

Dermoscopy for beginners

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GP CME

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Tristram



Outline of presentation

- What is dermoscopy?
- Warm-up quiz
- 1st step for diagnosis of pigmented lesions
 - Dermoscopy of melanocytic lesions
- 2nd step for diagnosis of pigmented lesions
 - Is the melanocytic lesion benign and malignant?
- Dermoscopy of nonmelanocytic lesions
- Answers to the quiz

Polarised dermatoscopes

3Gen Dermlite®*



DL3



HR Pro



Original

*equipmed.com, dermlite.com

Oil-immersion dermatoscopes

- Linos DermoGenius®
- Heine Delta Dermatoscope®
- Welch Allyn Episcope®



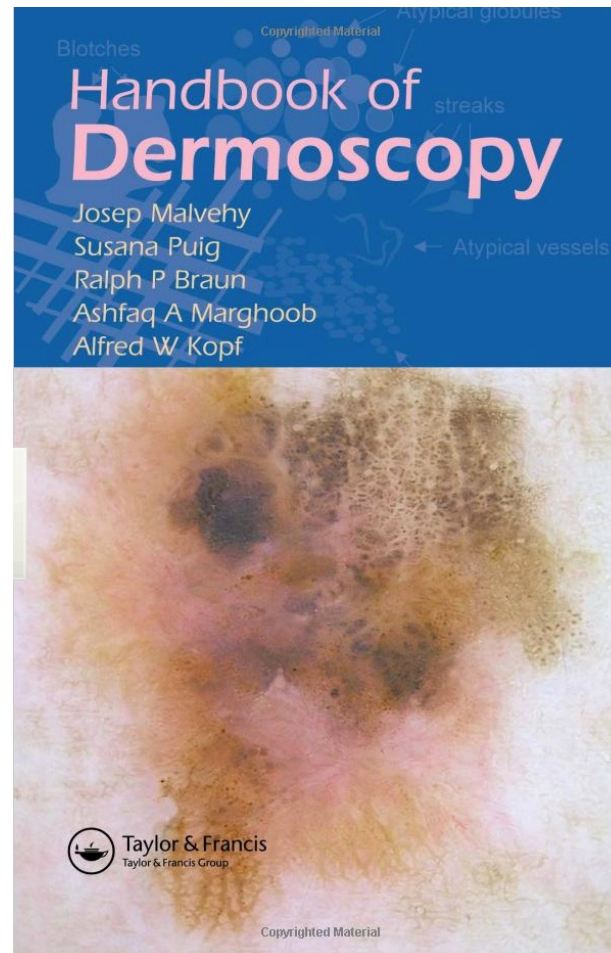
What else do I need?

- Training
- Photography
- 2nd opinions
- Plenty of practice

Training

- Online modules:
<http://www.dermnetnz.org/doctors/>
- iPhone app:
see iTunes
- Textbooks:
Amazon lists 12 titles
- International Diploma of Dermoscopy
<http://www.meduni-graz.at/IDD/general.html>

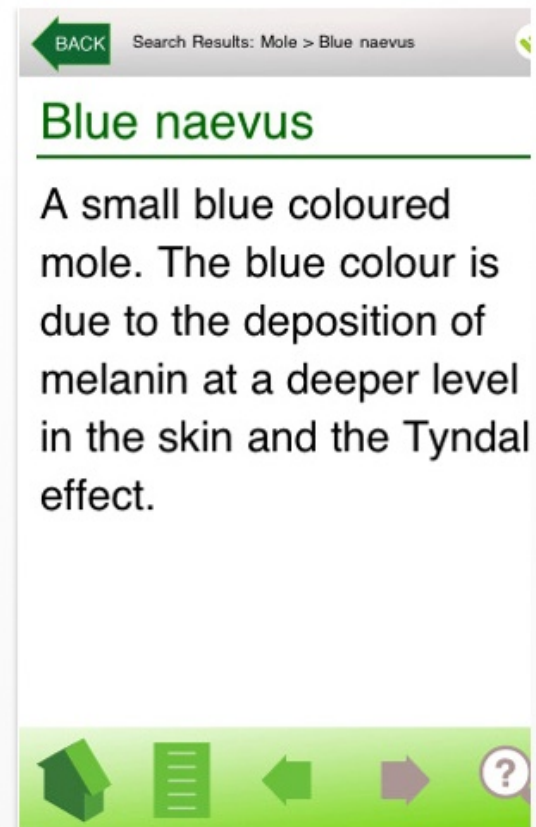
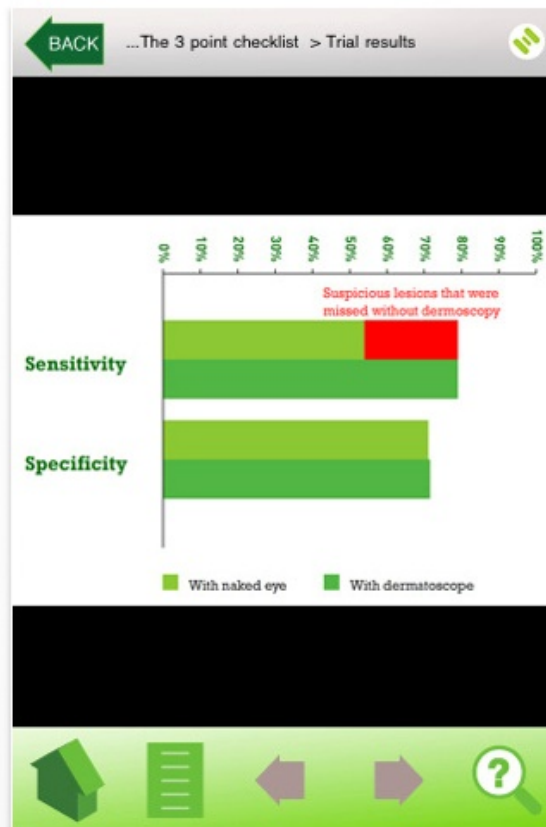
Handbook of dermoscopy



US\$100

iPhone / iPod Touch / iPad

iPhone Screenshots



Photography



DIGITAL CAMERA USE



CAMCORDER USE



Dermlite compatible cameras

- Sony W350
- Canon G11



What is dermoscopy used for?

- Evaluating pigmented skin lesions
- Evaluating nonpigmented skin lesions
- Entodermoscopy (parasites)

On every patient with a skin complaint!

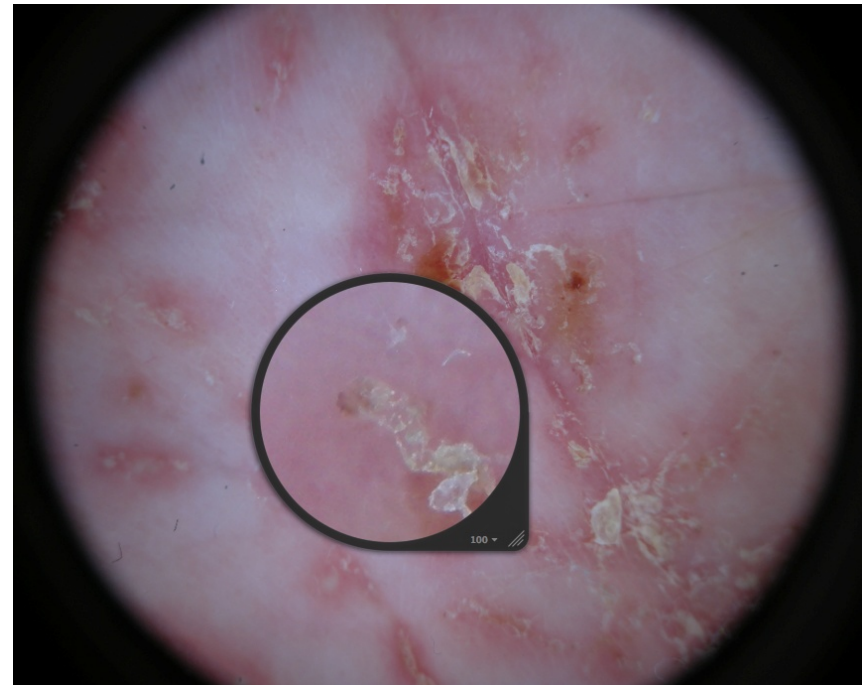
Diagnosis of pigmented lesions

- Melanocytic lesions
 - Melanoma
 - Benign moles and freckles
- Pigmented basal cell carcinoma
- Seborrhoeic keratoses
- Vascular lesions
 - Cherry angioma
 - Haemorrhage
- Miscellaneous
 - Dermatofibroma
 - Squamous cell carcinoma in situ

Diagnosis of nonpigmented lesions

- Melanocytic lesions
 - Amelanotic melanoma
 - Pink moles
- Nonmelanocytic lesions
 - Nonpigmented basal cell carcinoma
 - Lichenoidkeratosis
 - Squamous cell carcinoma in situ
 - Porokeratosis
 - Sebaceous hyperplasia
- Inflammatory lesions
 - Psoriasis
 - Eczema
 - Lichen planus

Scabies



Headlice



www.health.state.mn.us/.../images/nit.jpg

10-question quiz

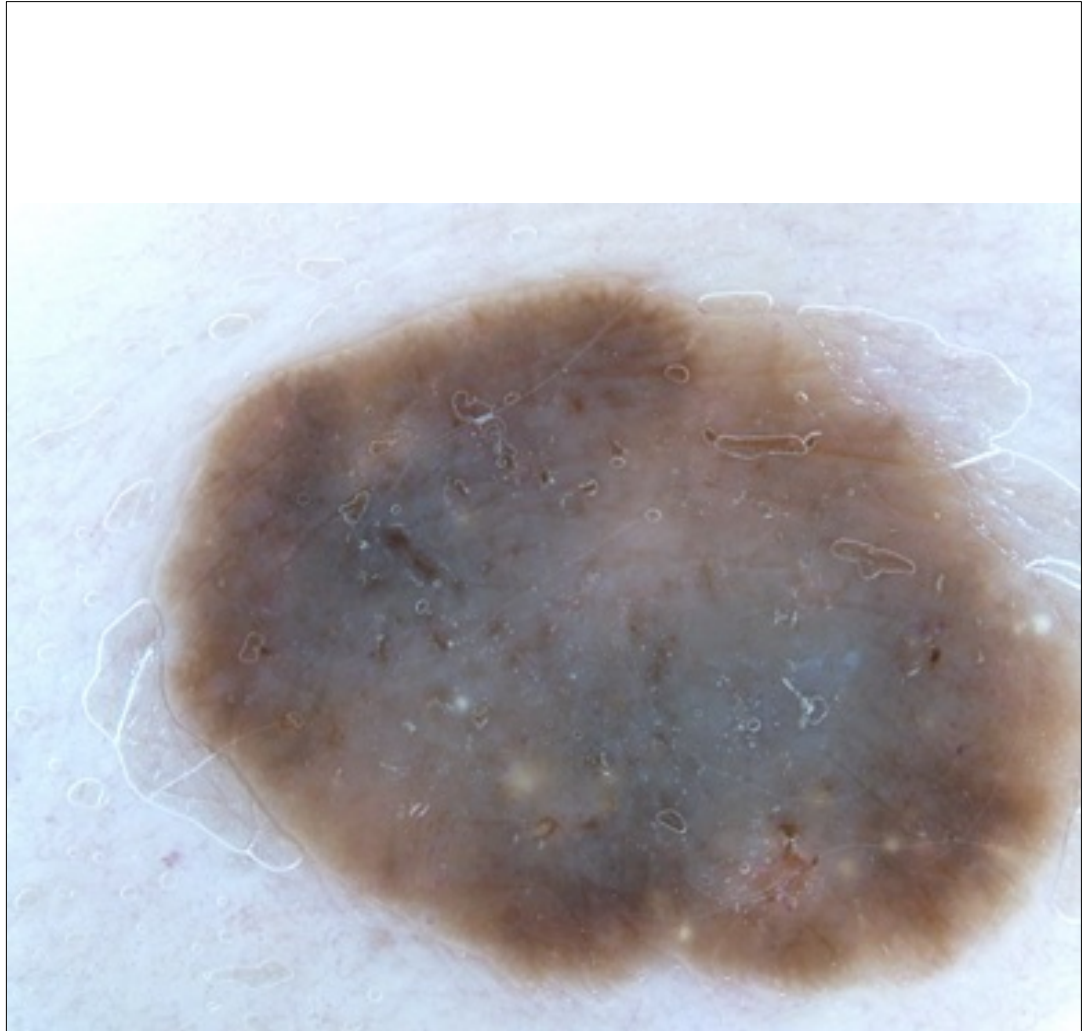
Q1. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



Q2. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



Q3. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



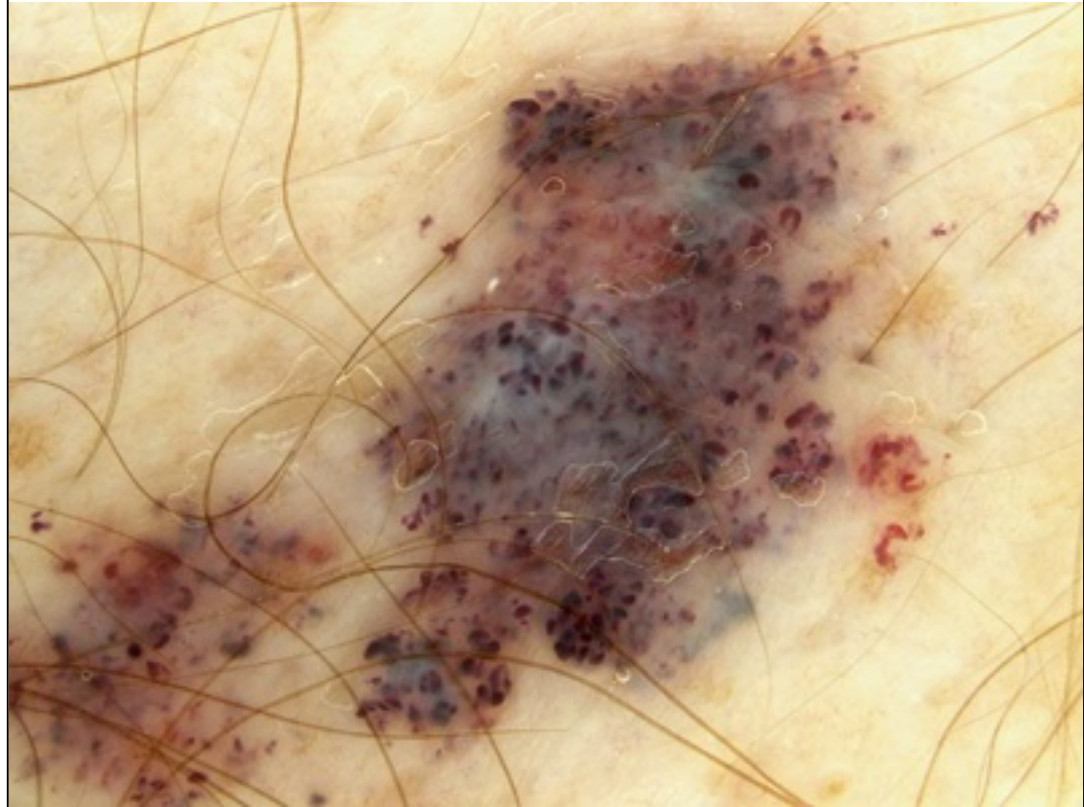
Q4. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



Q5. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



Q6. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



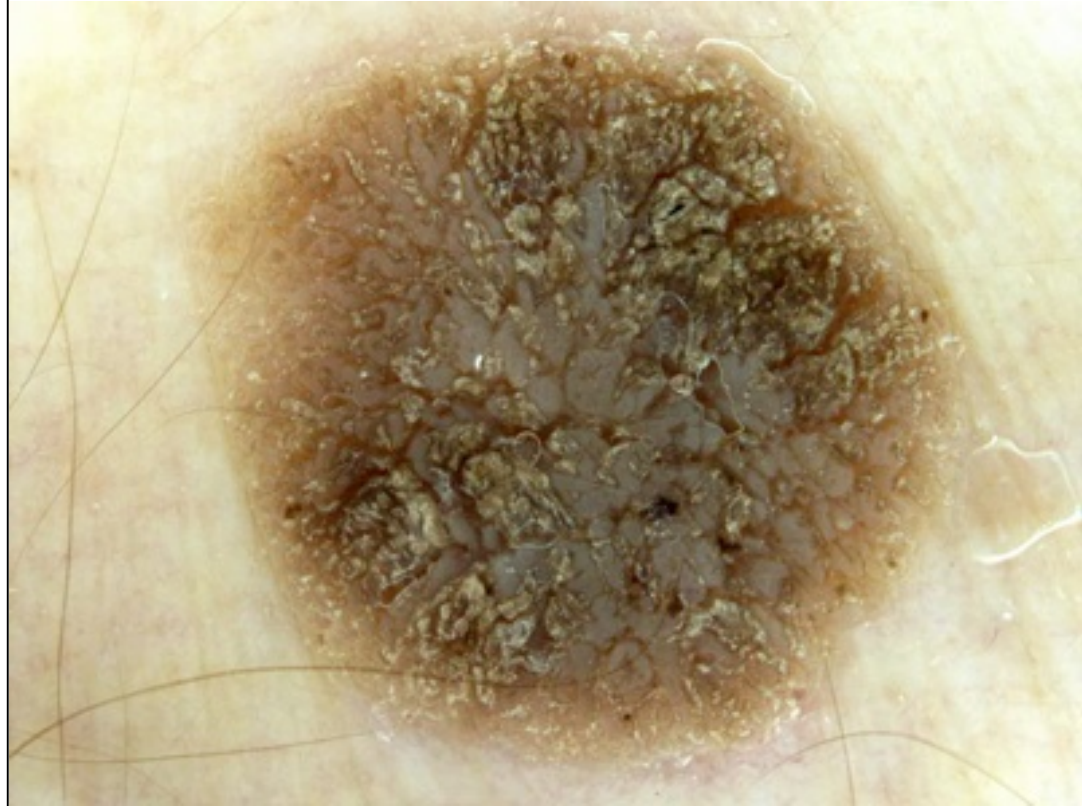
Q7. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



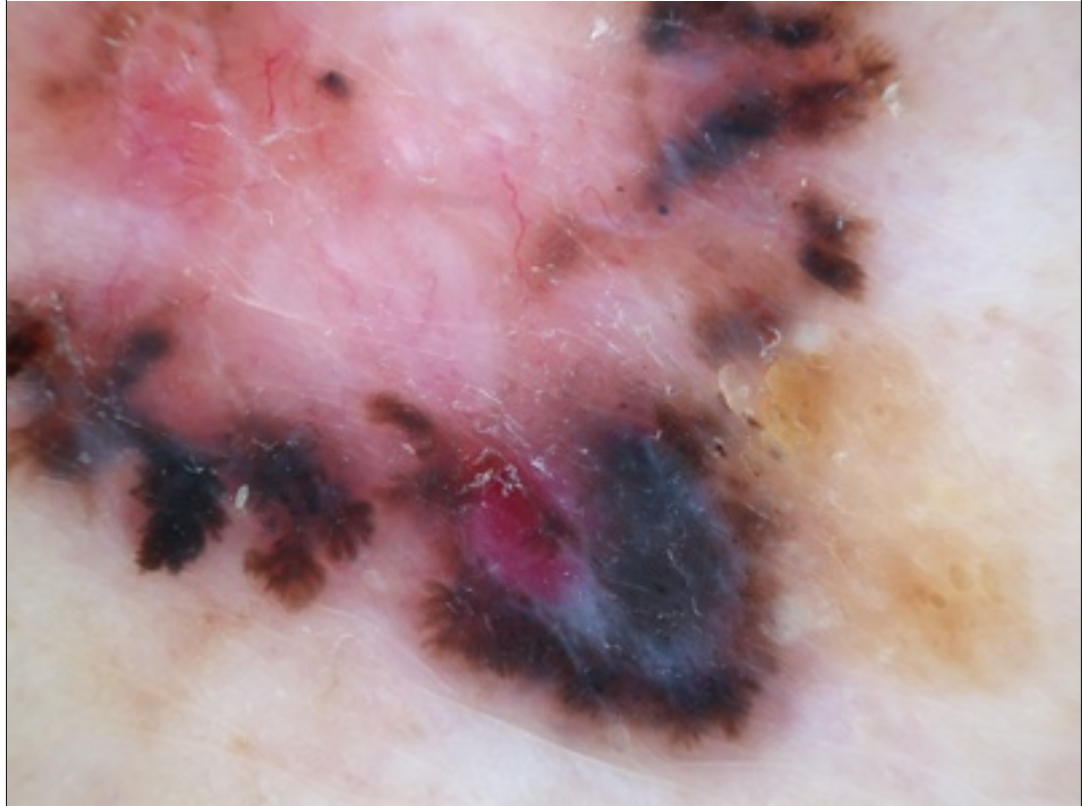
Q8. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



Q9. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



Q10. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



First step for diagnosis

For a pigmented lesion:

- Is it melanocytic or non-melanocytic?

Melanocytic lesions

- Benign naevi
 - Globular naevi
 - Reticular naevi
 - Other patterns
- Atypical naevi
 - Signature naevi
 - Borderline lesions
- Melanoma

Dermoscopic features

A melanocytic lesion is likely if you see:

- Pigment network

& / OR

- Aggregated brown or black globules

OR

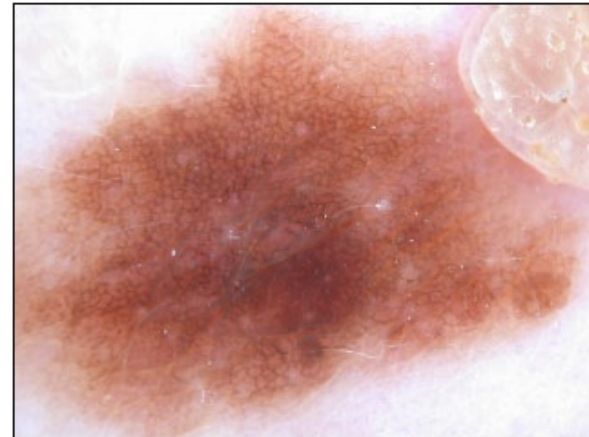
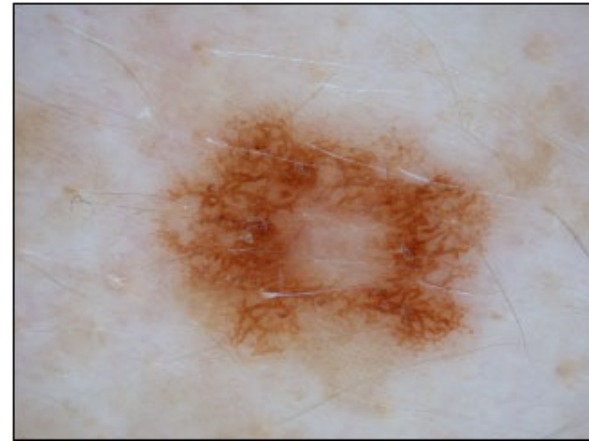
- Homogeneous steel-blue pigmentation

OR

- Parallel pattern on palms / soles

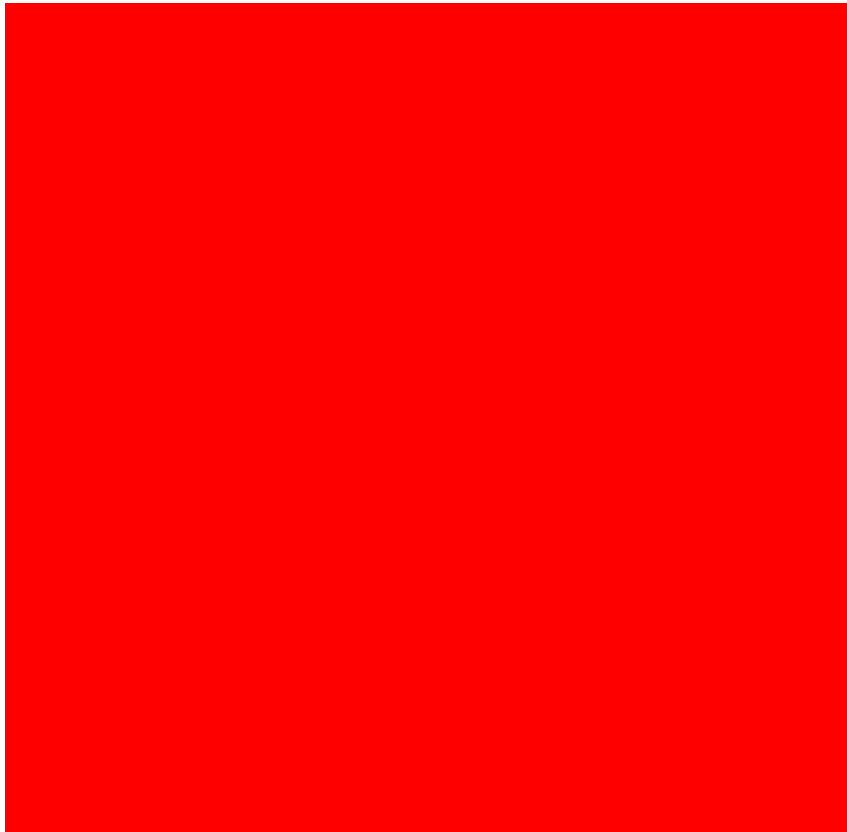
What is a pigment network?

- Reticular pattern
- A lattice of brown lines
- Localised or diffuse



Exercises: hold up your flag

Yes



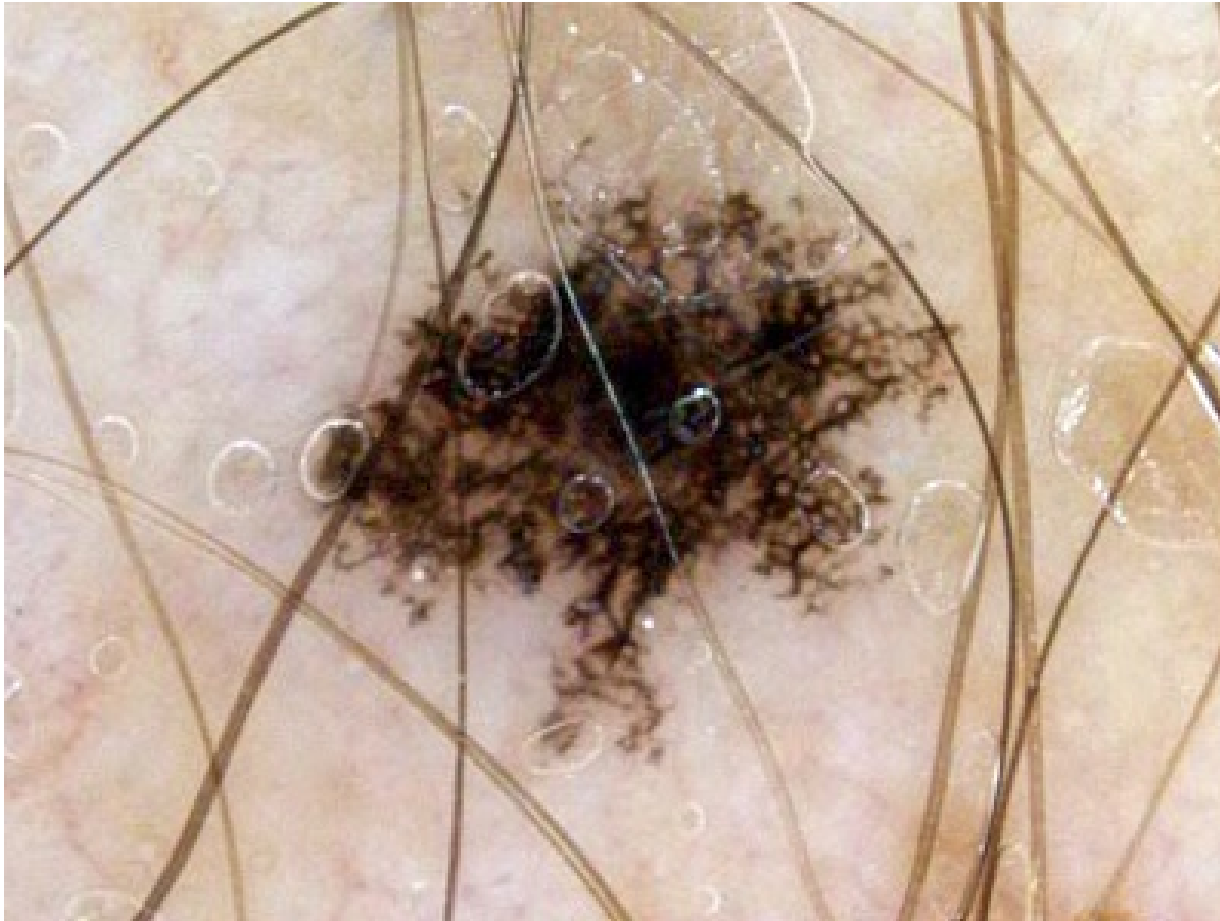
No



• YES

Is this a network?

• No



• Yes

• Ink spot naevus

• YES

Is this a network?

• No



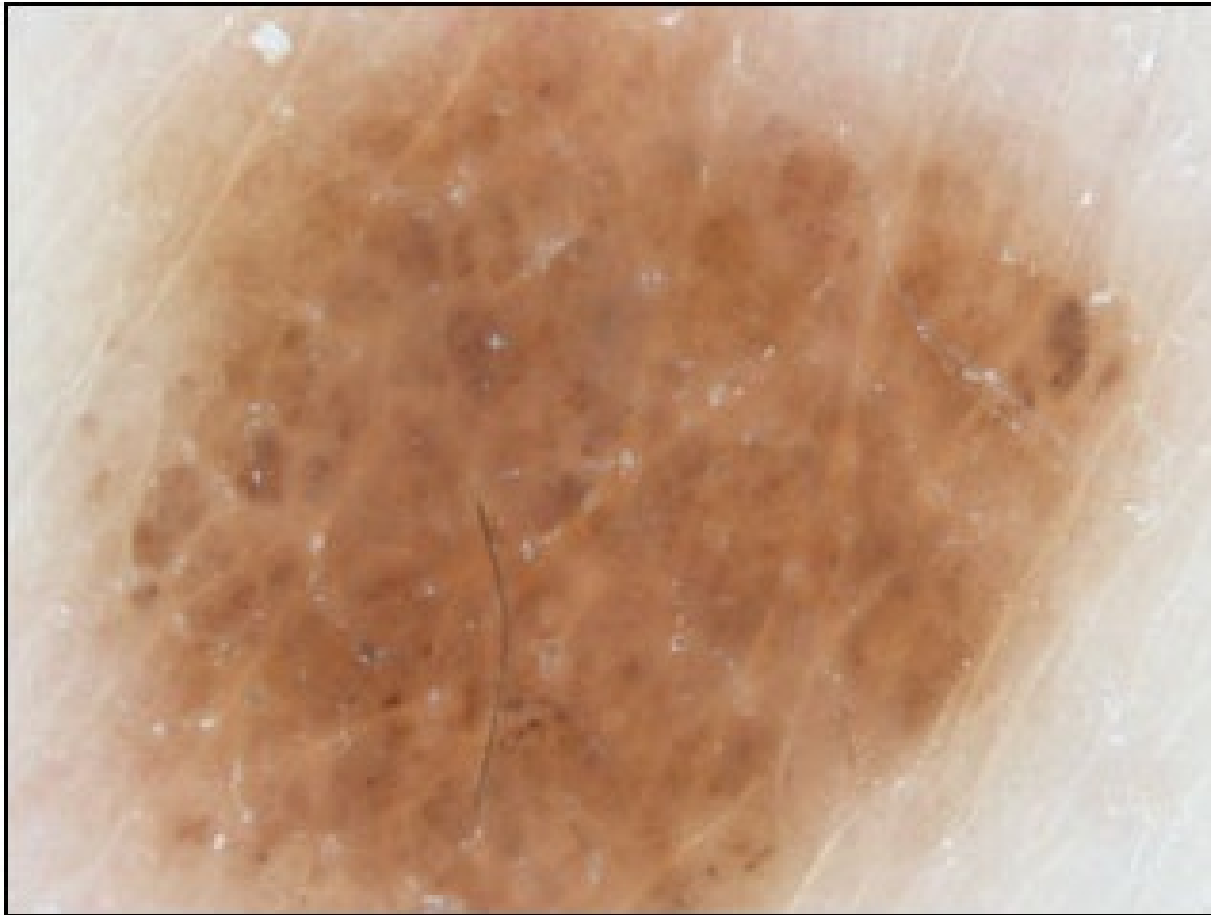
• Yes

• Pseudonetwork (face)

• YES

Is this a network?

• NO

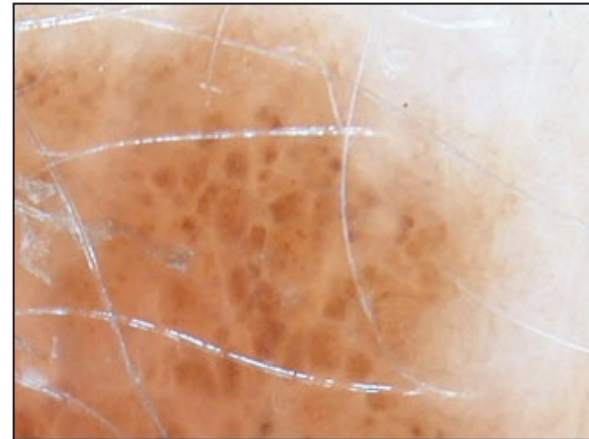


• No

• Aggregated globules

What are aggregated globules?

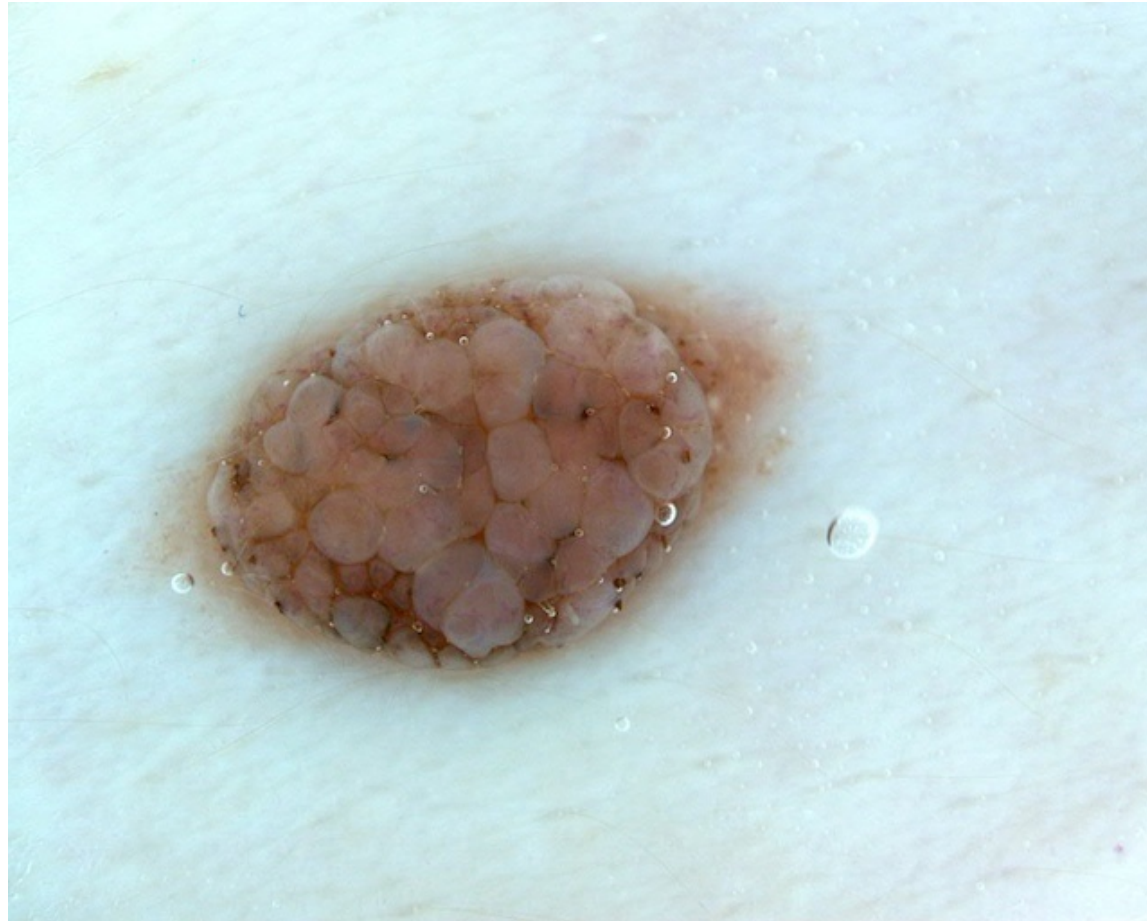
- Nests of melanocytes
- Brown / black 'clods'
- Round or oval brown or black structures



• YES

Are these aggregated globules?

• NO



• Yes

• Papillomatous naevus

• YES

Are these aggregated globules?

• NO



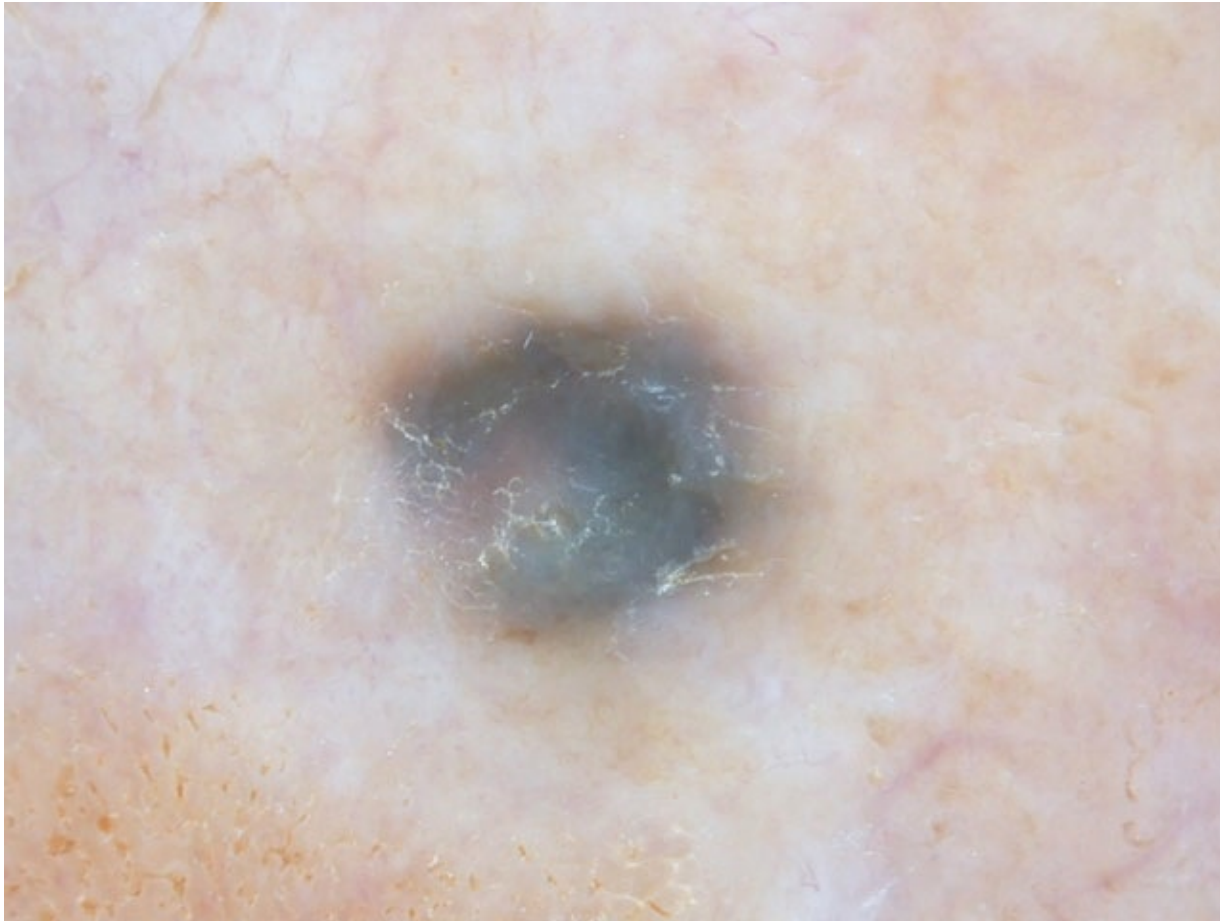
• No

• Grey 'clods'

• YES

Are these aggregated globules?

• NO

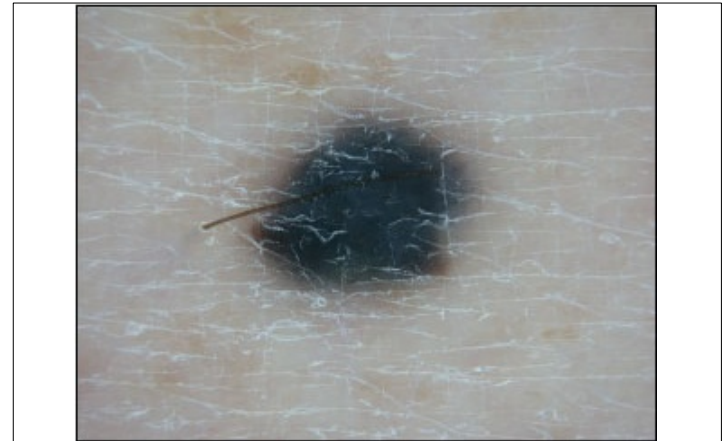


• No

• Steel-blue homogeneous pigment

What is homogeneous steel-blue pigmentation?

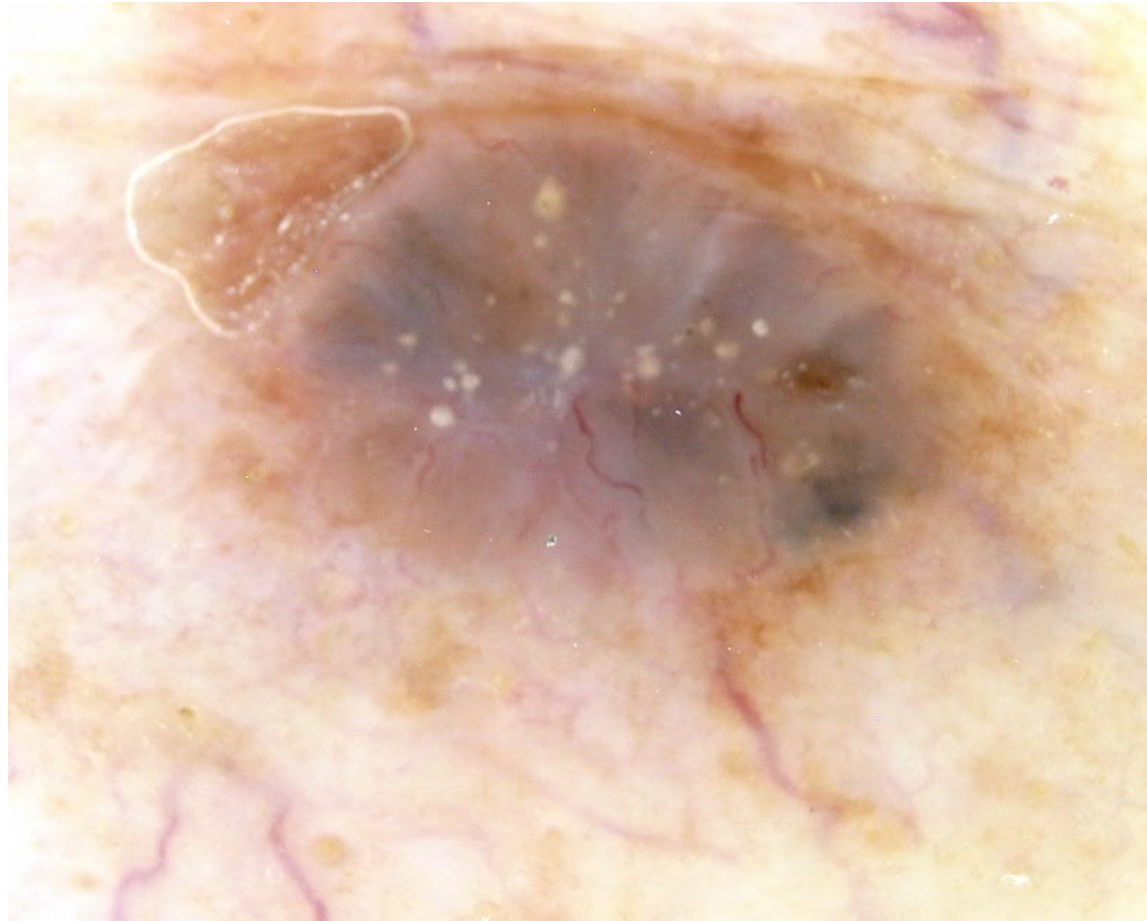
- Blue naevus



• YES

Is this a blue naevus?

• NO



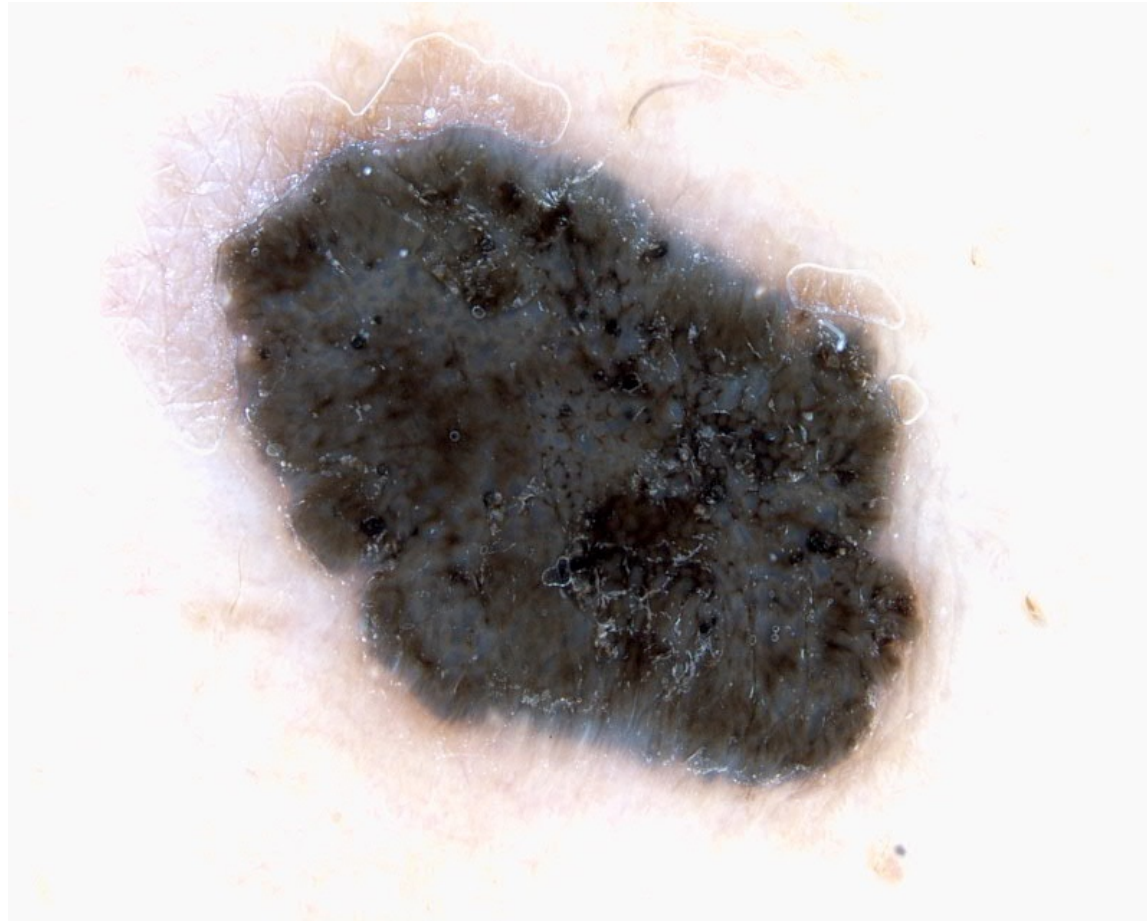
• No

• Pigmented basal cell carcinoma

• YES

Is this a blue naevus?

• NO



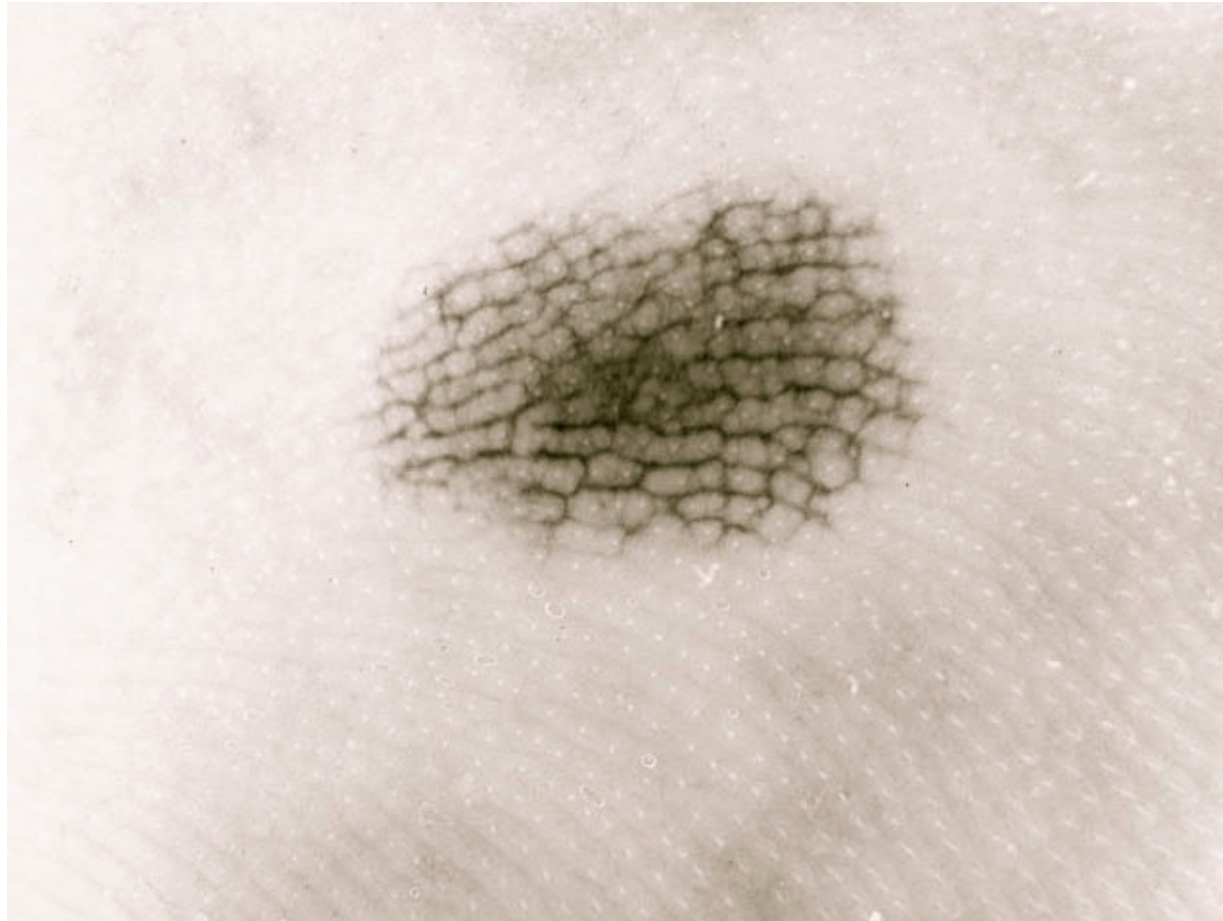
• No

• Not homogeneous: melanoma

• YES

Is this a blue naevus?

• NO



• No

• Parallel pattern

What is parallel pattern?

- On palms / soles
- Other patterns: fibrillar, filamentous, lattice, homogeneous
- Pigment on **furrows** in benign lesions, **ridges** in melanoma



• YES

Is this parallel pattern?

• NO



Furrow
pattern

- Yes
- Benign acral melanocytic naevus

• YES

Is this parallel pattern?

• NO



• No

• Not acral (reticular pattern)

• YES

Is this parallel pattern?

• NO



Ridge
pattern

• Yes

• Acral lentiginous melanoma

First step for diagnosis

For a pigmented lesion:

- Is it melanocytic or non-melanocytic?

• Yes

Is this melanocytic?

• No



• Yes

• Network: cocarde naevus

• Yes

Is this melanocytic?

• No



- No
- Globules due to subcorneal haemorrhage

Nonmelanocytic pigmented lesions

- Do not have features of melanocytic lesions!
- We'll deal with these later
 - Seborrheic keratosis
 - Pigmented basal cell carcinoma
 - Dermatofibroma
 - Vascular lesions

2nd step for melanocytic lesions

- Is it benign or malignant?

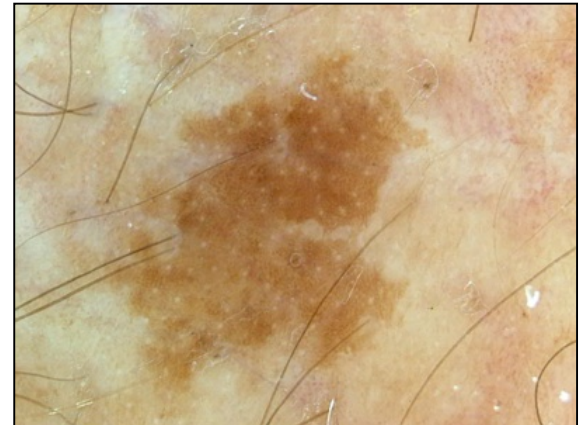
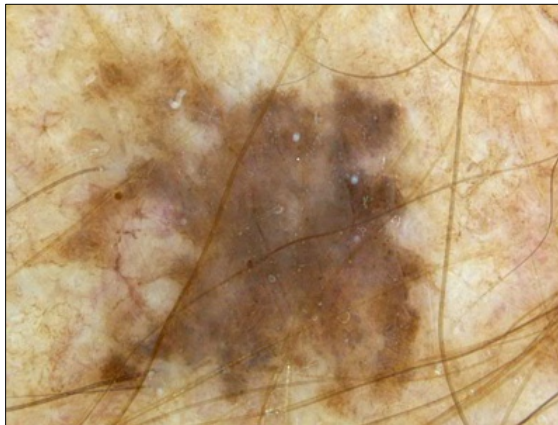
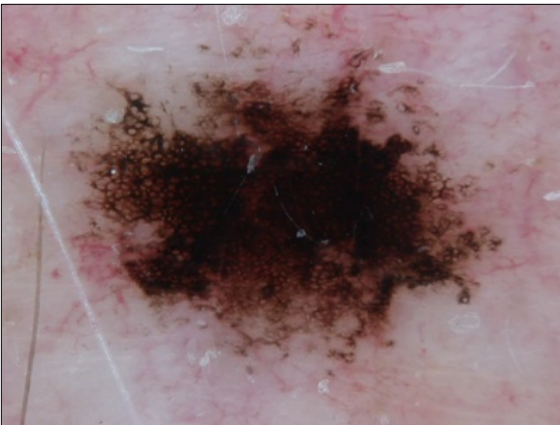
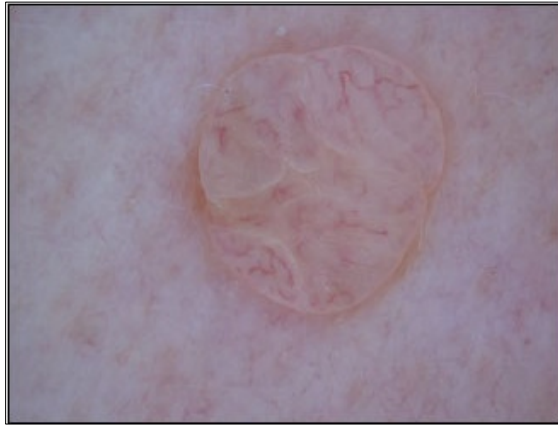
Benign melanocytic lesions

- Single colour

OR

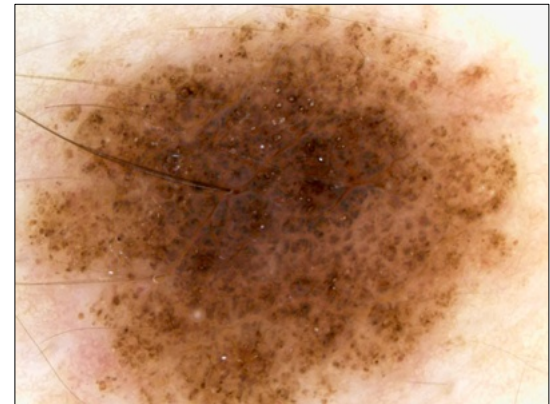
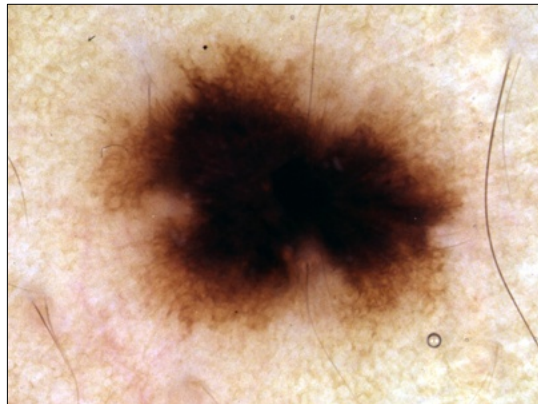
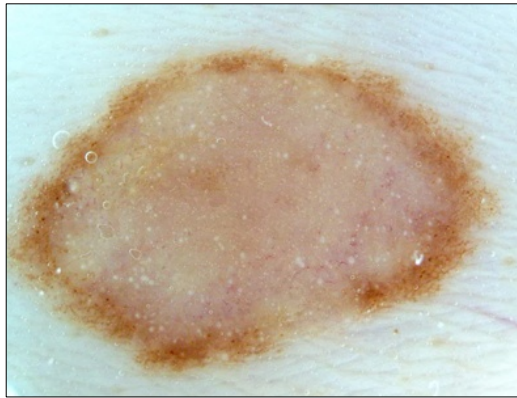
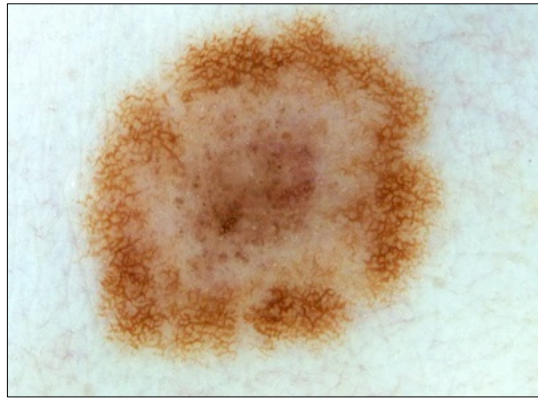
- Symmetrical pigmentation pattern

Benign melanocytic lesions



- Single colour

Benign melanocytic lesion



- Symmetrical pigment pattern

• Yes

Is this benign?

• No



• Yes

• Symmetry colour / structure

• Yes

Is this benign?

• No



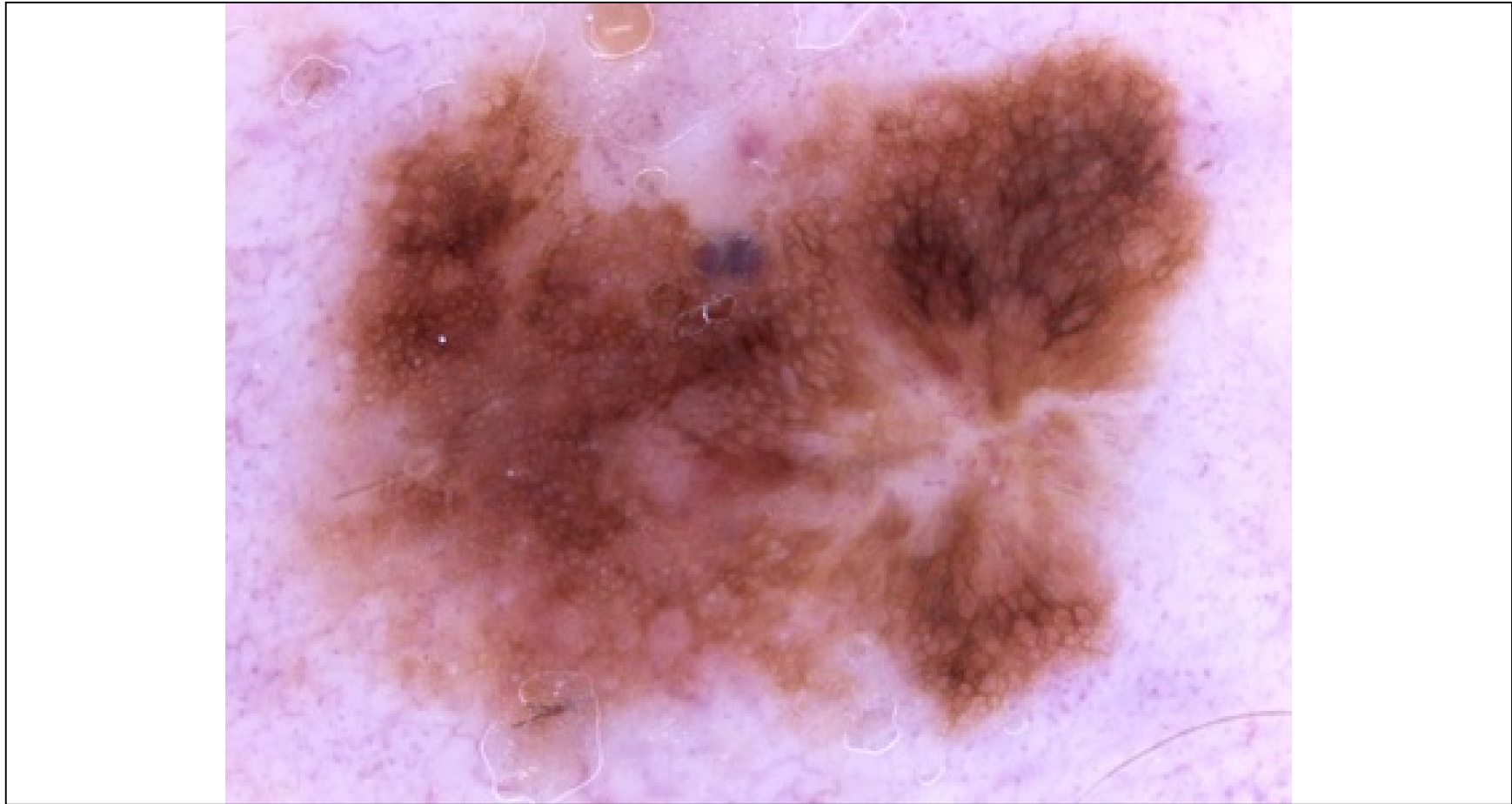
• Yes

• Symmetry structure

• Yes

Is this benign?

• No



• No

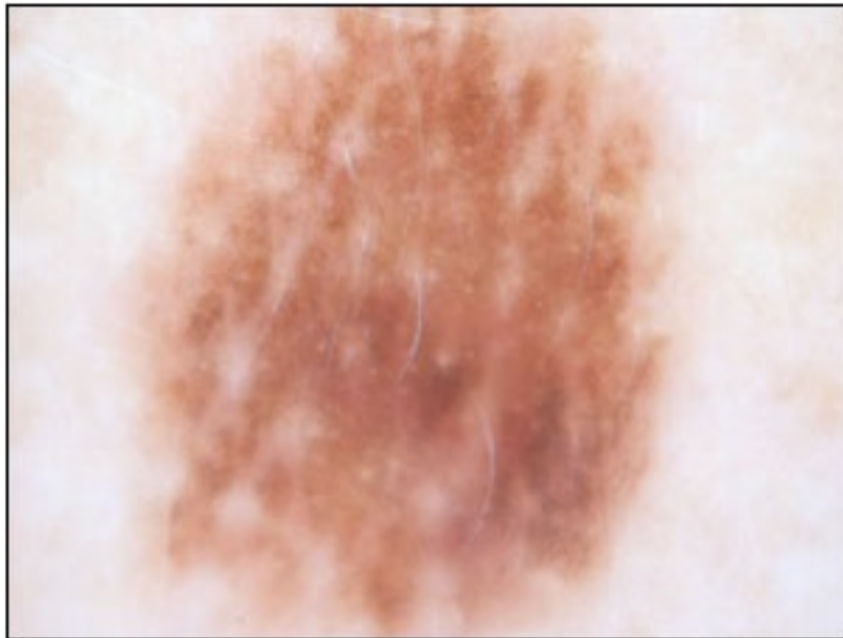
• Asymmetry of colour / structure

Features of melanoma

- Asymmetry of colour / structure
- Often: melanocytic structures
 - Network, aggregated globules
- Specific features
 - Atypical network
 - Thick lines
 - Irregular holes
 - Streaks
 - Blue-white structures
 - Blue-white veil
 - Aggregated grey dots
 - Scar-like depigmentation
 - Multiple (5-6) colours

Asymmetry of colour / structure

Symmetrical



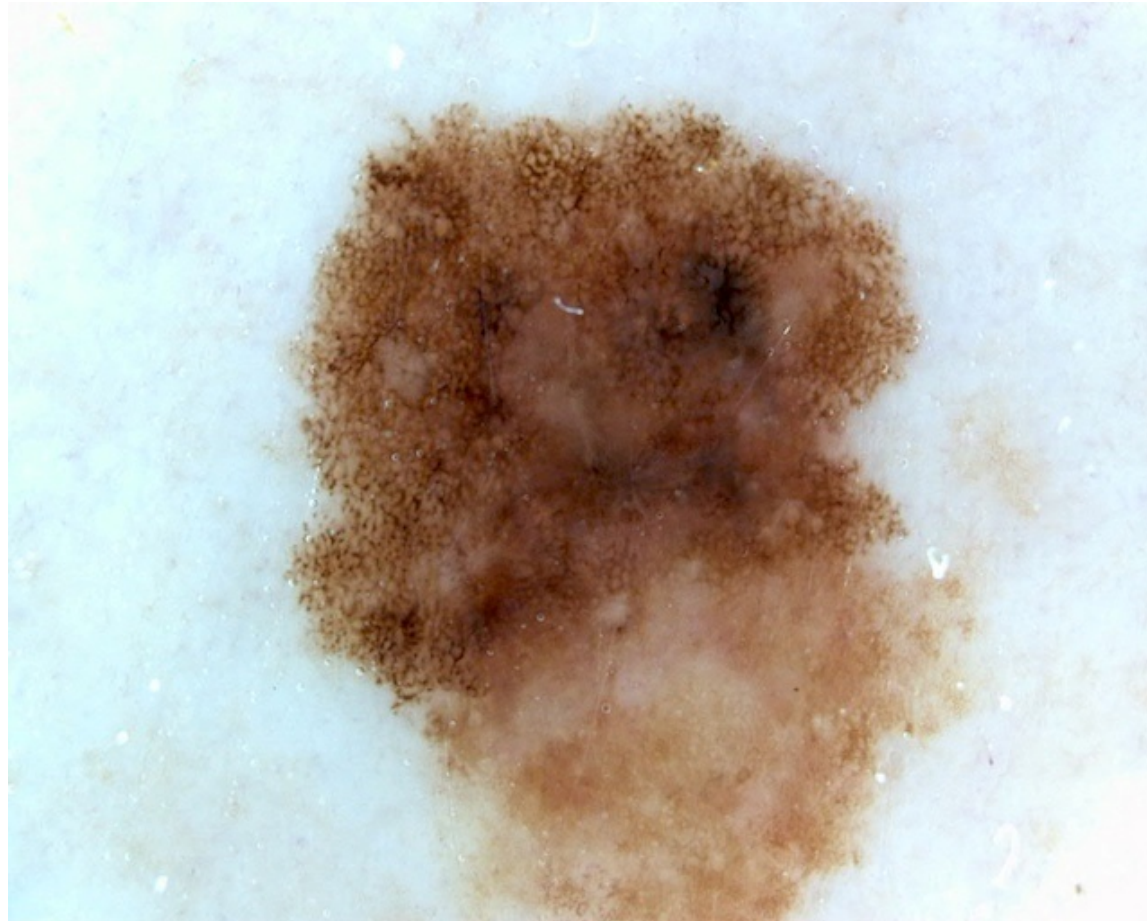
**Asymmetrical or
disordered**



• Yes

Has this asymmetrical colour / structure?

• No



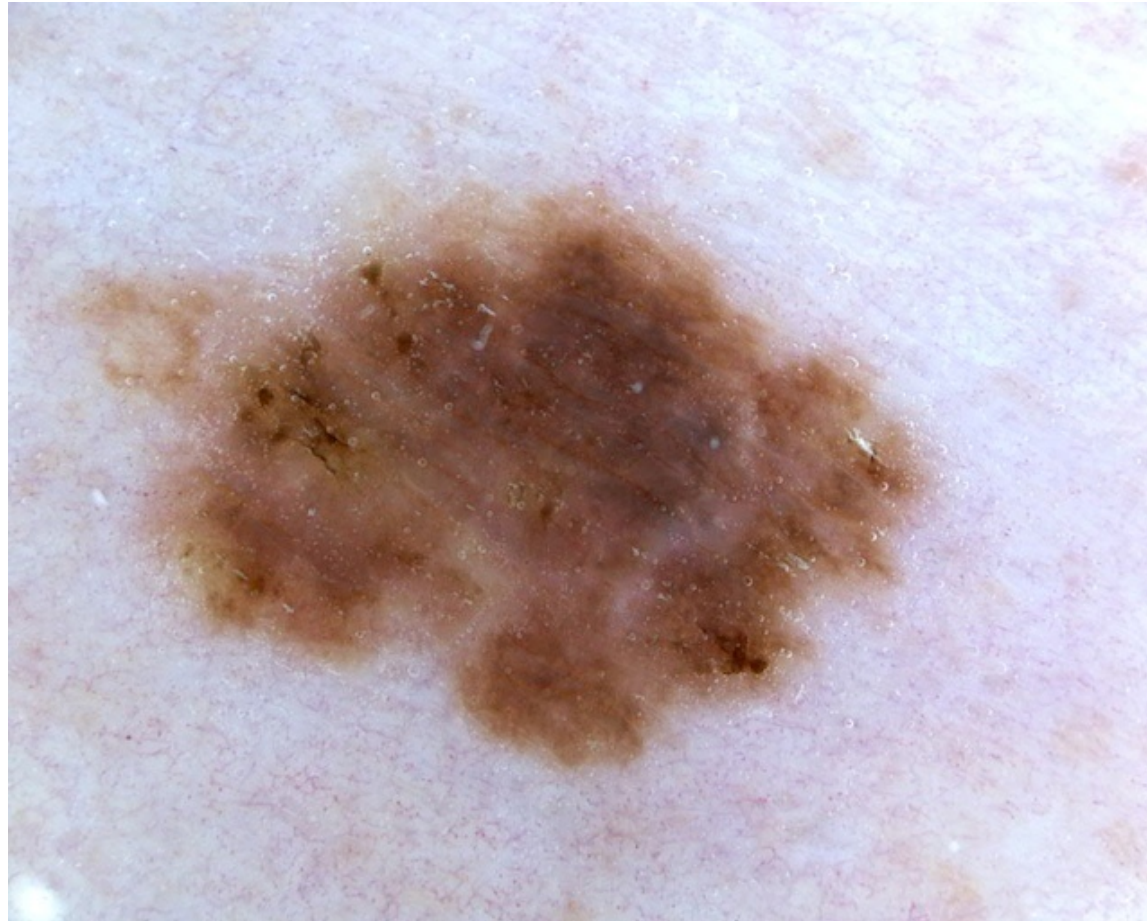
• Yes

• Melanoma

• Yes

Has this asymmetrical colour / structure?

• No



• Yes

• Melanoma

• Yes

Has this asymmetrical colour / structure?

• No



• No

• Benign melanocytic naevus

• Yes

Has this asymmetrical colour / structure?

• No



• No

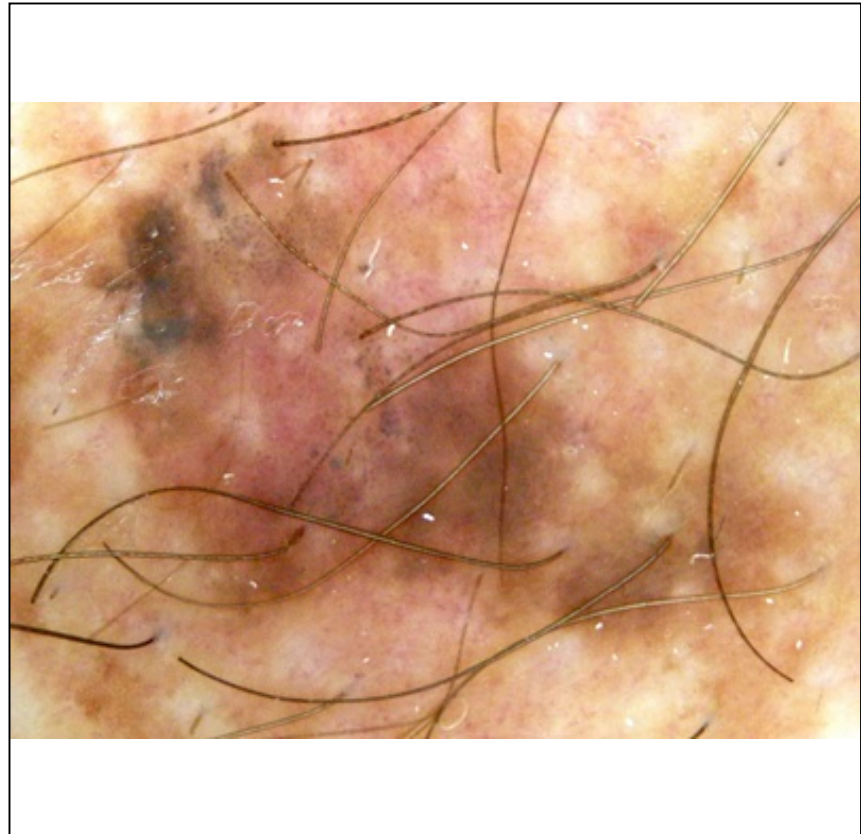
• Benign melanocytic naevus

Melanocytic structures

Parallel pattern ✓



No clear network or globules X



• yes

Has this melanocytic structures?

• No



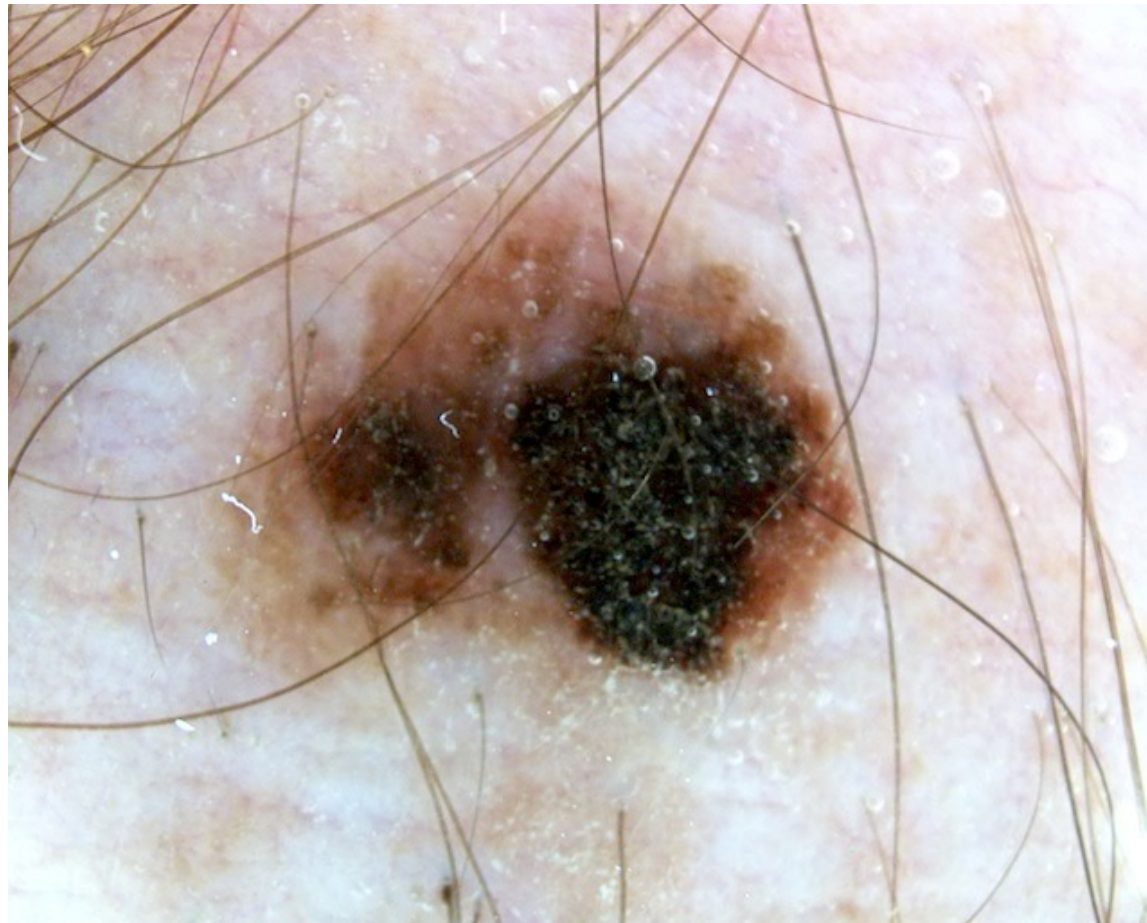
• Yes

• Aggregated globules (peripheral)

• yes

Has this melanocytic structures?

• No

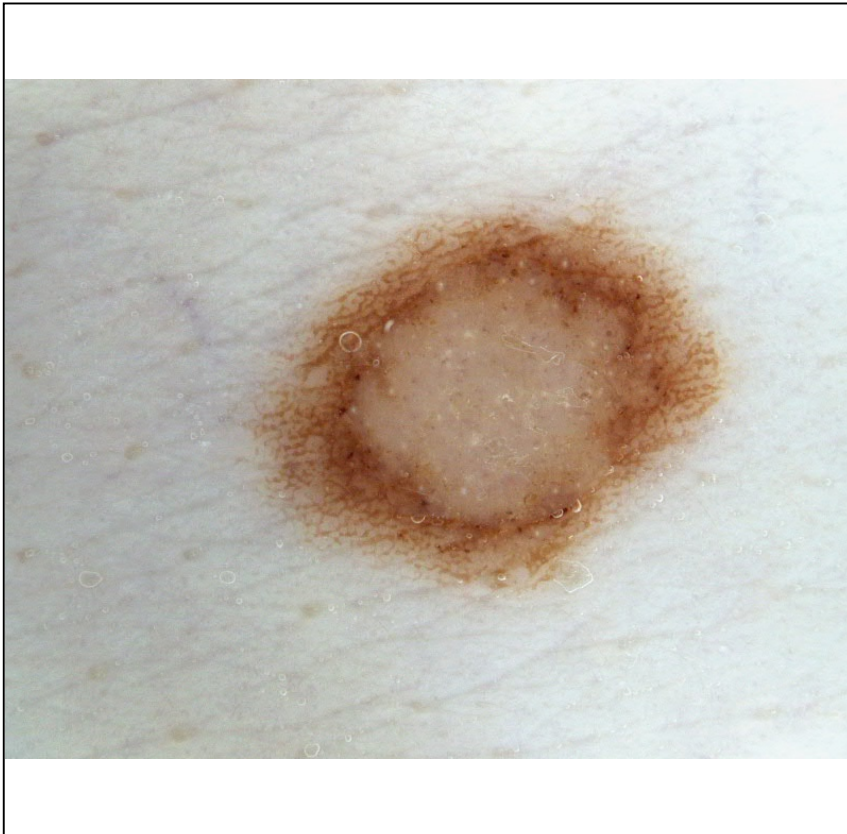


• No

• Pigmentation / blotches

Atypical network

Typical network



Atypical network



• Yes

Has this atypical network?

• No



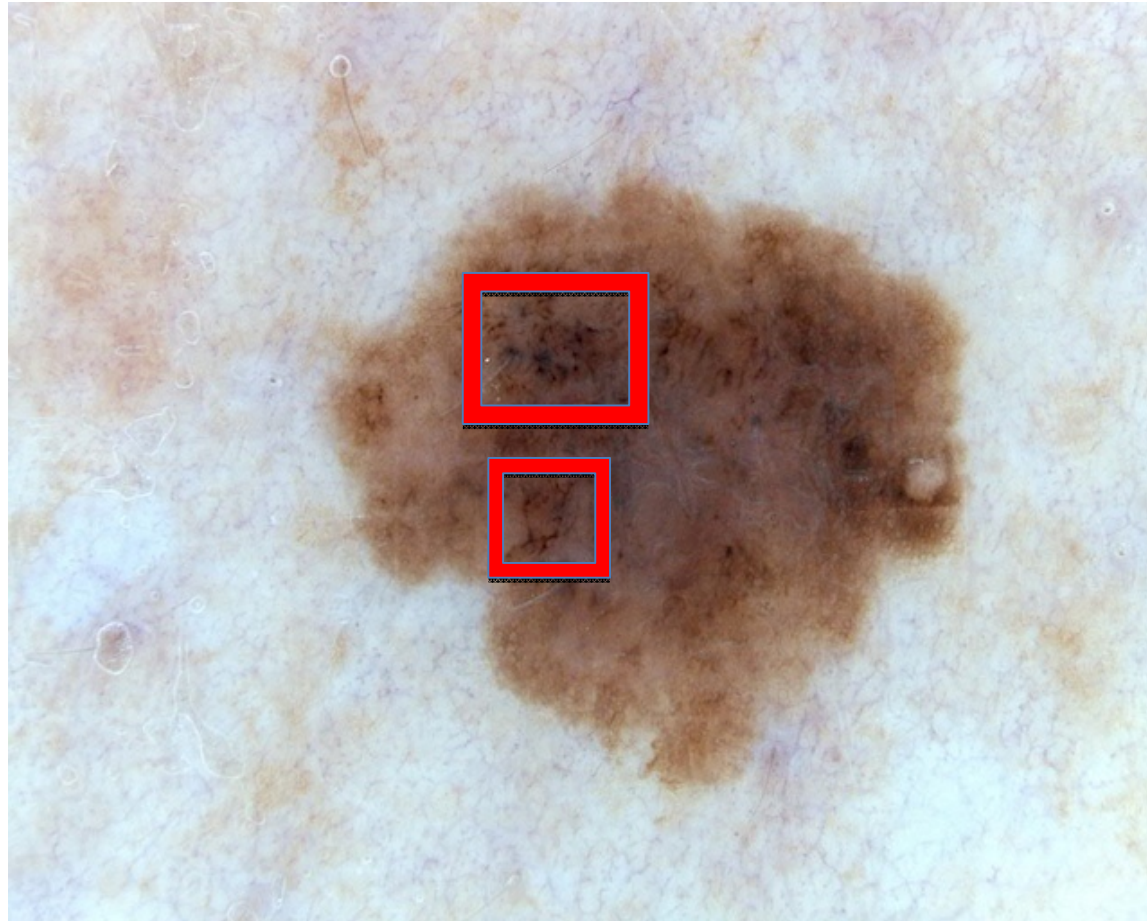
• No

• Cocarde naevus

• Yes

Has this atypical network?

• No

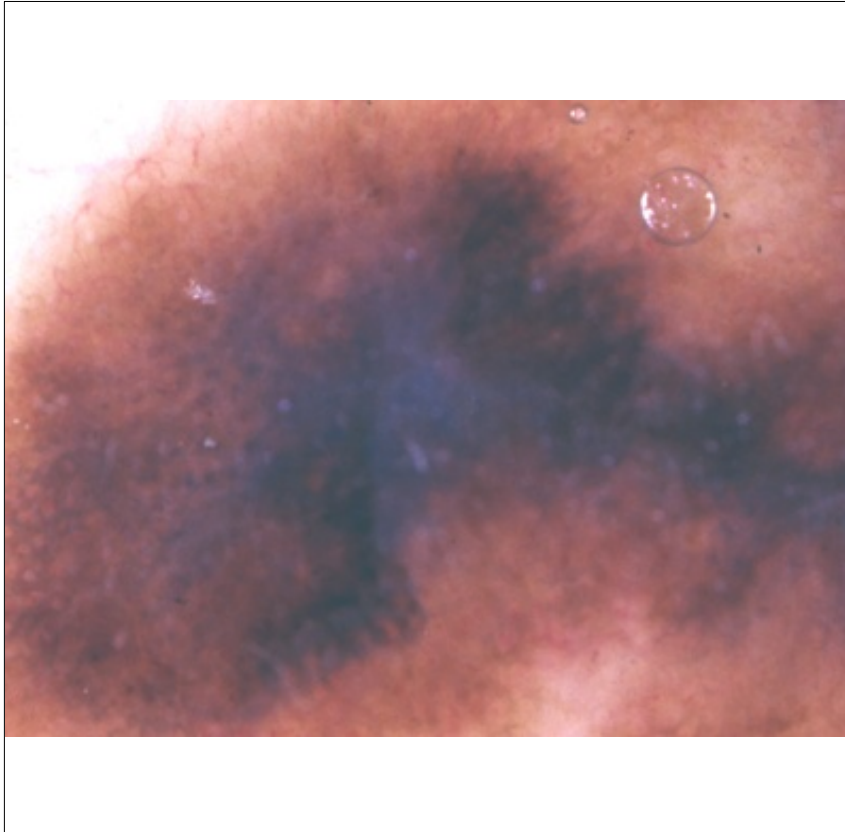


• Yes

• Melanoma

Blue-white structures

Blue-grey veil



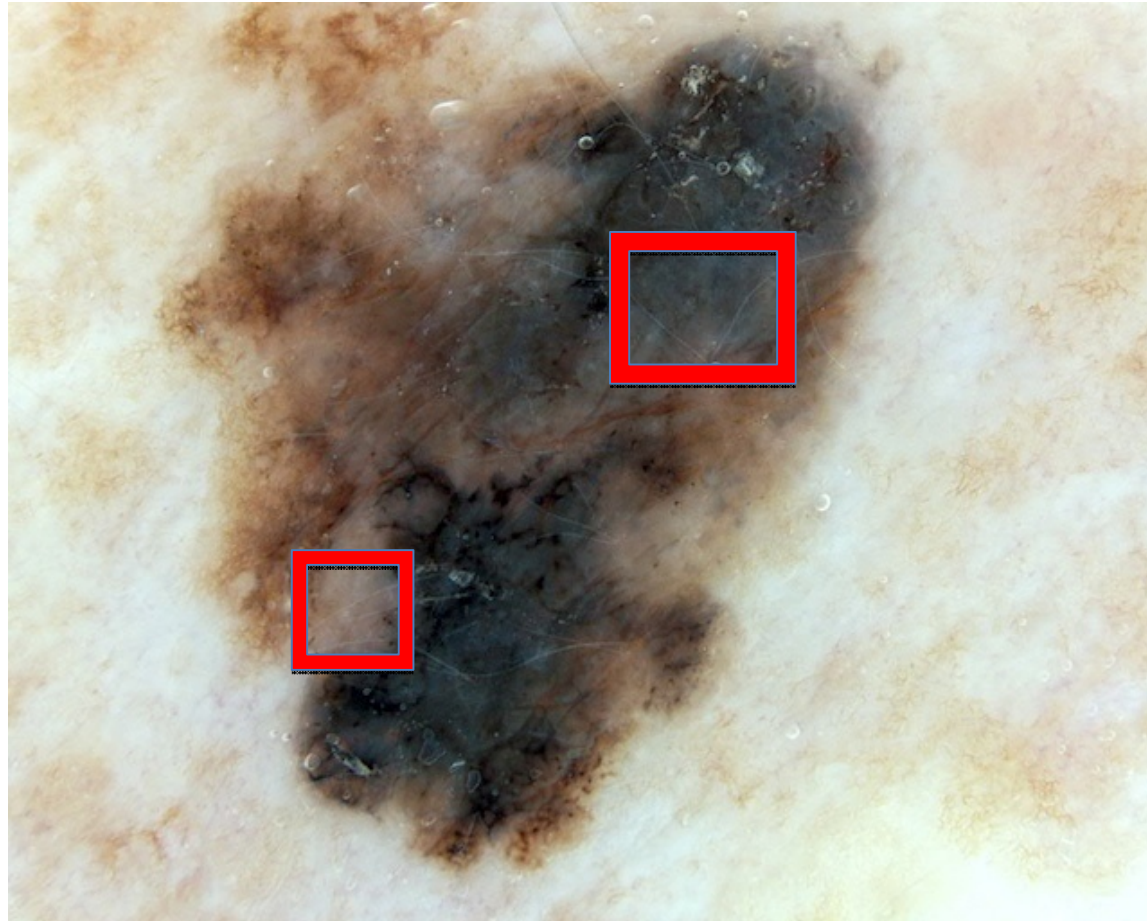
Scar-like depigmentation



• Yes

Has this blue-white structures?

• No



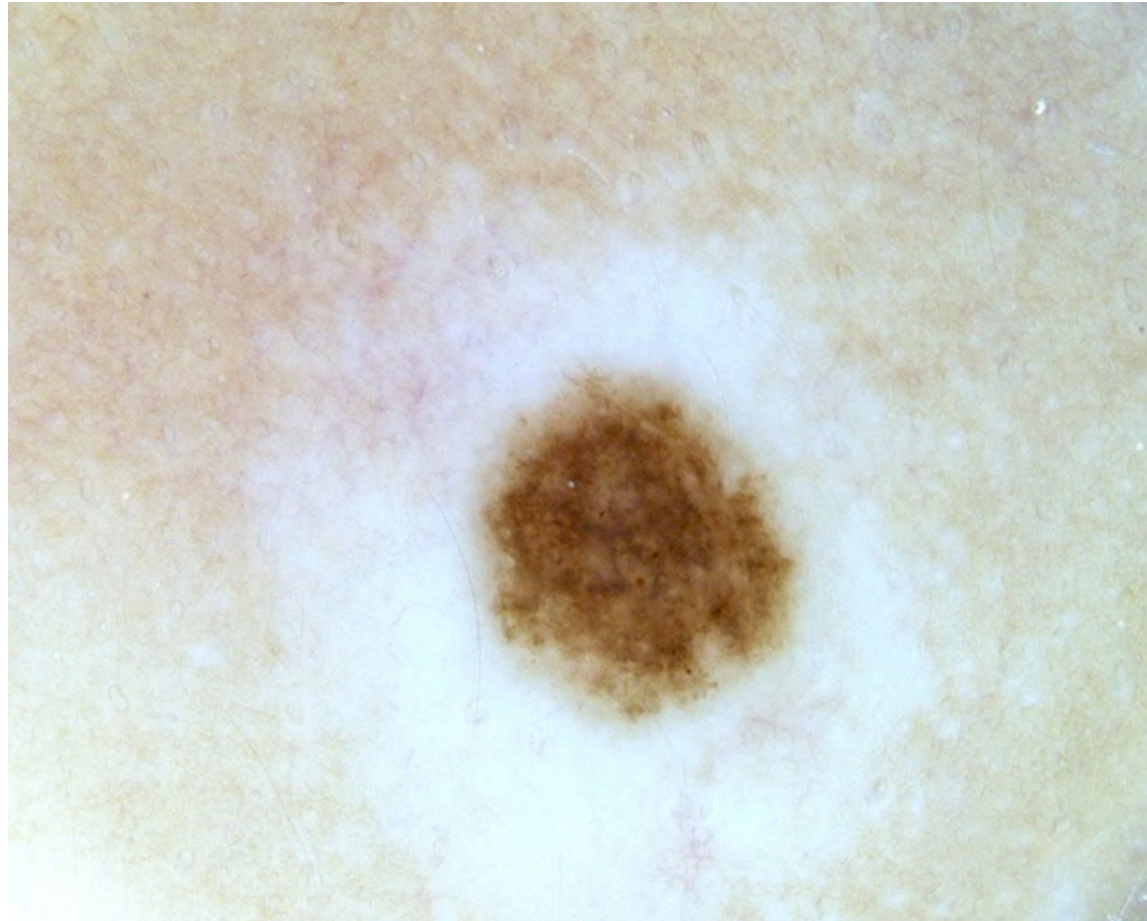
• Yes

• Melanoma

• Yes

Has this blue-white structures?

• No



• No

• Hypopigmentation: halo naevus

• Yes

Has this blue-white structures?

• No



- No
- Regular network + pale background

• Yes

Has this blue-white structures?

• No

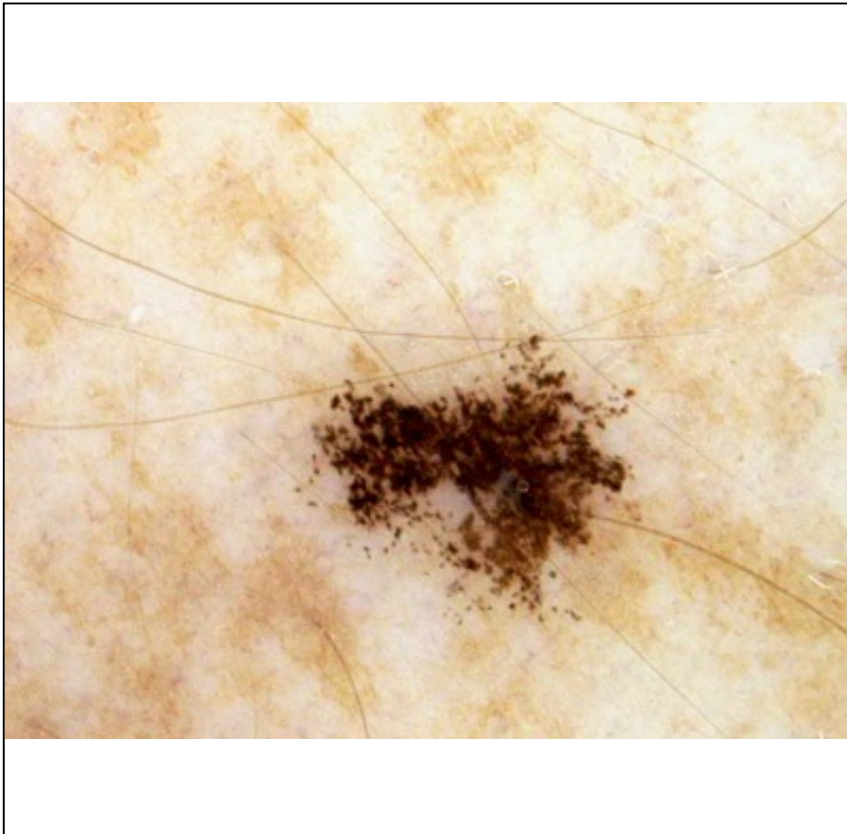


• Yes

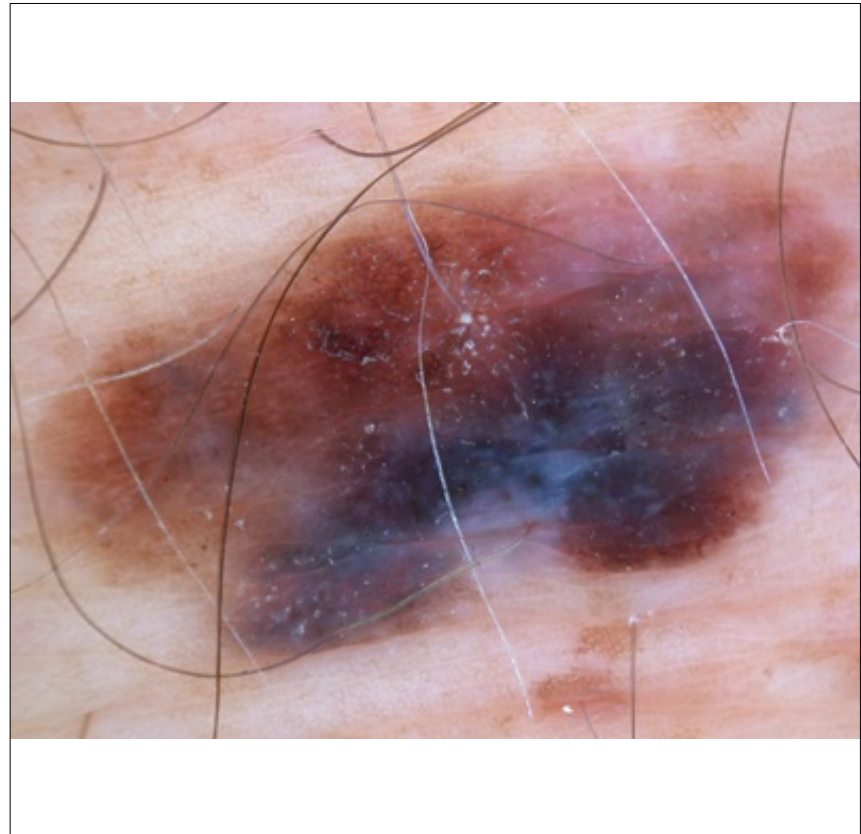
• Melanoma

Multiple colours (≥ 5)

1-2 colours



Multiple colours



• Yes

Has this multiple colours?

• No



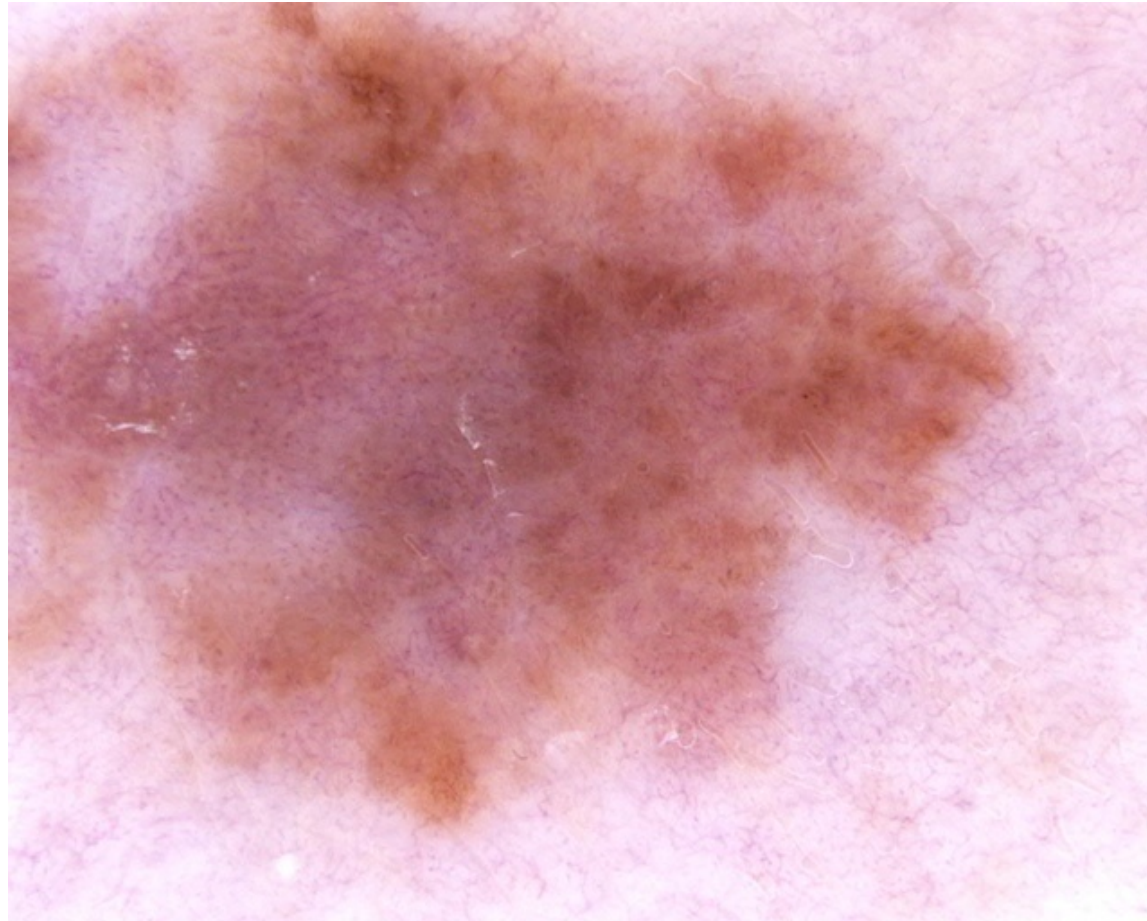
• Yes

• Melanoma

• Yes

Has this multiple colours?

• No



• No

• Melanoma

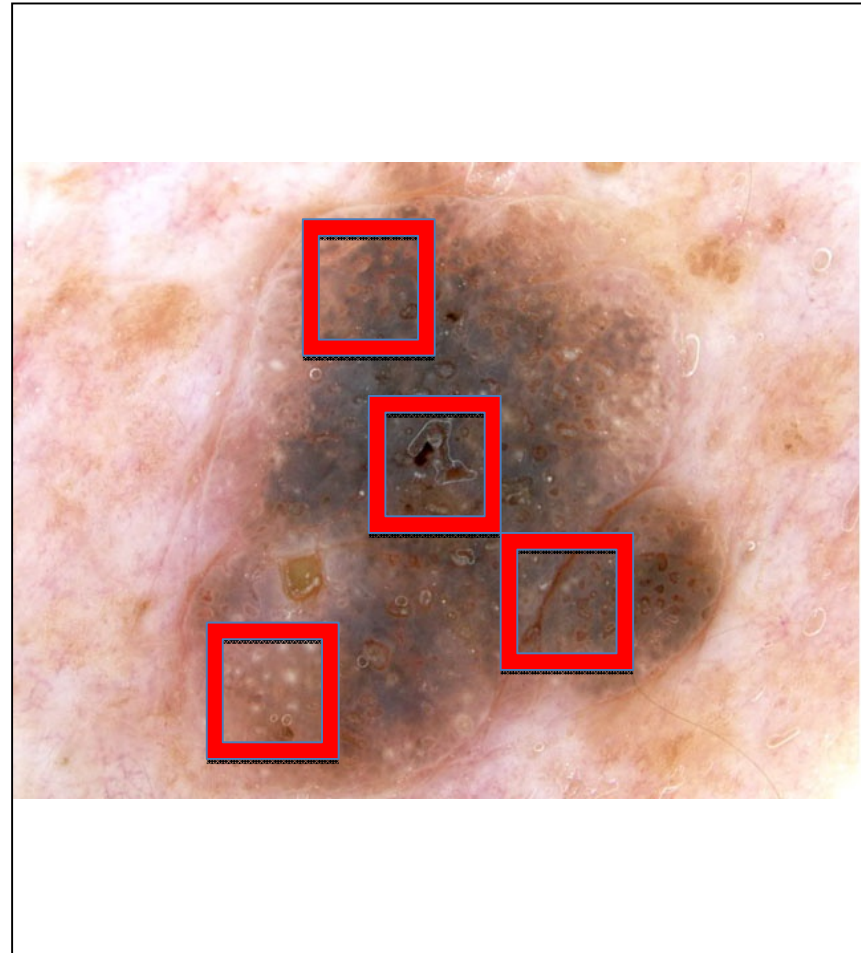
Take a break!

Nonmelanocytic pigmented lesions

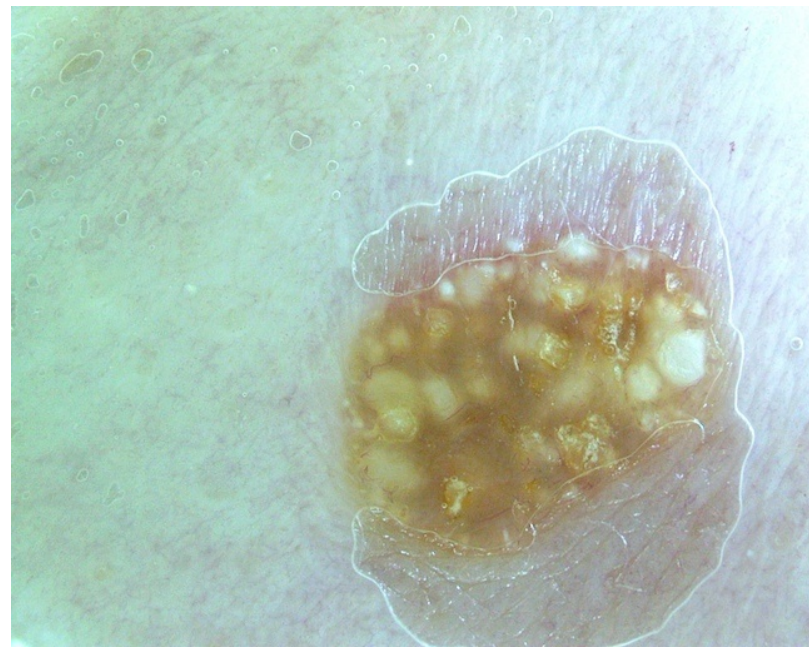
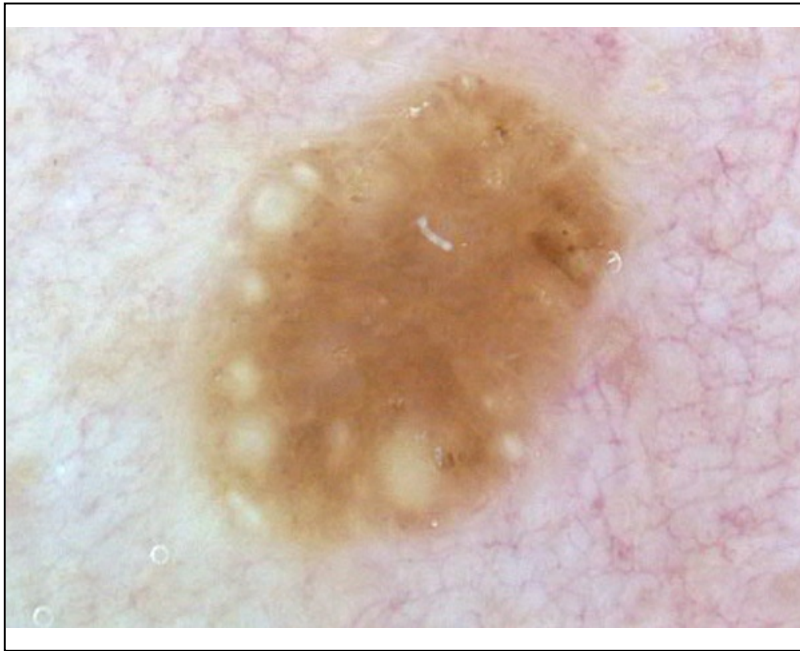
- Seborrhoeic keratosis
- Pigmented basal cell carcinoma
- Dermatofibroma
- Vascular lesions

Seborrheic keratosis

- No network or globules
- Milia-like cysts
- Irregular crypts
- Cerebriform structures
- Fissures/ridges



Milia-like cysts



- White or yellow round or oval 'clods'

• Yes

Are these milia-like cysts?

• No



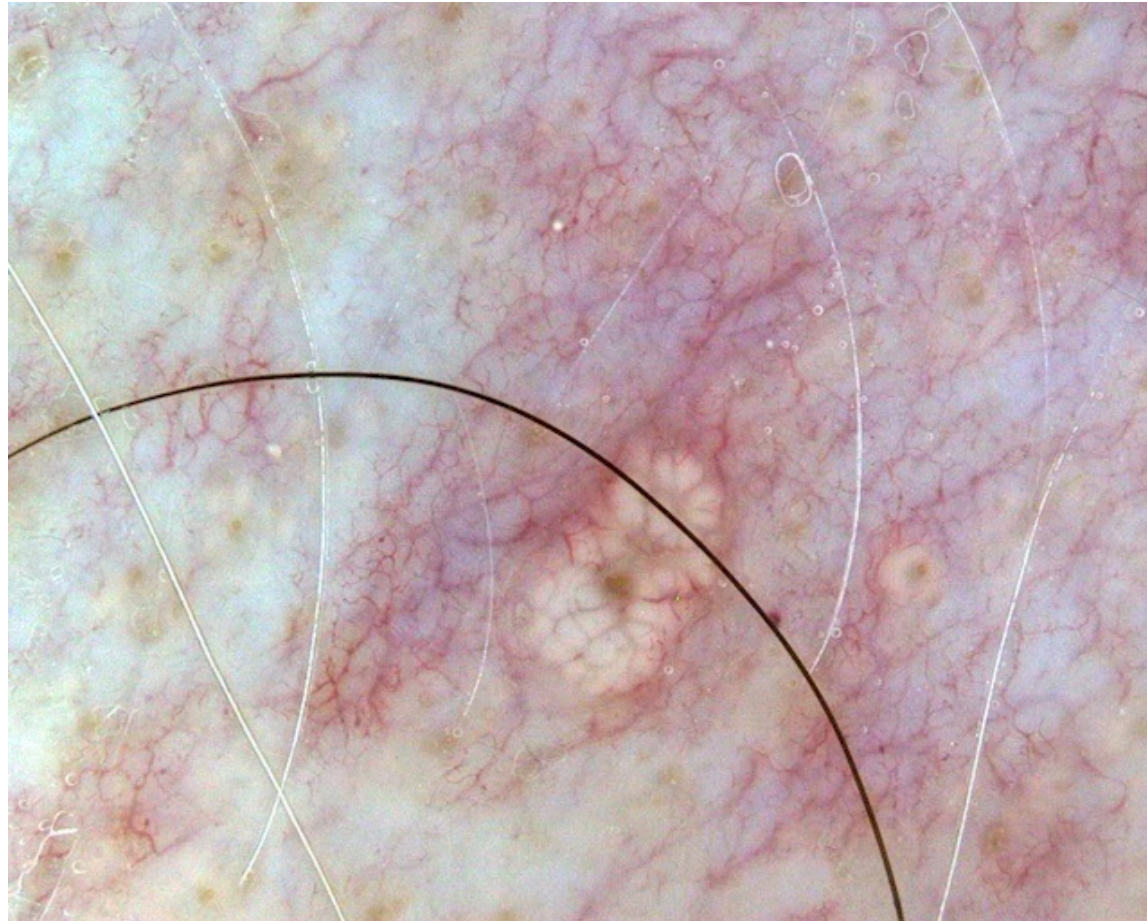
• Yes

• + irregular crypts: seb k

• Yes

Are these milia-like cysts?

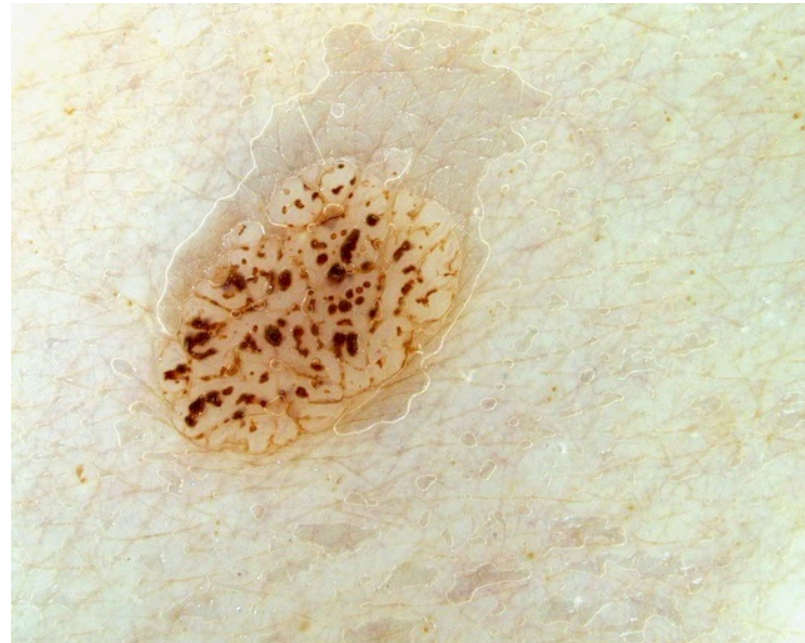
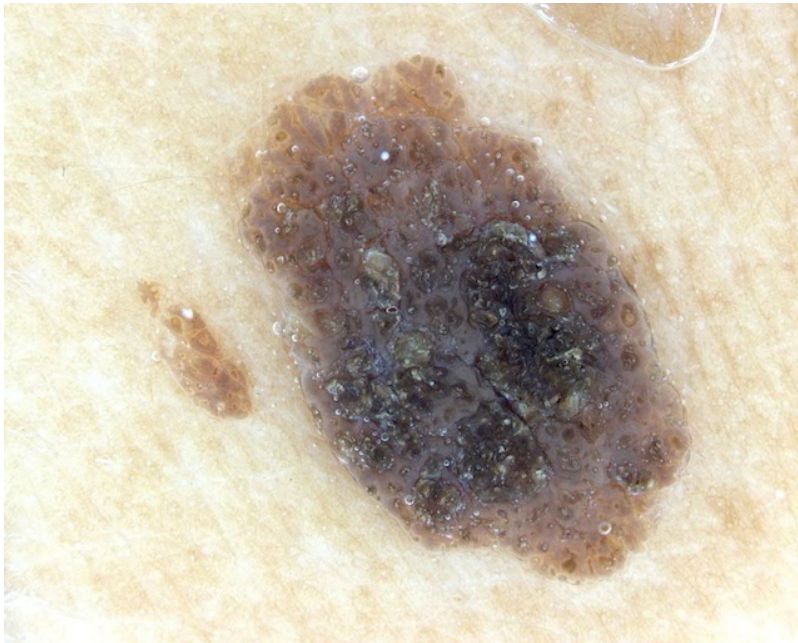
• No



• No

• Sebaceous hyperplasia

Irregular crypts

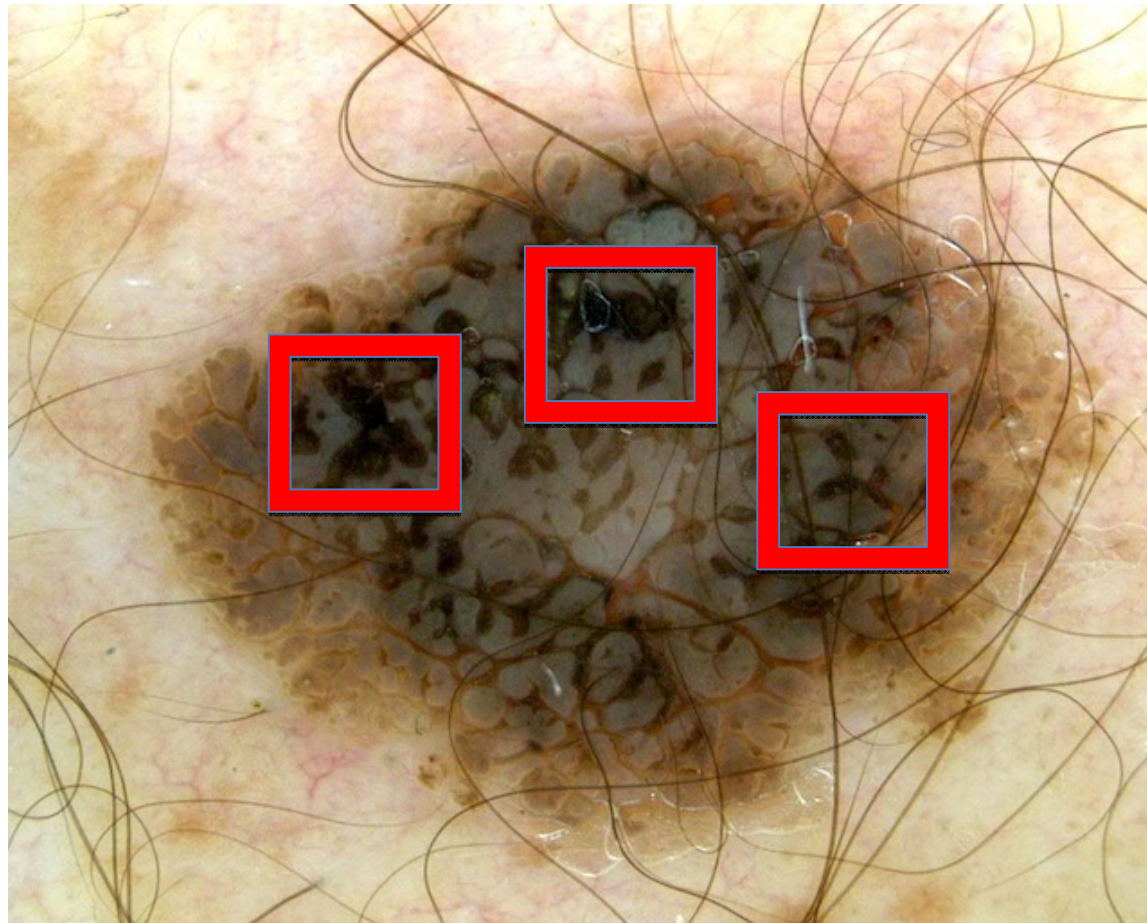


- Irregular clods of any colour
- Keratin-filled comedo-like openings

• Yes

Are these irregular crypts?

• No



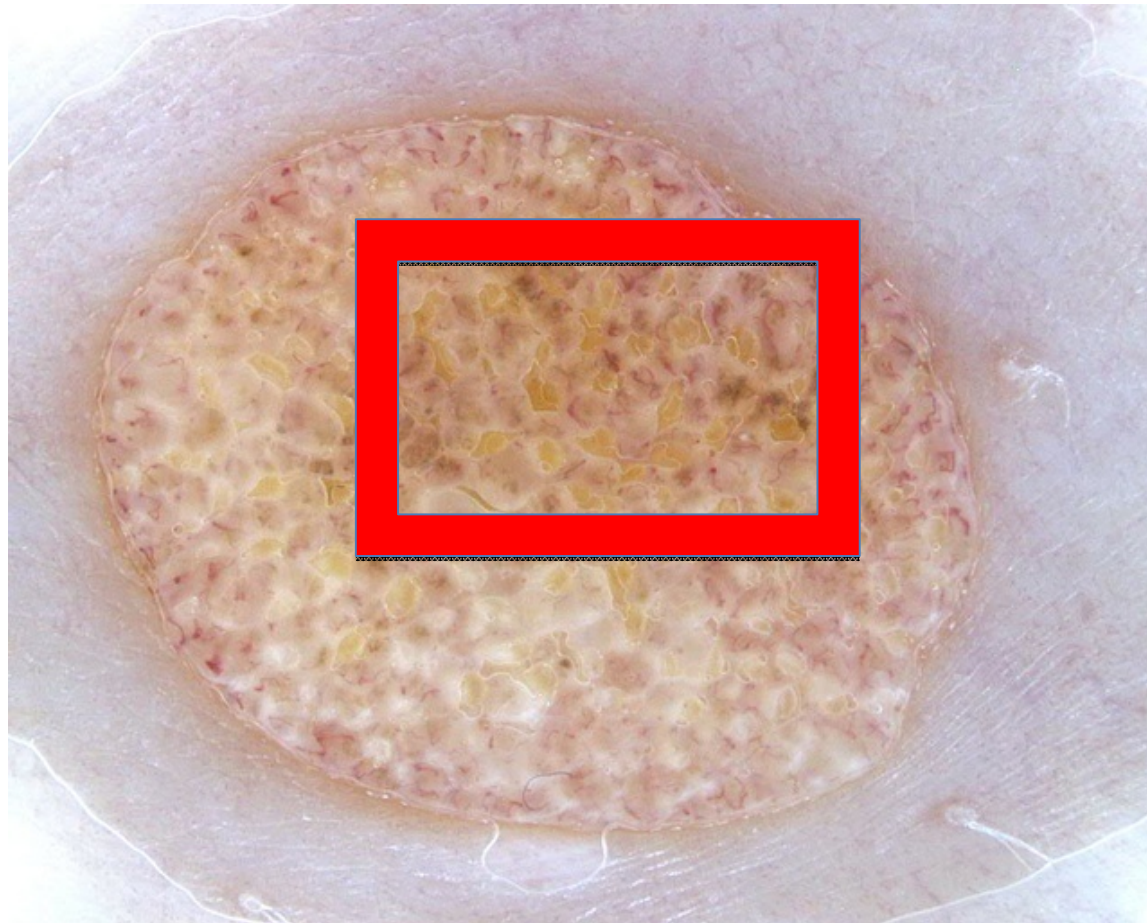
• Yes

• Seborrhoeic keratosis

• Yes

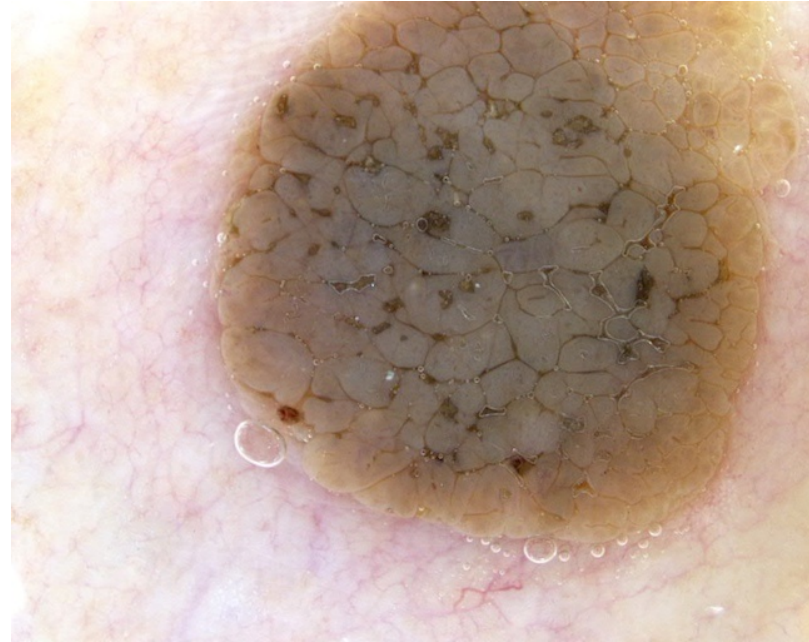
Are these irregular crypts?

• No



- Yes & No
- Papillomatous melanocytic naevus

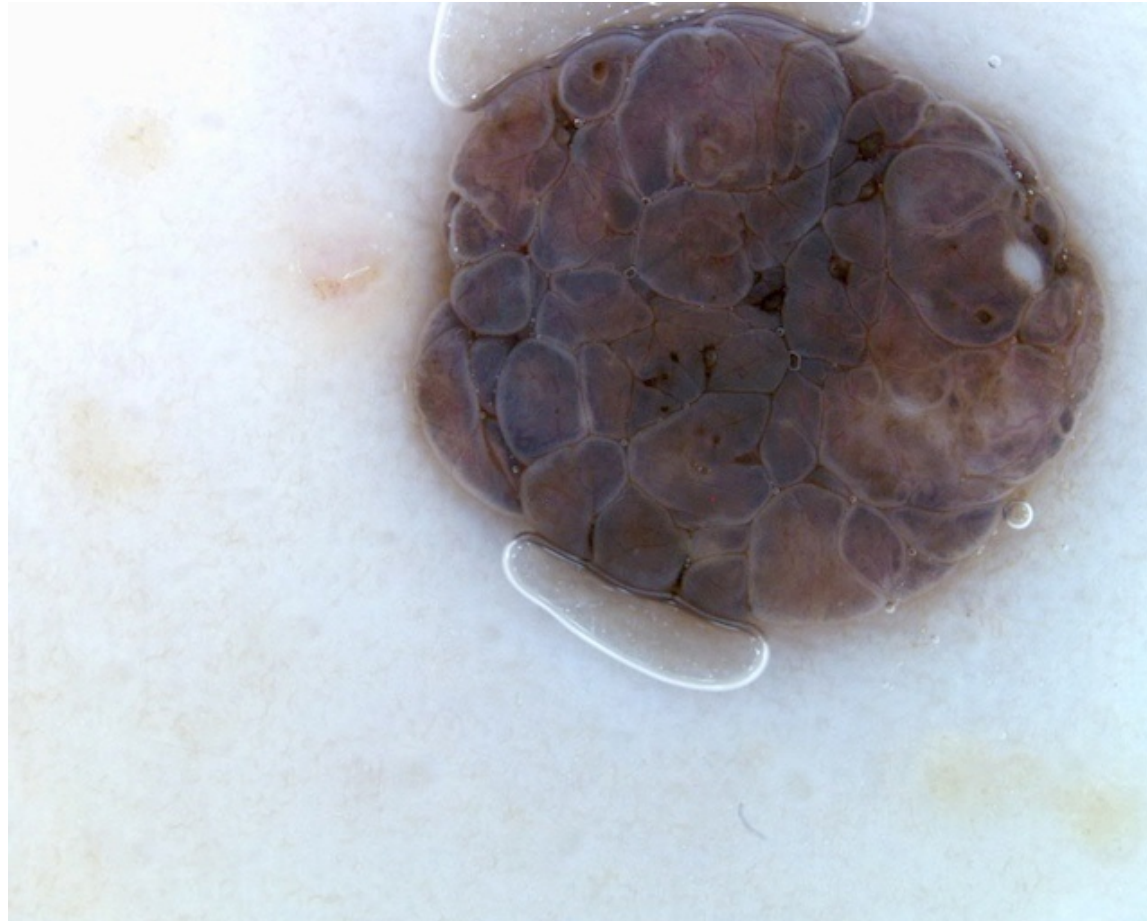
Cererbriform structures



• Yes

Is this cerebriform?

• No



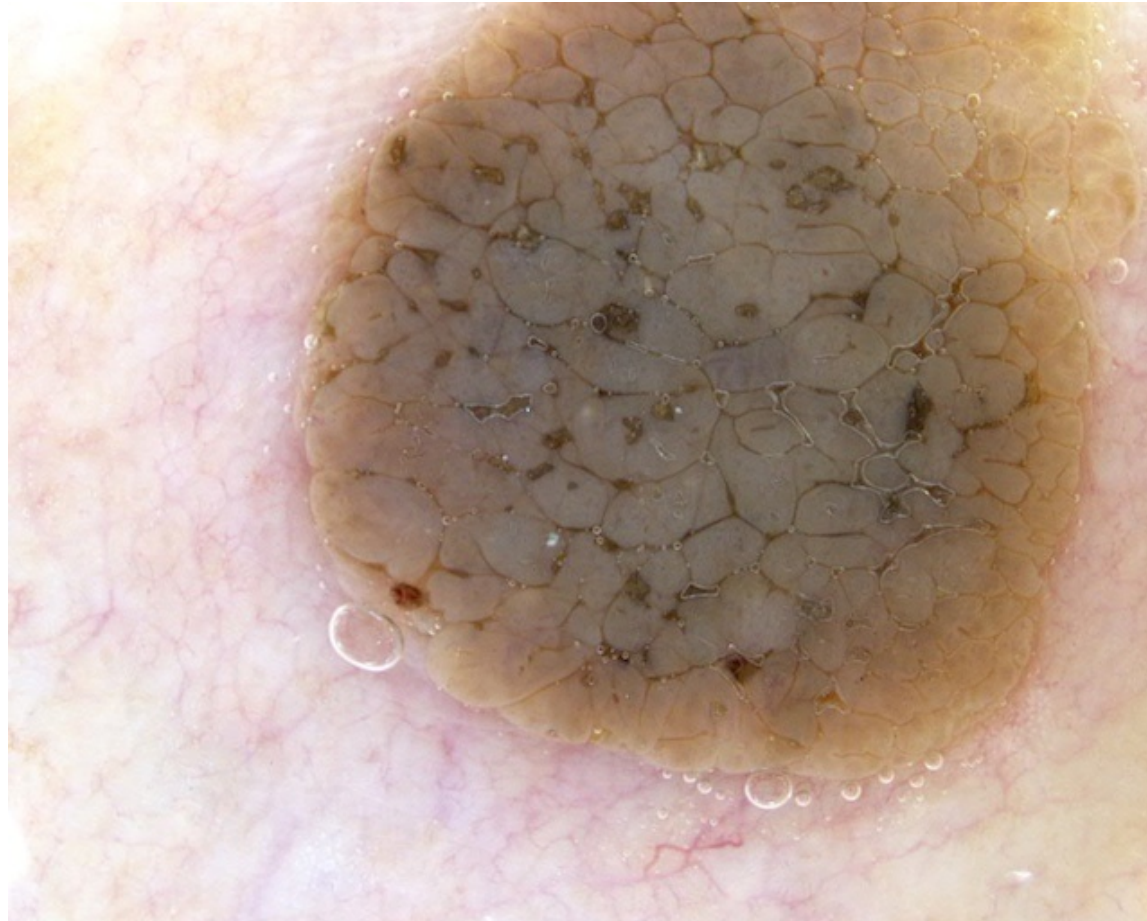
• No

• Dermal naevus (Unna type)

• Yes

Is this cerebriform?

• No



• Yes

• Seborrhoeic keratosis

Does it wobble?

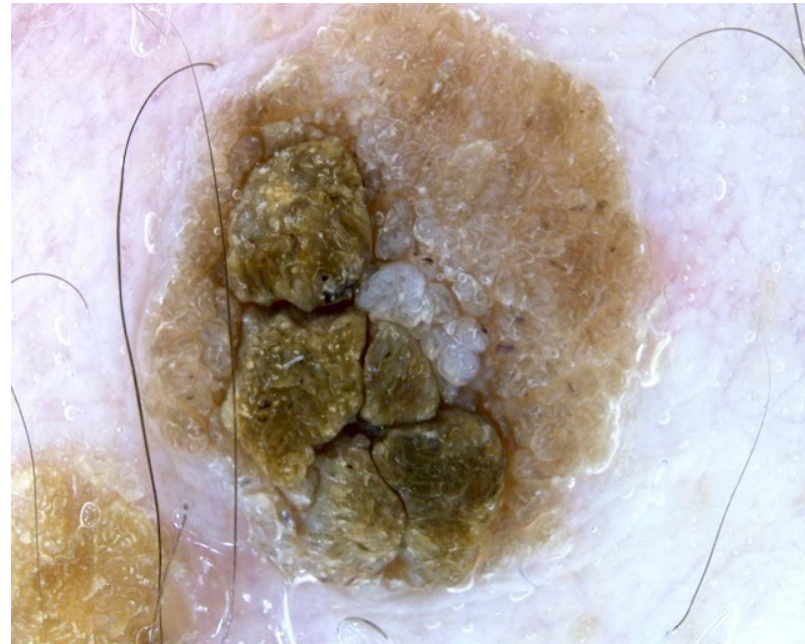
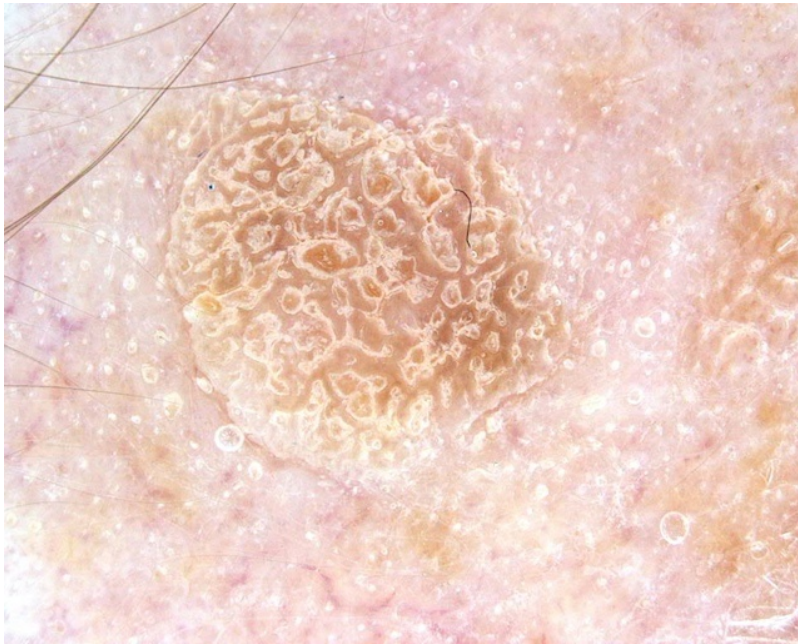
Yes: melanocytic naevus



No: seborrhoeic keratosis



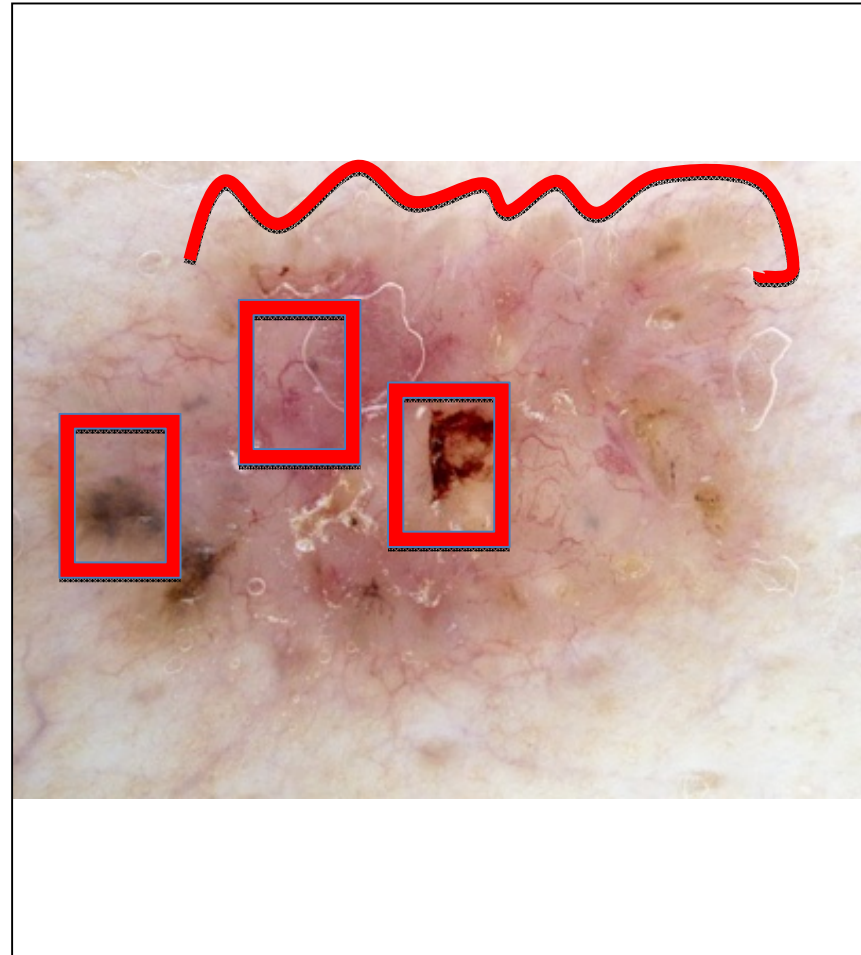
Fissures / ridges



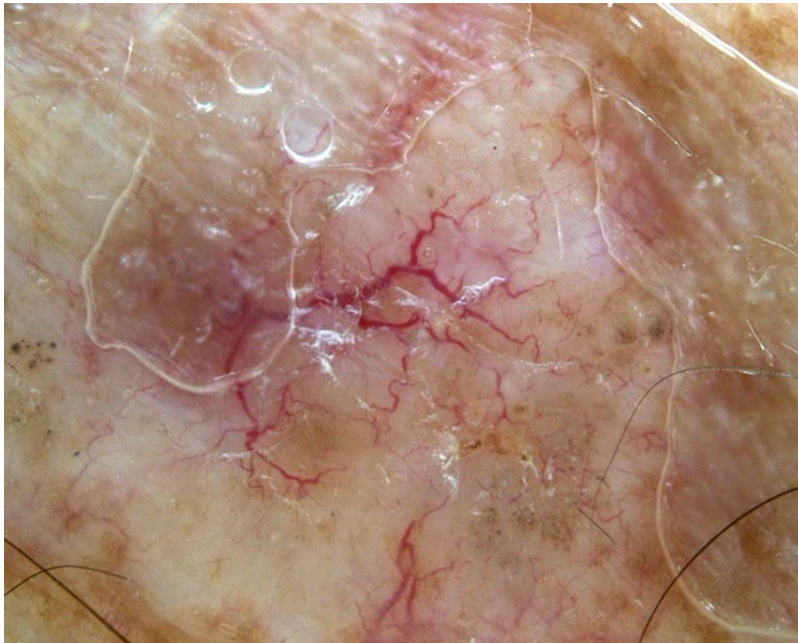
- Straight and curved lines

Pigmented basal cell carcinoma

- No network or globules
- Arborising vessels – branched red lines
- Leaf-like areas – any colour
- Blue-grey structures
- Ulceration



Arborising telangiectasia

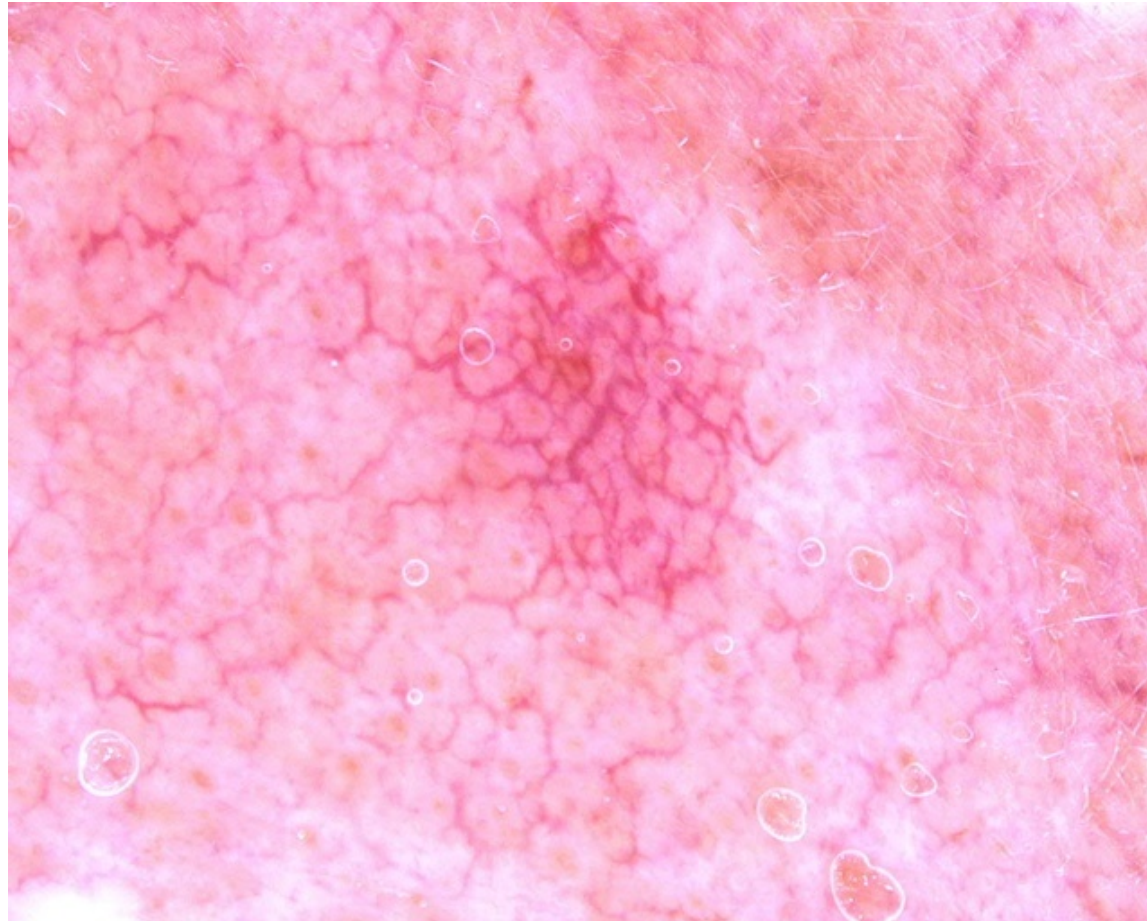


- Branched red lines

• Yes

Is this arborising telangiectasia?

• No



• No

• Telangiectasia as a lattice

• Yes

Is this arborising telangiectasia?

• No



• Yes

• Basal cell carcinoma

Leaf-like areas



- This concept requires imagination!

• Yes

Is this leaf-like?

• No



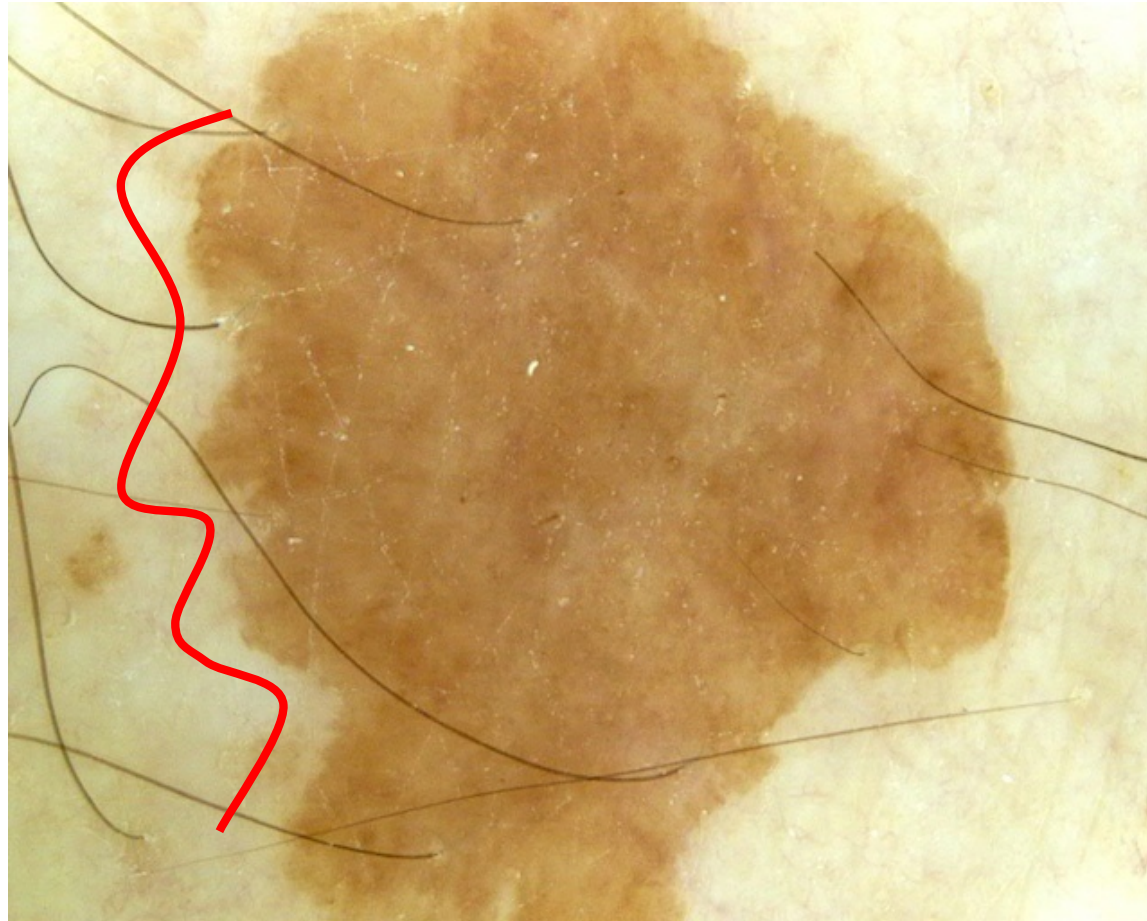
• Yes

• Basal cell carcinoma

• Yes

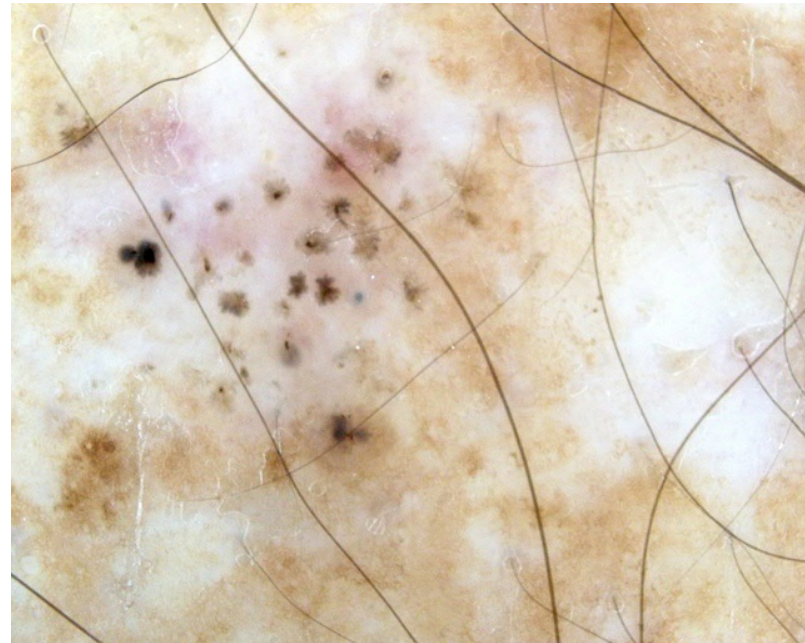
Is this leaf-like?

• No



- Yes & No
- It's a solar lentigo!

Blue-grey structures

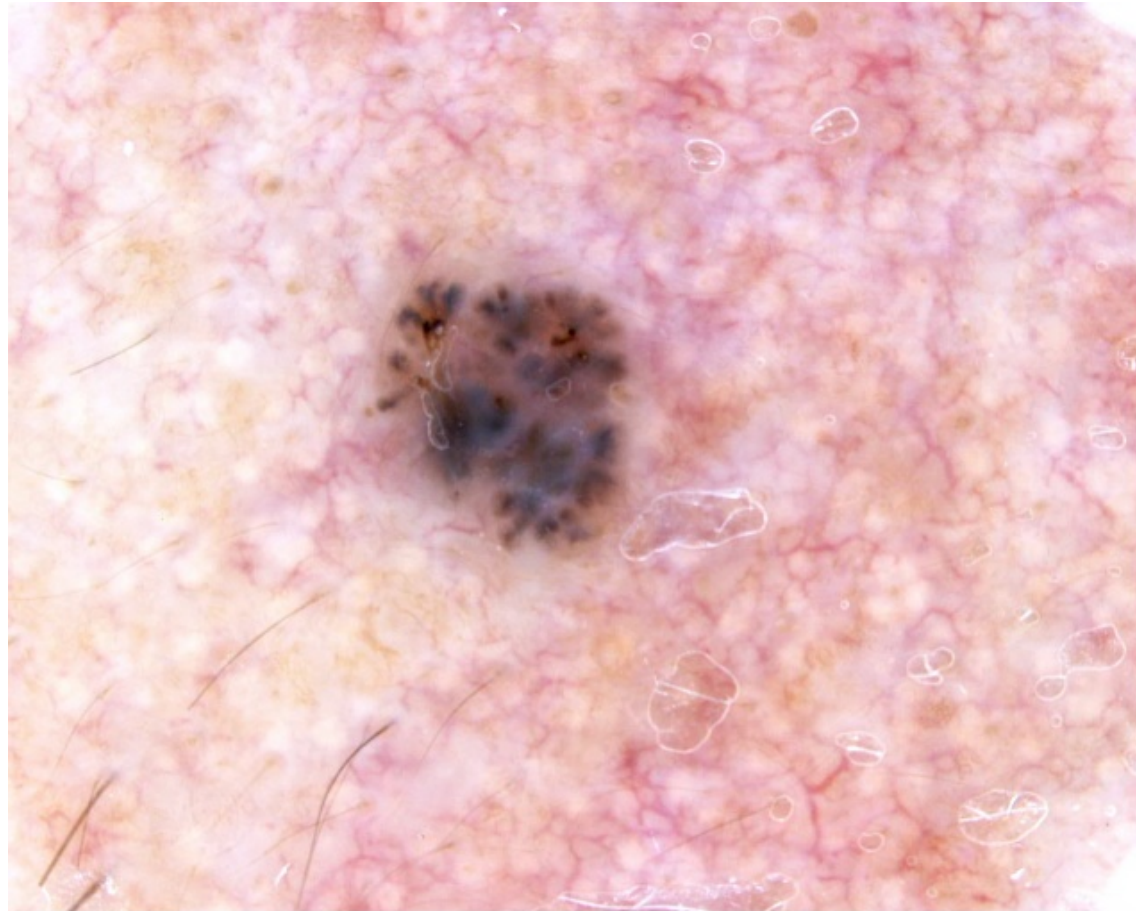


- Large blue-grey ovoid nests
- Multiple blue-grey dots / globules
- Spoke wheel areas
- Blue – grey clods

• Yes

Are these blue-grey structures?

• No



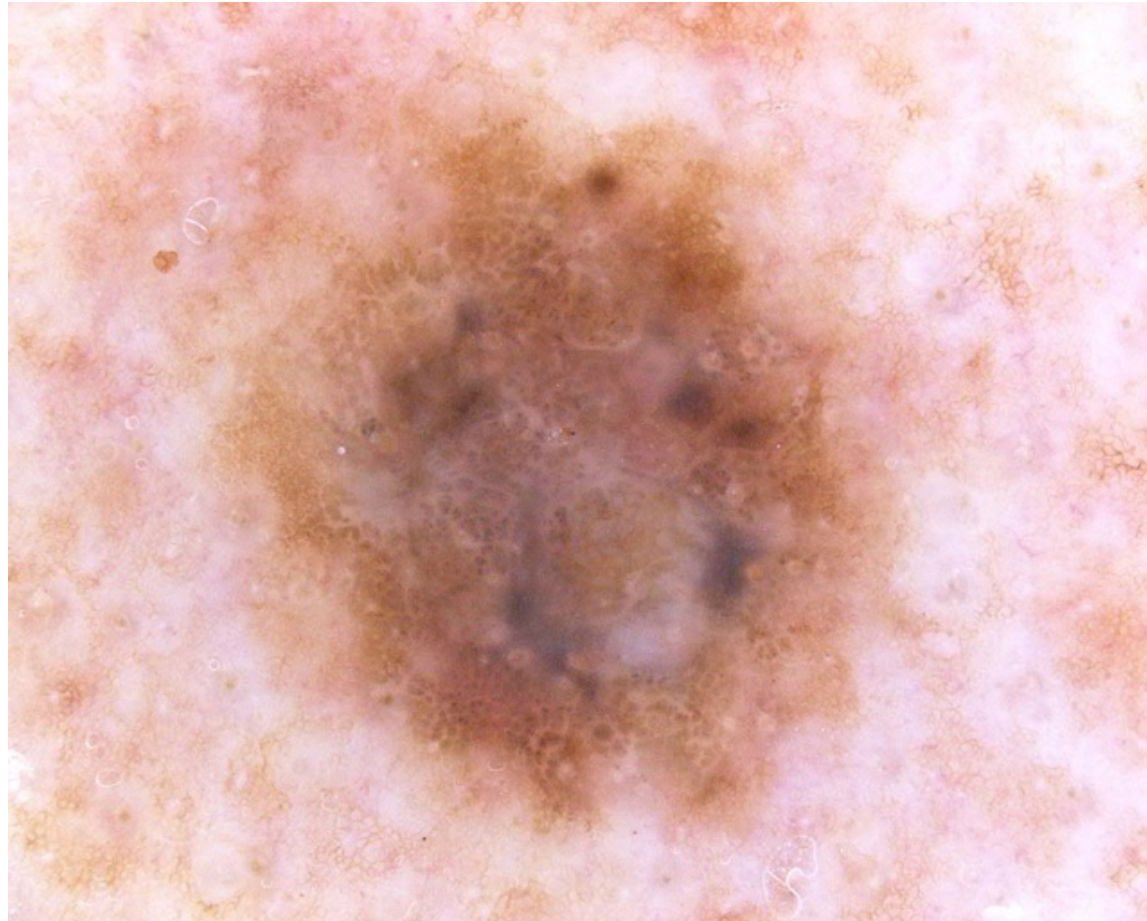
• Yes

• Basal cell carcinoma

• Yes

Are these blue-grey structures?

• No



- Yes & No
- Melanocytic lesion: melanoma

Ulceration

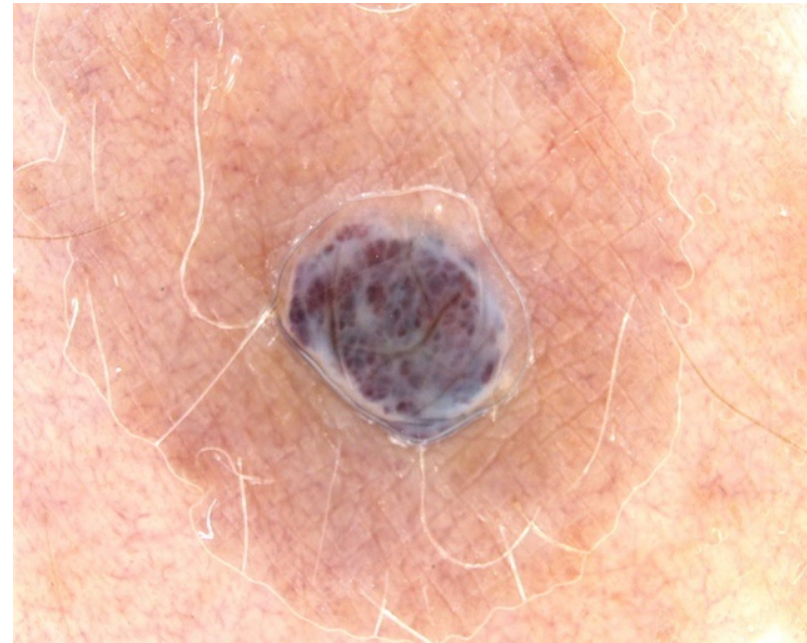


- Very common in BCC

Vascular lesions

- Widespread red-blue lacunes
- Red-bluish-black homogeneous areas

Red-blue lacunes



- Red, blue or purple clods
- Separated by whitish fibrous bands

• yes

Is this lacunar pattern?

• No



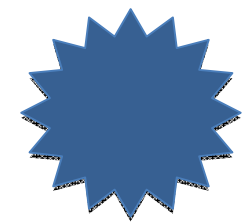
• Yes

• Cherry angioma

• yes

Is this lacunar pattern?

• No



• No

• Blue naevus with starburst

Red-blue homogeneous areas



• Yes

Is this red-blue homogeneous?

• No



- Yes & No
- Cherry angioma that has bled

Dermatofibroma

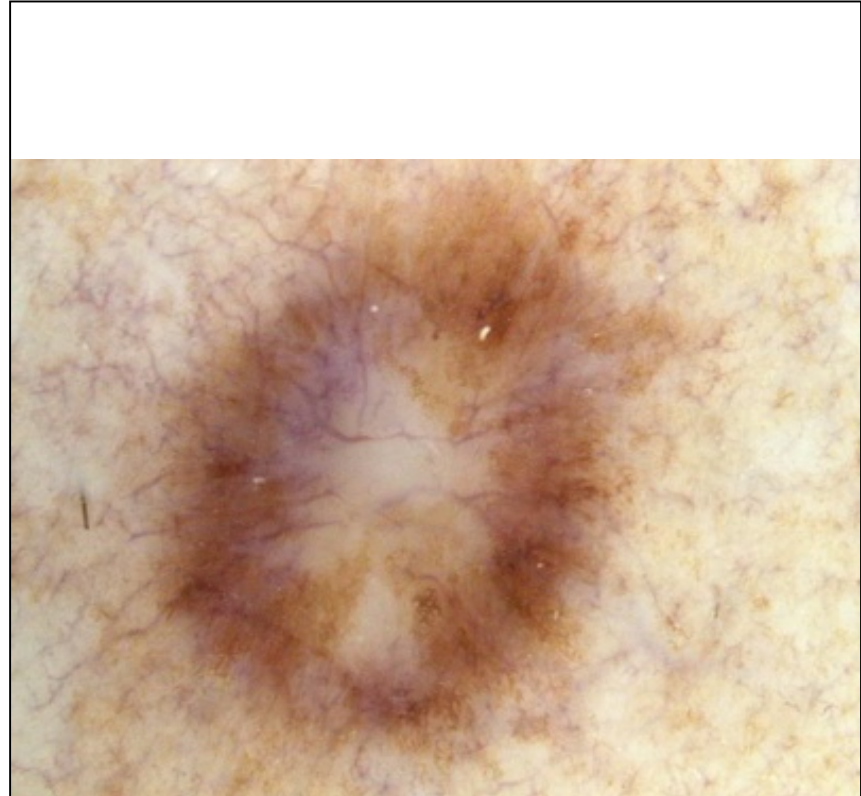
- Firm pink or brown nodule
- Positive pinch sign
- Subtle dermoscopic features: white centre, faint network/amorphous



Pinch sign



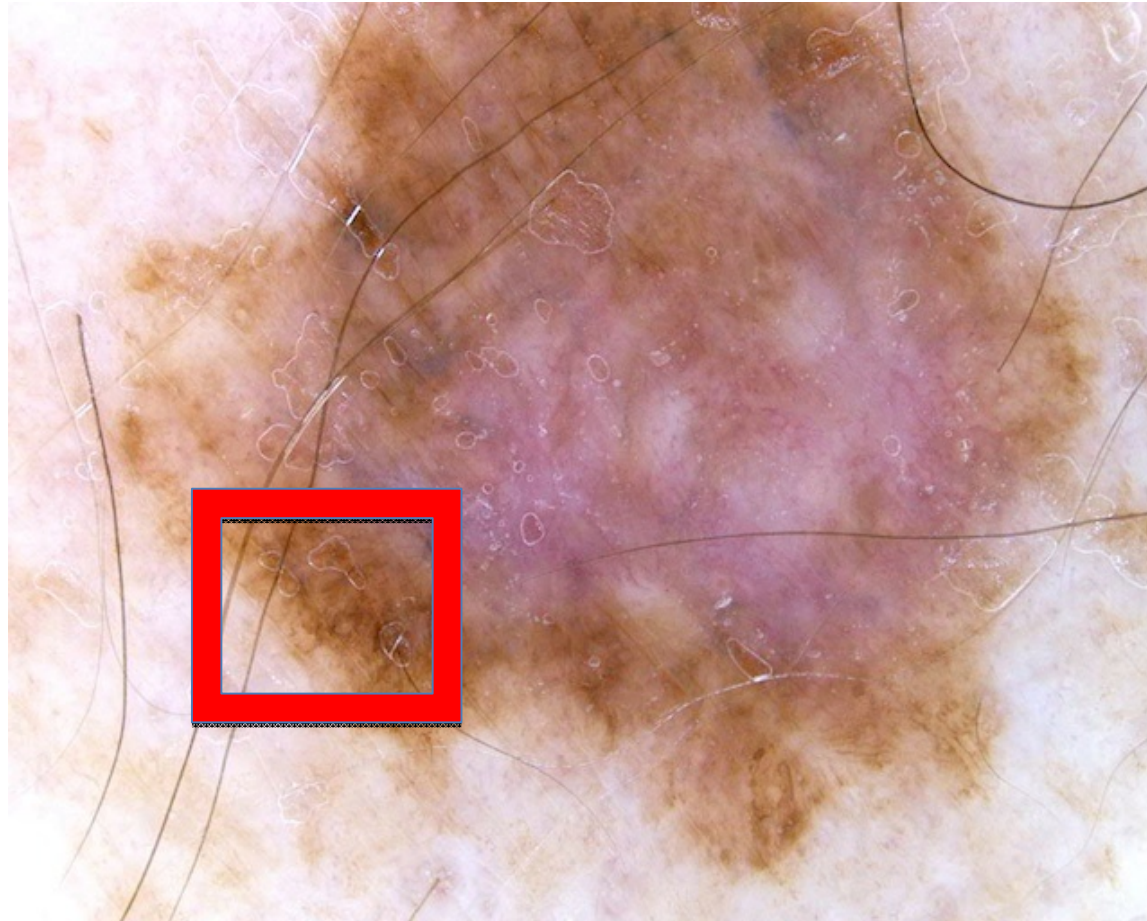
Central white area



• Yes

Central white area?

• No



• No

• Network: melanoma

• Yes

Central white area?

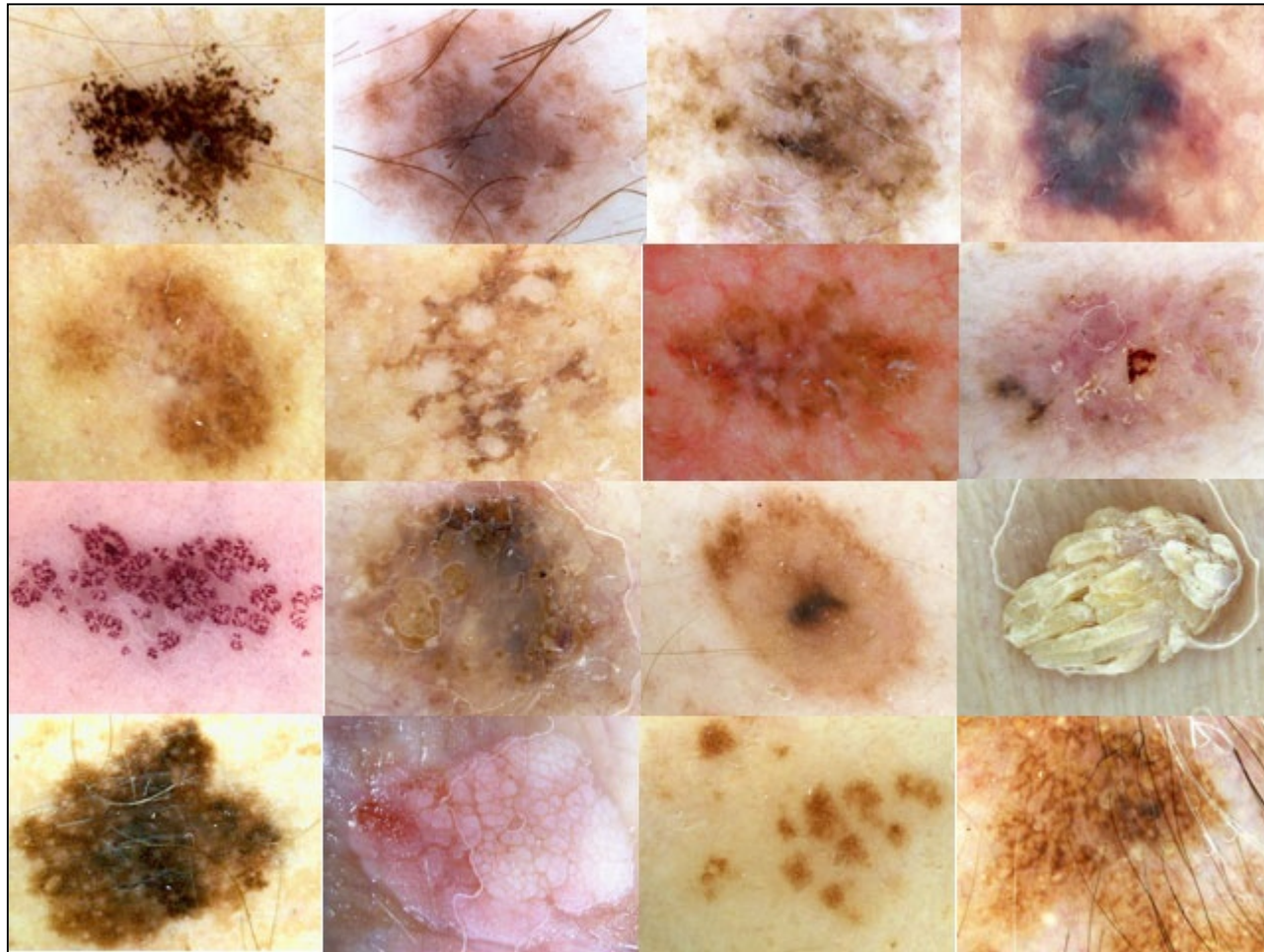
• No



• Yes

• Dermatofibroma

What is this lesion?



Recap

- 1st step of dermoscopy: is it melanocytic?
- If not, is it:
 - Seborrhoeic keratosis?
 - Basal cell carcinoma?
 - Vascular?
 - Dermatofibroma
- If yes, 2nd step: is it benign or malignant?

3-point checklist for melanoma

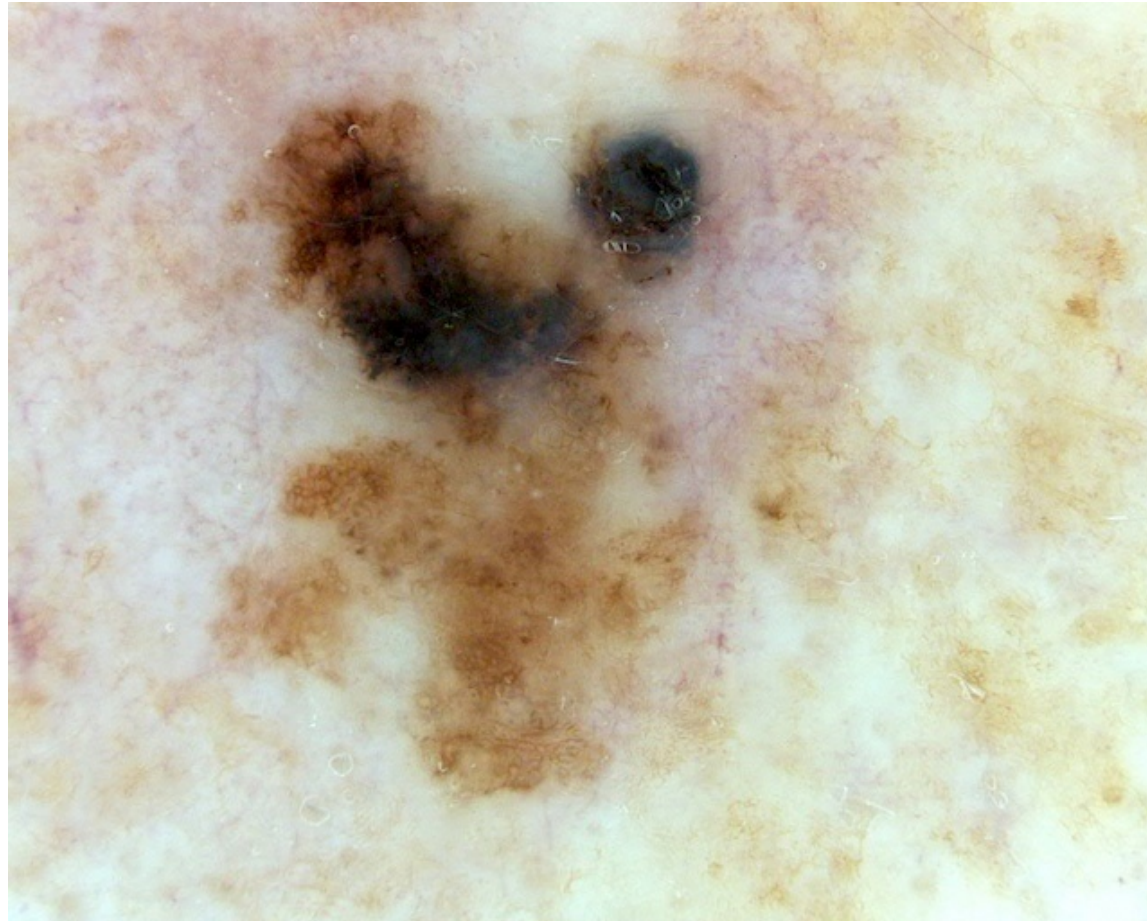
1. Asymmetry of colour or structure
2. Atypical network
3. Blue-white structures

If 2 or 3 features present, excise the lesion or refer to an expert.

• Yes

Is this lesion a melanoma?

• No



- **Yes!**
- Asymmetry, atypical network, blue-white structures

Answers to the quiz

Q1. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

**Melanocytic or
Nonmelanocytic?**



Melanocytic

- Benign or malignant?

Q1. What is this lesion?

a) Benign melanocytic naevus

- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

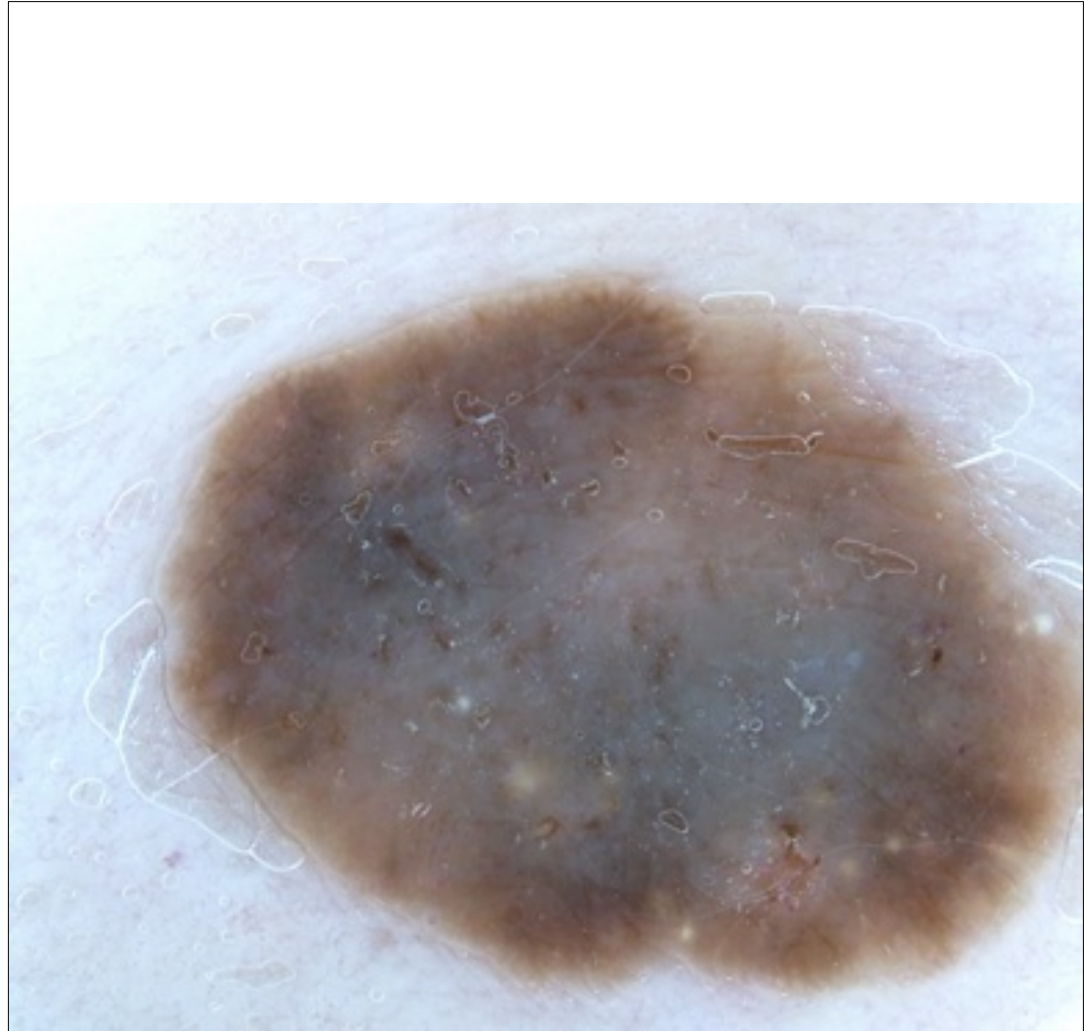


Steel-blue homogeneous structure
Blue naevus

Q2. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

Melanocytic or
Nonmelanocytic?

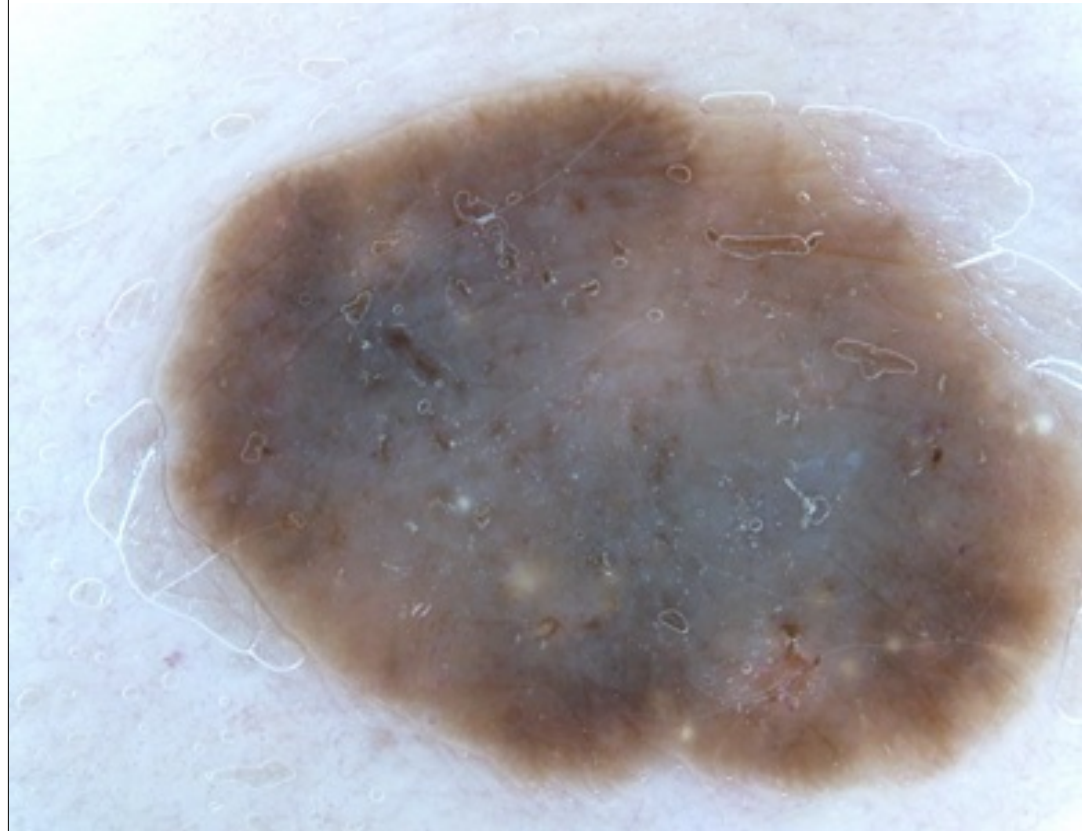


Nonmelanocytic

- What is it?

Q2. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis**
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



No network
Milia-like cysts

Q3. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

Melanocytic or
Nonmelanocytic?



Nonmelanocytic

- What is it?

Q3. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrheic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion

f) Dermatofibroma



Central white area

Q4. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

Melanocytic or
Nonmelanocytic?



Melanocytic

- Benign or malignant?

Q4. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma**
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

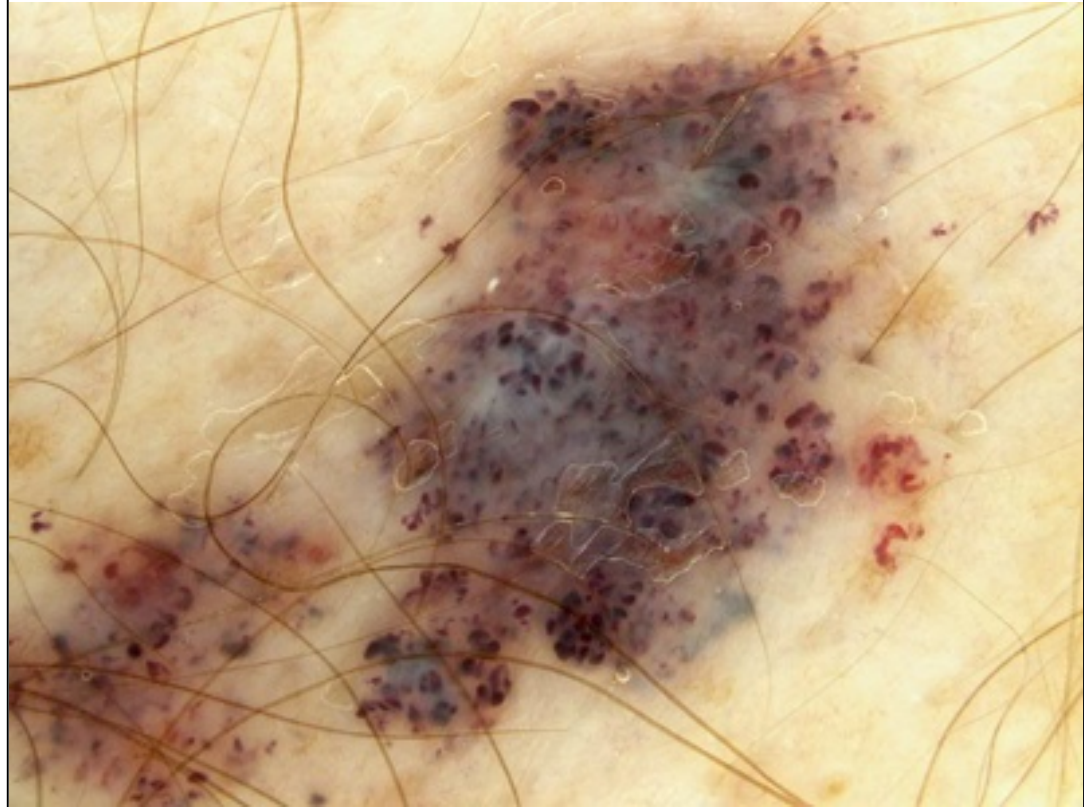


Asymmetry of structure
Atypical network

Q5. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

Melanocytic or
Nonmelanocytic?

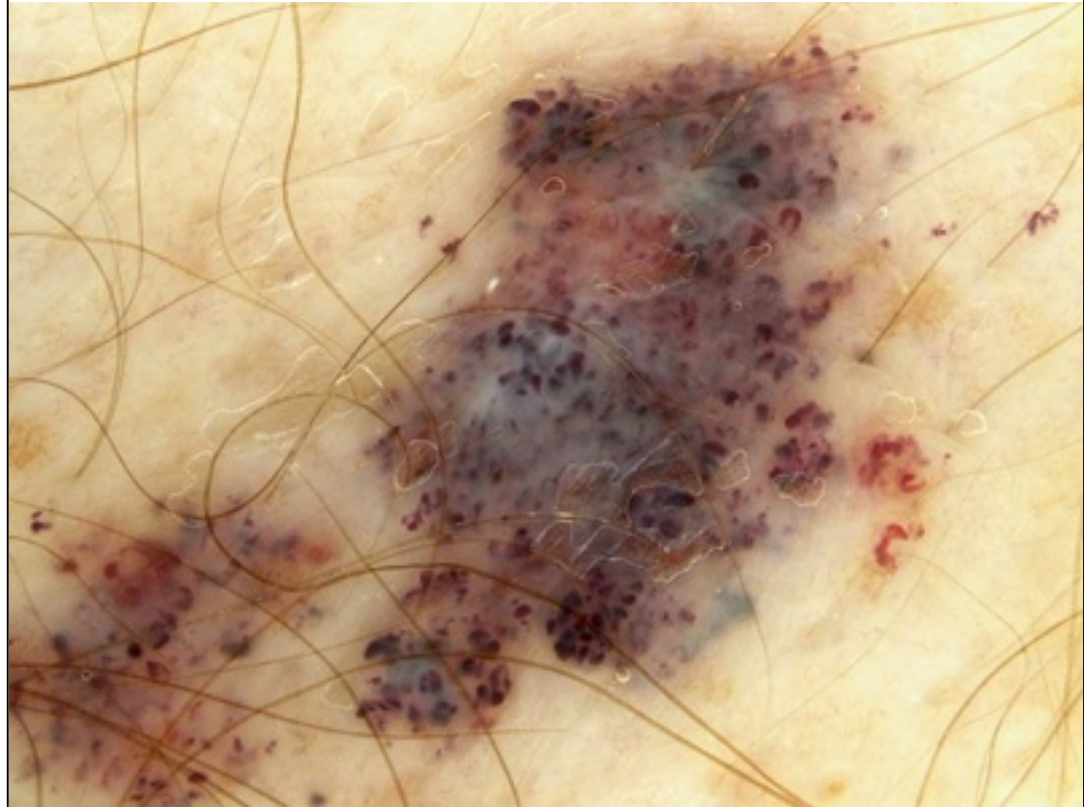


Nonmelanocytic

- What is it?

Q5. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion**
- f) Dermatofibroma



Lacunar pattern

Q6. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

**Melanocytic or
Nonmelanocytic?**



Melanocytic

- Benign or malignant?

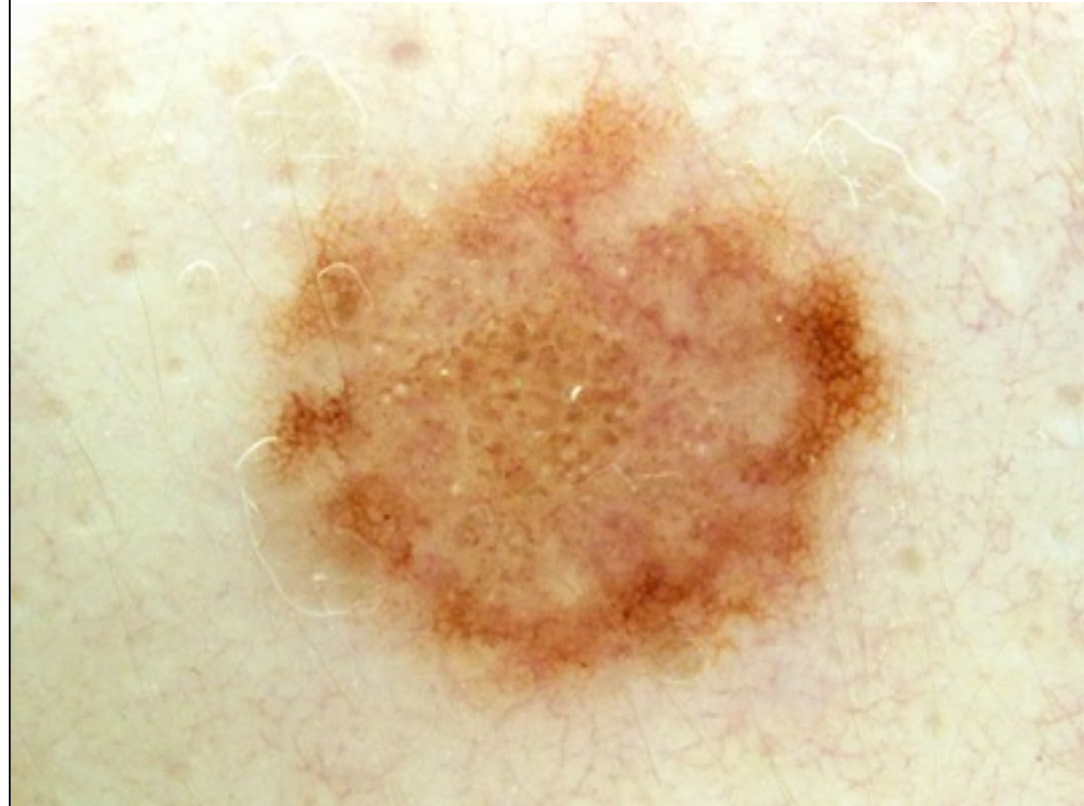
Q6. What is this lesion?

a) Benign melanocytic naevus

- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

Melanocytic

c



Symmetry of structure

Typical network

No blue-whitish structures

Q7. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

Melanocytic or
Nonmelanocytic?



Melanocytic

- Benign or malignant?

Q7. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma**
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

Melanocytic

c



Asymmetry of colour / structure

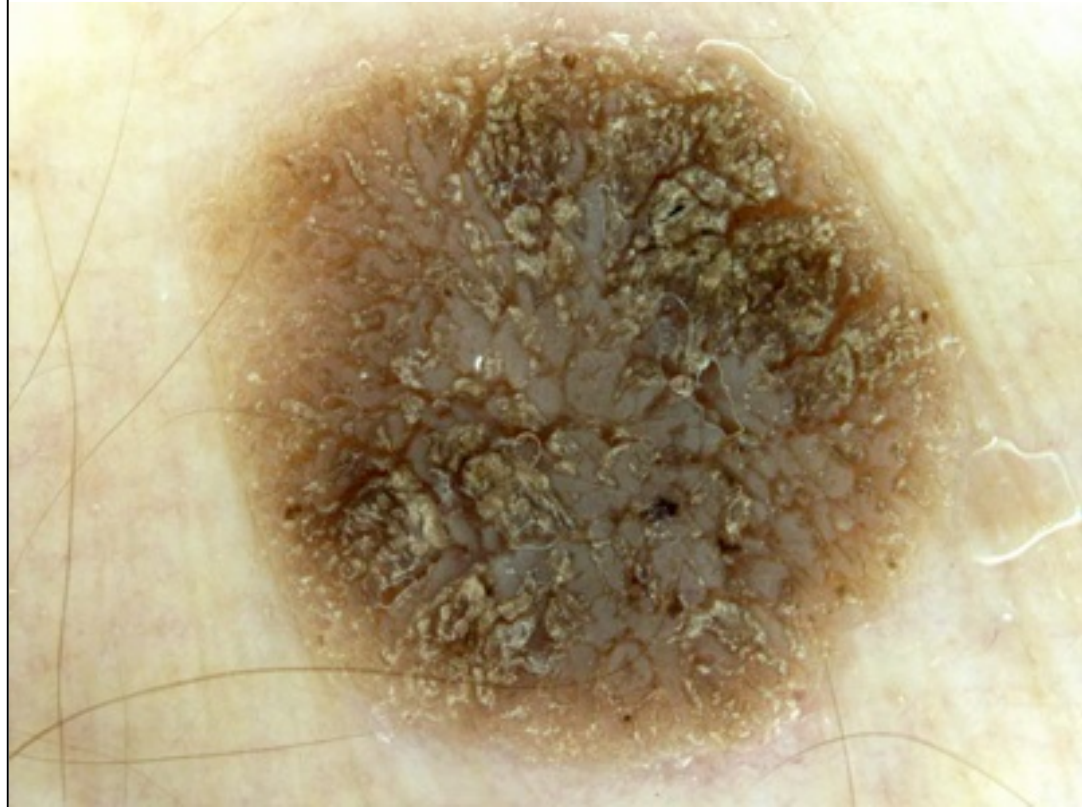
Atypical network

Blue-whitish structures

Q8. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

**Melanocytic or
Nonmelanocytic?**

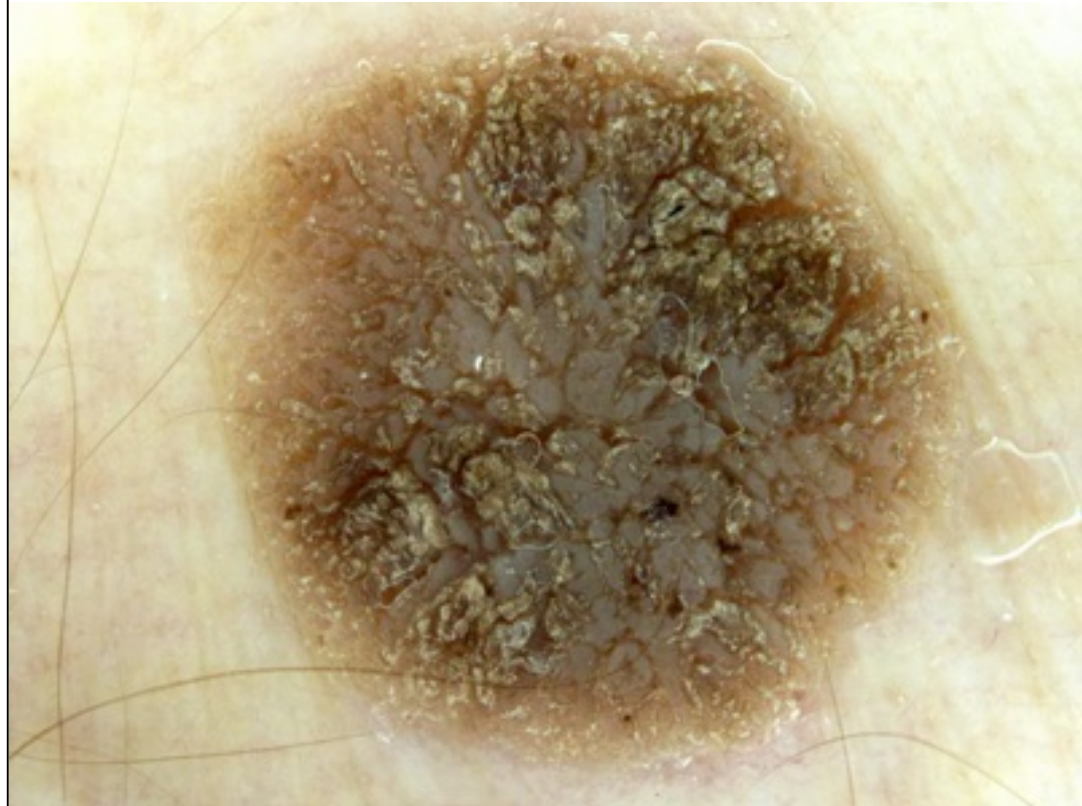


Nonmelanocytic

- What is it?

Q8. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis**
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

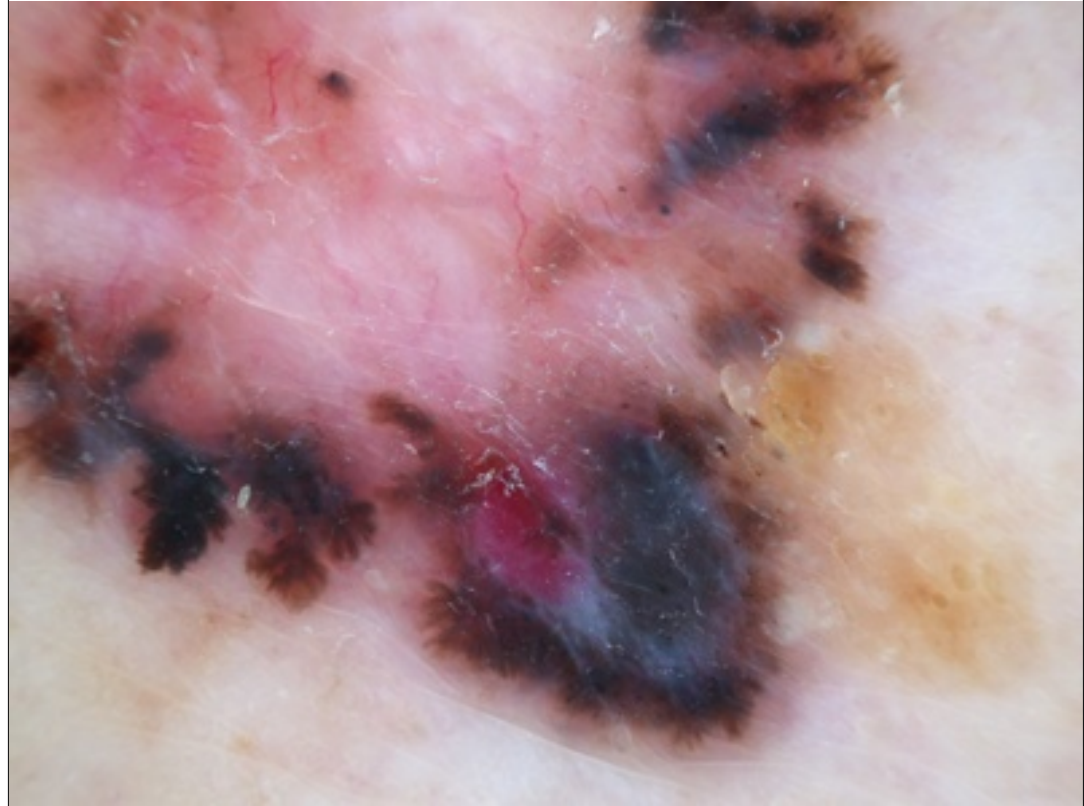


Irregular crypts
Fissures / ridges

Q9. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

Melanocytic or
Nonmelanocytic?

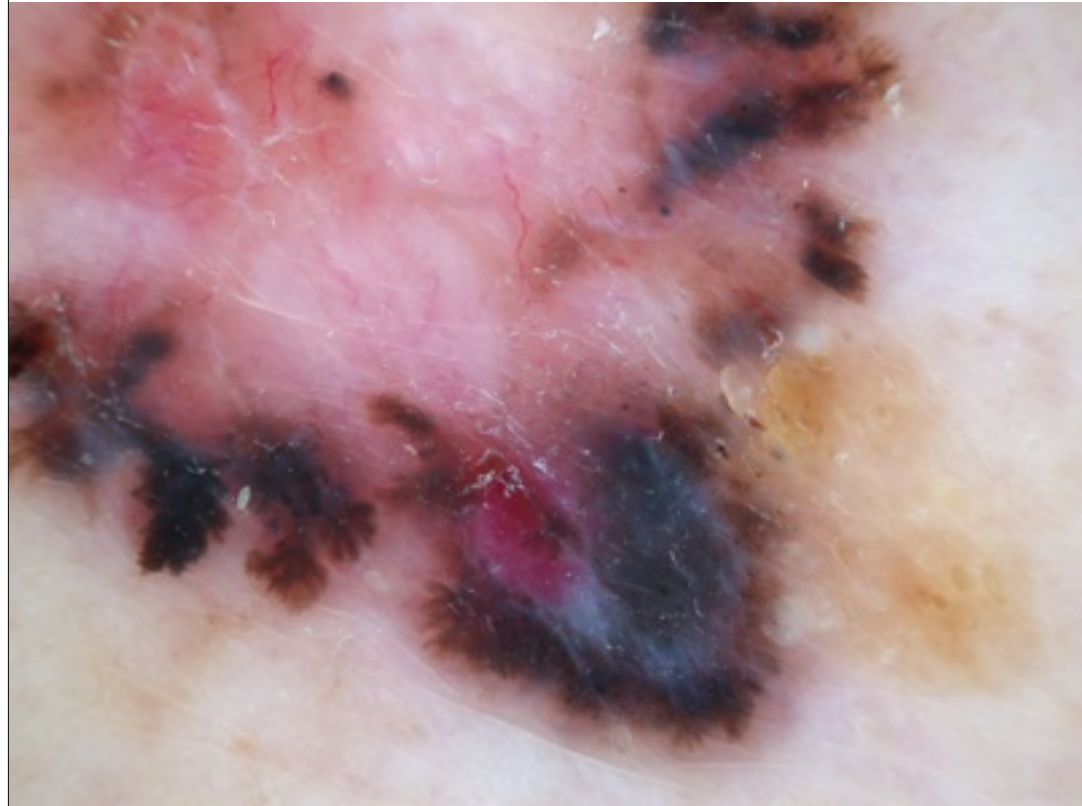


Nonmelanocytic

- What is it?

Q9. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma**
- e) Vascular lesion
- f) Dermatofibroma



Arborising telangiectasia
Leaf-like structures
Blue-grey structures

Q10. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma

**Melanocytic or
Nonmelanocytic?**



Melanocytic

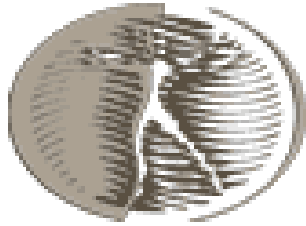
- Benign or malignant?

Q10. What is this lesion?

- a) Benign melanocytic naevus
- b) Melanoma**
- c) Seborrhoeic keratosis
- d) Basal cell carcinoma
- e) Vascular lesion
- f) Dermatofibroma



Asymmetry of colour / structure



<http://dermnetnz/org>

Acknowledgements

The course was originally developed for the University of Auckland [Goodfellow Unit](#). Much of the course and several interactive quizzes are available on CD – you may download the [order form for the CD-ROM](#) (PDF file). However, the online course is more up-to-date.

Images have been sourced from the following:

- Clin Assoc Prof Amanda Oakley
- The Department of Dermatology, Health Waikato
- [MoleMap New Zealand](#) (with permission)



Course contents

- [Introduction to dermoscopy](#)
- [Dermoscopic features](#)
- [Three-point checklist](#)
- [Dermoscopy of benign melanocytic lesions](#)
- [Dermoscopy of atypical naevi](#)
- [Dermoscopy of malignant melanoma](#)
- [Dermoscopy of seborrheic keratosis](#)
- [Dermoscopy of basal cell carcinoma](#)
- [Dermoscopy of other non-melanocytic lesions](#)
- [The first step algorithm](#)
- [Pattern analysis](#)
- [Other algorithms for melanocytic lesions](#)
- [The dermoscopy report](#)
- [Melanocytic naevi: new classification](#)
- [Dermoscopy of the nail](#)

Powerpoint presentations

These open in new windows. Adobe Flash Player, a browser plug-in, is required to view them. They are lectures on dermoscopy that have been given by Clinical Associate Professor Amanda Oakley to various audiences.

- [Dermoscopy for beginners](#)
- [Modified pattern analysis](#)
- [Signature naevi](#)
- [Dermoscopy of seborrheic keratoses](#)

[Authoritative facts](#) about the skin from the [New Zealand Dermatological Society Incorporated](#).