as seen in some nevi and dermatofibromas for example
- Intersecting brown lines arranged like a grid or net (reticular)



# Think of negative network as the inverse of the pigment network

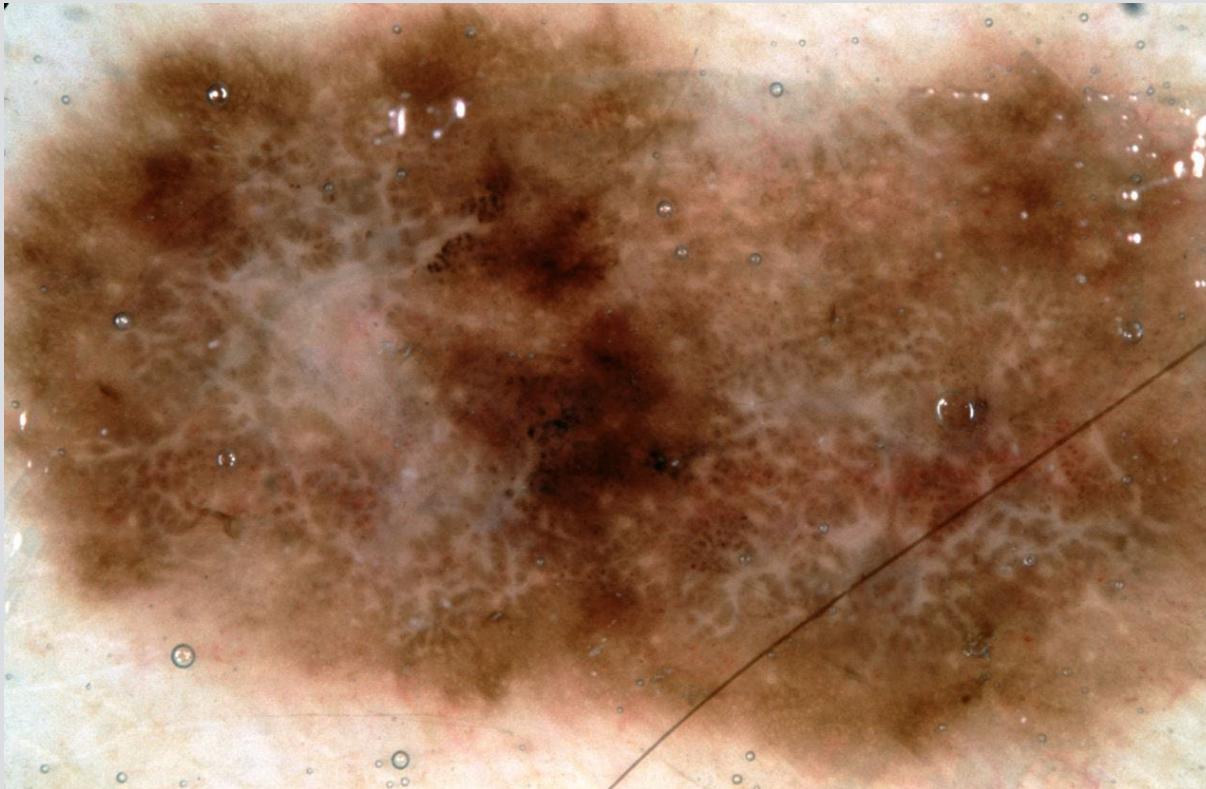
- Here, the net or grid is light and the “holes” are dark



# Negative network



# Negative network



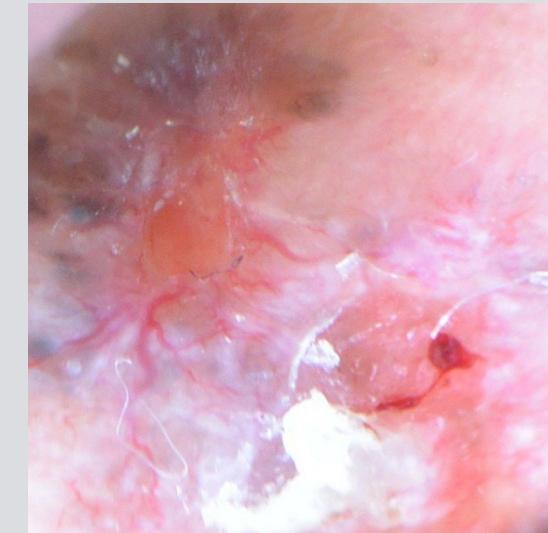
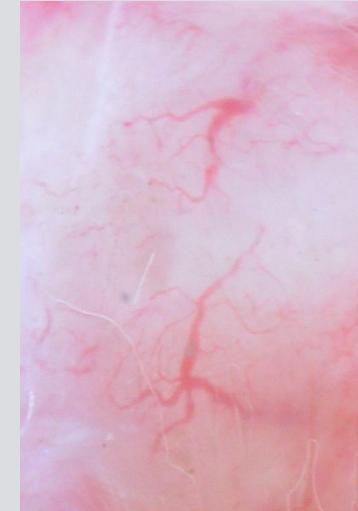
Negative Pigment Network. (2023, April 17). *dermoscopedia*. Retrieved 18:46, August 27, 2025 from [https://dermoscopedia.org/w/index.php?title=Negative\\_Pigment\\_Network&oldid=20723](https://dermoscopedia.org/w/index.php?title=Negative_Pigment_Network&oldid=20723).



Connolly D et al. 2014.  
Dermoscopy and the  
negative pigment network  
JAAD 70(2): e29-30.

# Vessels

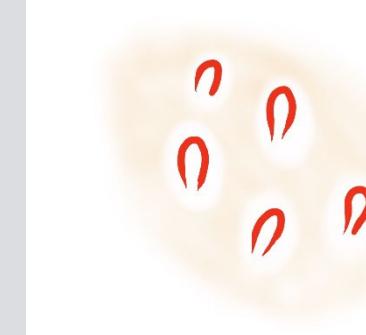
- Cancers need a vascular supply = red flag in a lesion of concern
- Abnormal angiogenesis
- Various vessel patterns
- Types can be mixed
- Dermoscopy Tip: vessels blanch with minimal pressure



# Vessels



Arborizing (treelike)



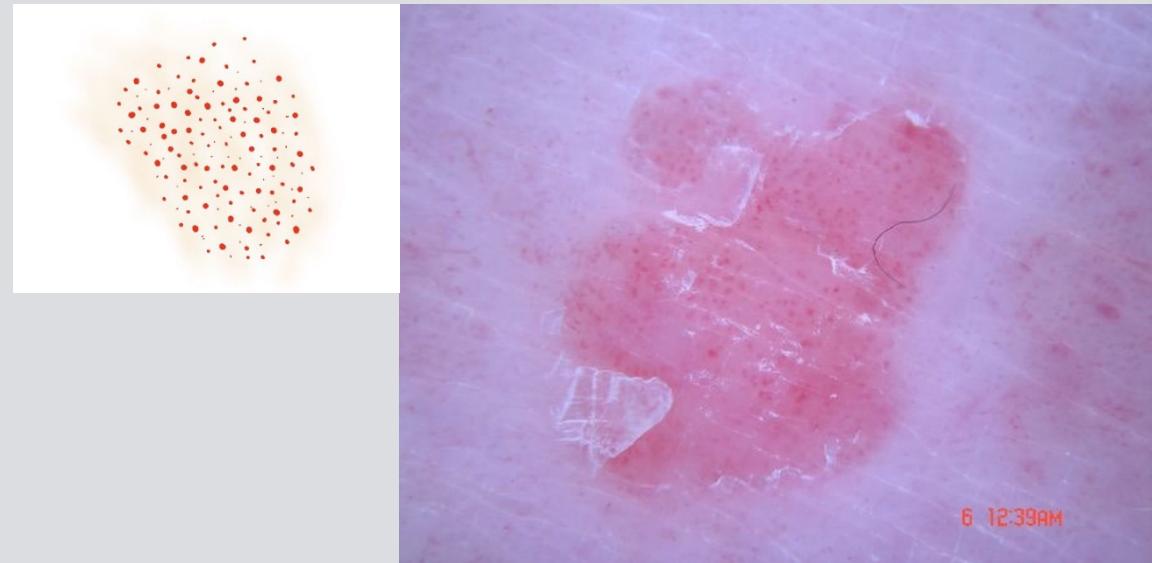
Hairpin

02-Vascular structures. (2023, April 17). *dermoscopedia*. Retrieved 18:41, September 4, 2025 from [https://dermoscopedia.org/w/index.php?title=02-Vascular\\_structures&oldid=20696](https://dermoscopedia.org/w/index.php?title=02-Vascular_structures&oldid=20696).

# Vessels



Glomerular



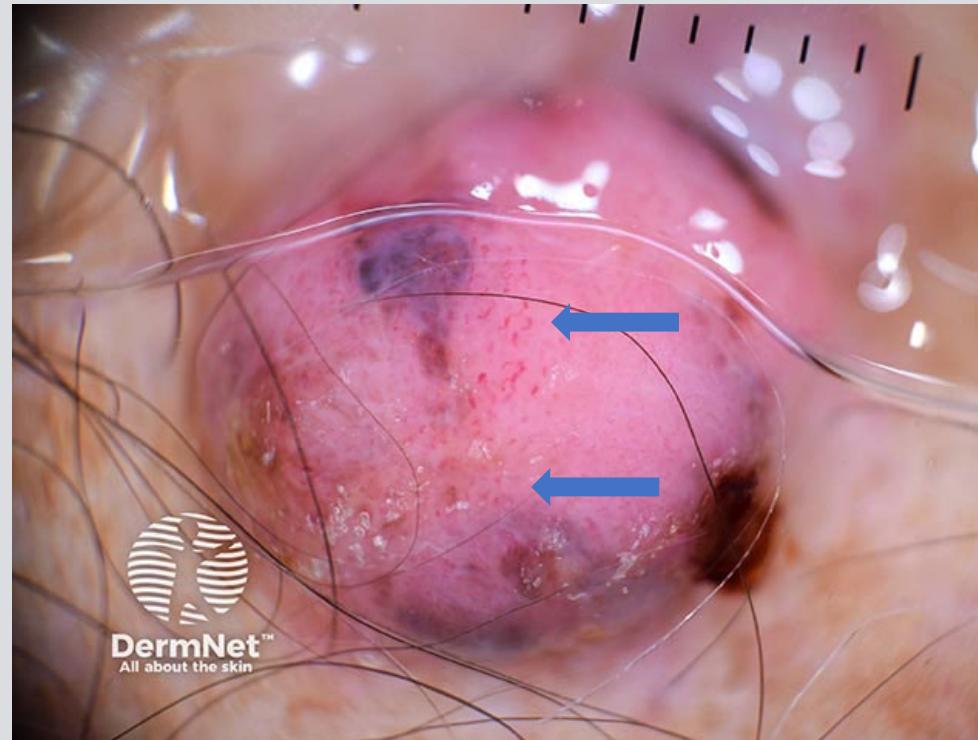
Dotted (end on)

02-Vascular structures. (2023, April 17). *dermoscopedia*. Retrieved 18:41, September 4, 2025 from [https://dermoscopedia.org/w/index.php?title=02-Vascular\\_structures&oldid=20696](https://dermoscopedia.org/w/index.php?title=02-Vascular_structures&oldid=20696).

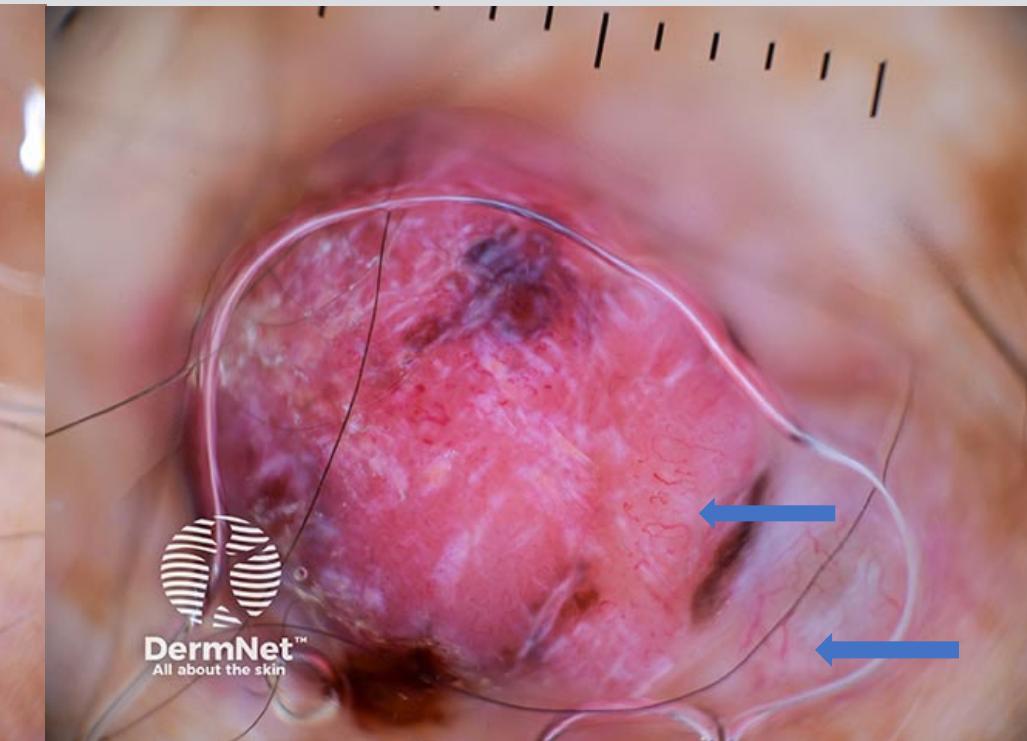
# Vessels



Polymorphous



<https://dermnetnz.org/imagedetail/23466-nodular-melanoma>



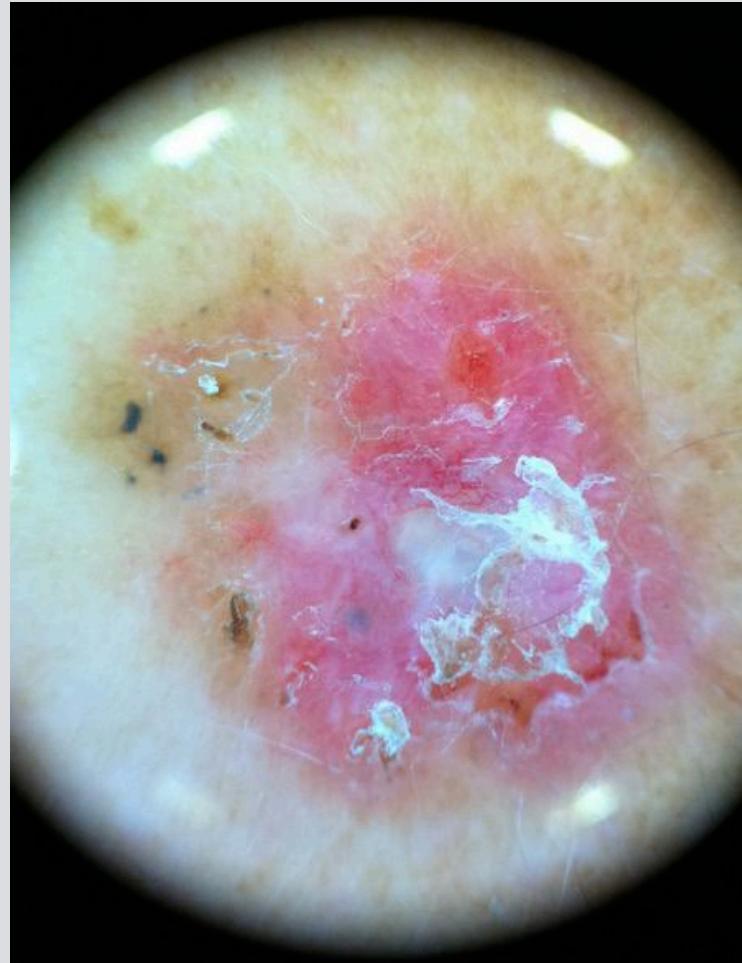
<https://dermnetnz.org/imagedetail/23467-nodular-melanoma>



# Ulceration

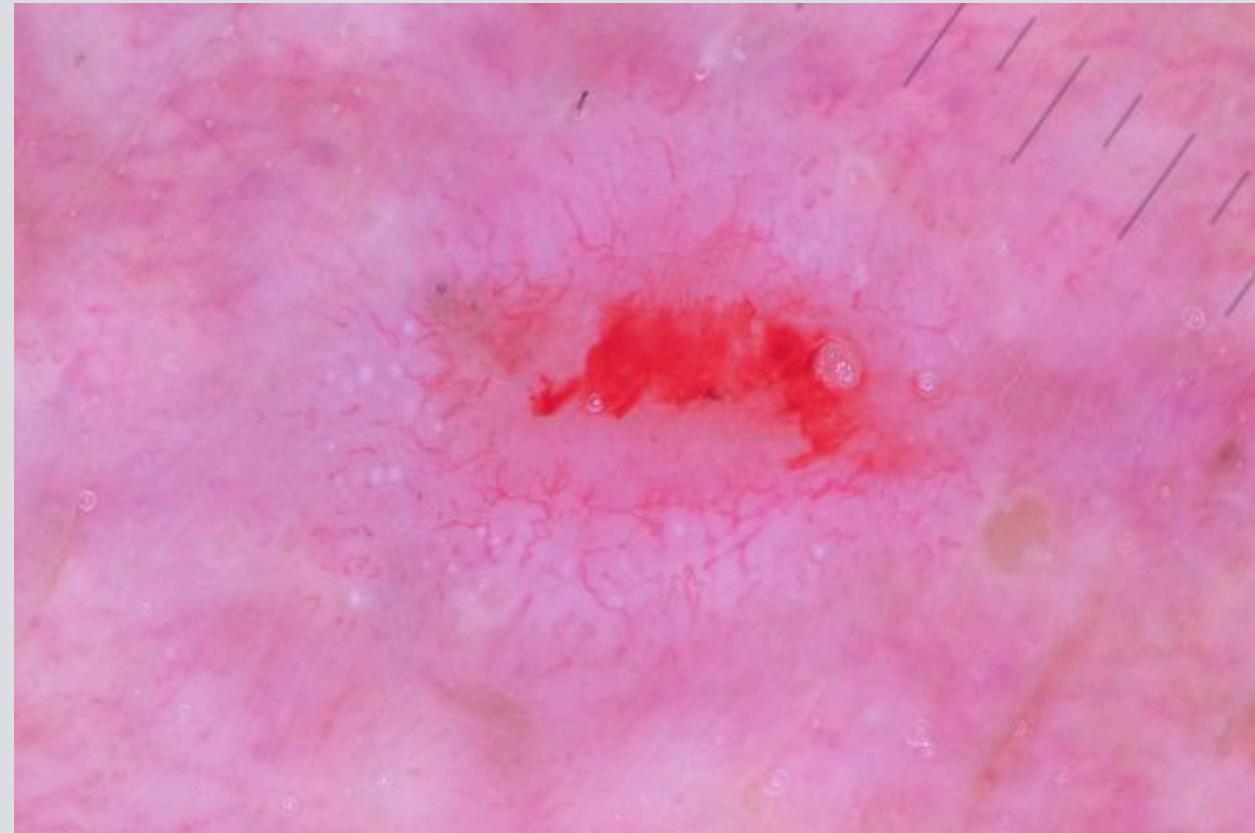
- Tumor growth can outstrip blood supply and damage blood vessels
- And damage epidermis
- May see ulcer, erosion, crust overlying ulcer/erosion





[https://dermoscopedia.org/File:BCC\\_Pigmented\\_Ulceration\\_Blue-gray\\_globules\\_Branched\\_vessels.jpg](https://dermoscopedia.org/File:BCC_Pigmented_Ulceration_Blue-gray_globules_Branched_vessels.jpg)

# Ulceration



[https://dermoscopedia.org/Basal\\_cell\\_carcinoma](https://dermoscopedia.org/Basal_cell_carcinoma)

[www.ConferMED.com](http://www.ConferMED.com)



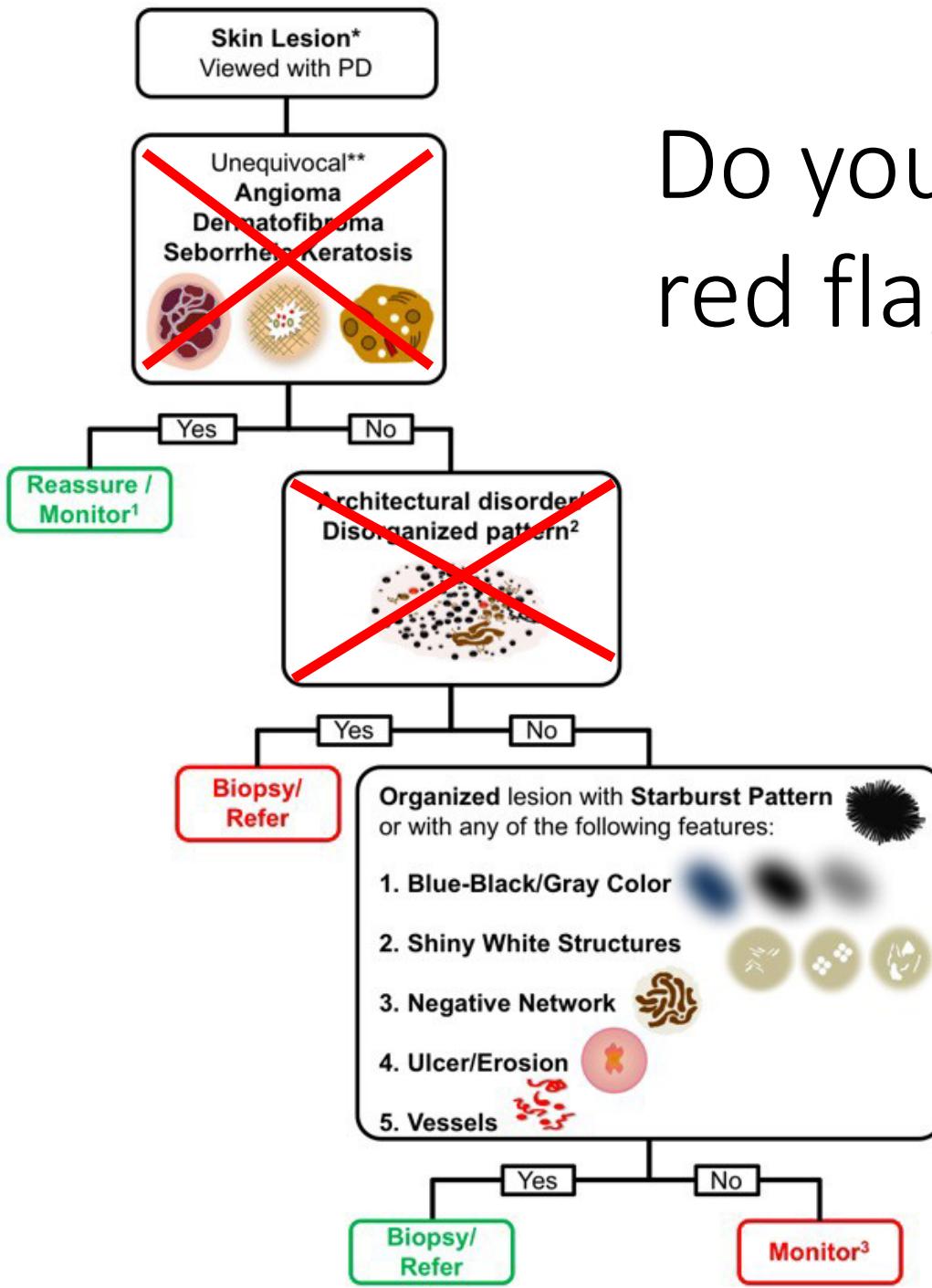
# Ulceration: Check history

- What about benign things with ulcer/erosion/crust?
- Bug bites, excoriated acne, etc
- If very recent, give it a few weeks to resolve (biopsy if it doesn't)

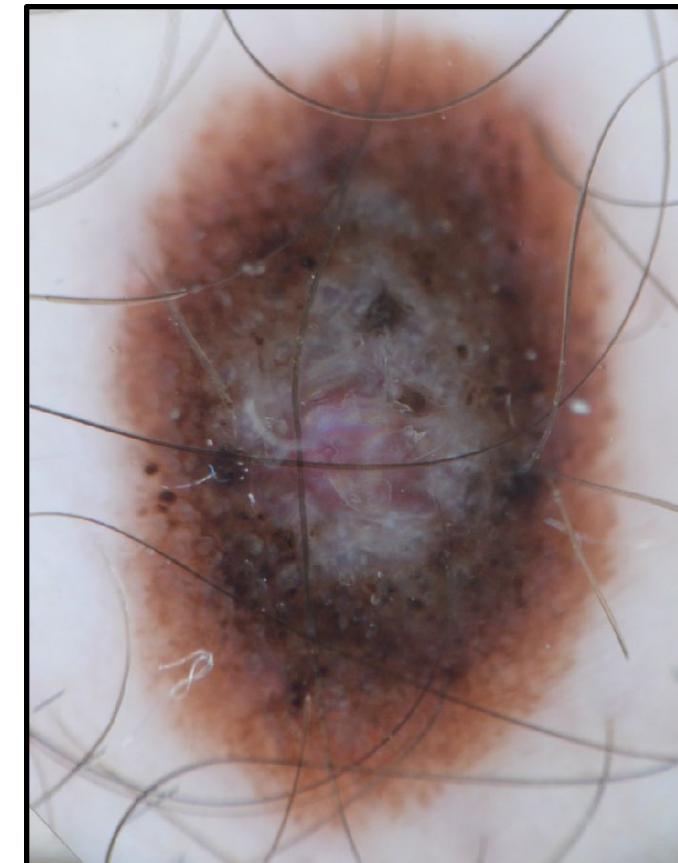


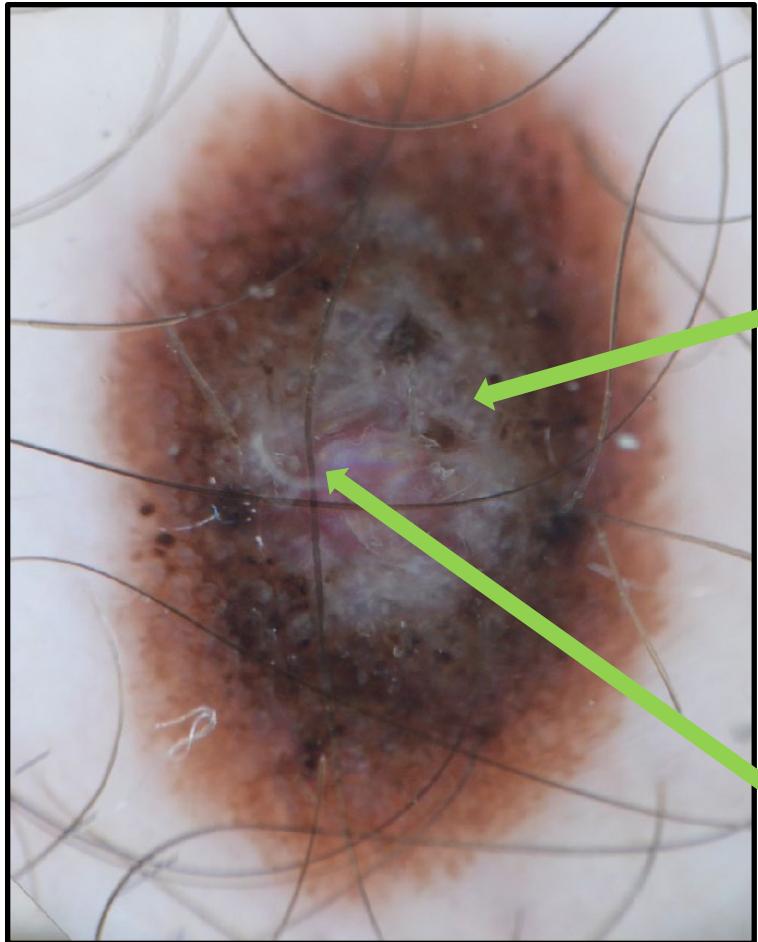
<https://dermnetnz.org/imagedetail/4380-compulsive-picking>





Do you see any of the red flags here?

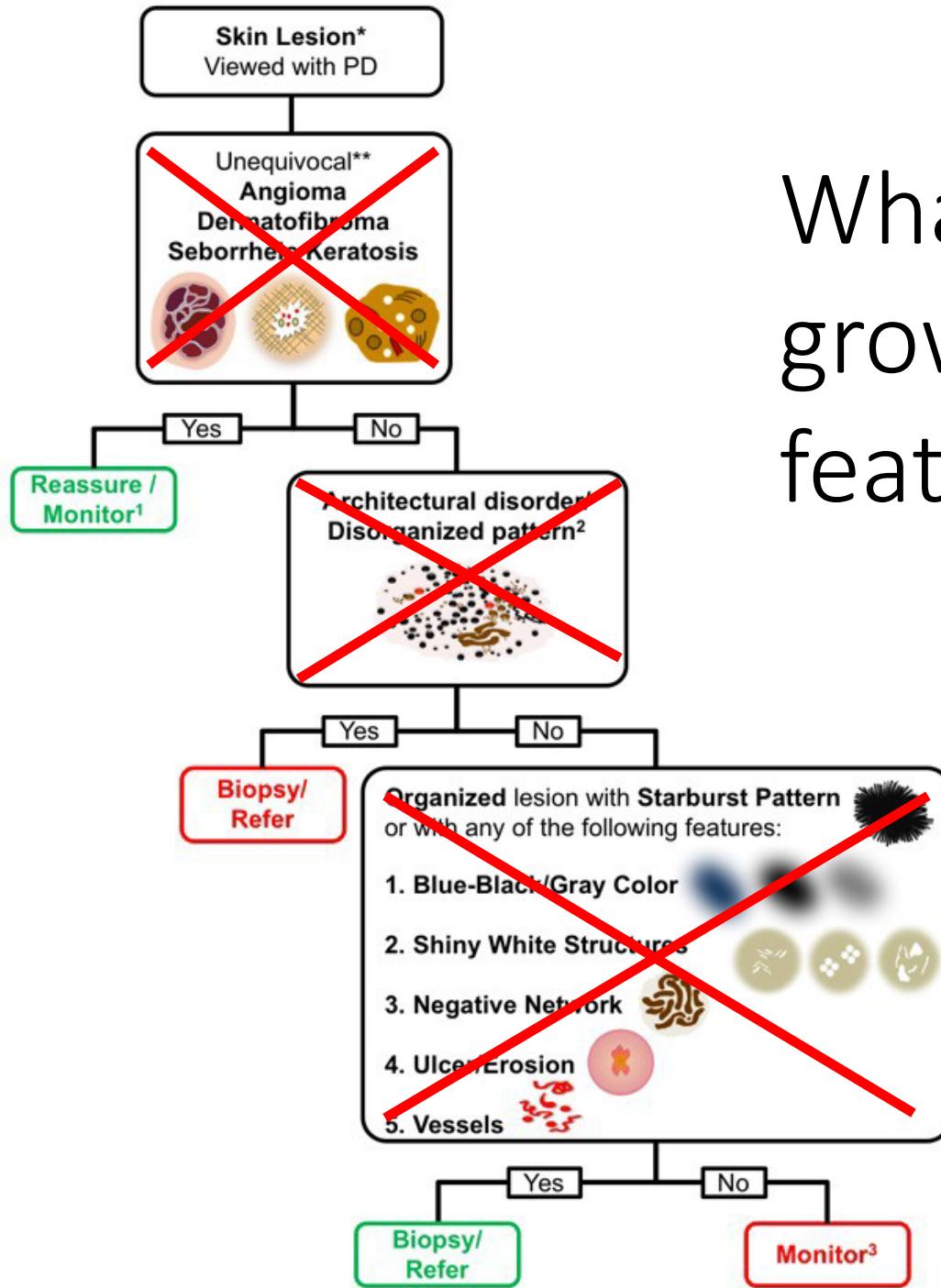




Blue-gray color

Shiny white structures

Melanoma



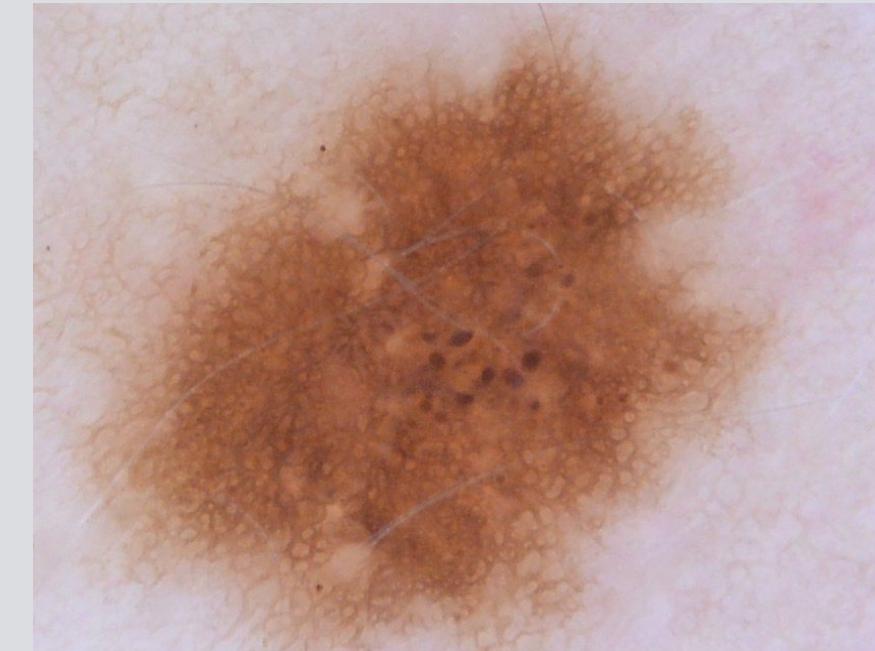
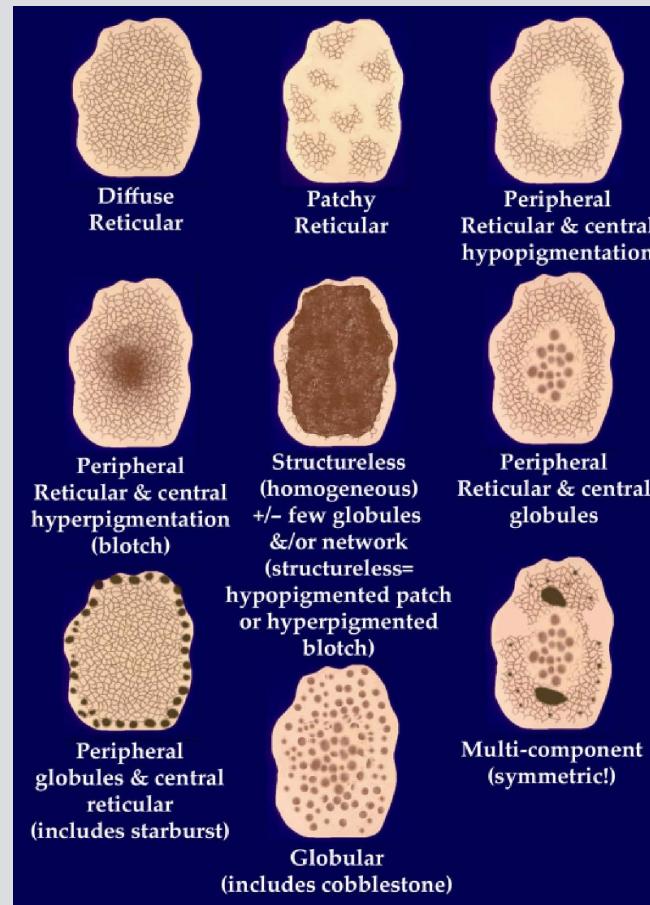
What if it's an organized growth without red flag features?

# Majority of the rest are nevi

Nevi in general  
should be monitored  
(self/clinician/app)

## Useful Monitoring Tips

1. Patients should continue self-monitoring & changes in morphology or symptoms should raise concern
2. Monitoring can include short-term, long-term, or self-monitoring for change



The Beauty and the Beast Sign in Dermoscopy. A  
Marghoob et al. Derm Surg. Nov 2007

## Isolated Skin Lesion

Unequivocal seborrheic keratosis, hemangioma or dermatofibroma

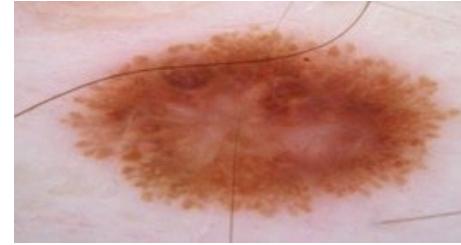
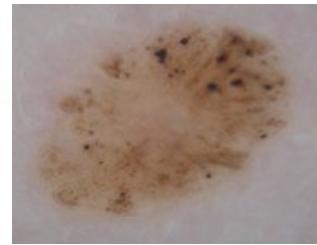


Yes

No

Reassure

Disorganized or  
Starburst



Biopsy  
or refer



Biopsy  
or refer

White structures  
or negative  
network



Biopsy  
or refer

Ulceration\* or  
Vascular  
structures



Biopsy  
or refer

Monitor

★ Algorithm is based on use of **polarized dermoscopy**

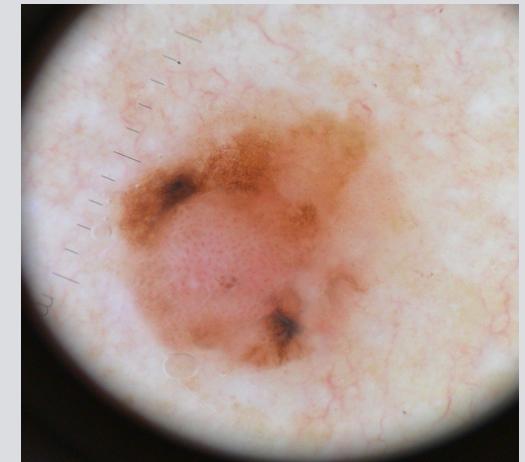
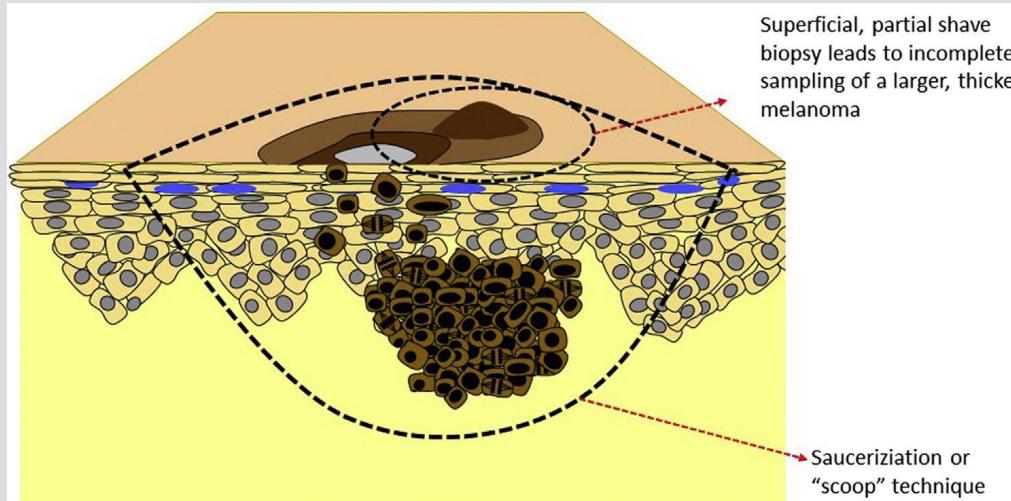
\* Ulceration without history of trauma

Exceptions: 1) Any changing lesion in an adult patient  
2) Any volar lesion with a parallel ridge pattern

Triage Amalgamated Dermoscopic Algorithm (TADA)

# Biopsy

- Photograph and mark the site prior to biopsy
- Avoid partial biopsies of melanocytic growths
- Obtain *breadth & depth* with a "scoop"



# Cases

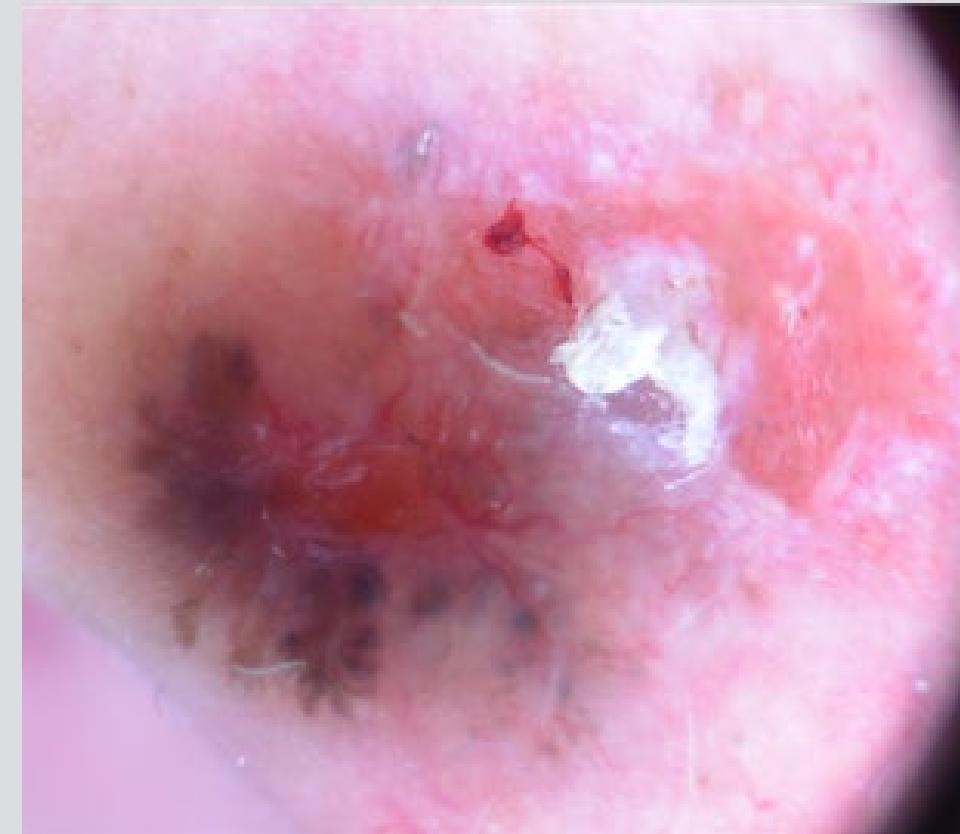


# 45 year old man with new growth on nose



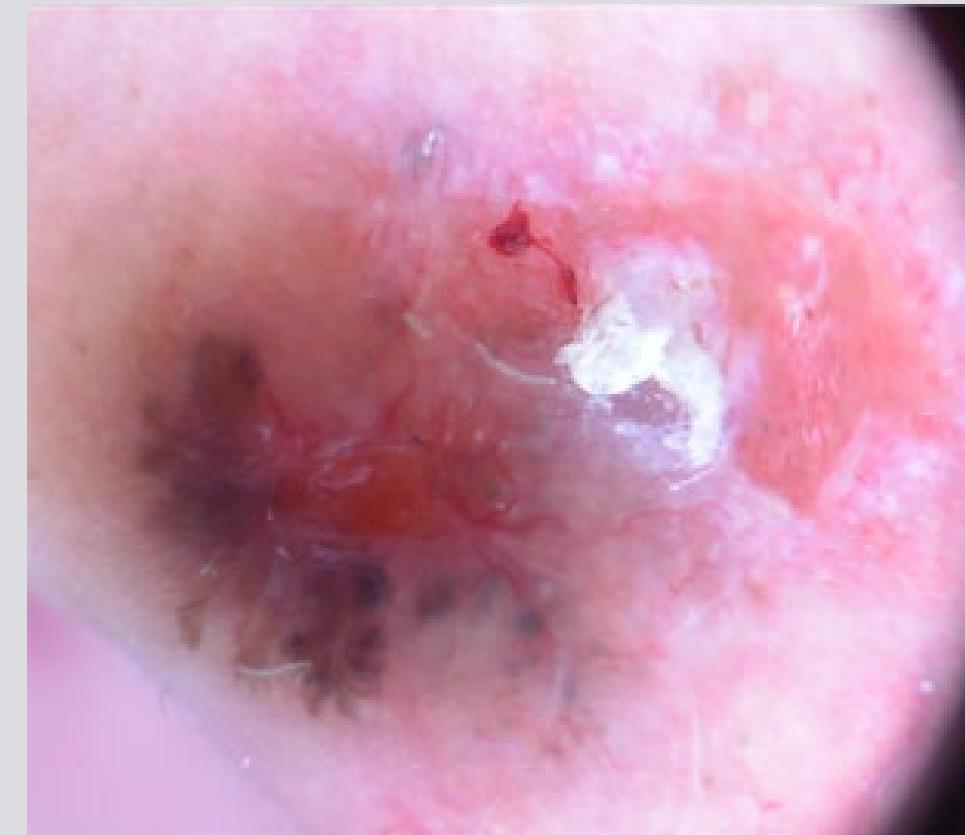
# Dermoscopic Evaluation

- Unequivocal angioma, SK, DF?
  - NO
- Disorganized?
  - YES
- What else do you see?
  - Ulceration
  - Shiny White Structures
  - Vessels



# Biopsy

- Basal cell carcinoma

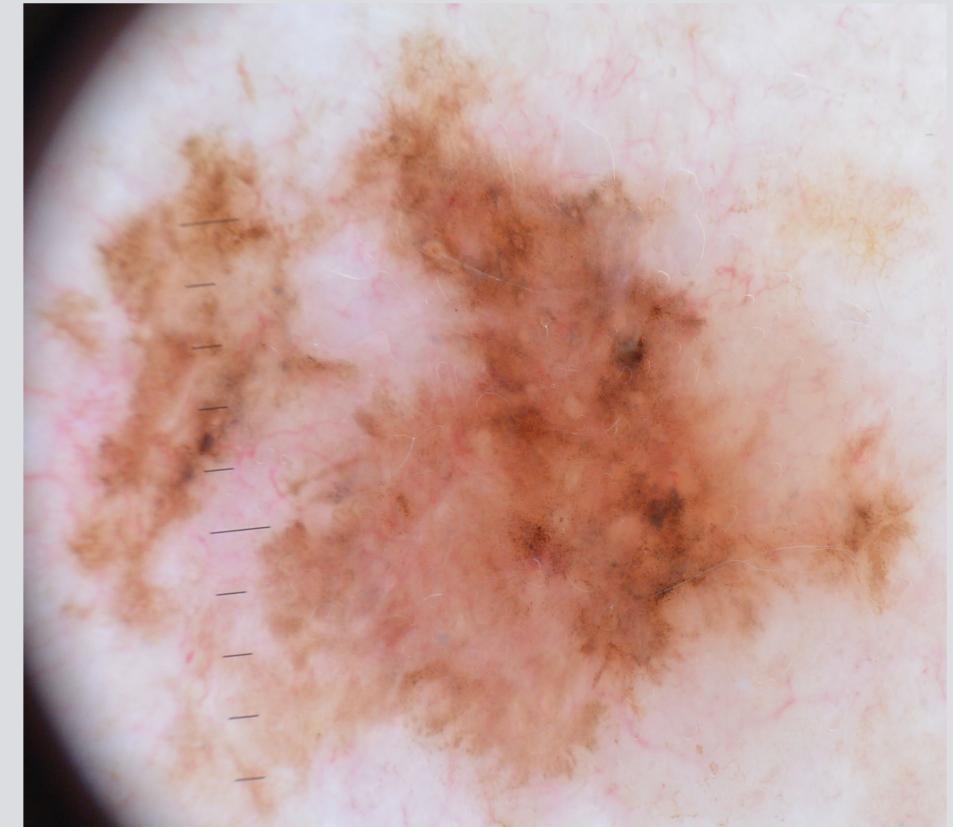


66-year-old woman with enlarging brown macule on left shoulder



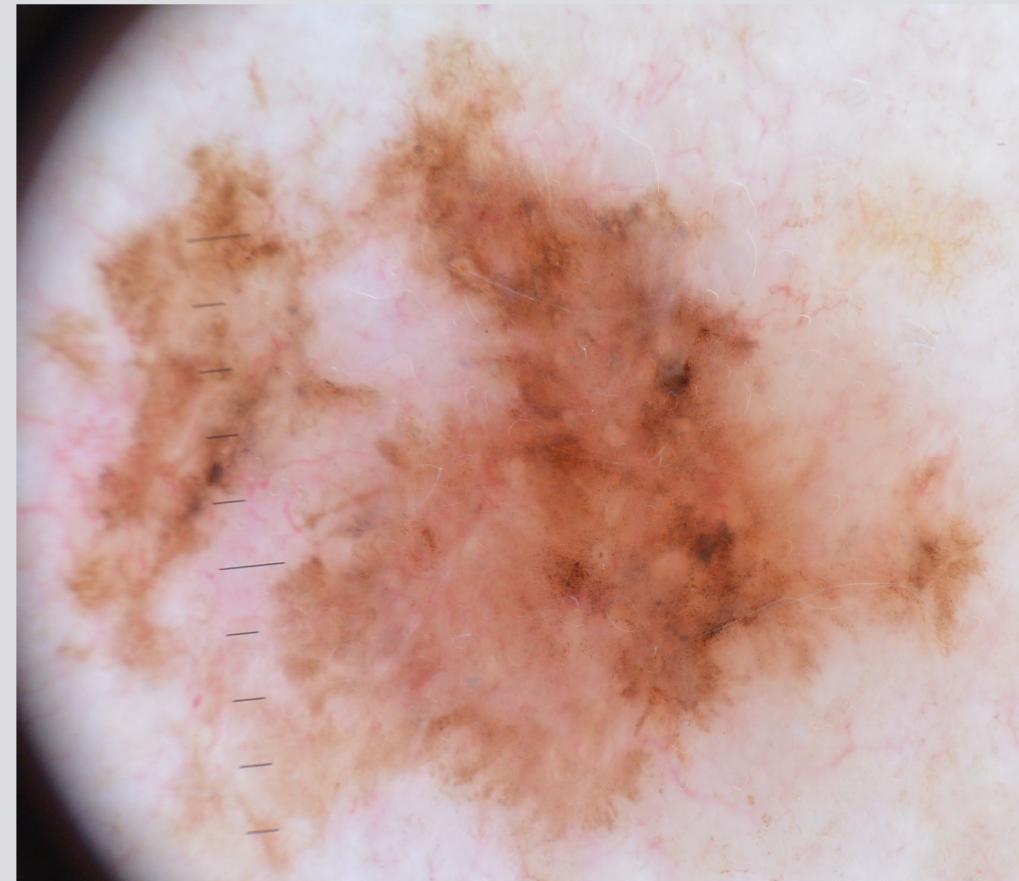
# Dermoscopic Evaluation

- Unequivocal angioma, SK, DF?
  - NO
- Disorganized?
  - YES
- What else do you see?
  - Blue/Black/Gray color
  - Shiny White Structures
  - Vessels



# Biopsy

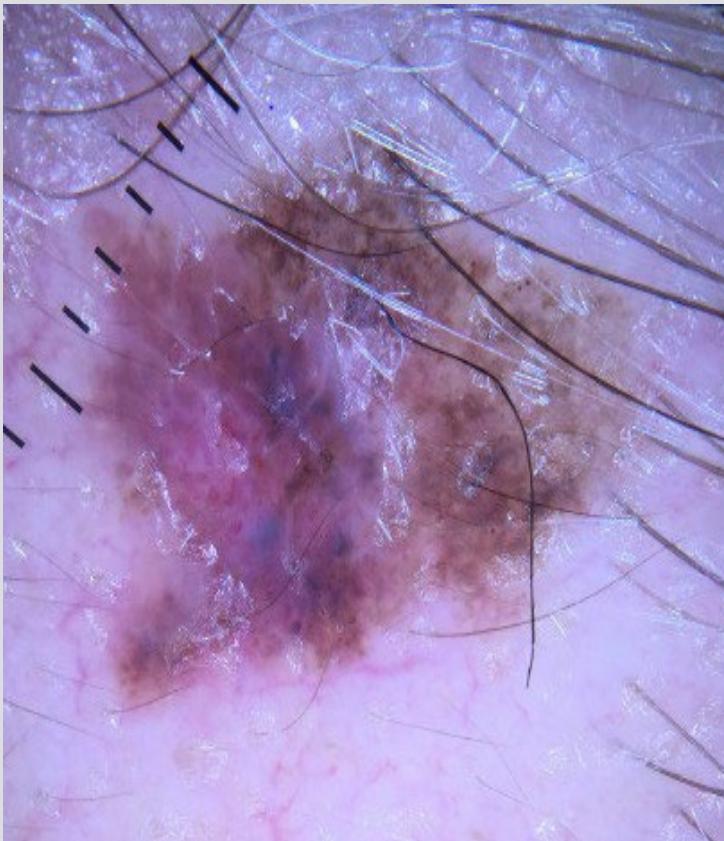
- Melanoma 0.6 mm



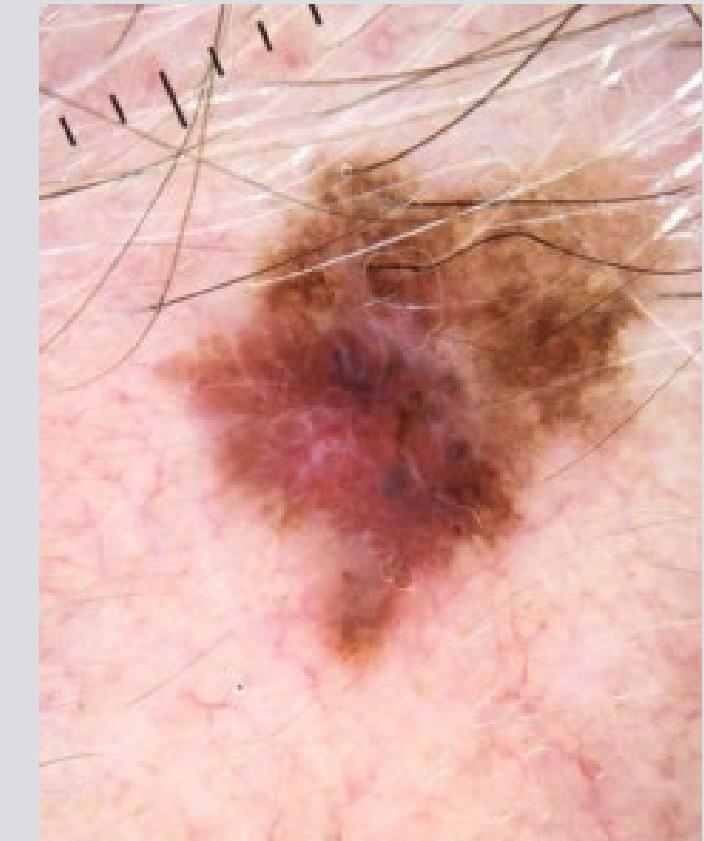
54-year-old man with an  
enlarging  
growth left temple



# Dermoscopy



NPD



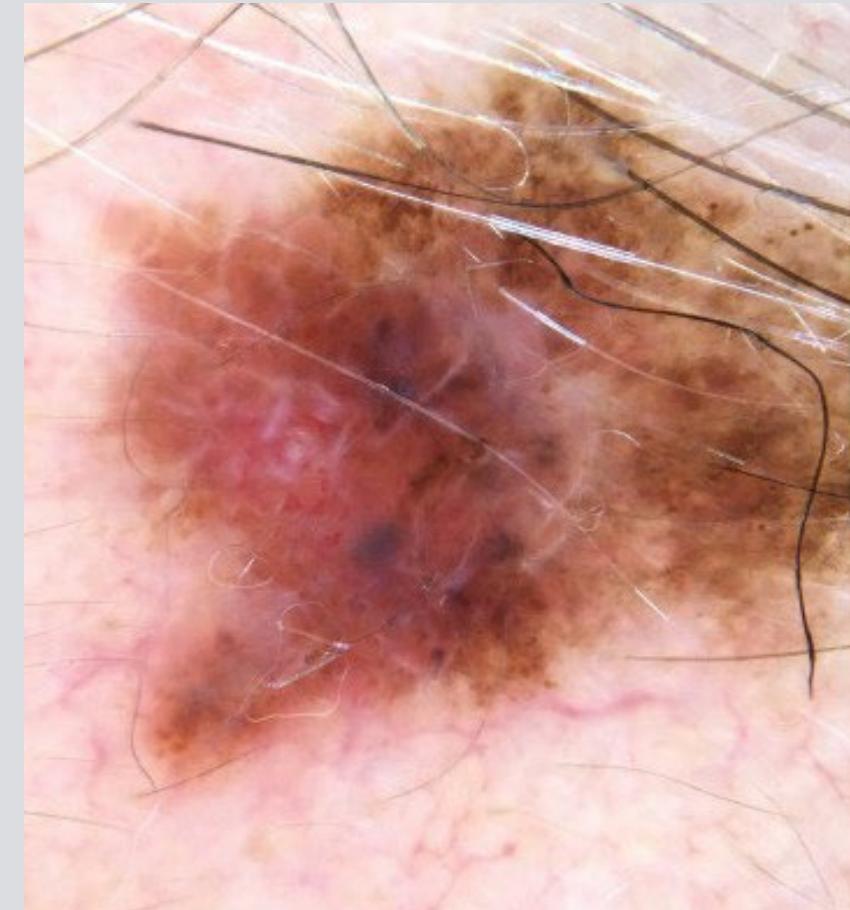
# Dermoscopic Evaluation

- Unequivocal angioma, SK, DF?
  - NO
- Disorganized?
  - YES
- What else do you see?
  - Blue/Black/Gray color
  - Shiny White Structures
  - Vessels



# Biopsy

- Melanoma 1.9 mm



51-year-old man phototype II with a history of melanoma and a new dark growth on the lower back

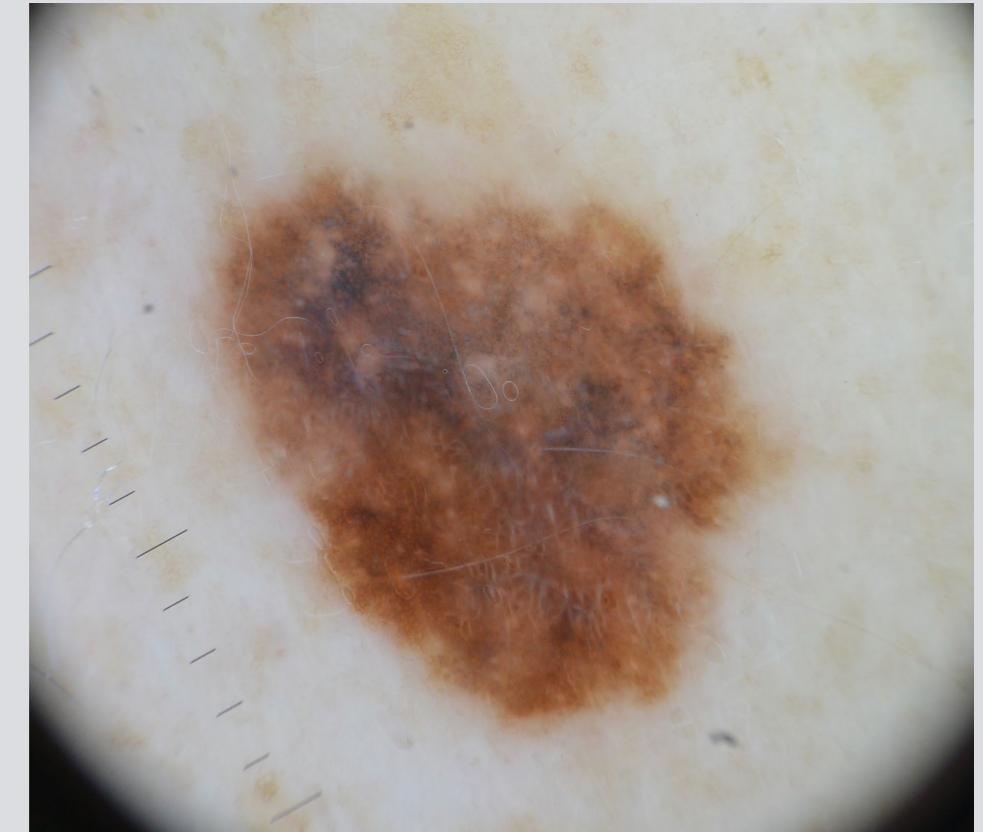
Prior  
melanoma  
scar



Lesion in question

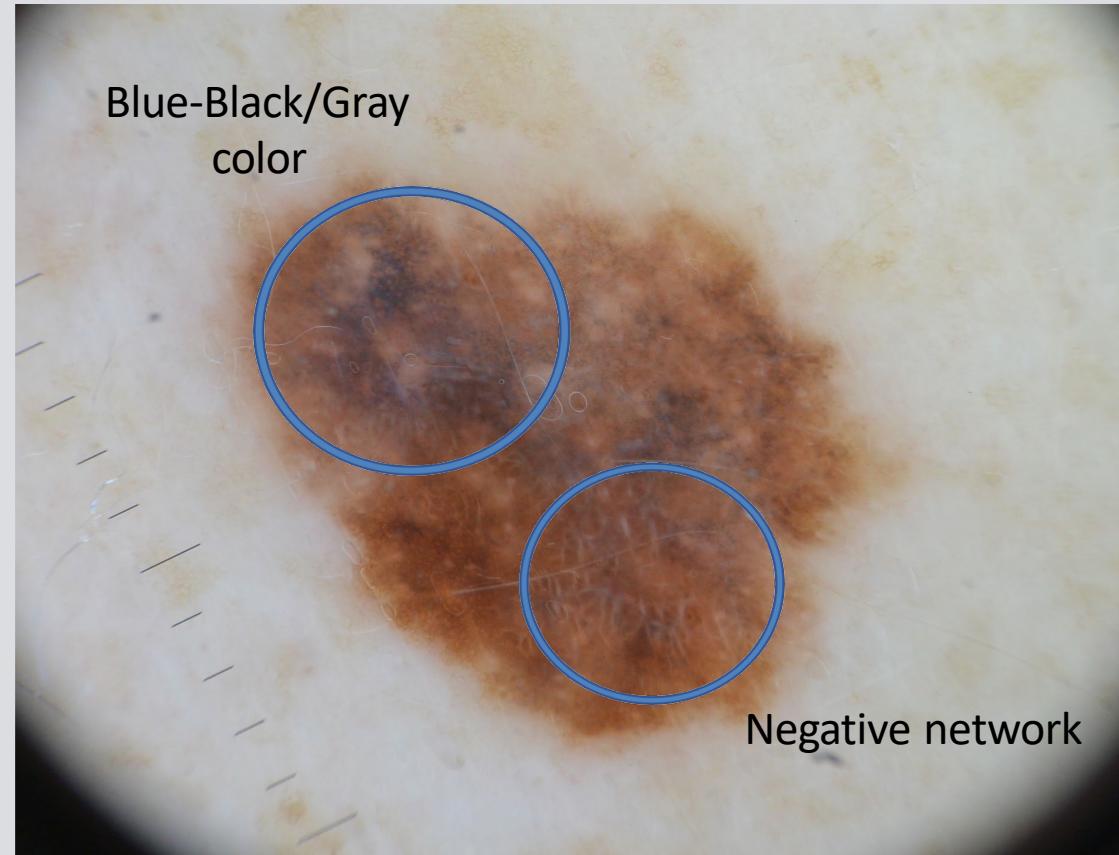
# Dermoscopic Evaluation

- Unequivocal angioma, SK, DF?
  - NO
- Disorganized?
  - YES
- What else do you see?
  - Blue/Black/Gray color
  - Negative network

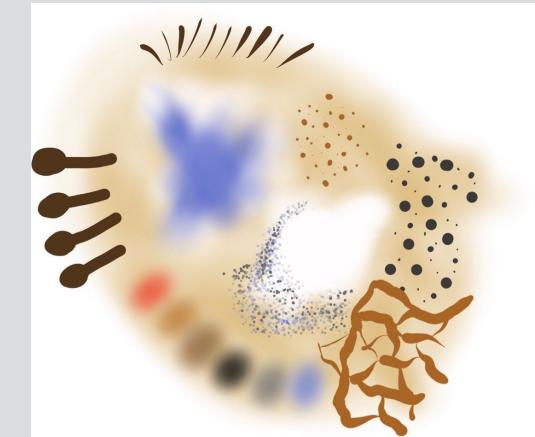
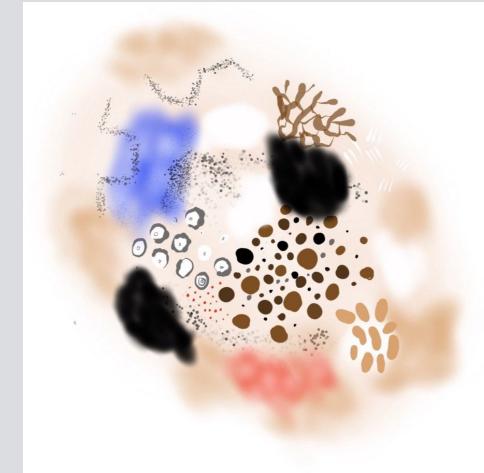
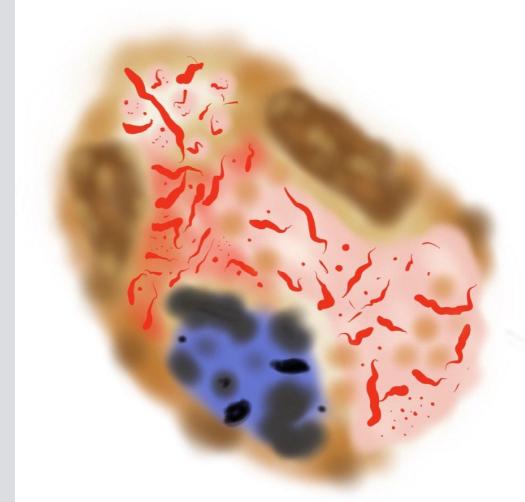
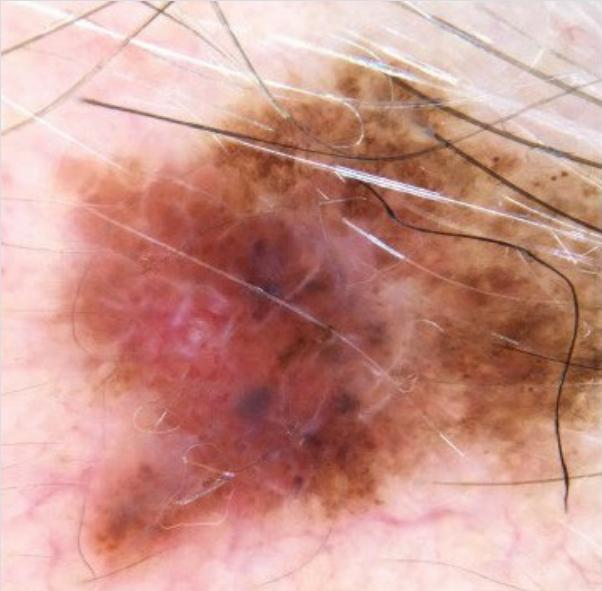


# Biopsy

- Melanoma 0.2 mm



# Most Melanomas are Disorganized





# Thank You! Questions?

Next Session: October 30, 2025:  
Rashes and Skin Infections