Introduction to Dermoscopy for Primary Care Physicians

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Disclosures

We have no relevant financial disclosures

We will not be discussing off-label uses of medications

Topics

- Why dermoscopy in primary care?
- Dermoscopy equipment & techniques
- Clinical diagnosis of melanoma
- Pattern recognition principles
- Diagnosis using the TADA algorithm
- Clinical unknowns quiz

We will not cover these topics

- Pigmented lesions on the face, palms, soles, nail bed
- Other pigmented neoplasms

Why should family physicians use dermoscopy?

Dermoscopy use by primary care providers can increase the sensitivity for skin cancer detection while simultaneously decreasing the number of unnecessary biopsies and specialty referrals.

Wu, X., Marchetti, M. A., & Marghoob, A. A. (2015). Dermoscopy: not just for dermatologists. *Melanoma management*, *2*(1), 63-73.

STUDY	LESIONS	SENSITIVITY, %		SPECIFICITY, %		POSITIVE PREDICTIVE VALUE, %		NEGATIVE PREDICTIVE VALUE, %	
		NAKED EYE	DERMOSCOPY	NAKED EYE	DERMOSCOPY	NAKED EYE	DERMOSCOPY	NAKED EYE	DERMOSCOPY
Argenziano et al[22]	All malignant	**54.1**	**79.2**	71.3	71.8	11.3	16.1	**95.8**	**98.1**
Westerhoff et al[23]	Melanoma only	**54.6**	**75.9**	NA	NA	NA	NA	NA	NA
Menzies et al[24]	All malignant	40.0	55.0	84.6	89.0	25.8	40.0	91.3	93.7
	Melanoma only	37.5	53.1	84.6	89.0	20.7	34.0	92.7	94.7
Dolianitis et al[25]	Melanoma only								
	• Menzies method	**60.9**	**84.6**	**85.4**	**77.7**	NA	NA	NA	NA
	• 7-point checklist	**60.9**	**81.4**	**85.4**	**73.0**	NA	NA	NA	NA
	• ABCD rule	**60.9**	**77.5**	**85.4**	**80.4**	NA	NA	NA	NA
	• Pattern analysis	**60.9**	**68.4**	85.4	85.3	NA	NA	NA	NA

Herschorn A. Dermoscopy for melanoma detection in family practice. *Can Fam Physician*. 2012;58(7):740-5, e372-8.

In short:

"Similar to the impact of the otoscope, ophthalmoscope and stethoscope in improving the bedside diagnosis of ear, eye and heart conditions, the **dermatoscope** will likely become a **routinely used handheld tool** for the examination of skin lesions and rashes."

Wu, *X.*, *Marchetti*, *M. A.*, *& Marghoob*, *A. A. (2015). Dermoscopy: not just for dermatologists. Melanoma management*, *2(1)*, *63-73.*

Incorporating dermoscopy into your practice

- Invest in a dermoscope (discounts available)
- Start in practice EARLY!
- Get into a habit of easy access to a **charged** scope
- Practice a lot - on patients; also many online resources available
- Be the “mole” person in your clinic / group?
- Solicit referrals
- Practice performing shave biopsies quickly - work them into existing visits rather than have patients return

2 largest manufacturers of dermoscopes:

Heine: May attach to existing equipment, contact only, difficult to use in certain body areas

DermLite: contact or non contact, fits in pocket but easy to misplace, takes time to focus, iPhone/iPad attachment

Dermoscopy: mode options

Nonpolarized

- Contact only, use EtOH pad
- Superficial skin layers better visualized
- Blue-white veil may be seen more easily
- Milia and comedone-like structures more easily seen

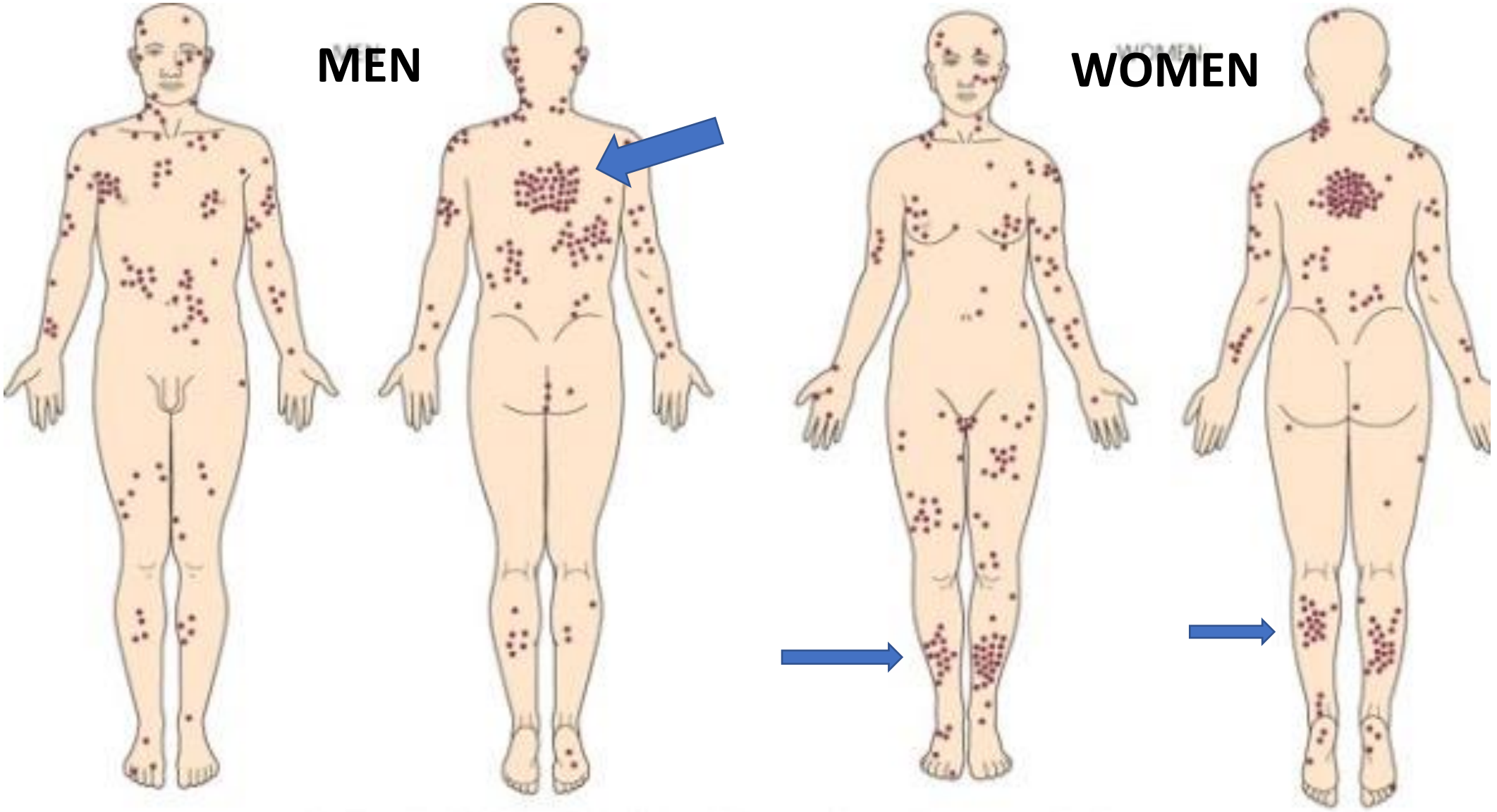
Polarized

- Contact or noncontact
- Deeper layers of skin better seen
- White scars & lines and vessels more easily seen

What can dermoscopy add to our clinical examination?

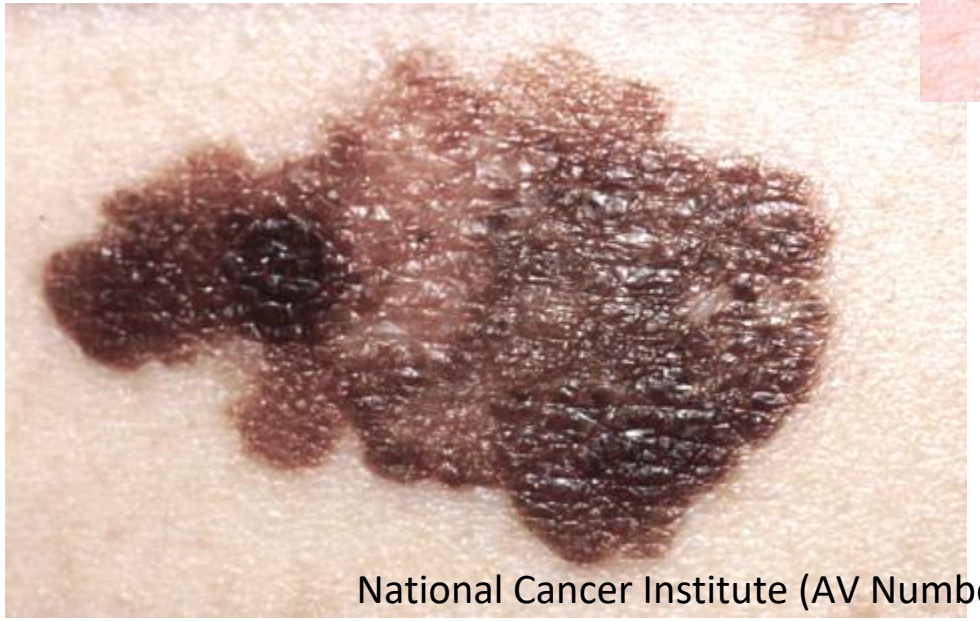
We can see things under the skin with polarization and surface changes with 10X magnification

½ of melanomas in females are below the waist



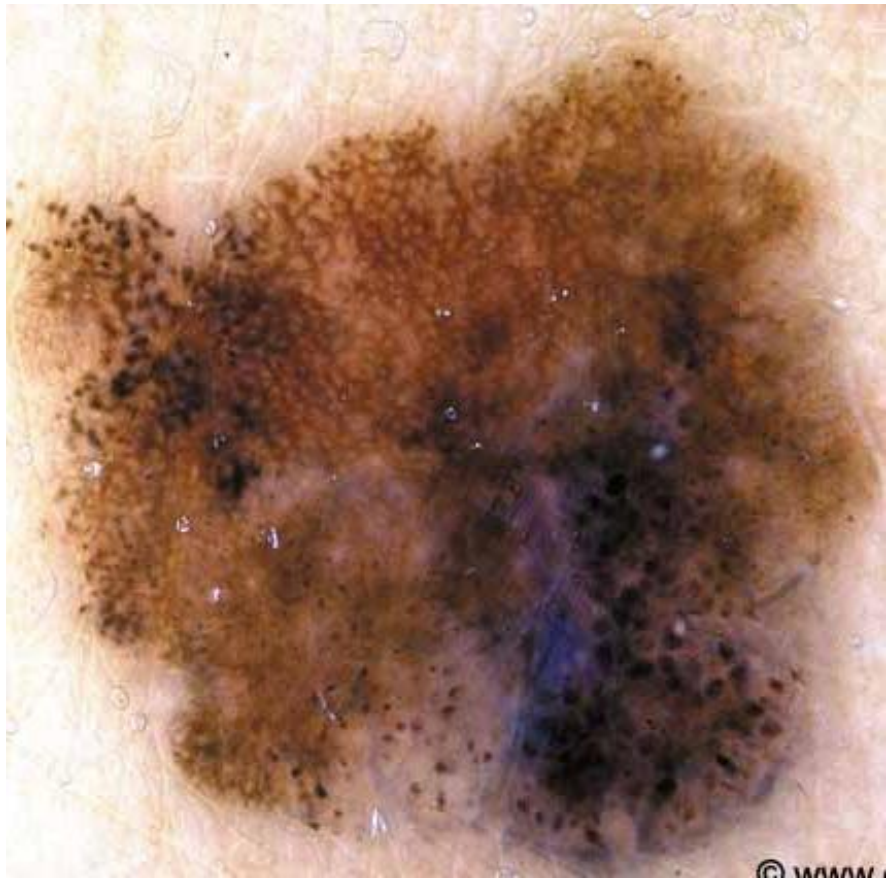
ABCDEs of Melanoma

- A **Asymmetry**
- B **Border** *irregular*
- C **Color** *irregular*
- D **Diameter** ***>6 mm***
- E **Evolving or Exceptional**



National Cancer Institute (AV Number: AV-8500-3850)

Melanoma with and without dermoscopy



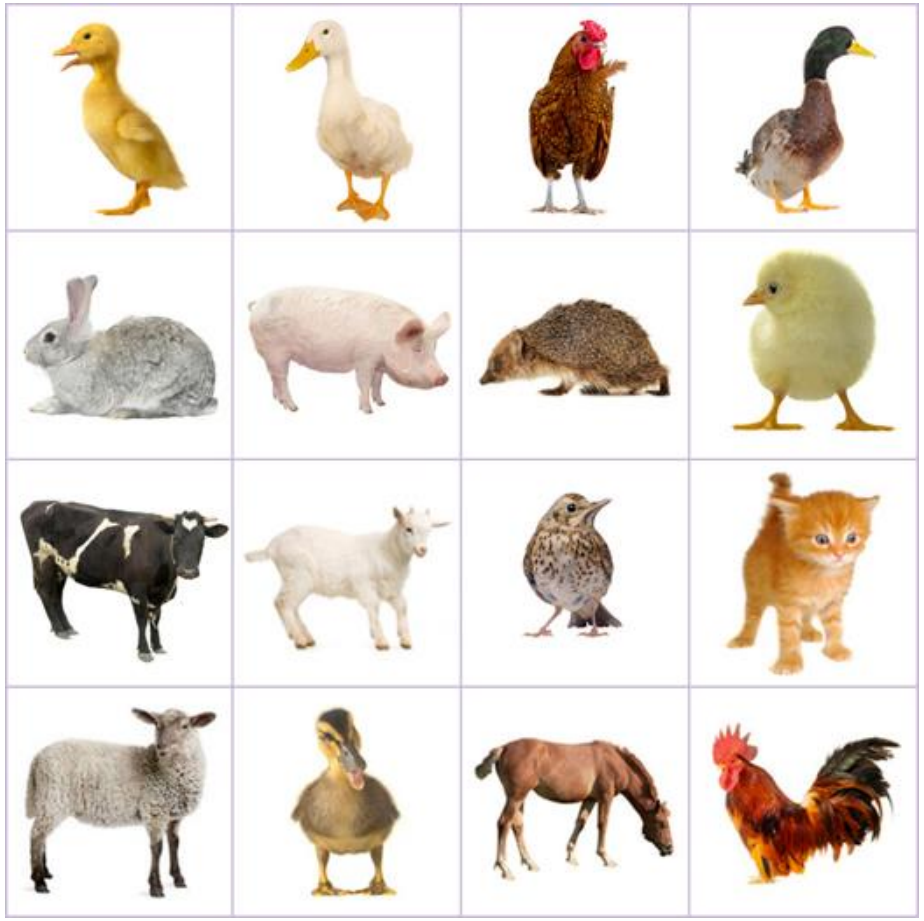
How do we use dermoscopy to aid in the diagnosis of pigmented skin lesions?

- Pattern recognition: in general,
- melanomas have chaotic pattern,
- benign nevi are symmetrical

- The use of Algorithms:
  - “TADA”

Both systems use ***pattern recognition***

a skill we have had since childhood



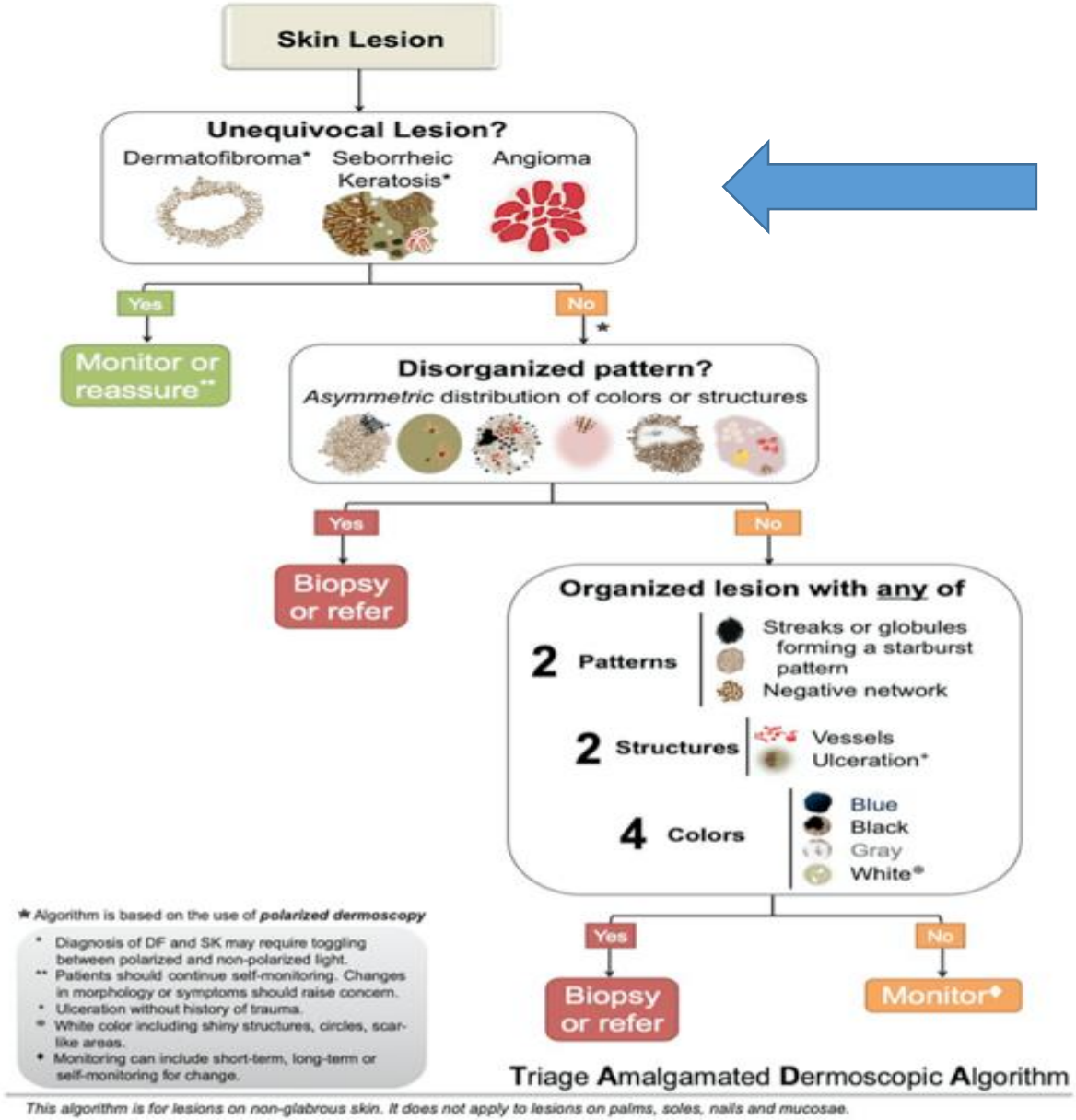
Healthy things are **symmetrical**
Unhealthy things are not

The TADA algorithm relies on

Symmetry and organization

vs

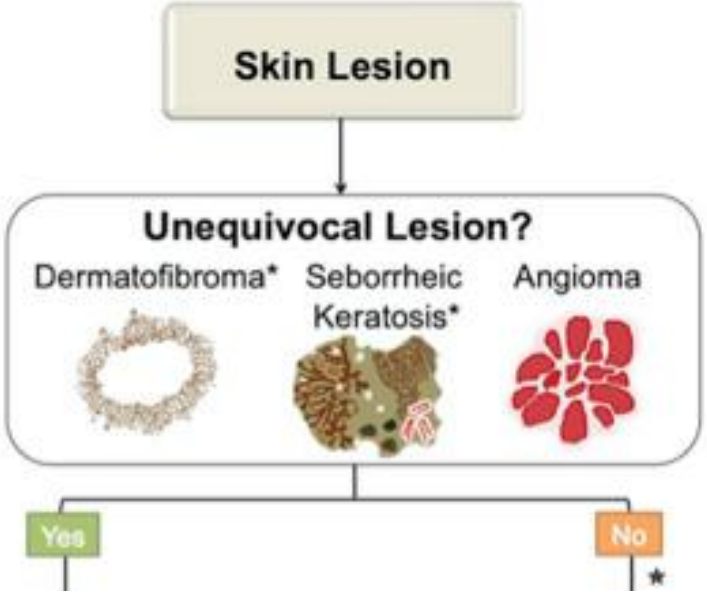
Asymmetry and disorganization



Infographic 1. Triage amalgamated dermoscopic algorithm. *DF*, Dermatofibroma; *SK*, seborrheic keratosis.

First step

Is this lesion a benign dermatofibroma, angioma or seborrheic keratosis? If so> reassure



Dermatofibroma and angiomas are easy

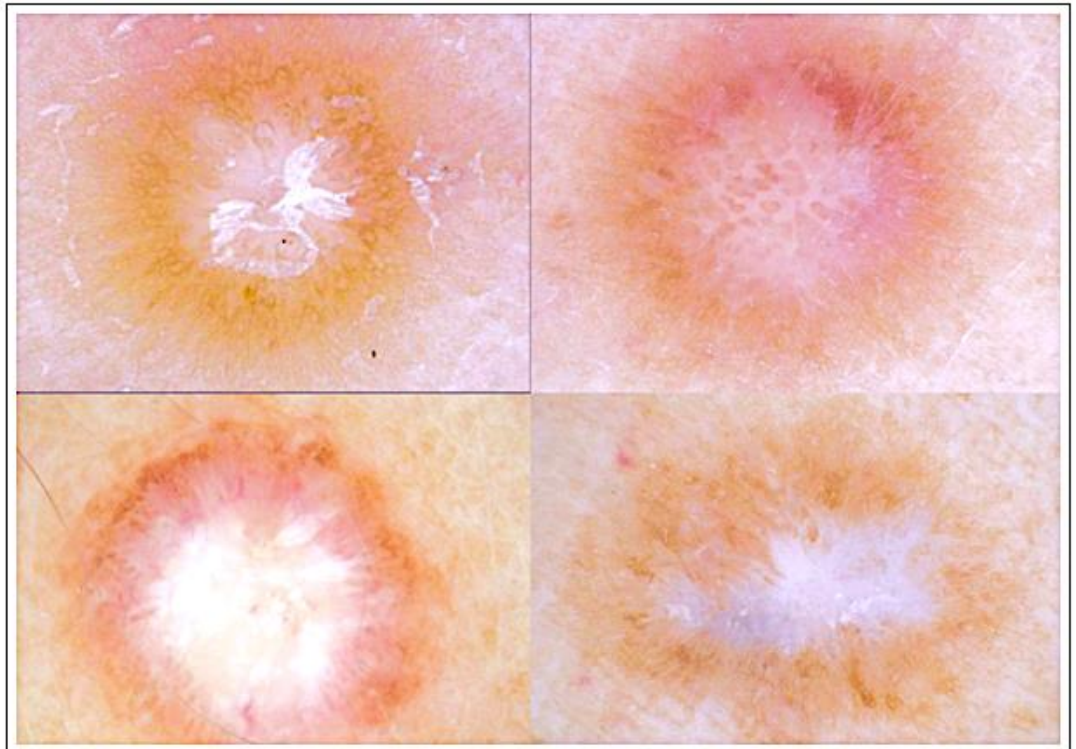
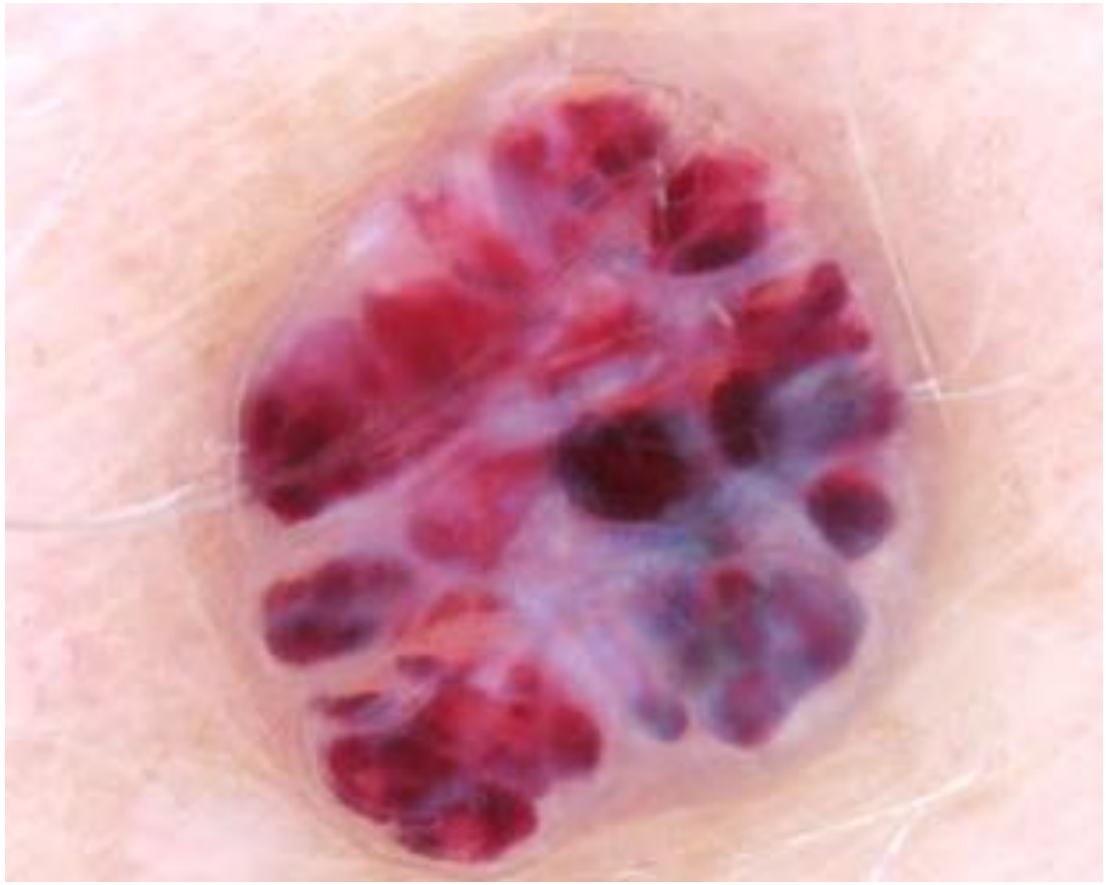
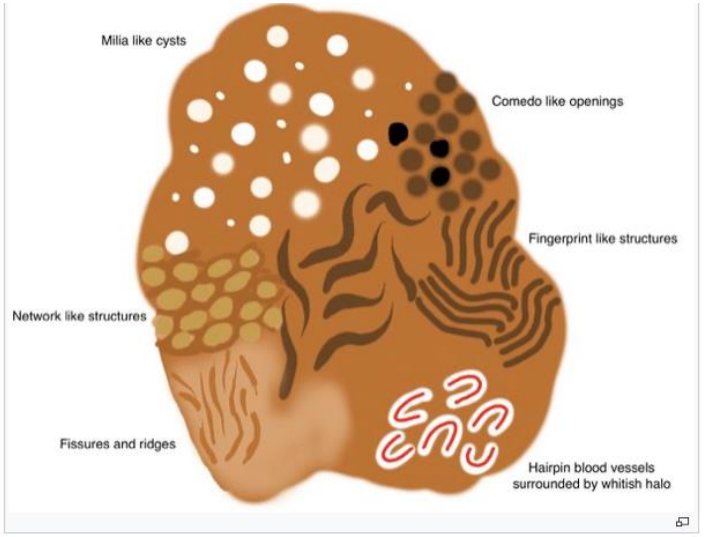
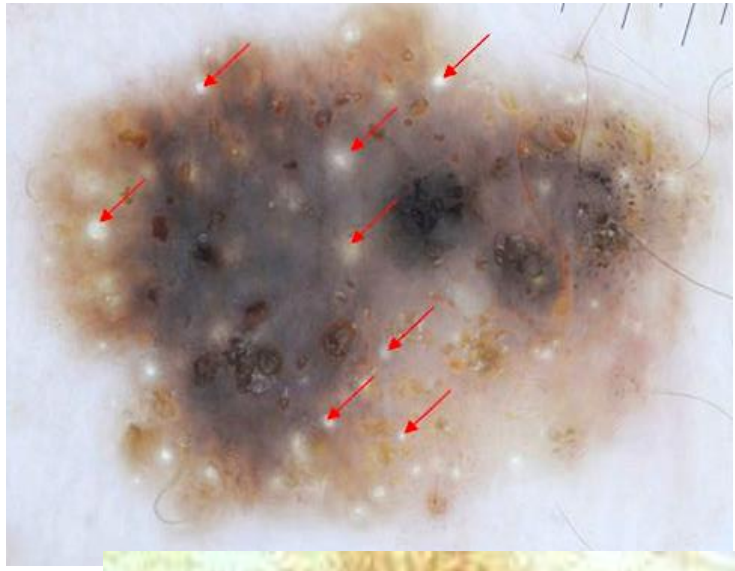


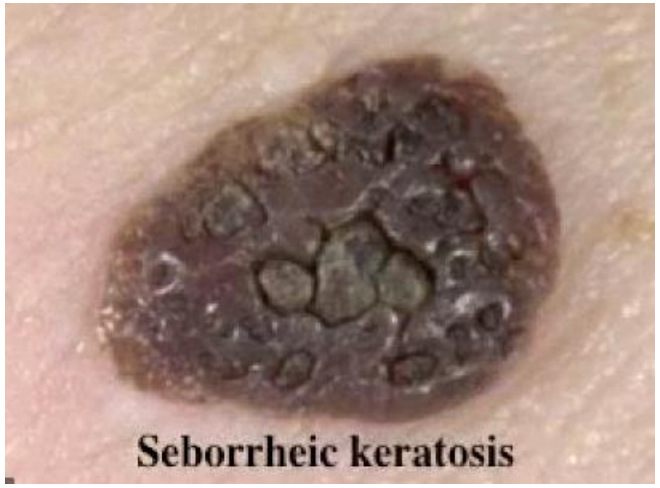
Figure 6 Variants of dermatofibroma. This composite figure well demonstrates the variation on the theme of central white scar-like patch, representing a classical dermoscopic clue for dermatofibroma (Ferrari et al, 2000).

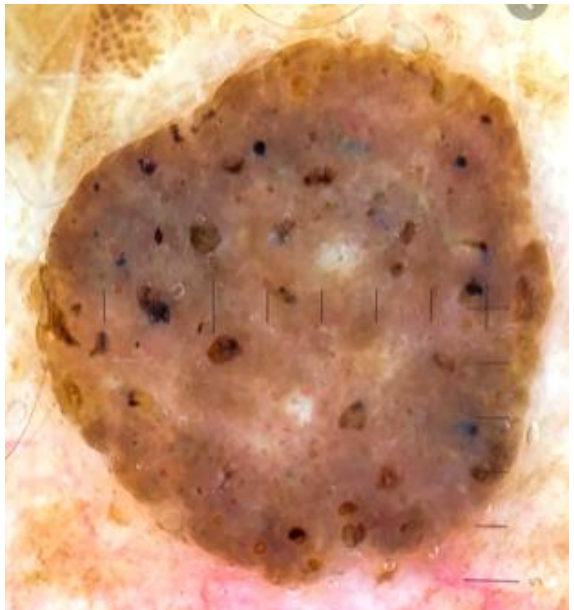


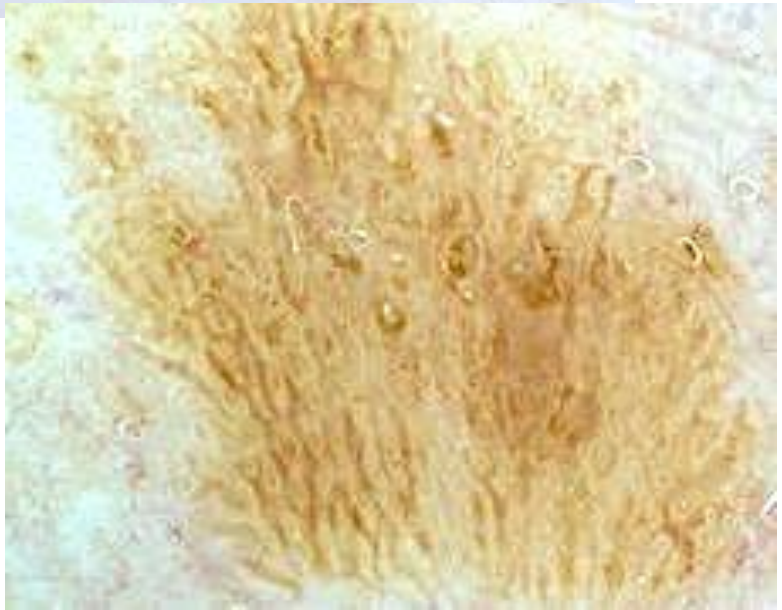
Seborrheic keratosis have many possible appearances

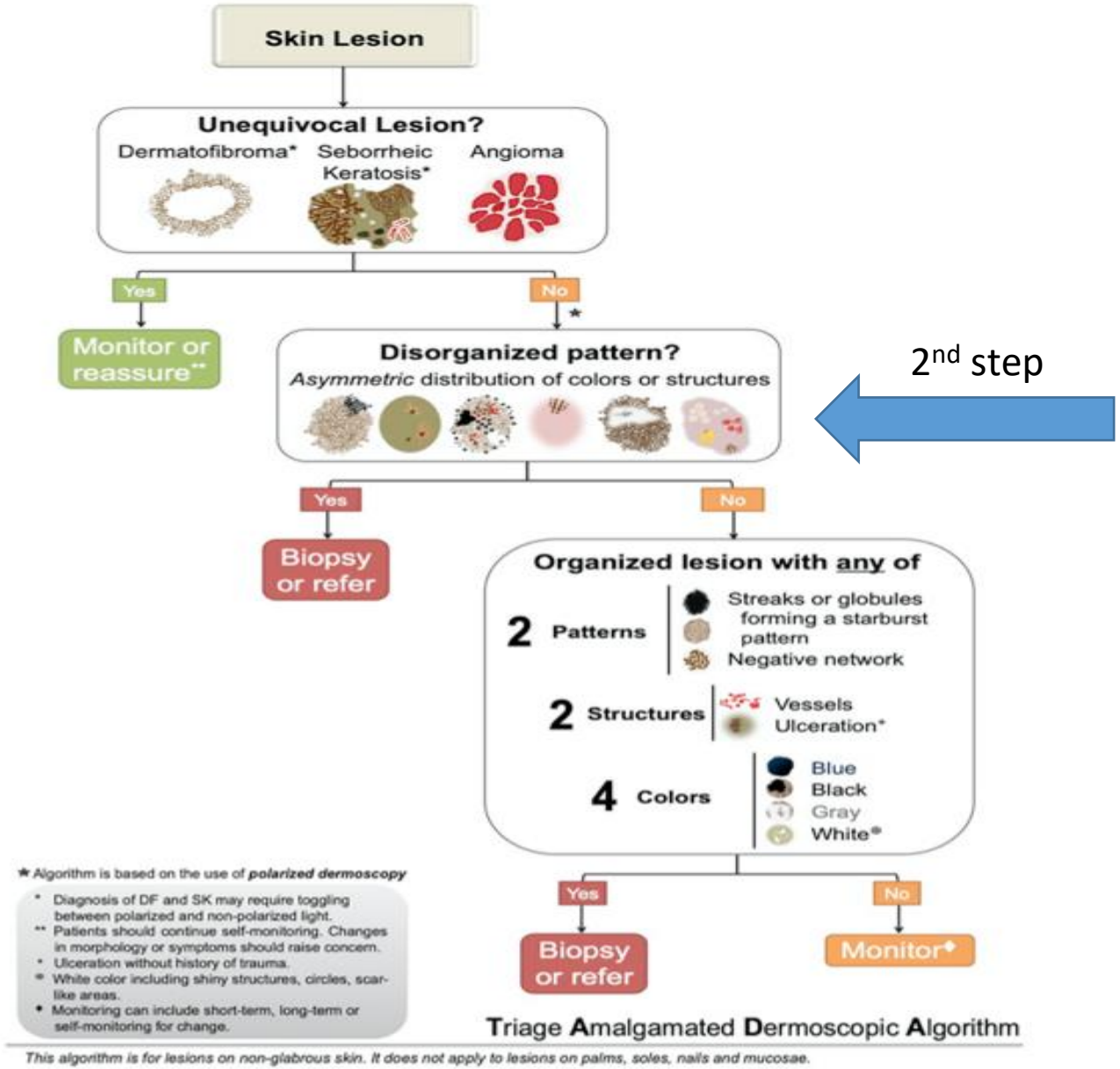












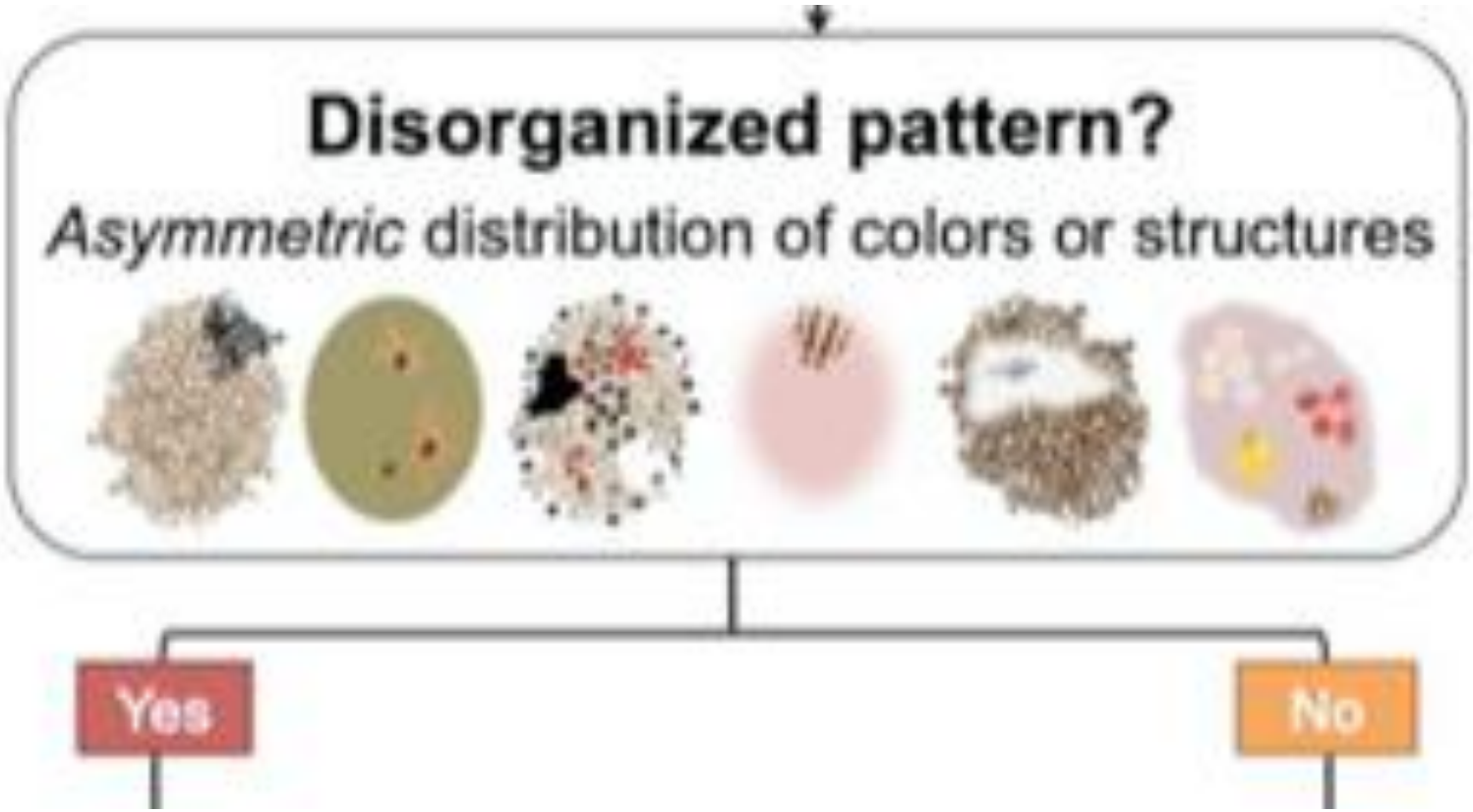
2nd step

Infographic 1. Triage amalgamated dermoscopic algorithm. *DF*, Dermatofibroma; *SK*, seborrheic keratosis.

Second step

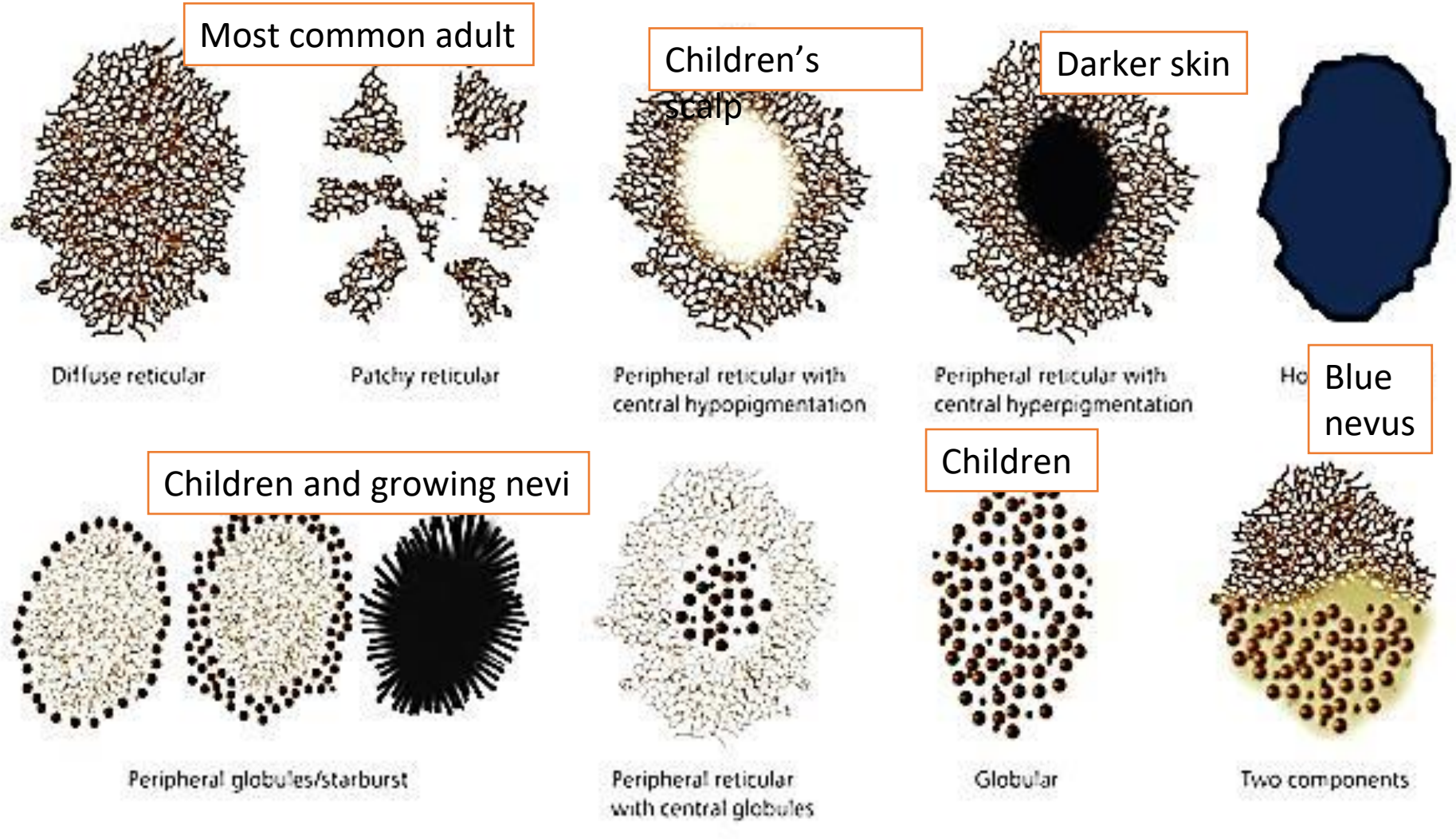
Is the pattern **organized** or **disorganized**?

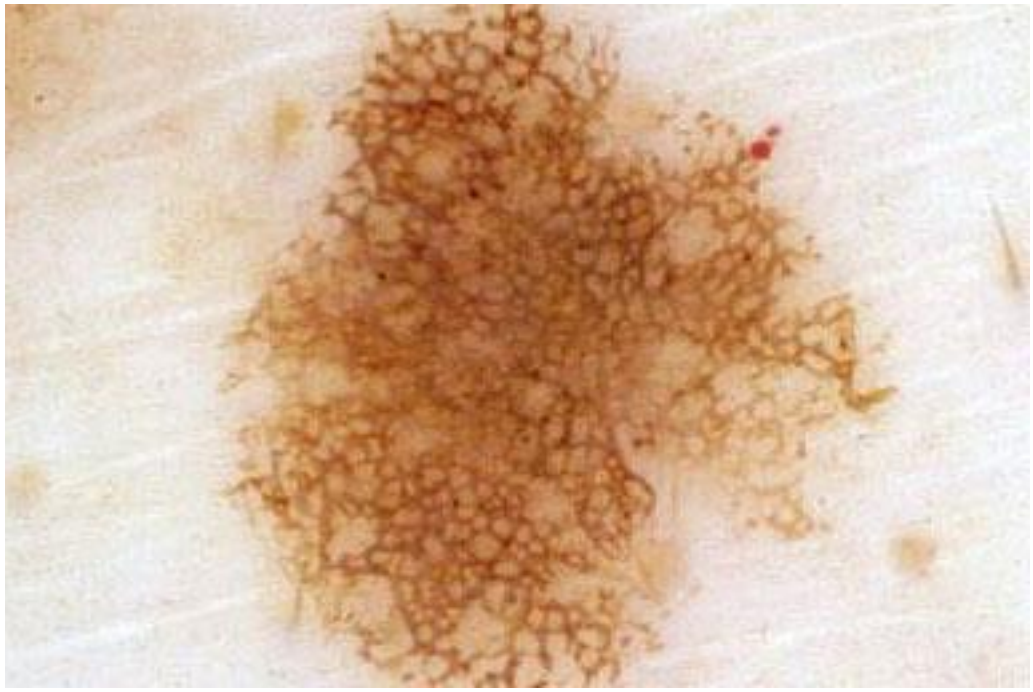
If so Biopsy or Refer



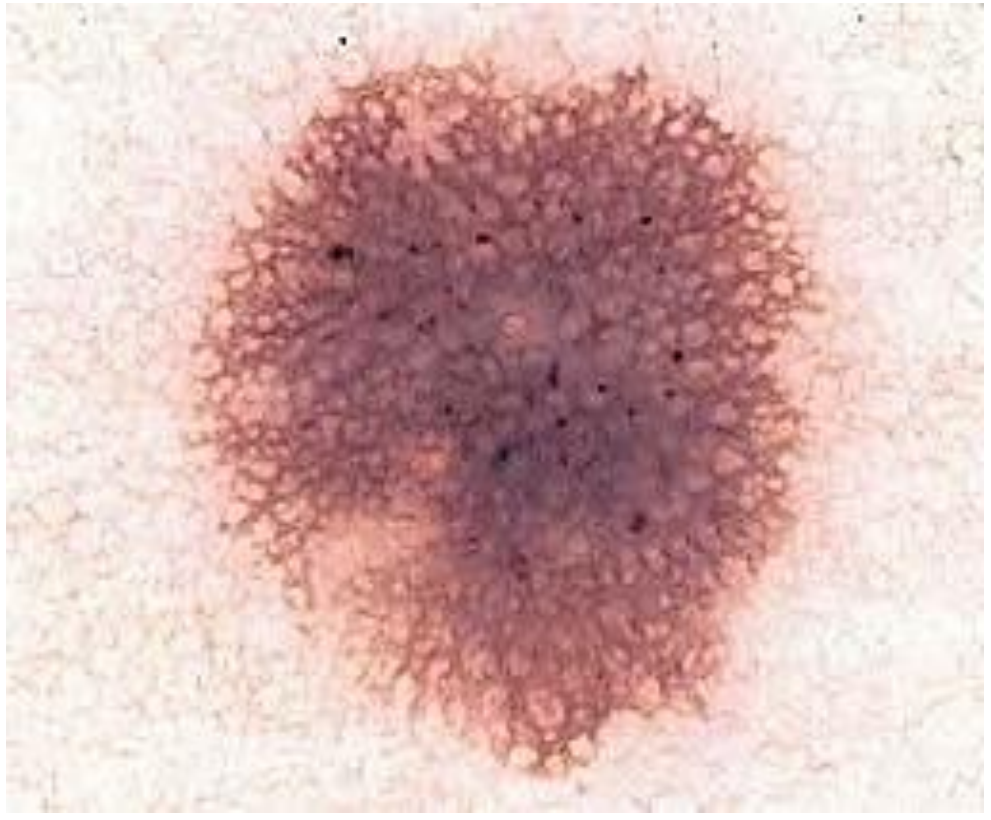
Organized symmetrical patterns of benign nevi > monitor or reassure

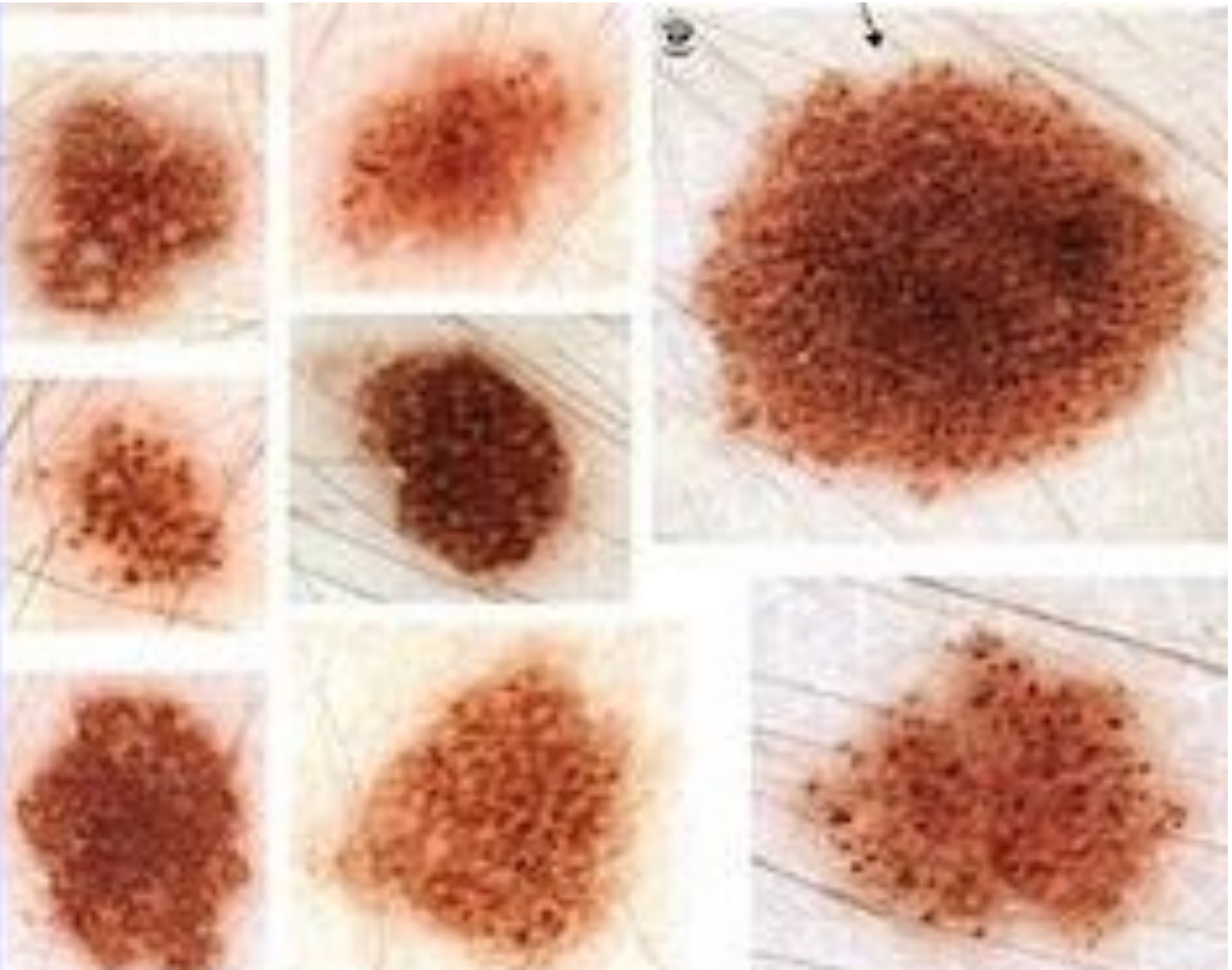
Am Fam Physician. 88(7), 2013 p. 446





Organized reticular network
most common
in adults

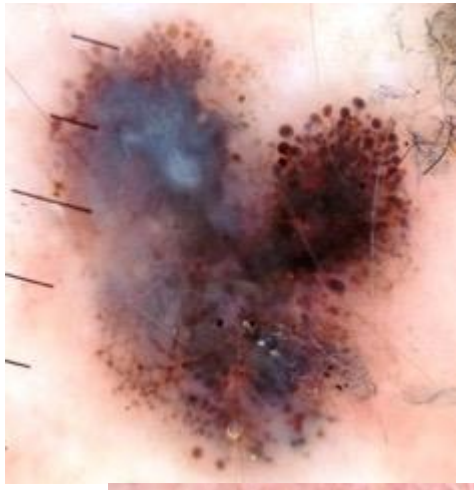


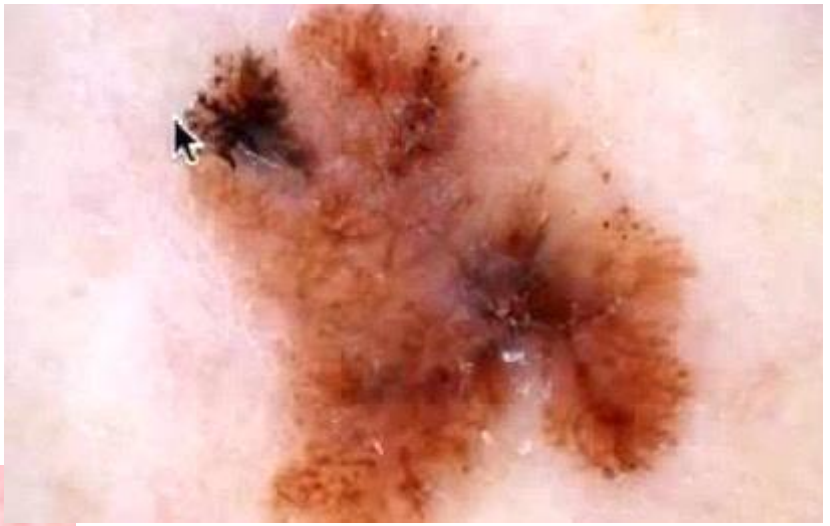


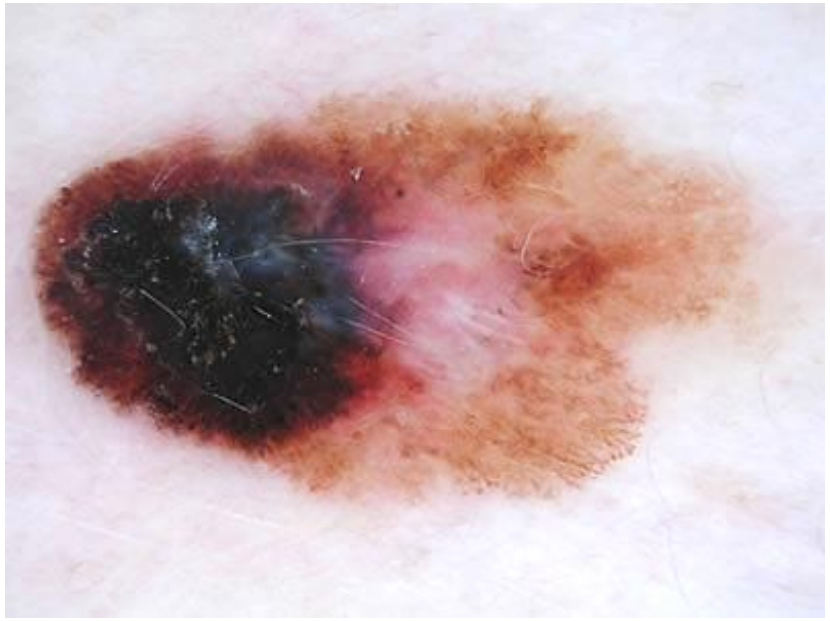
Organized

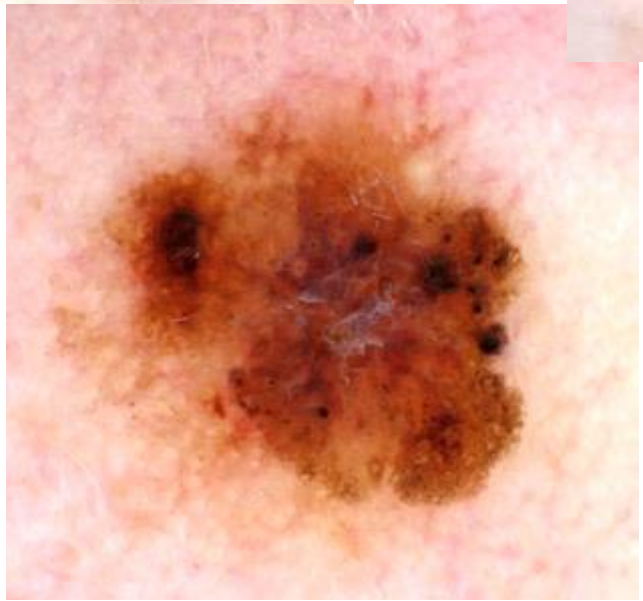
Globular pattern most common In children

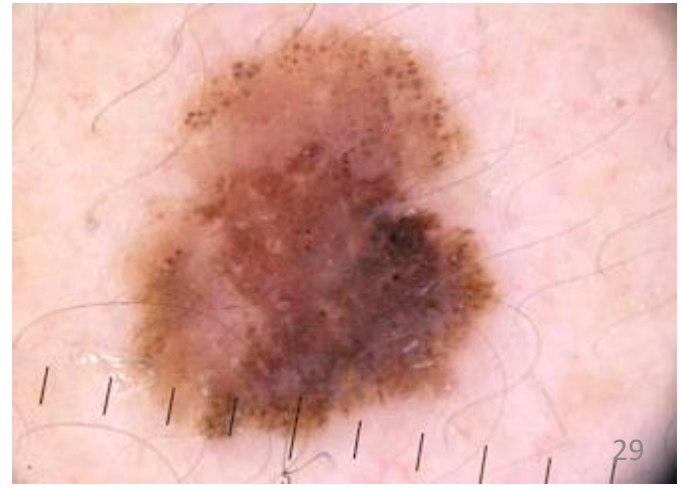
Disorganized pattern asymmetric distribution of colors and structures in melanomas > Biopsy or refer



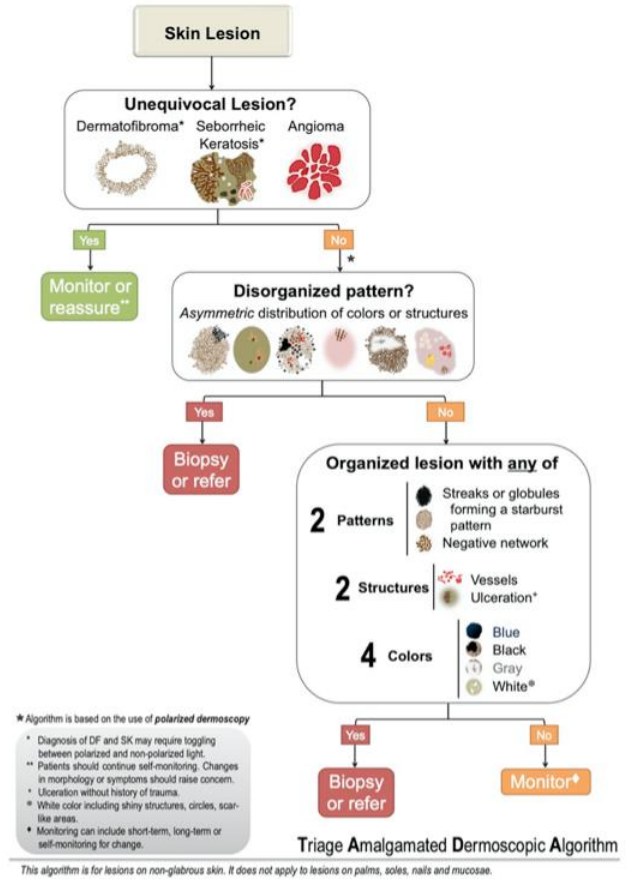






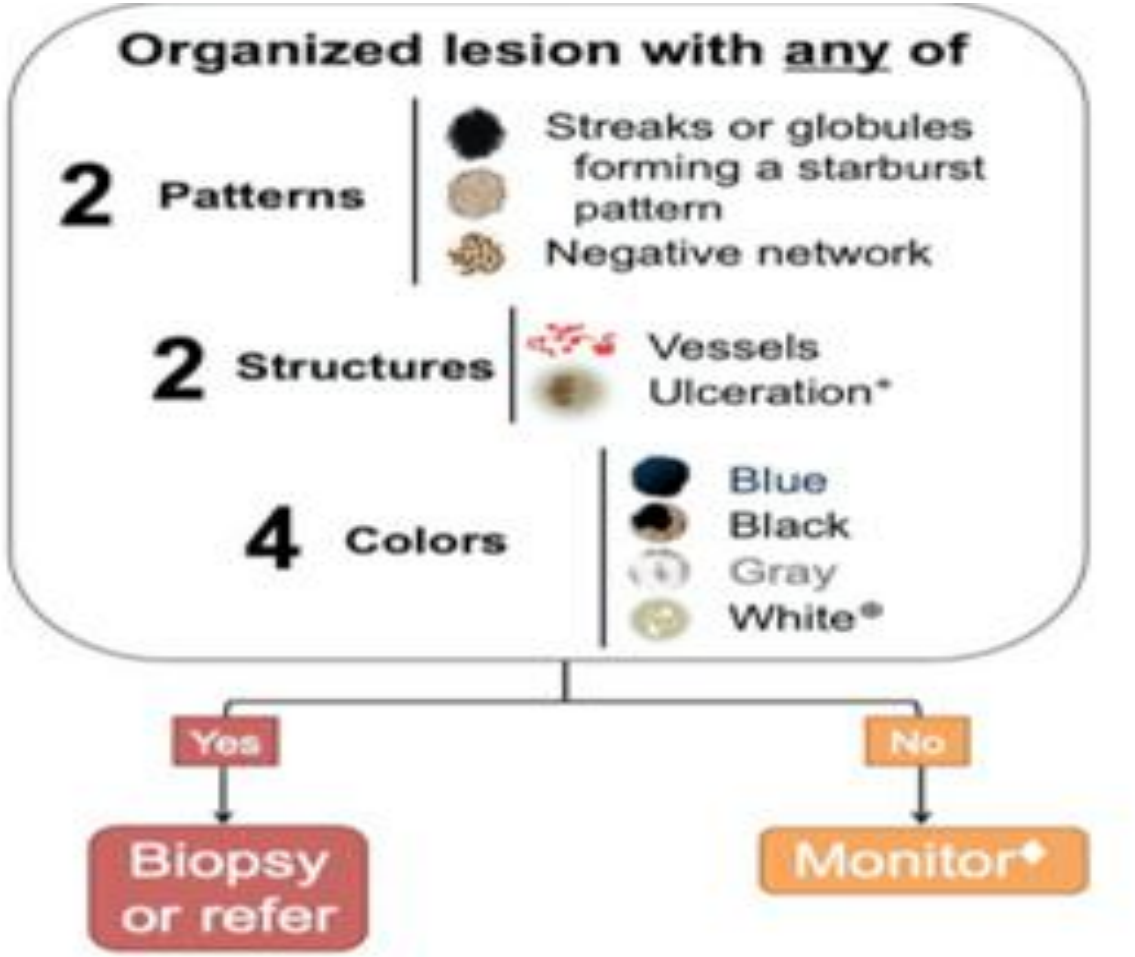


Most lesions that are “disorganized” are melanoma, What about lesions that are “organized,” but have suspicious features for melanoma?

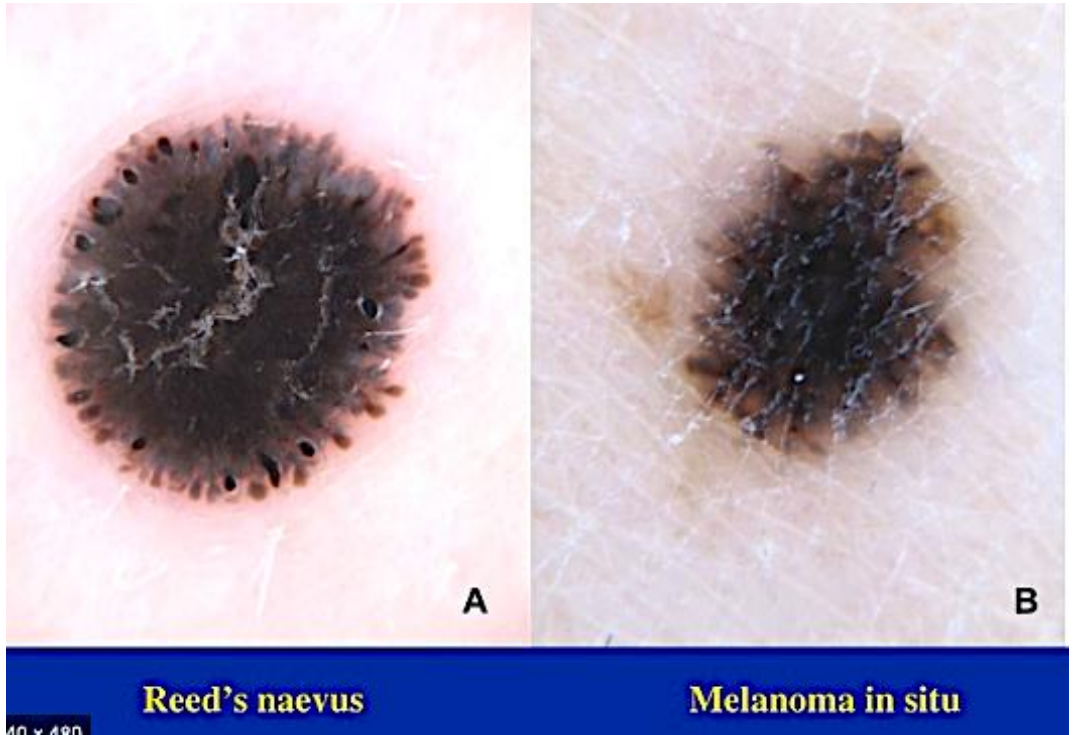


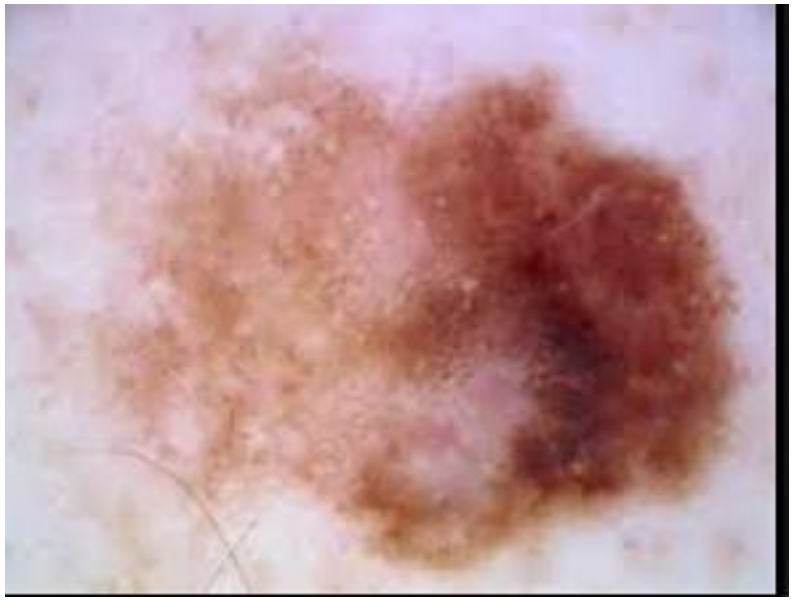
Infographic 1. Triage amalgamated dermoscopic algorithm. *DF*, Dermatofibroma; *SK*, seborrheic keratosis.

Organized lesions
with melanoma specific structures



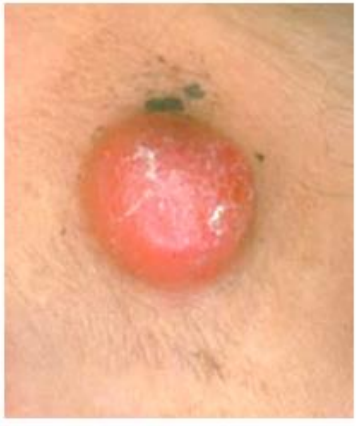
Organized lesions but with have melanoma specific structures



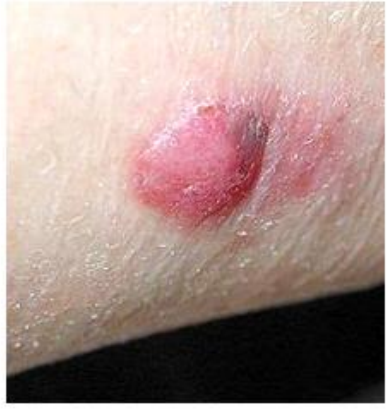


Organized lesions but have melanoma specific structures

2 Structures | Vessels | Ulceration*



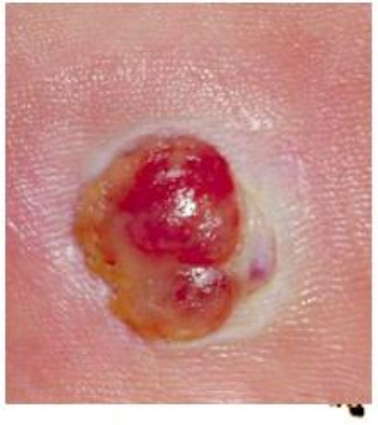
Atypical vascular structures

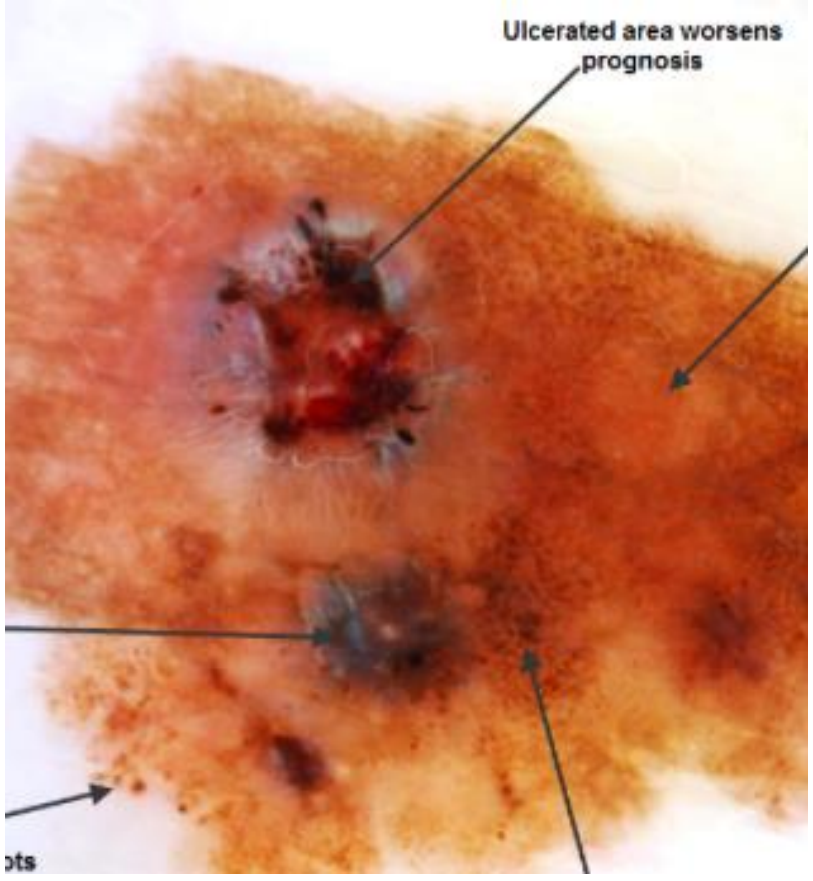


Dotted vessels over milky-red backgrounds

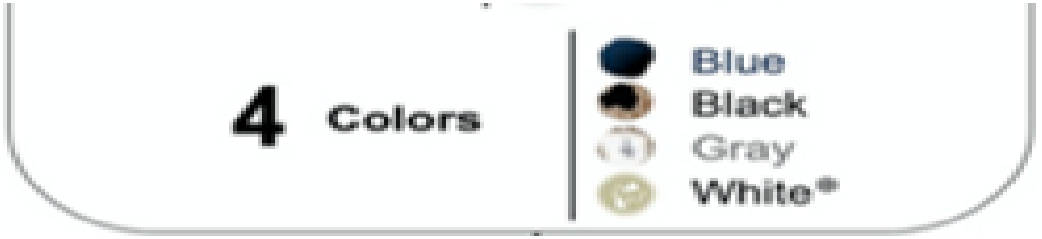
Serpentine (irregular linear) vessels

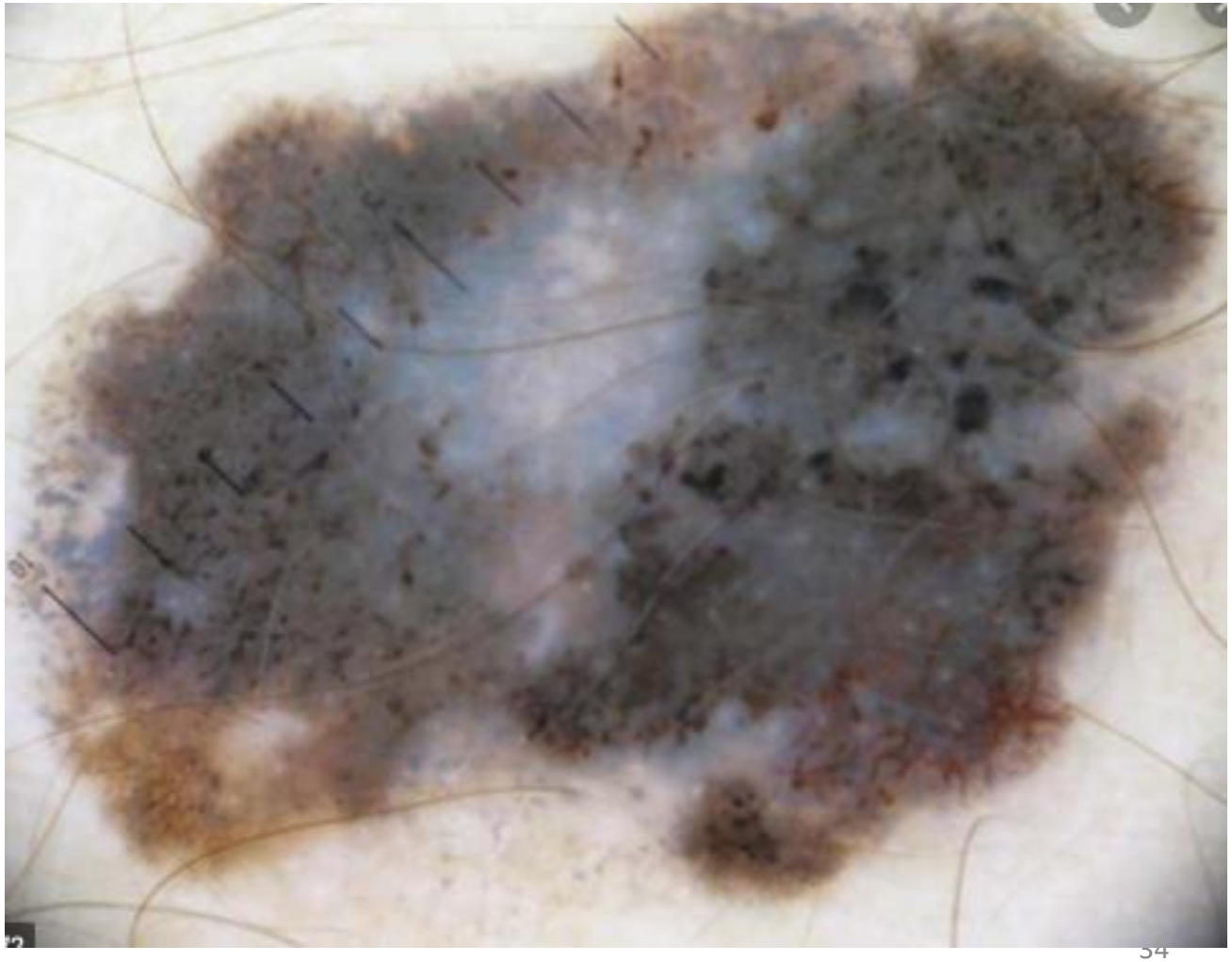
Polymorphous vessels



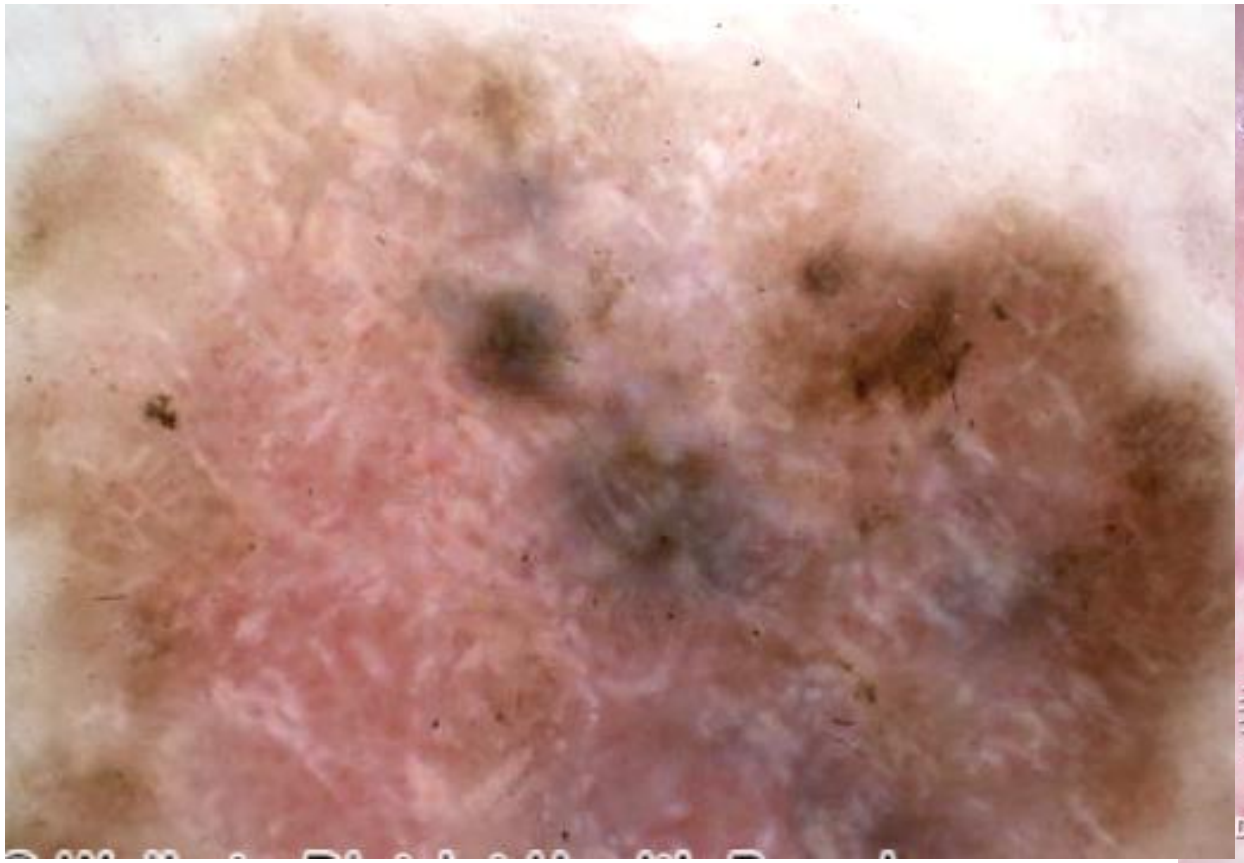


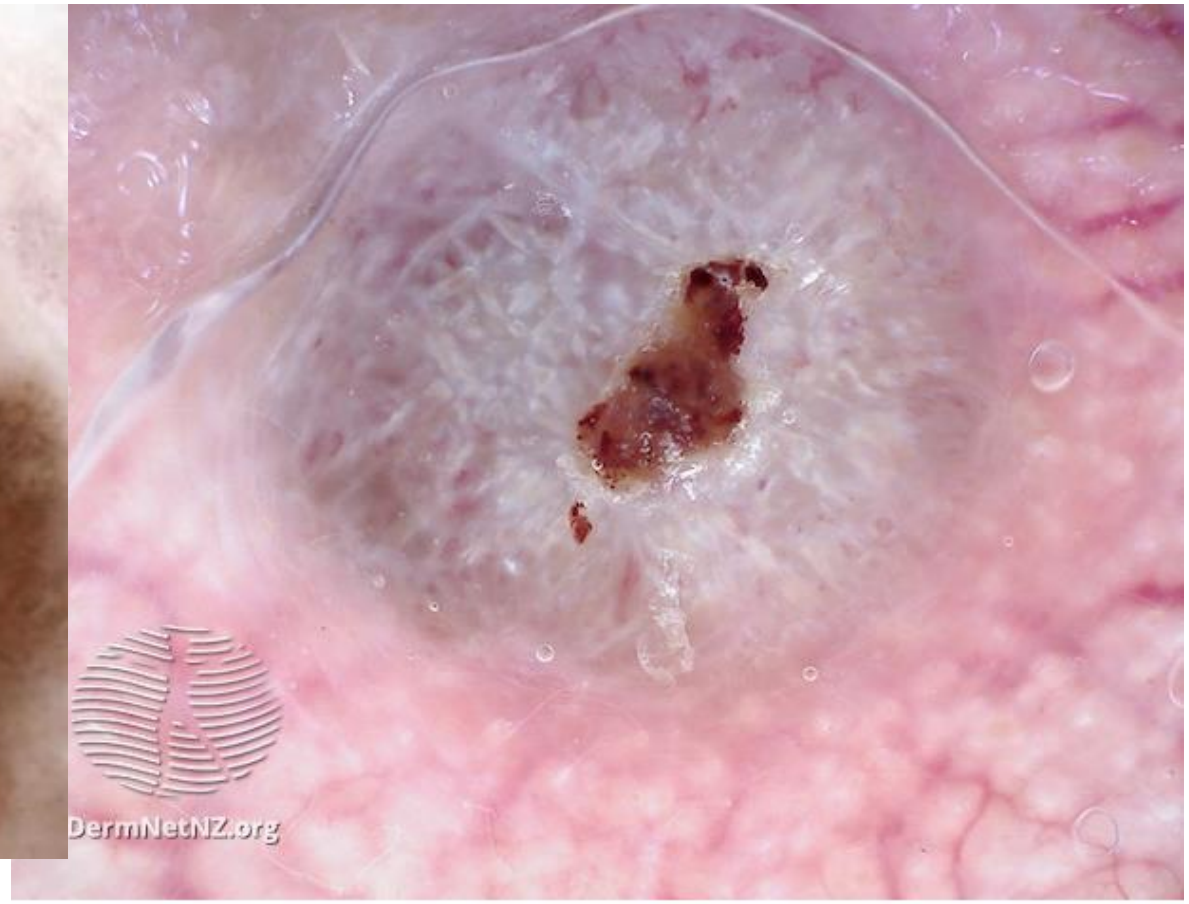
Organized lesions
with melanoma specific structures





Other suspicious “white” structures

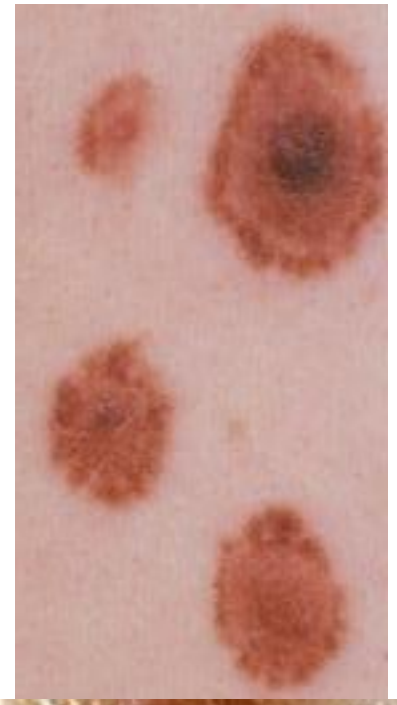


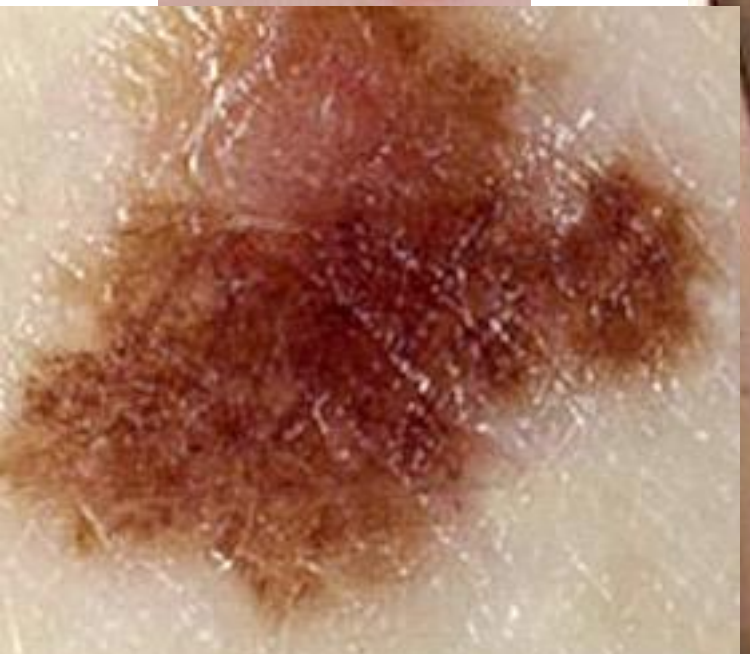


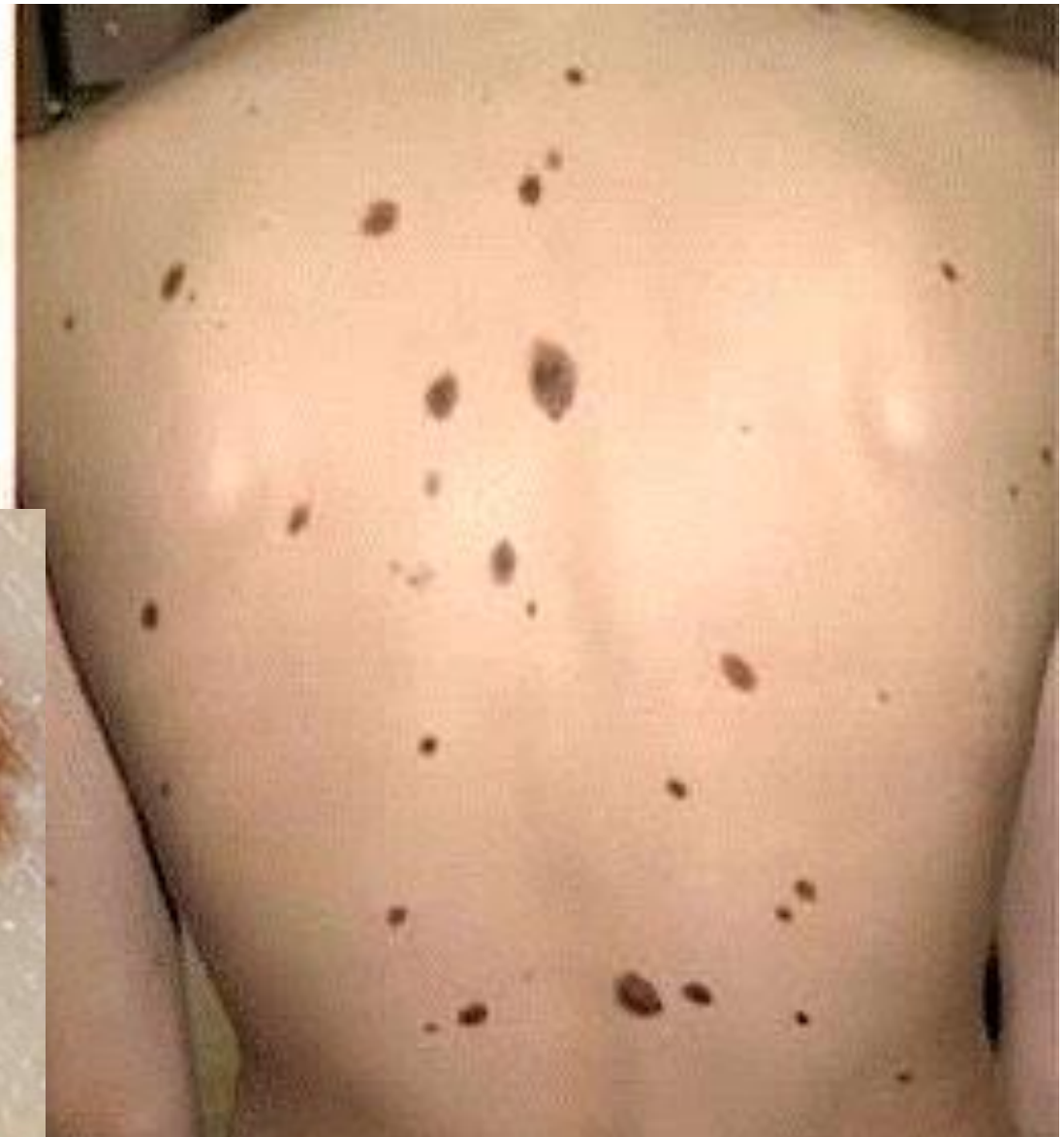
Nodular melanoma, Breslow 6.8 mm

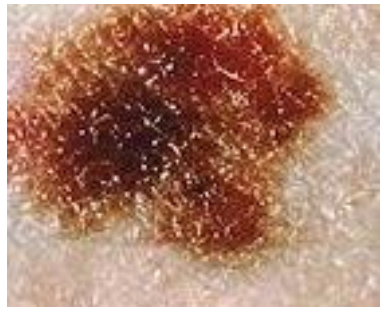
Atypical/dysplastic nevi have some features of melanoma on physical exam and dermoscopy

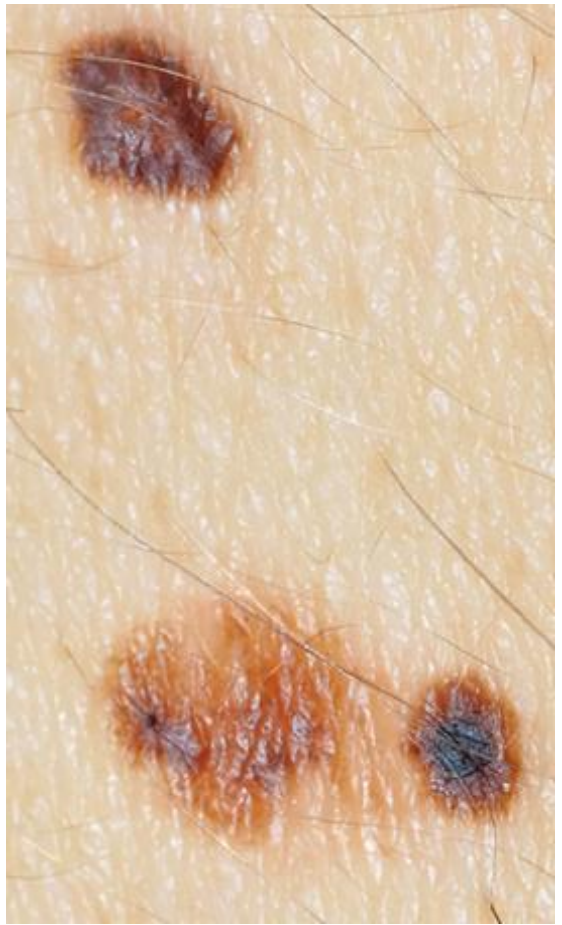
Atypical/ **Dysplastic** Nevi



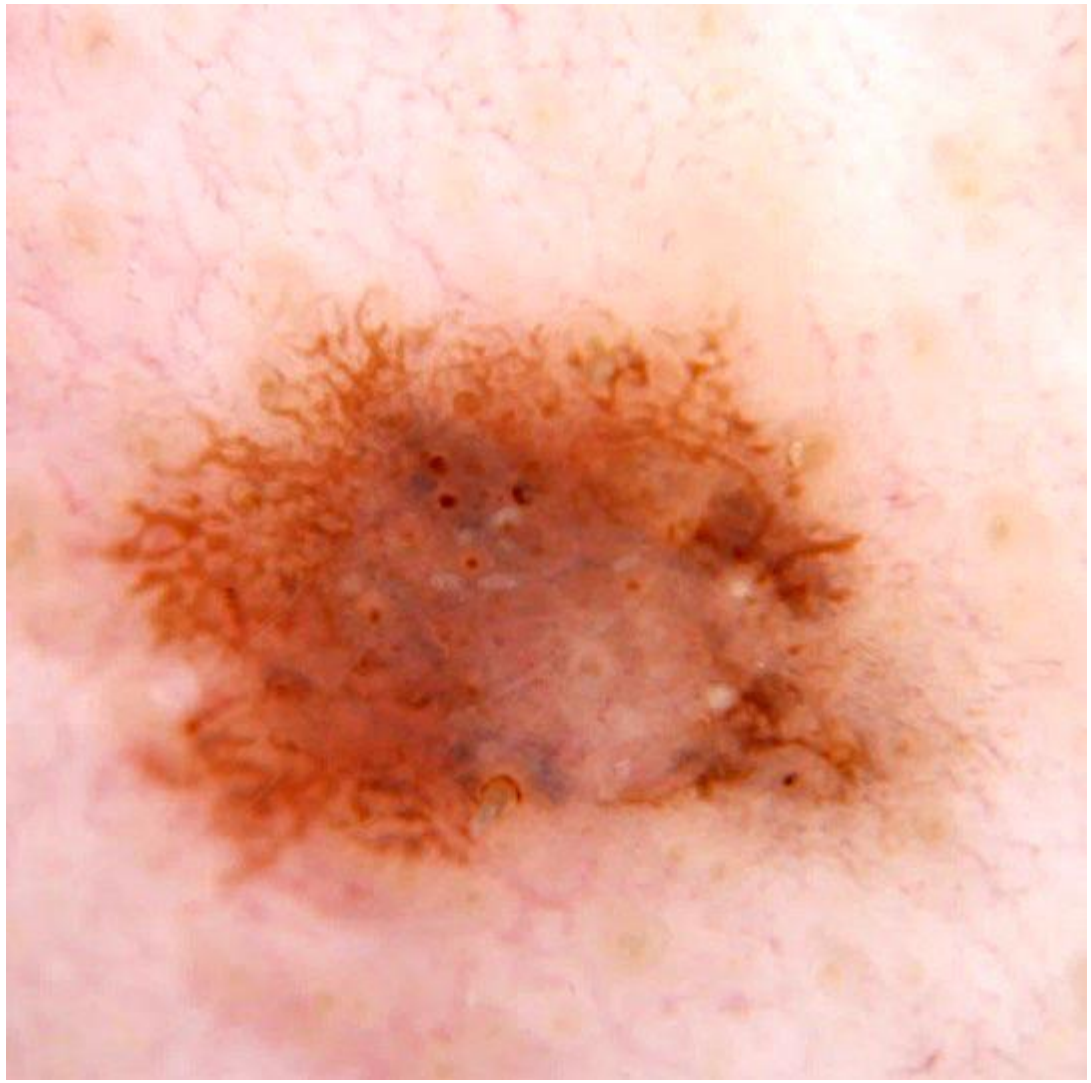


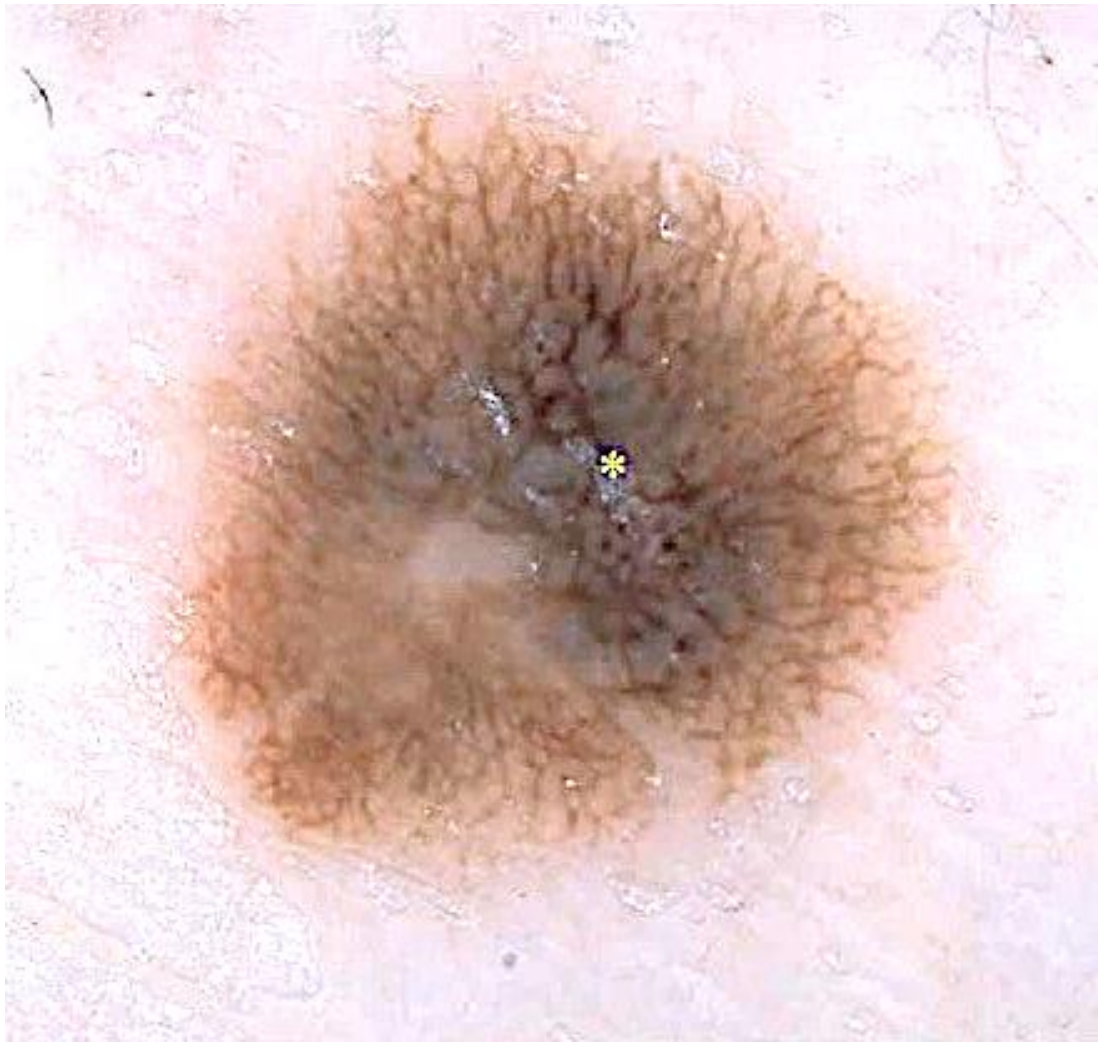




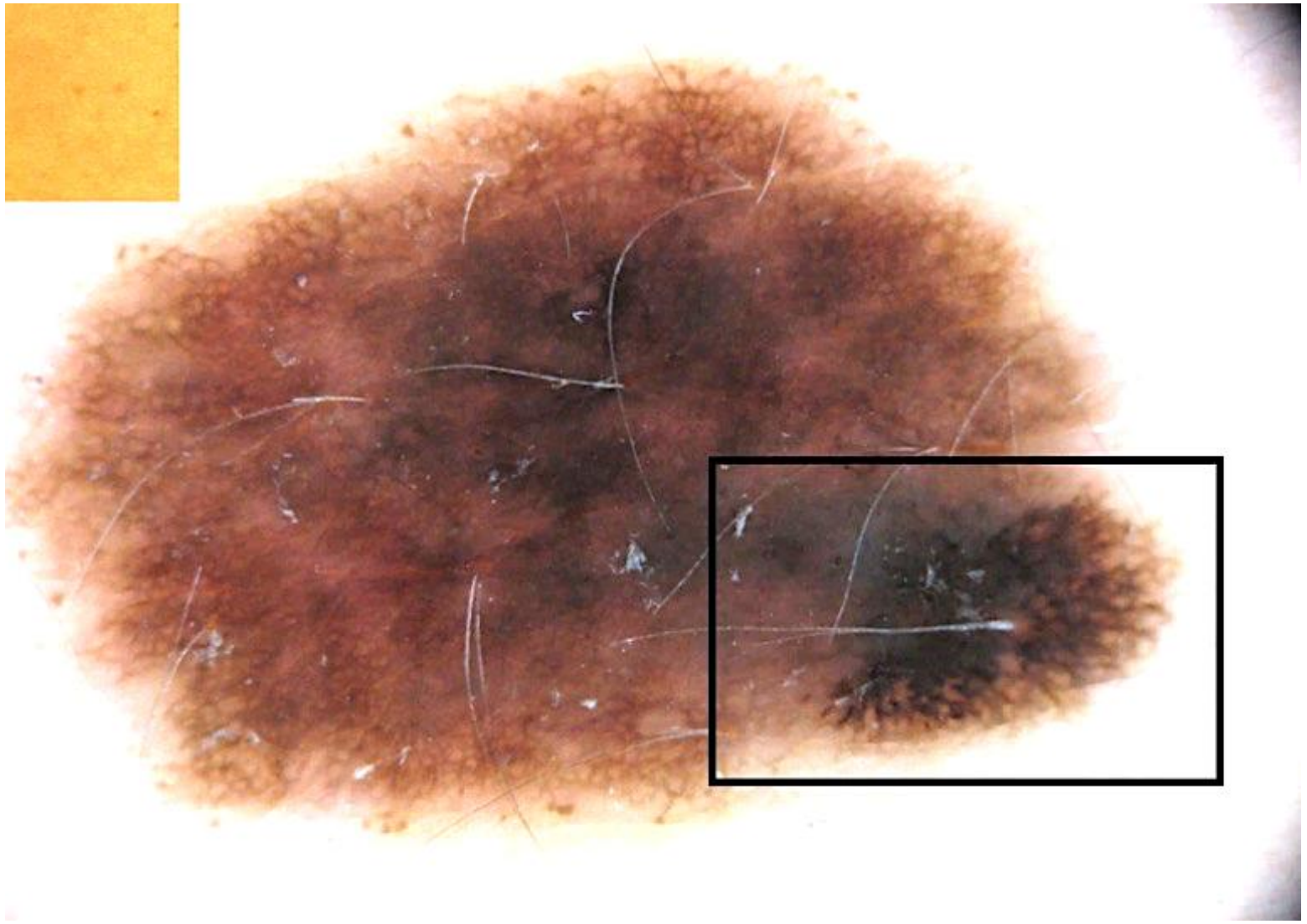


Atypical/dysplastic nevi
Dermosopy

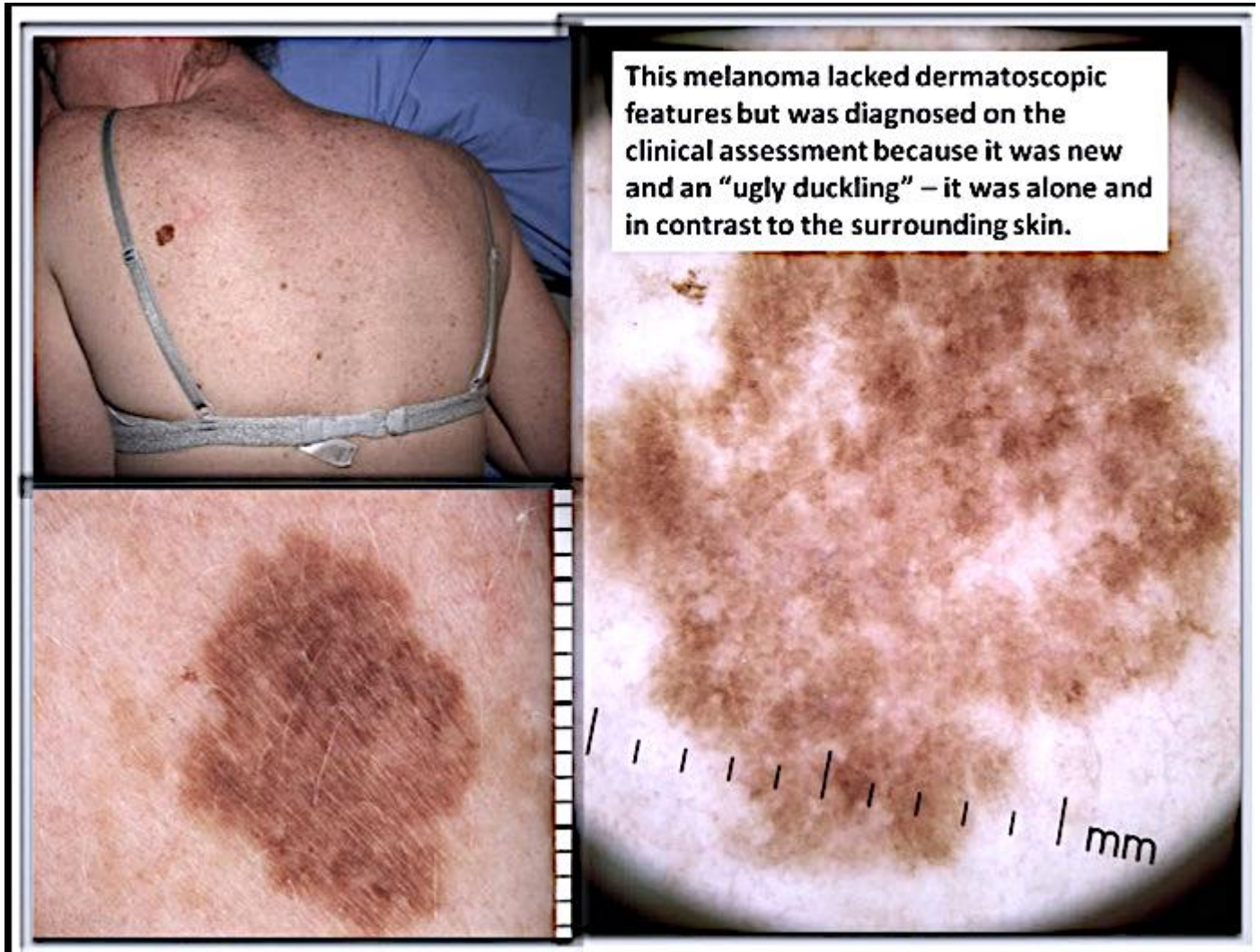




Dysplastic nevus evolving into melanoma

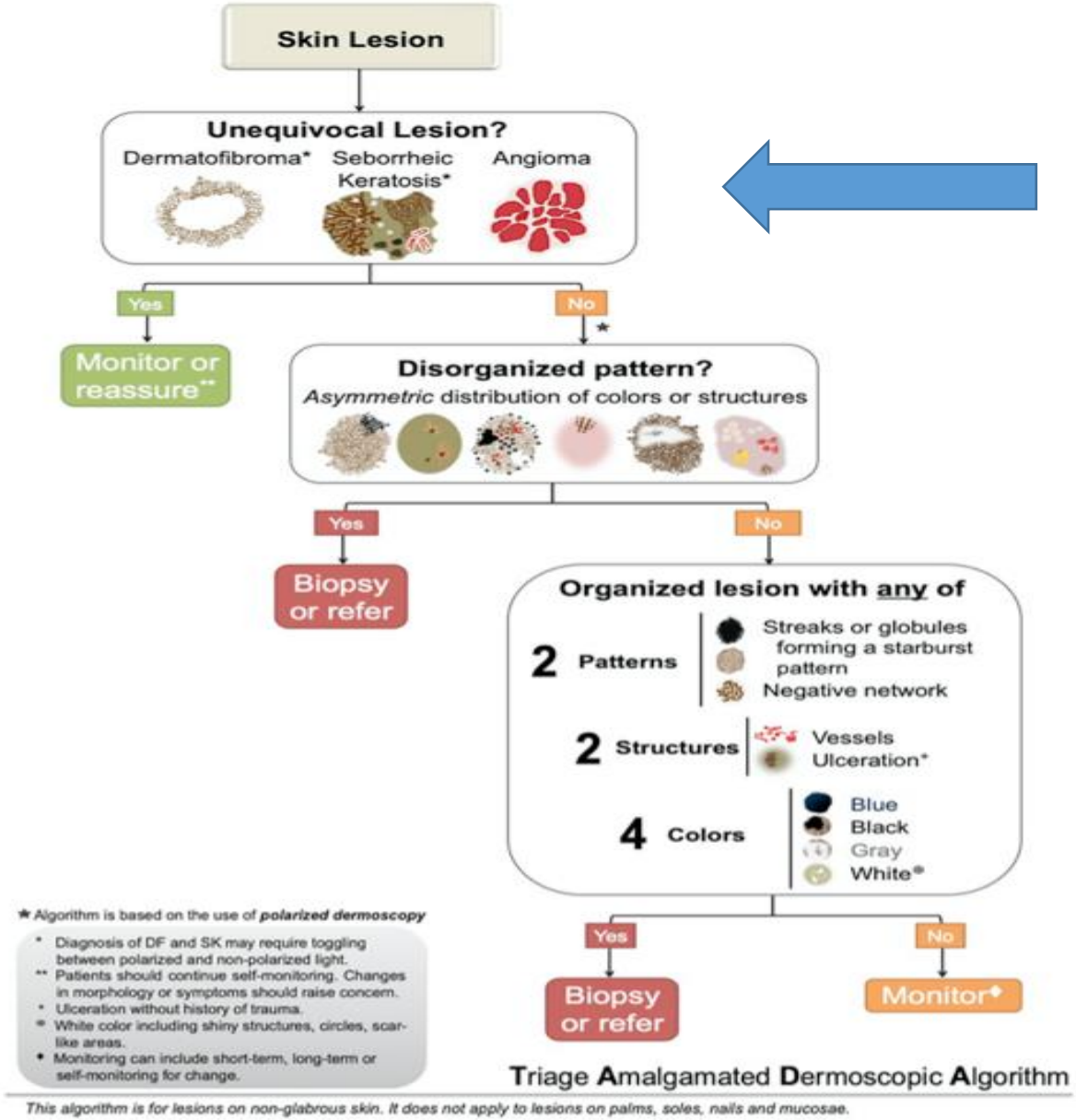


Melanoma in an “ugly duckling” or exceptional nevus, network lines are thick in areas, but otherwise dermoscopy is not remarkable



If you suspect a lesion is a melanoma,
biopsy the entire width and depth

Let’s review those steps



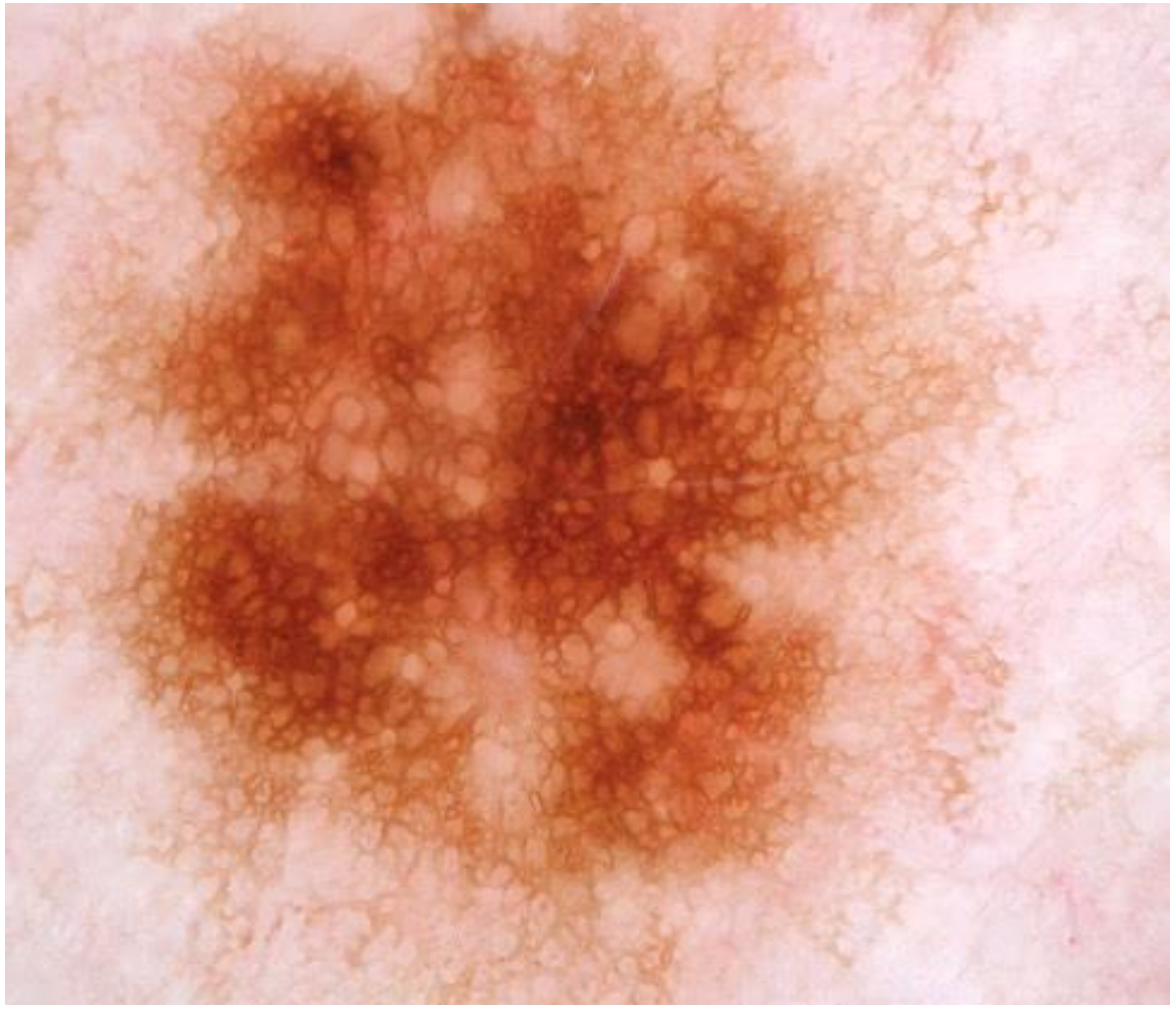
Infographic 1. Triage amalgamated dermoscopic algorithm. *DF*, Dermatofibroma; *SK*, seborrheic keratosis.

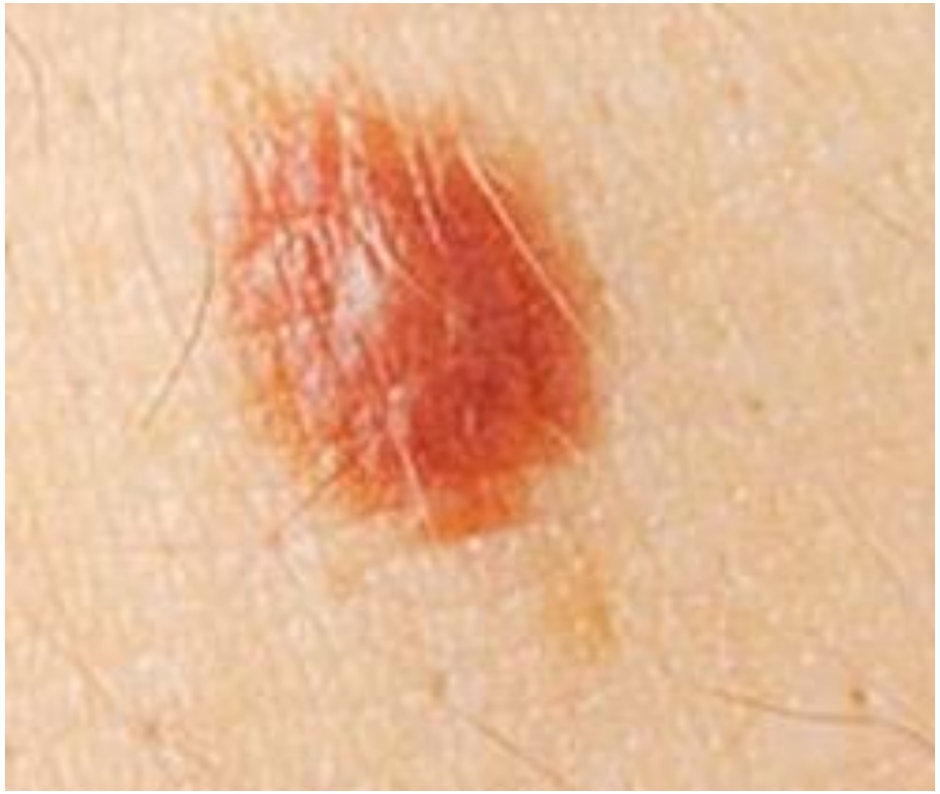
Quiz time!
Clinical Unknowns

What would you do based on clinical and dermoscopy findings?

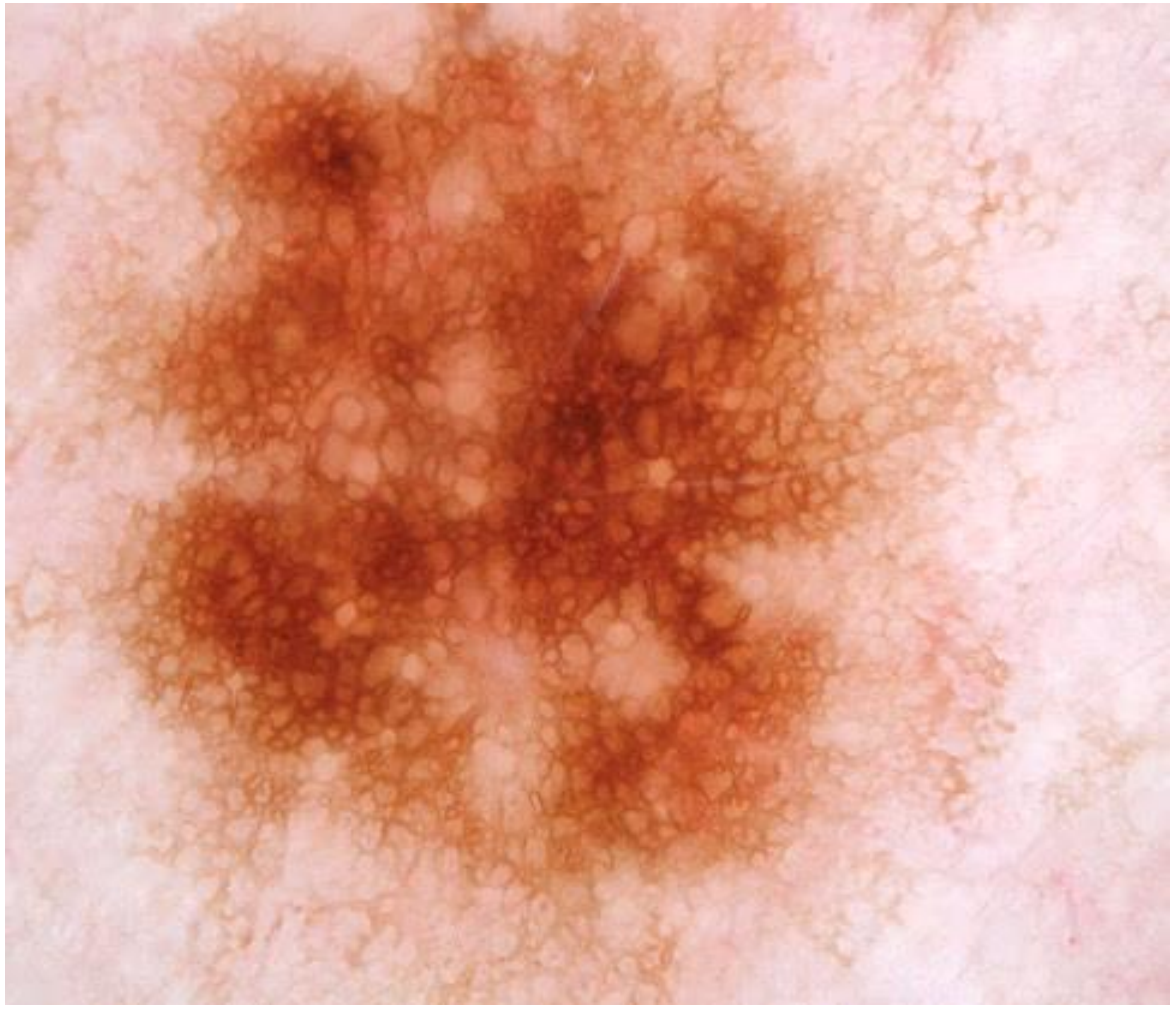
1. Reassure that this is a benign lesion
2. Monitor and follow up
3. Biopsy due to concern for malignancy

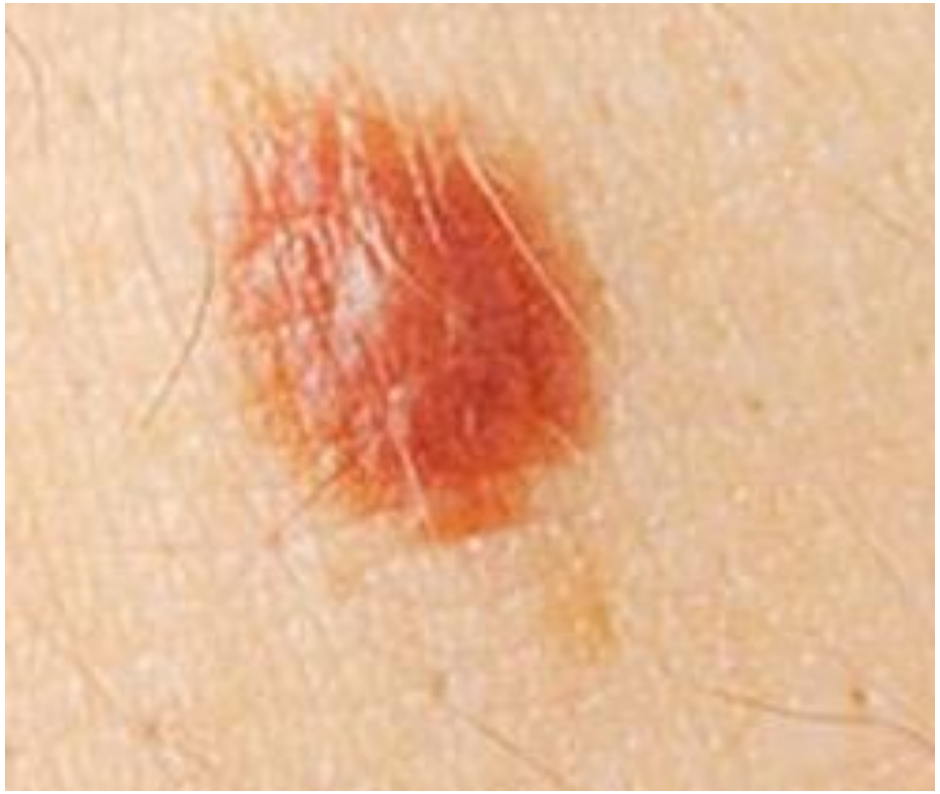
#1: Male in 30s



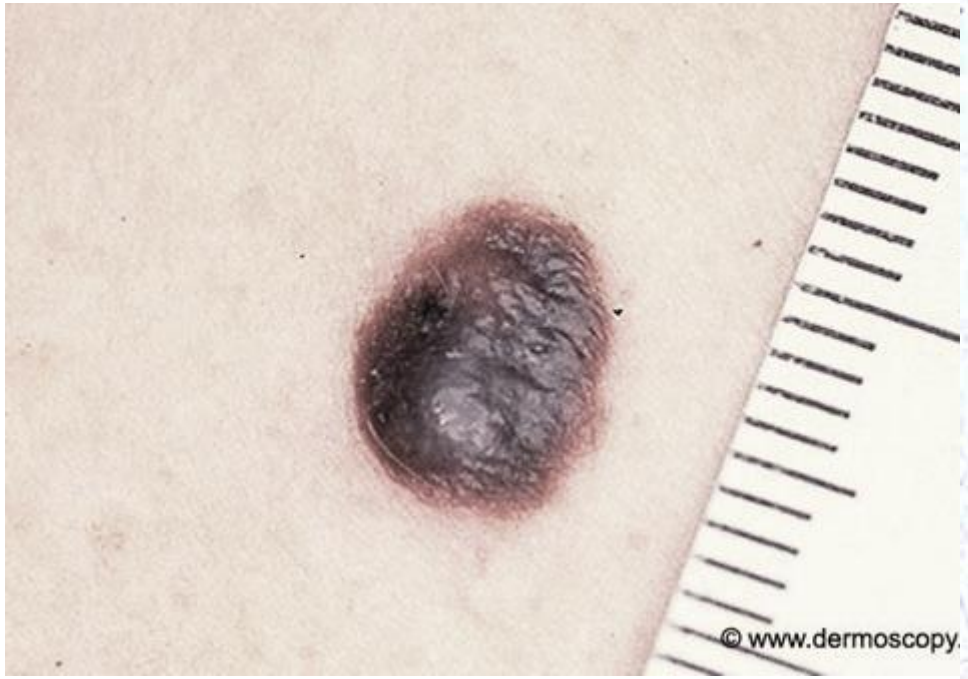


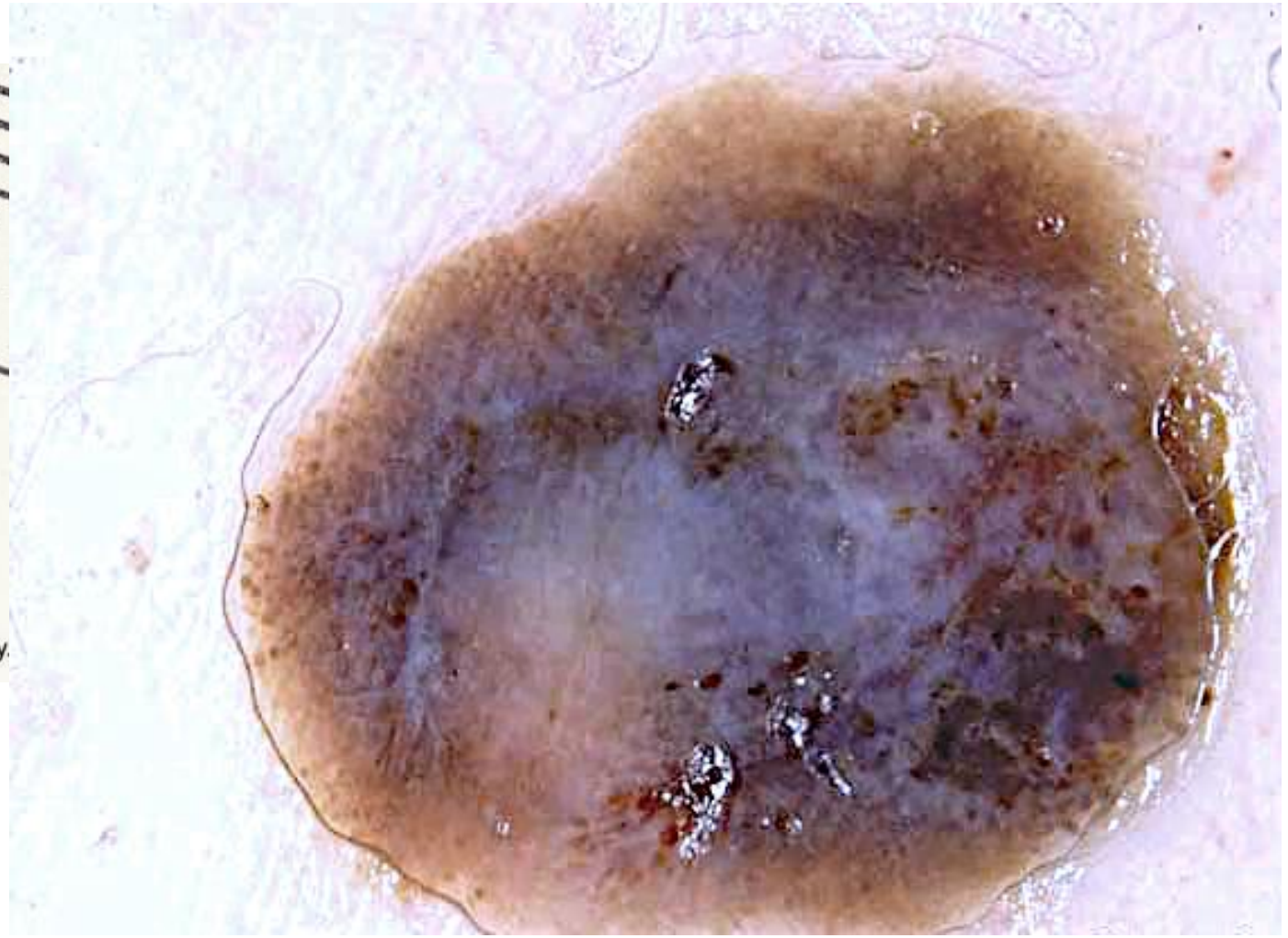
#1: **Benign nevus:** normal, organized pigment network



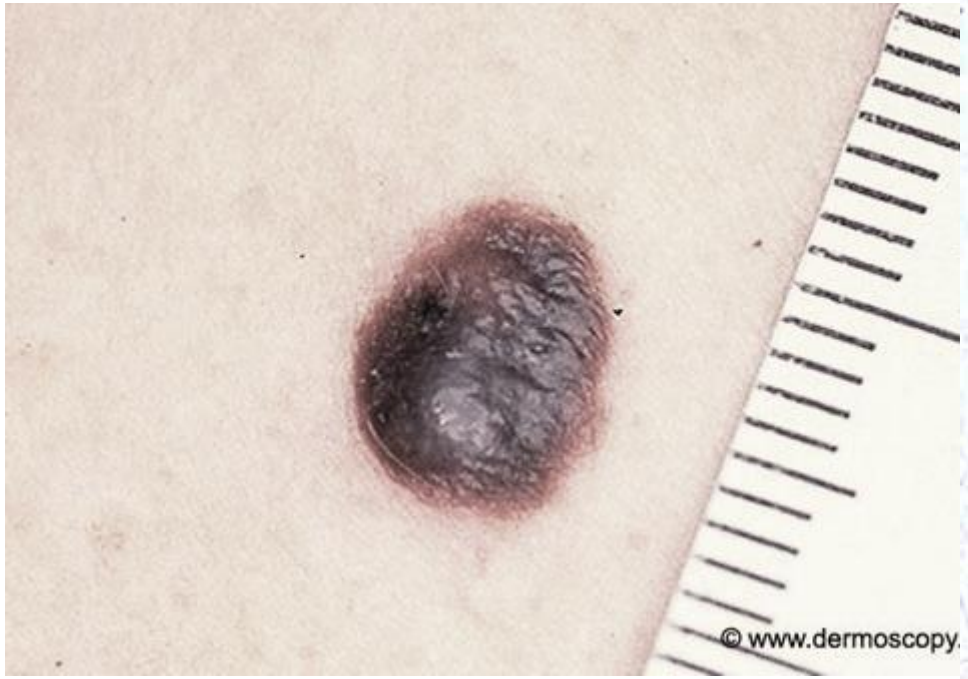


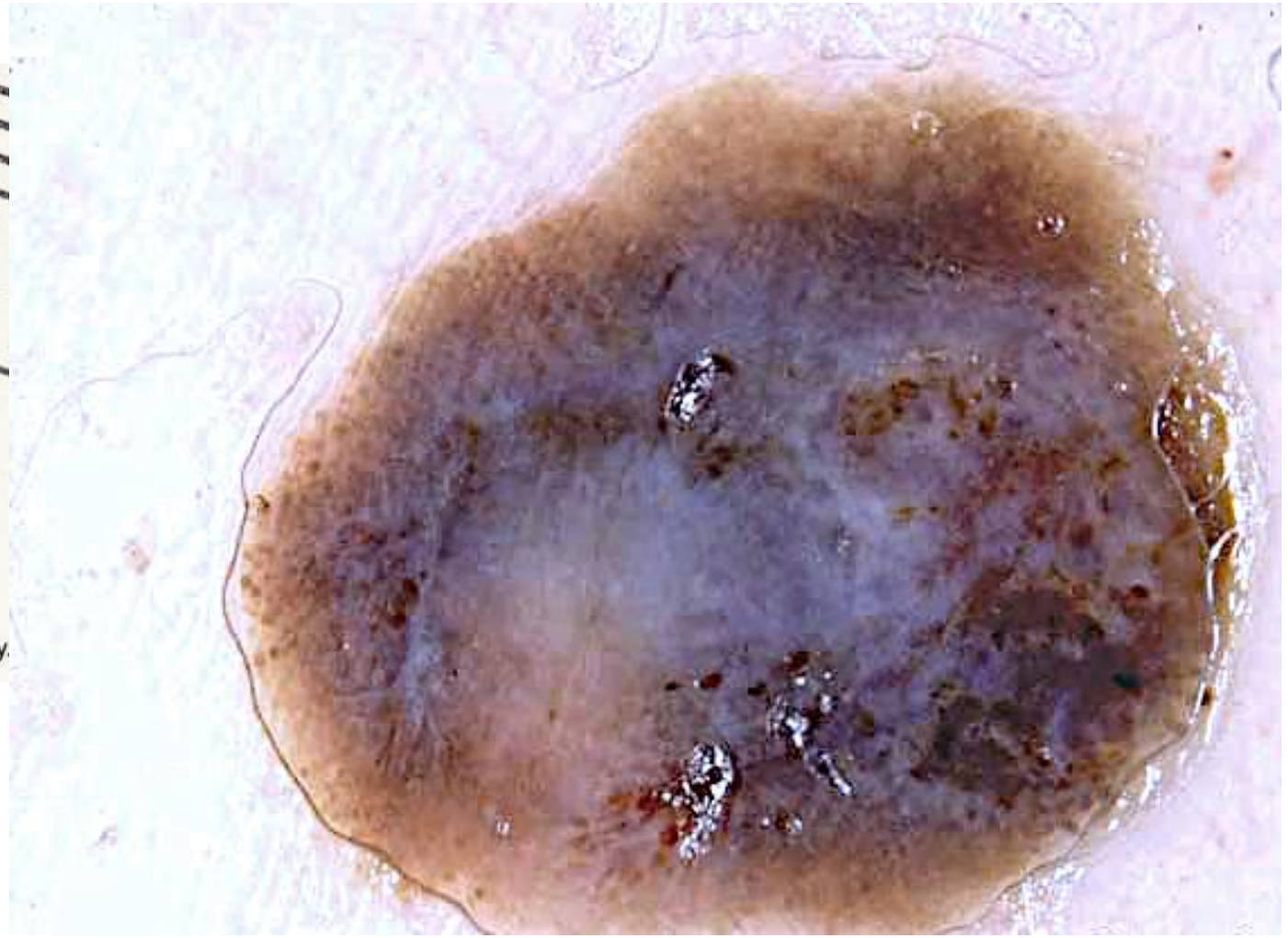
#2 Male in 70s



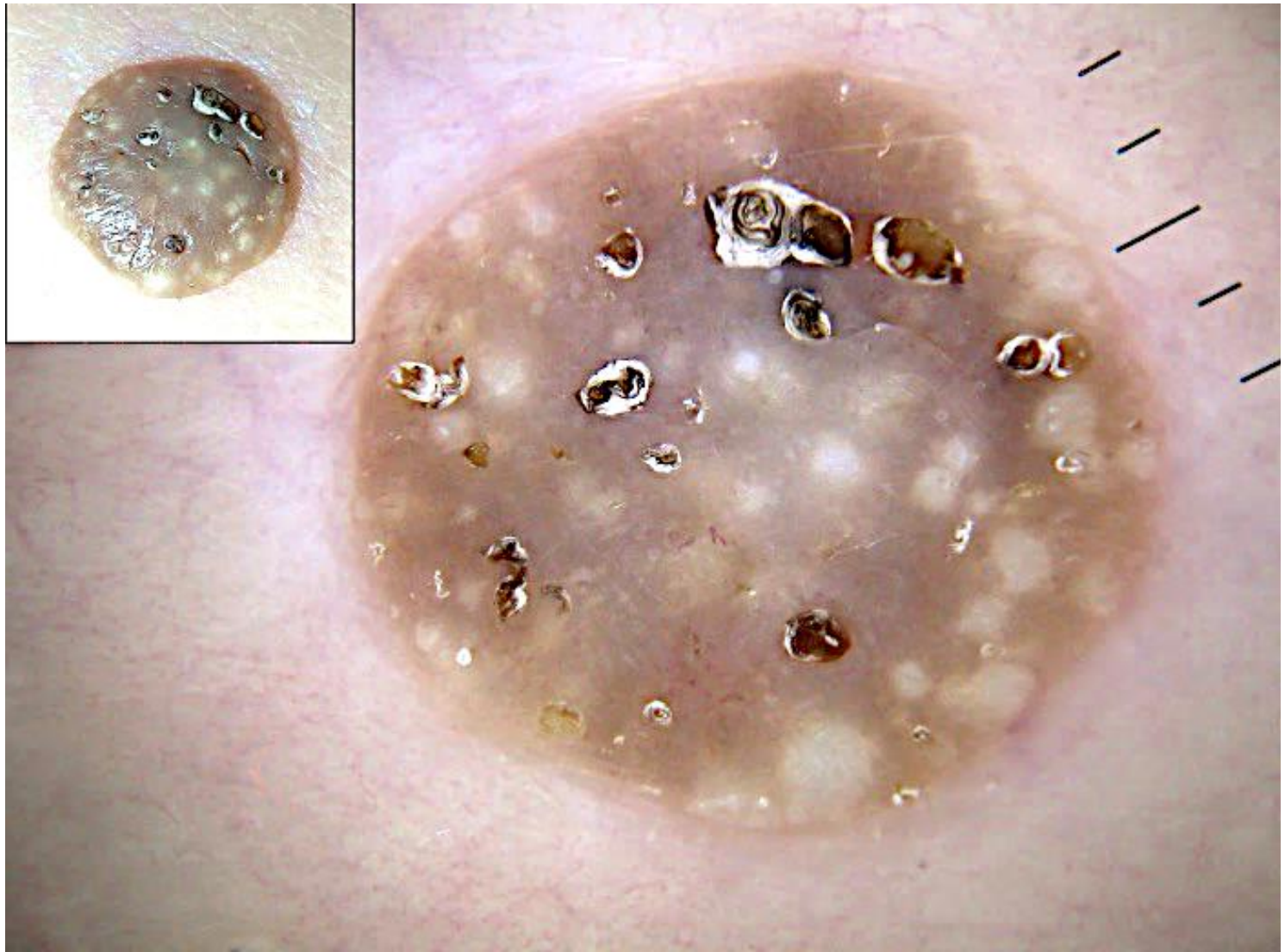


#2 **Melanoma:** blue-white veil, streaks dots/globules are asymmetric

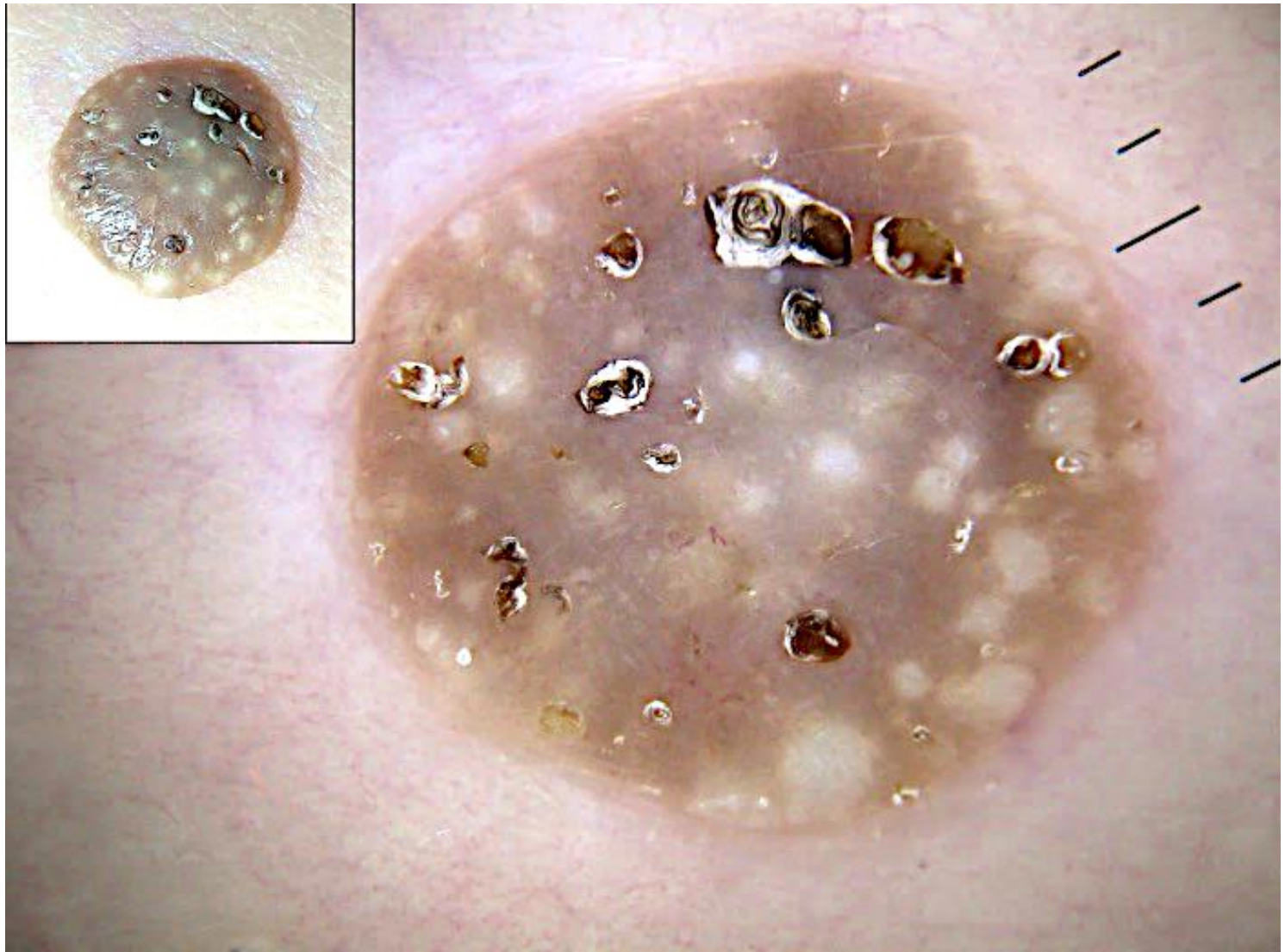




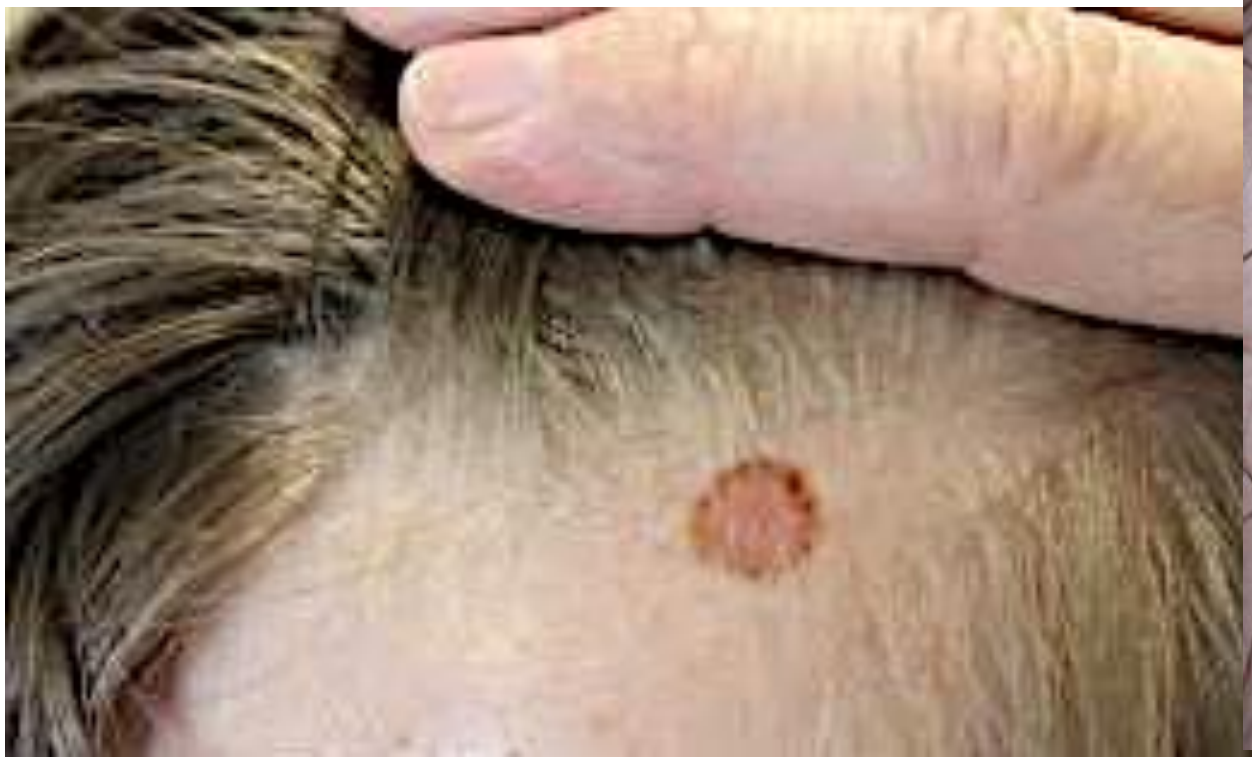
#3 Male in 80s

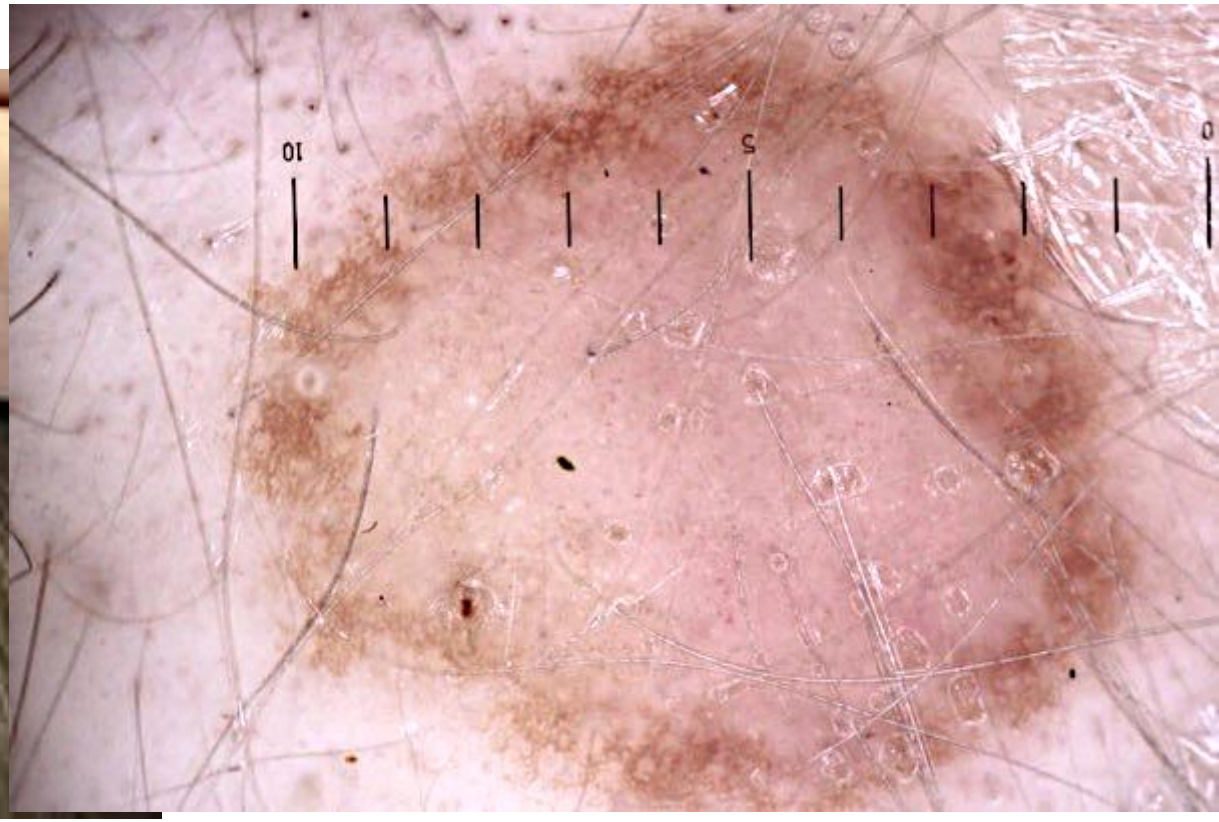


#3 **Seborrheic keratosis:** white milia, commedones and crypt like openings

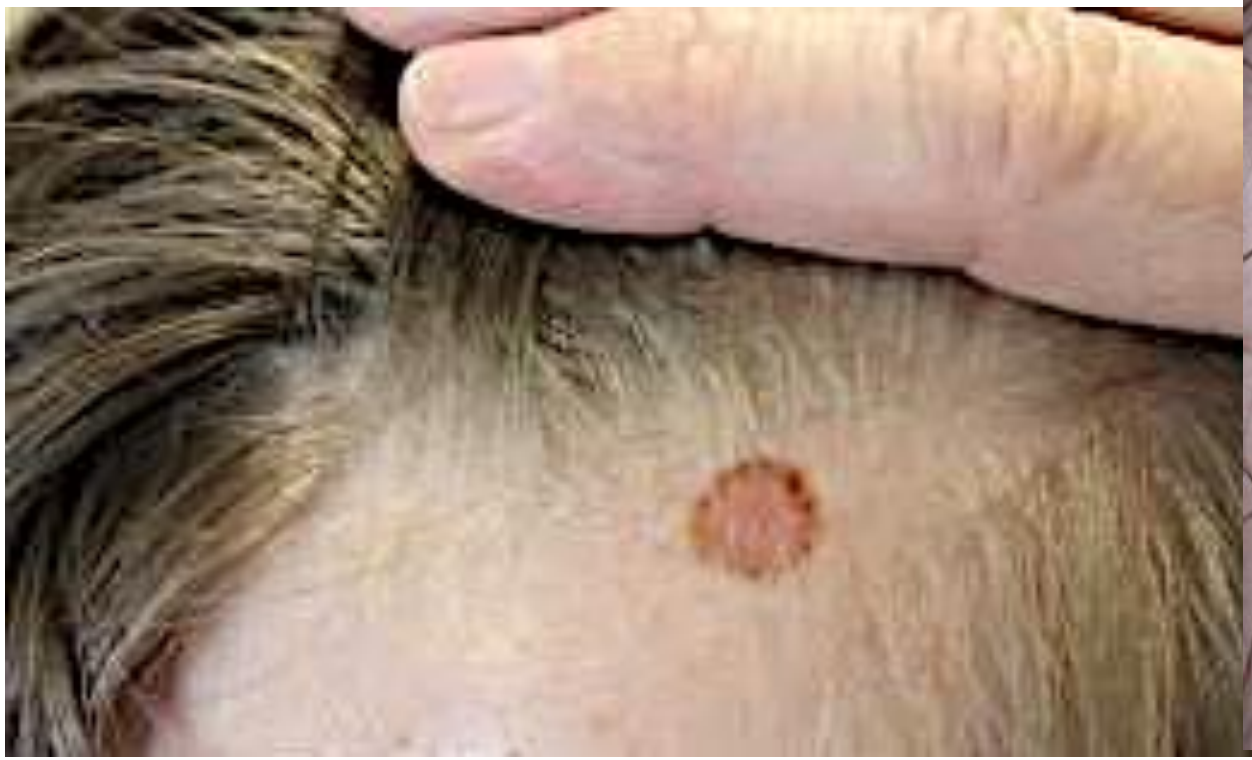


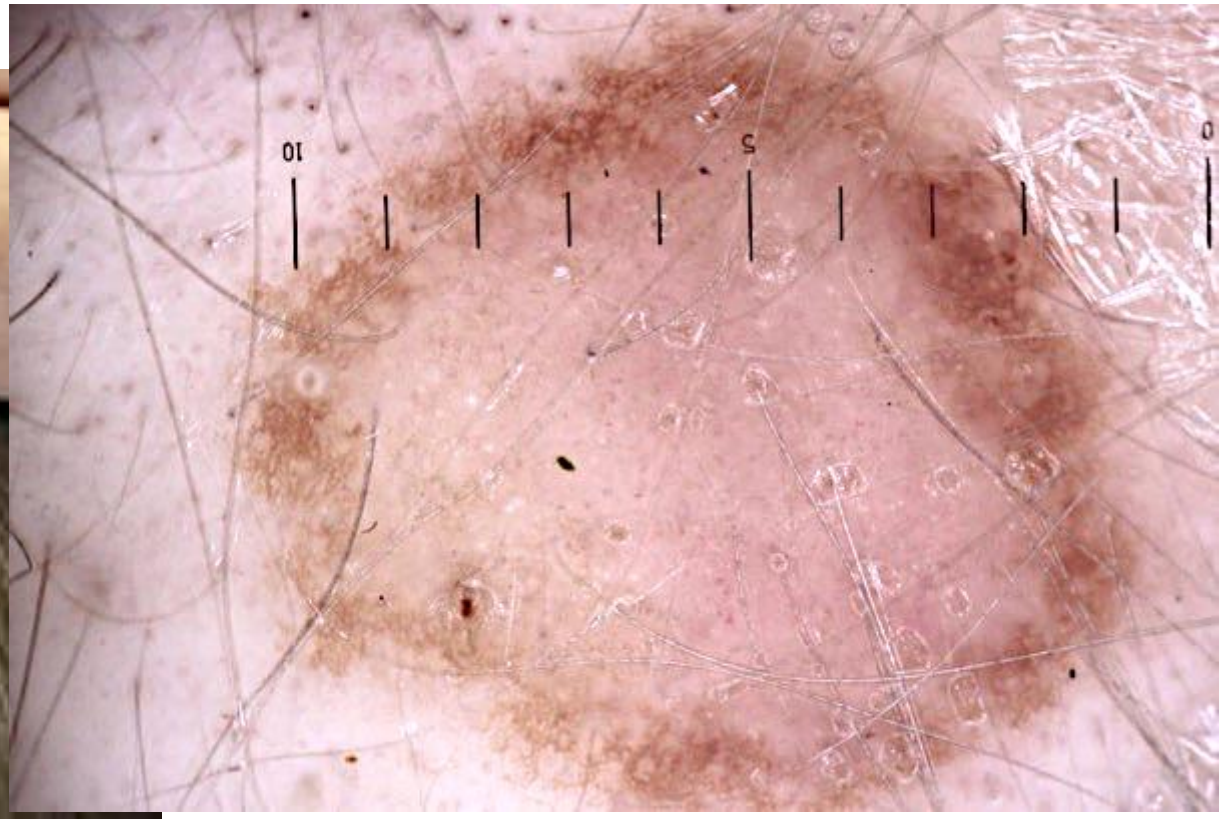
#4 Male in teens



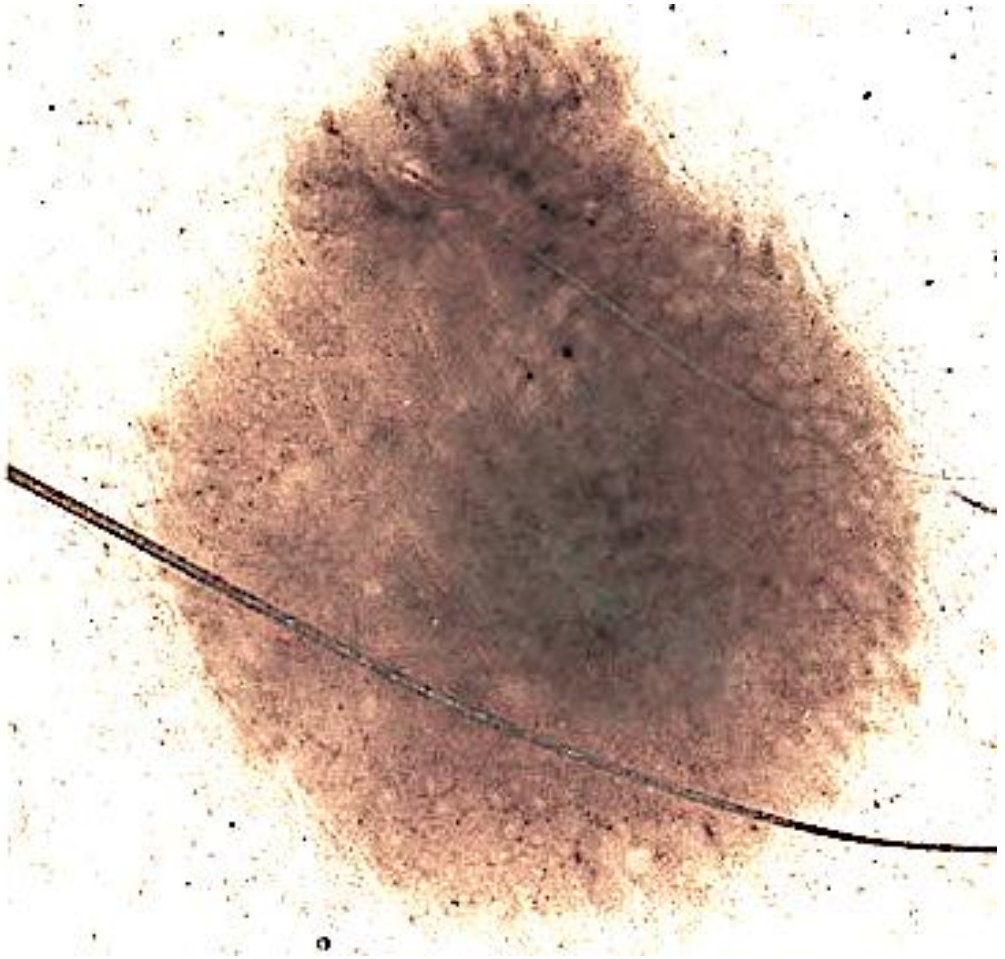


#4 **Benign nevus:** symmetrical in 4 quadrants, organized





#5 Female in 20s



#5 **Melanoma:** abnormal network/globules, streaks, asymmetry

Thank you!

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