



Cliniques universitaires  
**SAINT-LUC**  
UCL BRUXELLES

# Skin cancer screening in outdoor workers: Why? When? & How?

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**INSTITUT  
ROI ALBERT II**  
CANCÉROLOGIE ET HÉMATOLOGIE  
Cliniques universitaires SAINT-LUC | UCL Bruxelles

# Summary

- Skin cancer screening
- Early detection is the key
- Importance of self-examination
- Secondary prevention in occupational health
- When to refer ?

# Skin cancer Screening



**What ?**

Secondary prevention

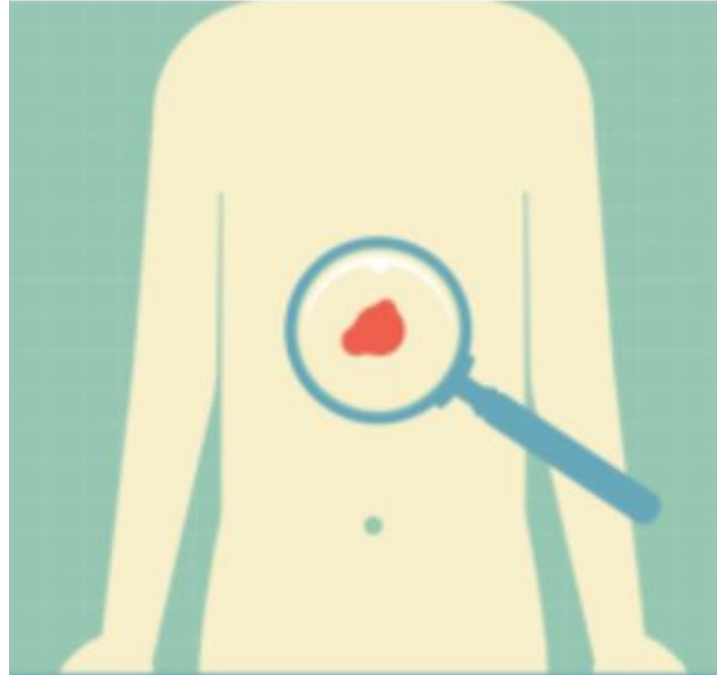
deals with **early detection**

when this improves the chances for **positive health outcomes**

(this comprises activities such as **evidence-based screening programs**)

# Secondary prevention in skin cancer

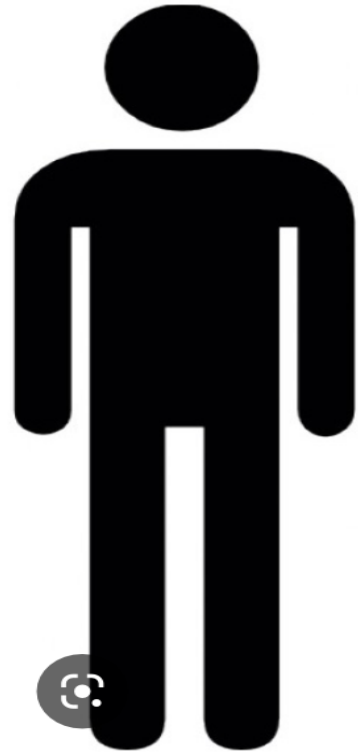
**How ?**



Early detection of skin cancers in outdoor workers  
**= Total-Body Skin Examinations**

# Secondary prevention

**By who ?**



**Outdoor worker**



**Primary care practitioner**

# Secondary prevention

**Why?**

**EARLY DETECTION is the KEY**

**to decrease the morbidity and mortality**

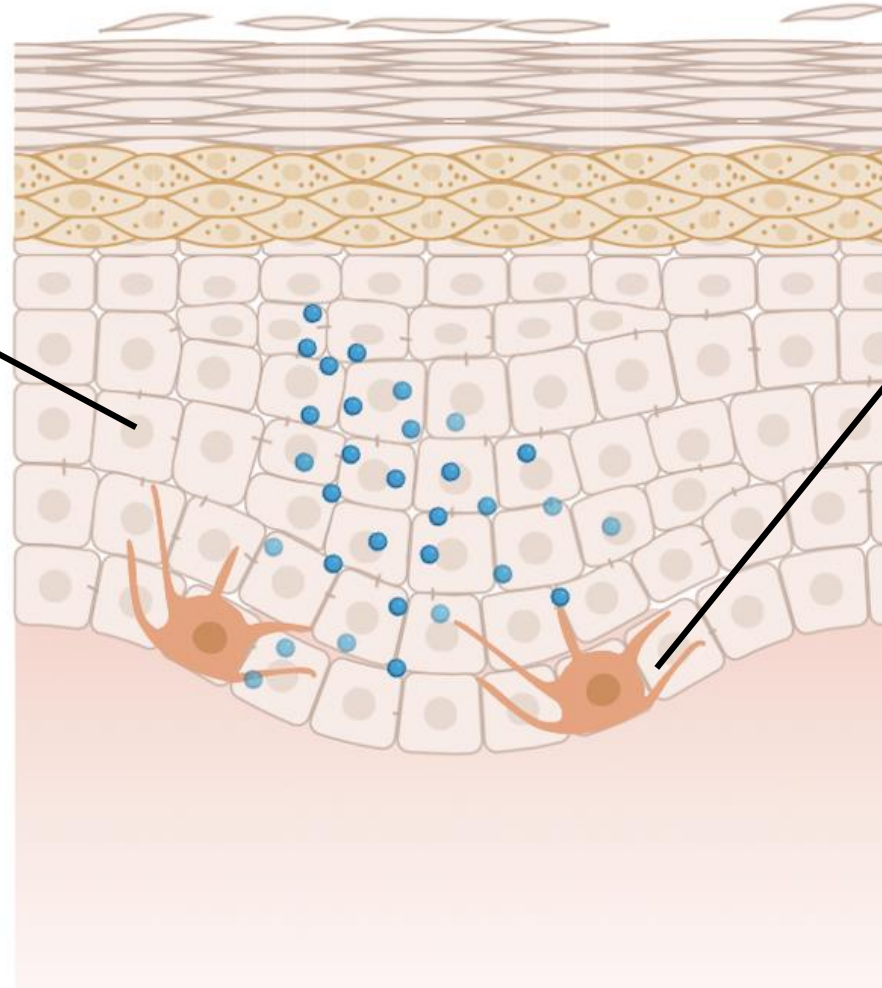
**of skin cancer patients**

# Most common malignant skin tumors

**Keratinocytes**



**Carcinomas**



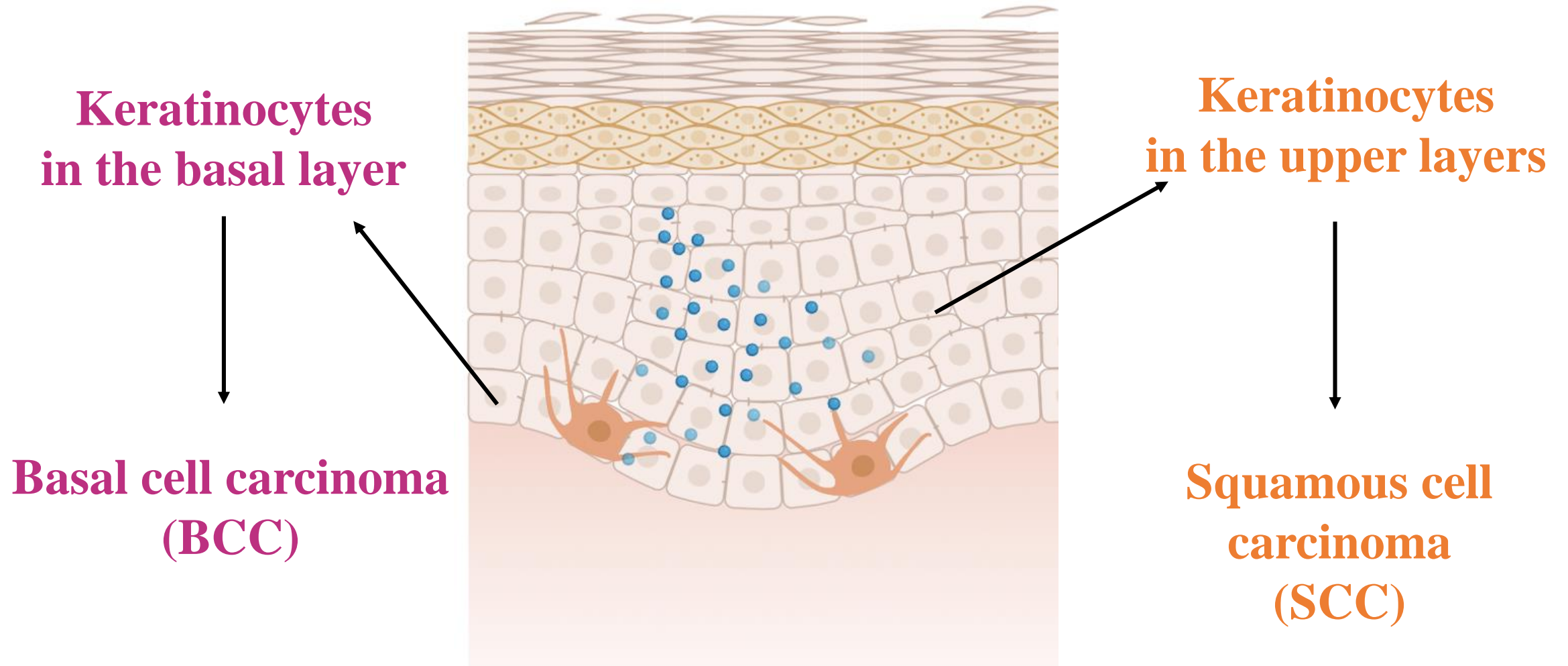
**Melanocytes**



**Melanomas**

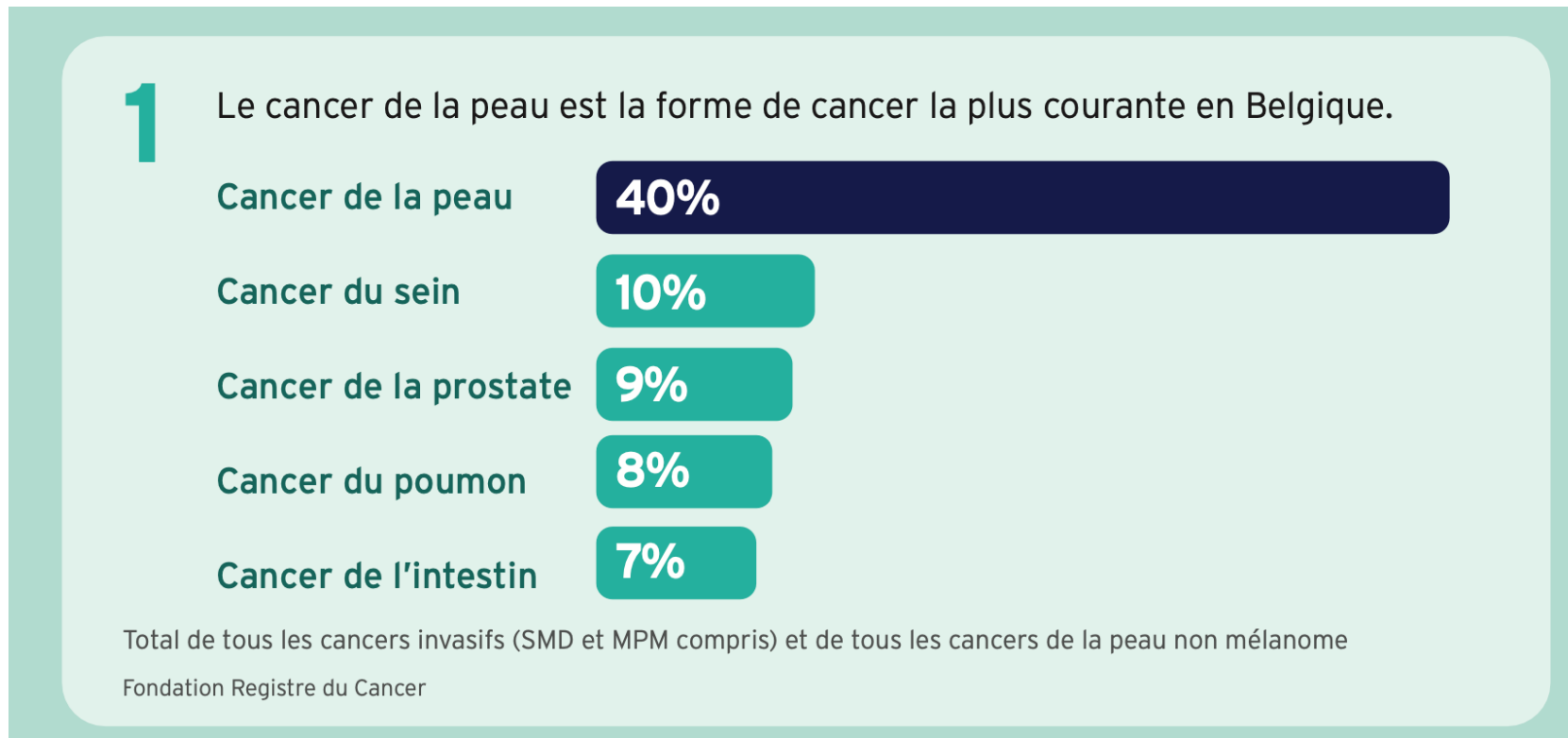


# Non-melanoma skin cancers



# Non-melanoma skin cancers

## Most common cancer in Belgium: **1 in 5** Belgians



# Non-melanoma skin cancers

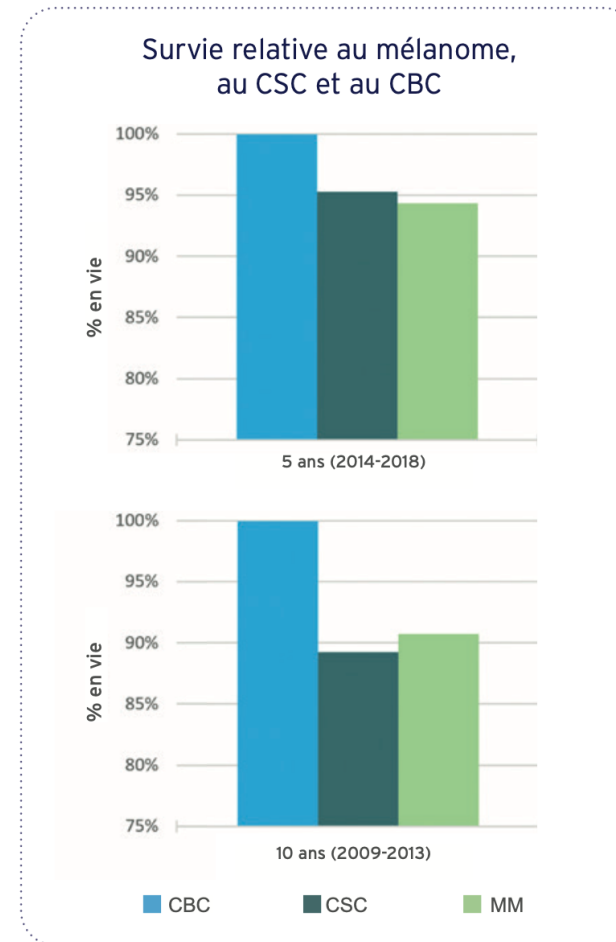
## Low mortality but **high morbidity**

### BCC:

- Metastases are rare
- However, **high local aggressiveness**

### SCC:

- Pre-carcinomatous forms
  - Actinic keratosis
  - Bowen's disease
- Higher risk of **metastasis** (<1% mortality)

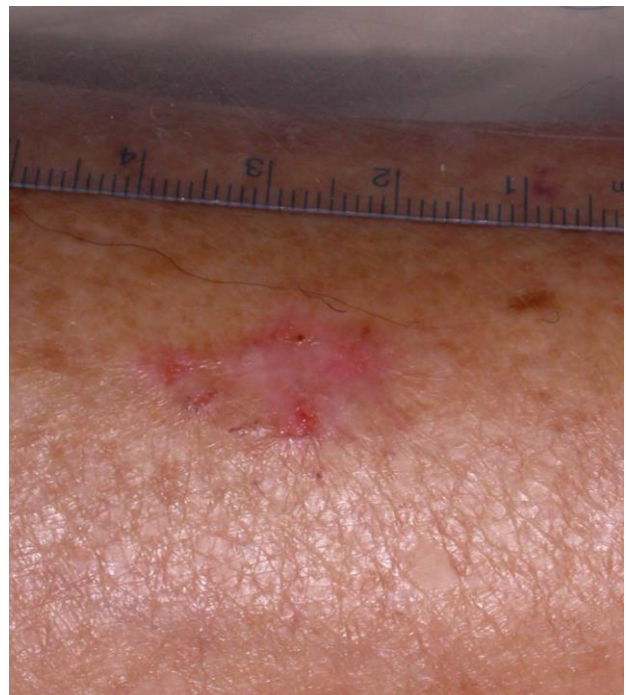


Nodular BCCs



Face

Superficial BCCs



**Trunk and limbs**

# High morbidity of aggressive BCCs



# High morbidity of aggressive BCCs



## **Pre-carcinomatous forms**

- Actinic keratoses
- Bowen's disease



Actinic keratoses



Bowen's disease



## Pre-carcinomatous forms

- Actinic keratoses
- Bowen's disease

## Squamous cell carcinoma (SCC)

- Poorly to well-differentiated
- Higher risk of **metastasis** (<1% mortality)

# Squamous cell carcinoma (SCC)





# Importance of early detection

Skin cancer is detectable **with the naked eye**



Most aggressive



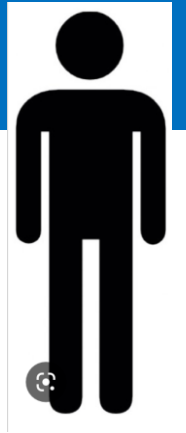
Most frequent



transplant patient's tumor

# Self-examination

# Self-examination



**Outdoor worker**

## **When ?**

- Every outdoor worker: **1x/season**
- Personal history of skin cancer: **1x/month**
- Whole-body skin examination (soles, between fingers/feets, nails,...)
- +++ **Sun-exposed areas** (face, scalp, neck, hands, forearms,...)



# Self-examination

## How to perform a self-exam



**1**

Examine your body front and back in the mirror, then right and left sides arms raised.



**2**

Bend elbows and look carefully at forearms and upper underarms and palms.



**3**

Look at the backs of the legs and feet; spaces between toes, and sole.



**4**

Examine back of neck and scalp with a hand mirror. Part hair for a closer look.

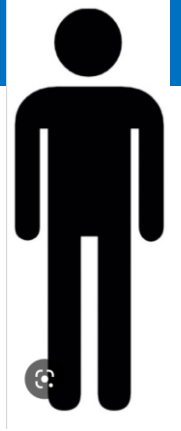


**5**

Finally, check back and buttocks with hand mirror.

# Hetero-examination





Outdoor worker

## What to look for ?

- **Ugly duckling sign**
  - ABCDE rule (melanocytic lesions)
  - EGF criteria
  - other Red Flags

# Ugly duckling sign

Randomized Controlled Trial > J Am Acad Dermatol. 2017 Dec;77(6):1088-1095.

doi: 10.1016/j.jaad.2017.06.152. Epub 2017 Sep 28.

## The role of the ugly duckling sign in patient education

Muneeb Ilyas<sup>1</sup>, Collin M Costello<sup>2</sup>, Nan Zhang<sup>3</sup>, Amit Sharma<sup>4</sup>

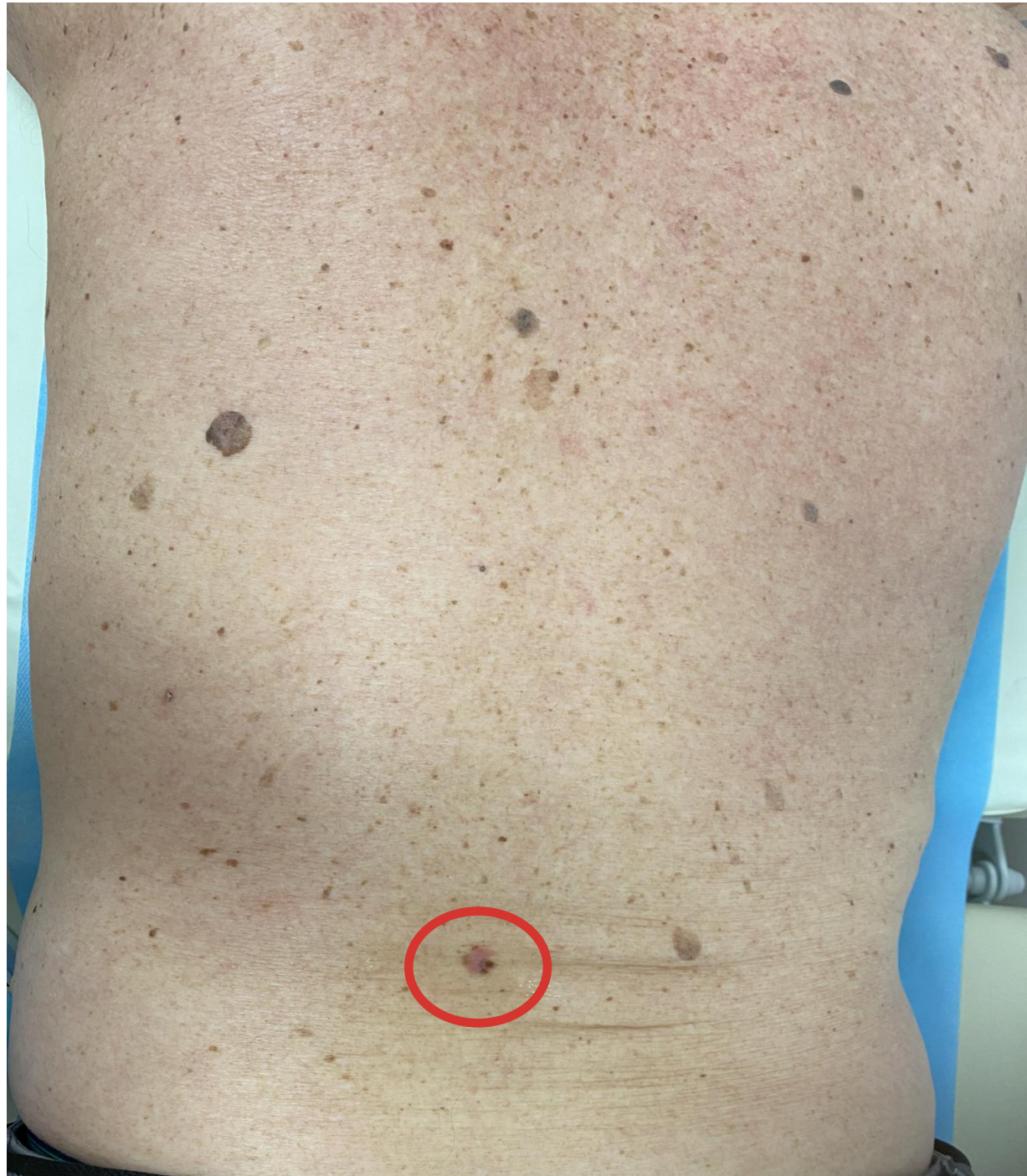
Affiliations + expand

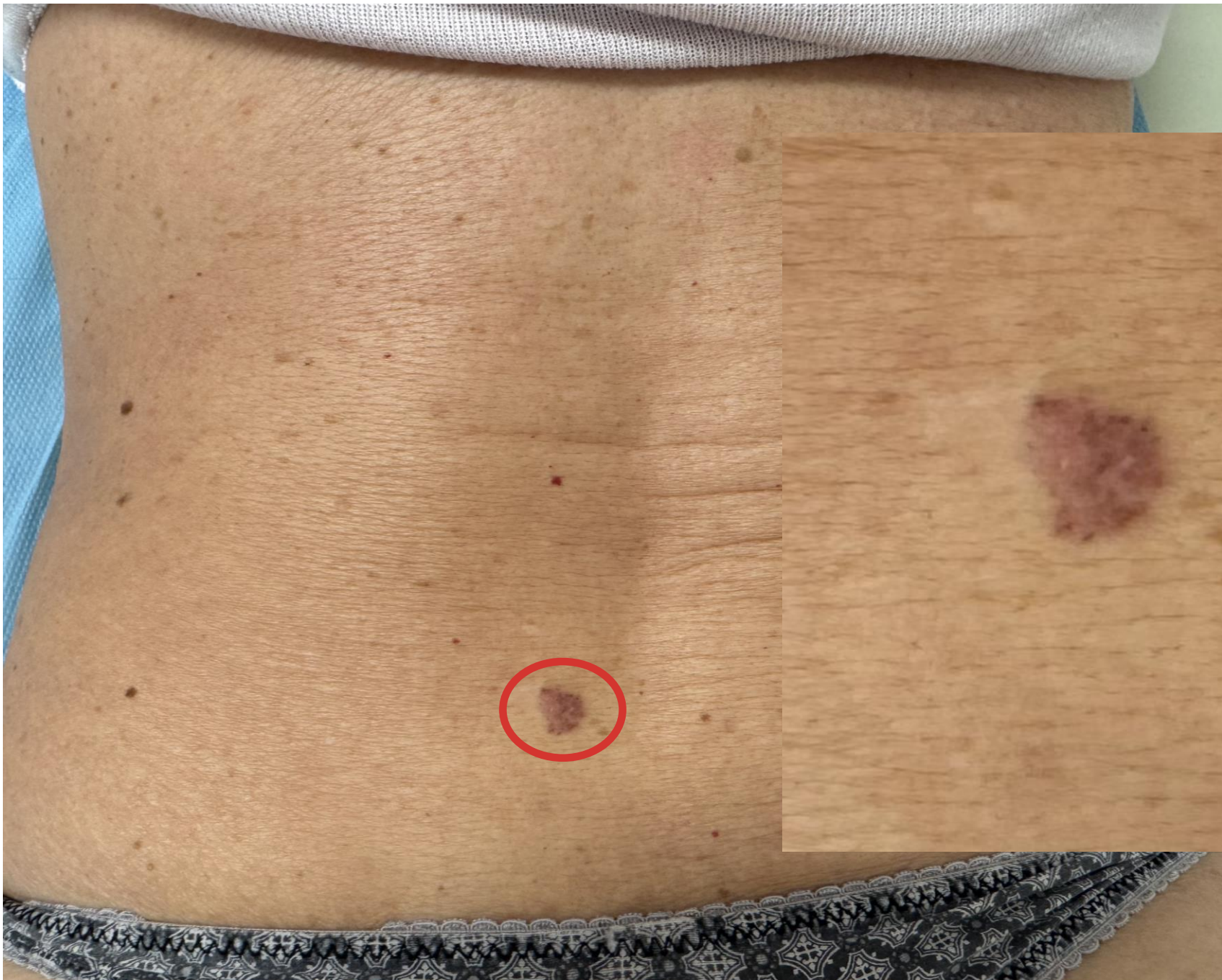
PMID: 28964538 DOI: 10.1016/j.jaad.2017.06.152















# ABCDE rule

## Criteria to examine your moles

A = **A**symmetry

B = uneven **B**orders

C = different **C**olors

D = **D**iameter > 6mm

E = **E**volution

[Review](#) > [JAMA](#). 2004 Dec 8;292(22):2771-6. doi: 10.1001/jama.292.22.2771.

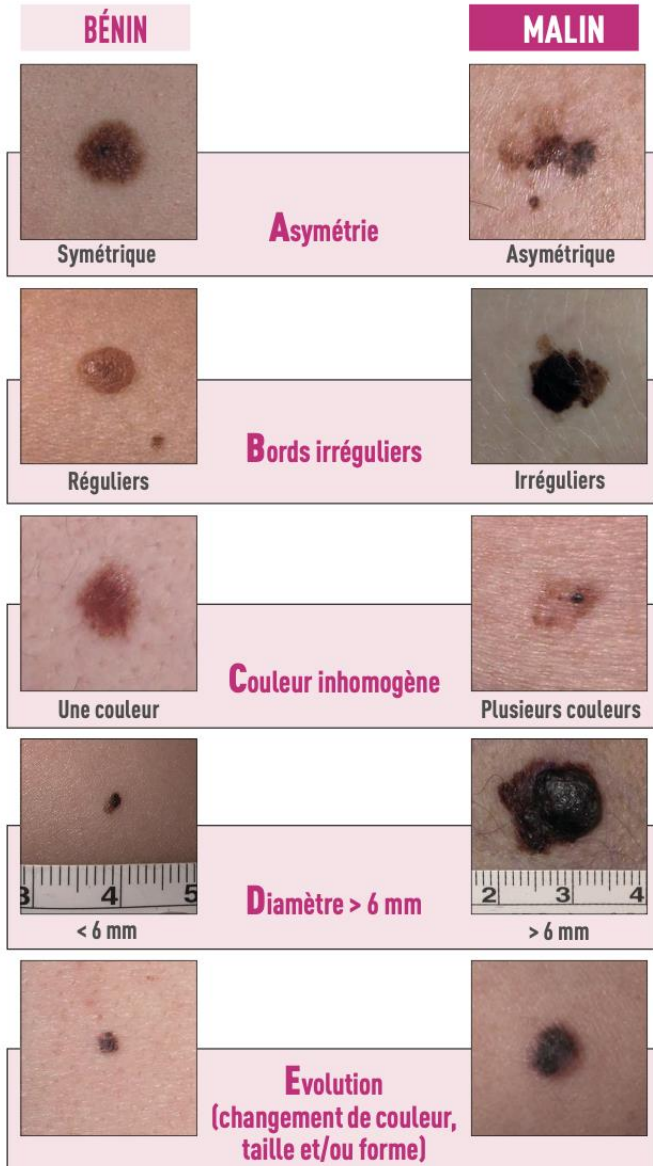
Early diagnosis of cutaneous melanoma: revisiting  
the ABCD criteria

Naheed R Abbasi<sup>1</sup>, Helen M Shaw, Darrell S Rigel, Robert J Friedman, William H McCarthy,  
Iman Osman, Alfred W Kopf, David Polsky

Affiliations + expand

PMID: 15585738 DOI: 10.1001/jama.292.22.2771

La règle **ABCDE** peut vous aider à  
détecter les nævus suspects



# ABCDE rule

**BÉNIN**



**Symétrique**

**MALIN**



**Asymétrique**

**Asymétrie**

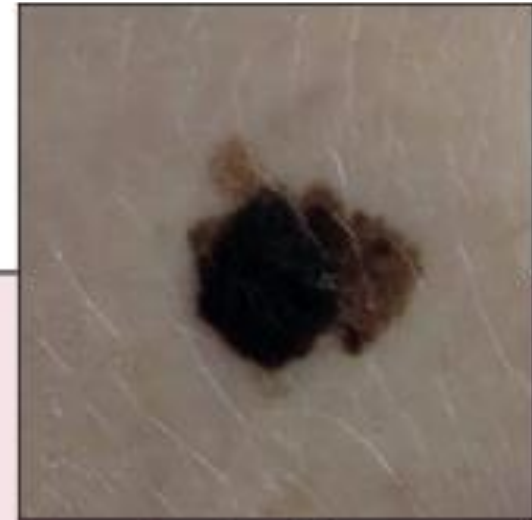
# ABCDE rule

**BÉNIN**



**Réguliers**

**MALIN**



**Irréguliers**

**Bords irréguliers**

# ABCDE rule

**BÉNIN**



Une couleur

**MALIN**



Plusieurs couleurs

**Couleur inhomogène**

# ABCDE rule

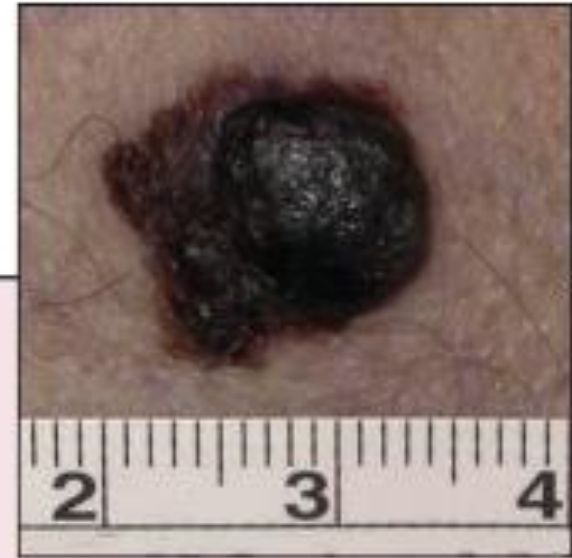
**BÉNIN**



< 6 mm

**Diamètre > 6 mm**

**MALIN**



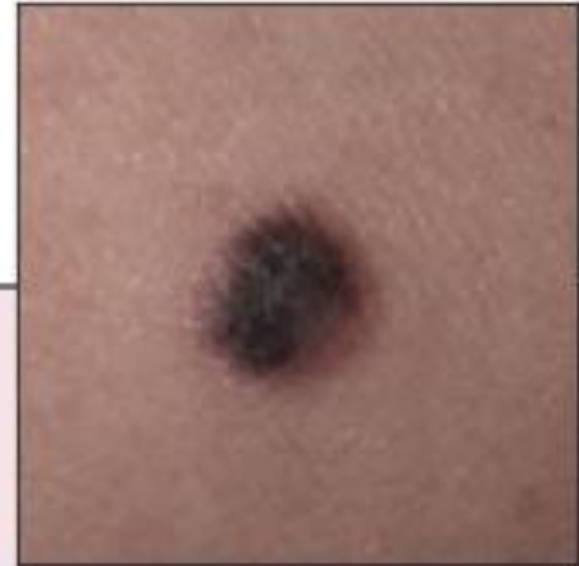
> 6 mm

# ABCDE rule

**BÉNIN**



**MALIN**



**Évolution**  
(changement de couleur,  
taille et/ou forme)

# ABCDE rule





# ABCDE rule



# ABCDE rule

Review > JAMA. 2004 Dec 8;292(22):2771-6. doi: 10.1001/jama.292.22.2771.

## Early diagnosis of cutaneous melanoma: revisiting the ABCD criteria

Naheed R Abbasi<sup>1</sup>, Helen M Shaw, Darrell S Rigel, Robert J Friedman, William H McCarthy, Iman Osman, Alfred W Kopf, David Polsky

Affiliations + expand

PMID: 15585738 DOI: 10.1001/jama.292.22.2771

## Changing or **new** lesion



# ABCDE rule

Changing or **new** lesion



# EGF criteria

> Aust Fam Physician. 2003 Sep;32(9):706-9.

## Nodular melanoma. No longer as simple as ABC

John W Kelly <sup>1</sup>, Alexander J Chamberlain, Margaret P Staples, Brian McAvoy

Affiliations + expand

PMID: 14524207



**EGF positive lesion**

**E = Elevated**

**F = Firm**

**G = Fast-Growing**

# EGF criteria



# EGF criteria



# EGF criteria



# EGF criteria





# other Red Flags

Review > Expert Rev Anticancer Ther. 2012 May;12(5):609-21. doi: 10.1586/era.12.38.

## Improving triage and management of patients with skin cancer: challenges and considerations for the future

Giuseppe Argenziano<sup>1</sup>, Jason Giacomel, Alexandre Abramavicus, Giovanni Pellacani, Caterina Longo, Barbara De Pace, Giuseppe Albertini, Mario Cristofolini, Iris Zalaudek

Affiliations + expand

PMID: 22594896 DOI: [10.1586/era.12.38](https://doi.org/10.1586/era.12.38)



- Ulceration - Bleeding
- Crusty or inflamed lesion
- Non-healing wound

# Bleeding



# Bleeding



# Crusty or inflamed



# Non-healing wound



# Non-healing wound



# Non-healing wound



# Non-healing wound





Skin cancer screening  
by primary care practitioners

ORIGINAL ARTICLE

**Skin cancer risk in outdoor workers: a European multicenter case-control study**

M. Trakatelli,<sup>1,2,\*</sup> K. Barkitzi,<sup>3</sup> C. Apap,<sup>4</sup> S. Majewski,<sup>5</sup> E. De Vries,<sup>6</sup> and the EPIDERM group<sup>7</sup>

## Why ?

- Outdoor workers = **population at risk**
- Most are **unaware of first signs** of skin cancer
- **Lack of** efficient sun protective behaviors
- **Educational** role



Primary care practitioner

# Screening



Primary care practitioner

## When ?

- Every outdoor worker: **1x/year**
- Recent personal history of skin cancer: **1x/6mois**
- **Whole-body skin examination** (soles, between fingers/feets, nails,...)
- +++ **Sun-exposed areas** (face, scalp, neck, hands, forearms,...)



Primary care practitioner

## How ?

### Whole-body skin examination

- Ugly duckling sign
- ABCDE rule (melanocytic lesions)
- EGF criteria
- Other Red Flags

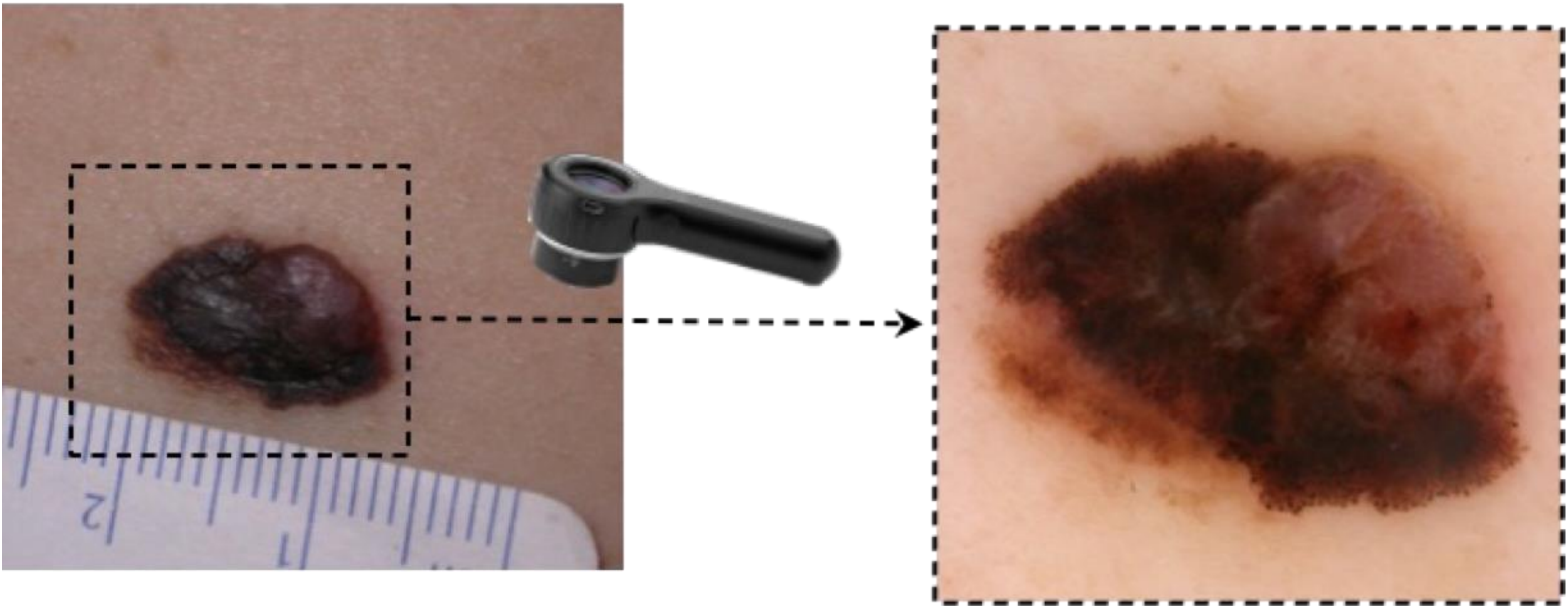
# Screening

## Dermoscopy

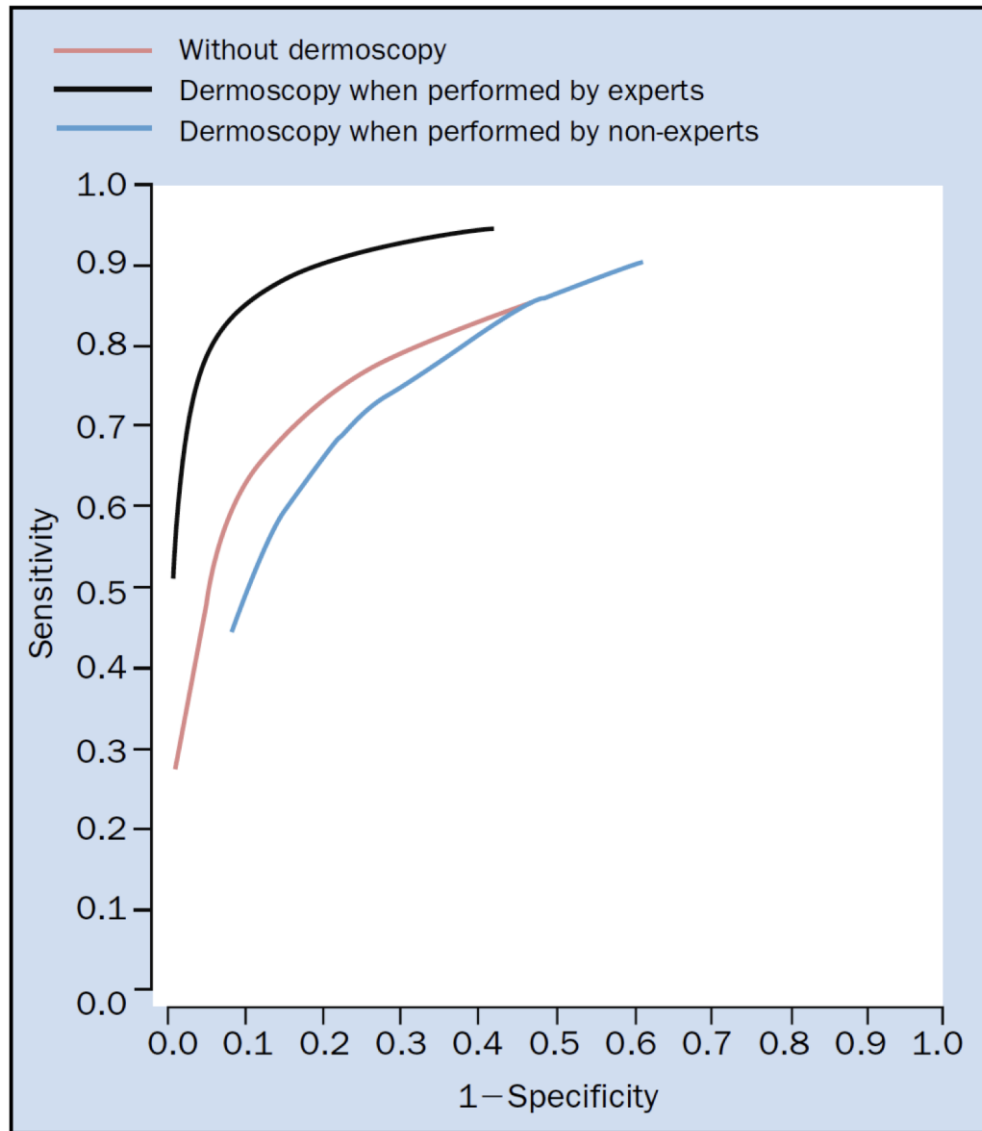


- Validated diagnostic tool for skin cancer diagnosis
- Used by dermatologists worldwide

# Dermoscopy



# Dermoscopy



Dermoscopy  
Improves diagnostic acuity

but

requires **TRAINING!**

Observational Study > J Am Board Fam Med. 2016 Nov 12;29(6):694-701.

doi: 10.3122/jabfm.2016.06.160079.

## A Clinical Aid for Detecting Skin Cancer: The Triage Amalgamated Dermoscopic Algorithm (TADA)

T Rogers <sup>1</sup>, M L Marino <sup>1</sup>, S W Dusza <sup>1</sup>, S Bajaj <sup>1</sup>, R P Usatine <sup>1</sup>, M A Marchetti <sup>1</sup>, A A Marghoob <sup>1</sup>

Affiliations + expand

PMID: 28076252 PMCID: [PMC5536949](#) DOI: [10.3122/jabfm.2016.06.160079](#)

Received: 31 March 2023 | Accepted: 12 June 2023

DOI: [10.1111/jdv.19277](#)

LETTER TO THE EDITOR

 **JEADV** JOURNAL OF  
THE EUROPEAN  
ACADEMY OF  
DERMATOLOGY &  
VENEREOLOGY

**A new TADA-inspired decision algorithm for training primary care practitioners in dermoscopy**



## Level I

### Dermatofibroma



Reticular network with central white blotch

### Seborrheic keratosis



Gyri/ridges & sulci/fissures



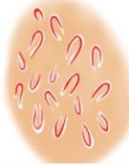
Milia cysts & Comedo openings



Fingerprint like structures



Moth eaten border/Sharp demarcation



Hairpin vessels

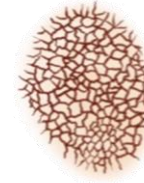
### Angioma



Red lacunes

(2)

### Benign patterns of nevi



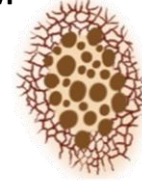
Reticular network



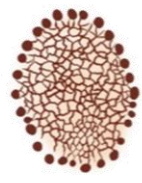
Peripheral network & central hypopigmentation



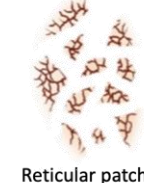
Peripheral network & central hyperpigmentation



Peripheral network & central globules



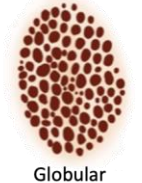
Peripheral ring of globules



Reticular patchy network



Cobblestone pattern



Globular pattern



Brown homogeneous



Blue nevus (structureless)



Intradermal nevus (comma vessels)

(1)



REASSURE

No

Yes

Yes

No

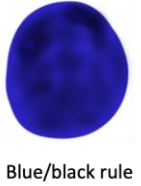
© dermoscopia.org (partly)

## Level II

(6)

### Exception « Nodules »

E(levated)  
F(irm)  
G(rowth)  
+/-



Blue/black rule

Yes



EXCISE URGENTLY

Yes

### Dermoscopic features of melanoma

Disorganized pattern (chaos)

Pseudopodes/Atypical streaks

Atypical blotches

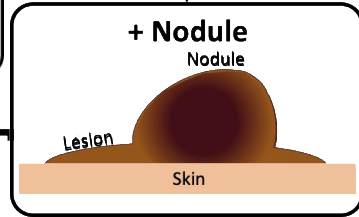
Peppering & Scarlike depigmentation

Blue-white veil (structureless)

Shiny white lines

(5a)

(5b)



Yes

No



REFER

No



EXCISE SEMI-URGENTLY

Yes

(3)

### Melanocytic lesion ?



Honeycomb pattern



Aggregated globules

Yes

No

(4)

### Actinic keratosis



Rosettes

### Bowen's disease



Glomerular/coiled vessels

### Basal cell carcinoma



Spoke wheel like structures



Leaf like areas



Multiples blue gray dots/globules



Blue gray ovoid nests



Shiny white blotches & strands

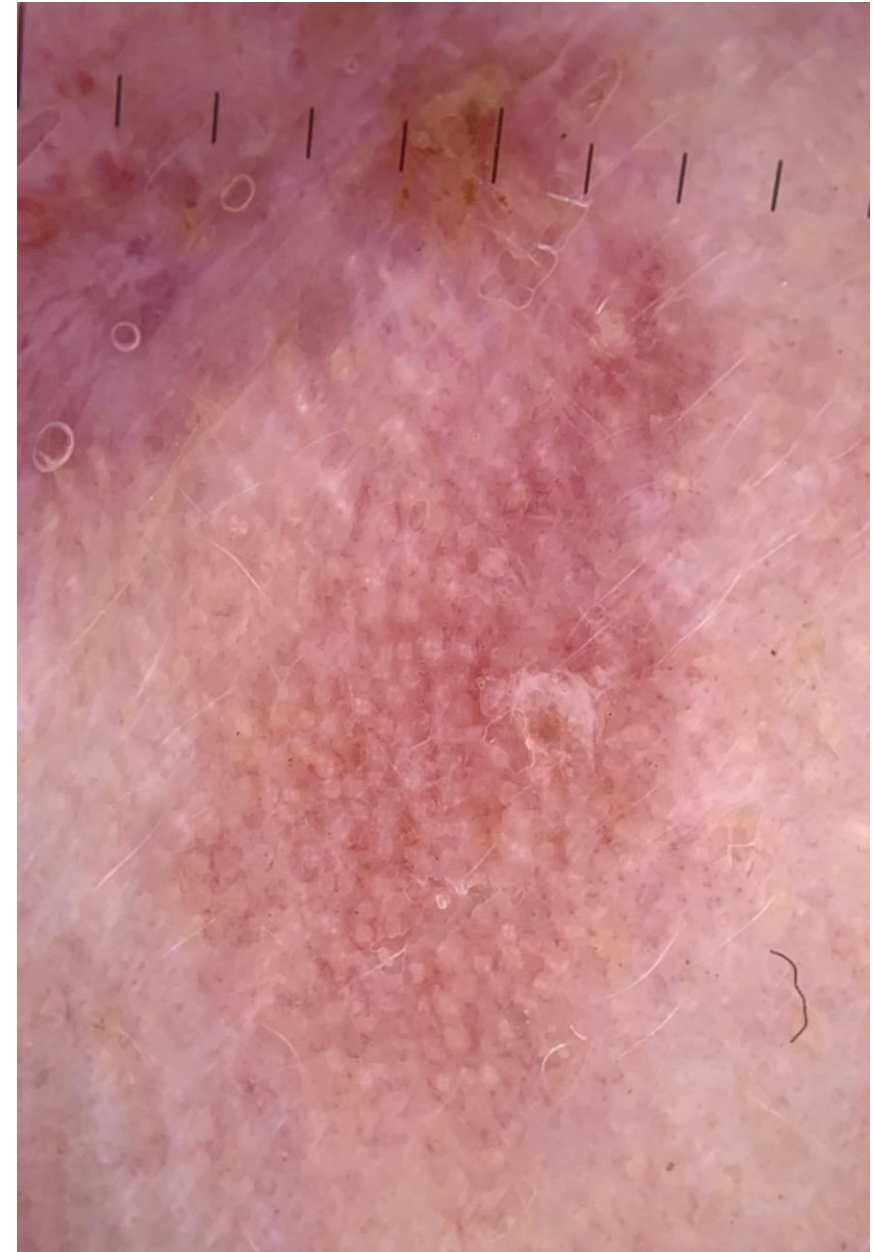


Multiples erosions/ulceration

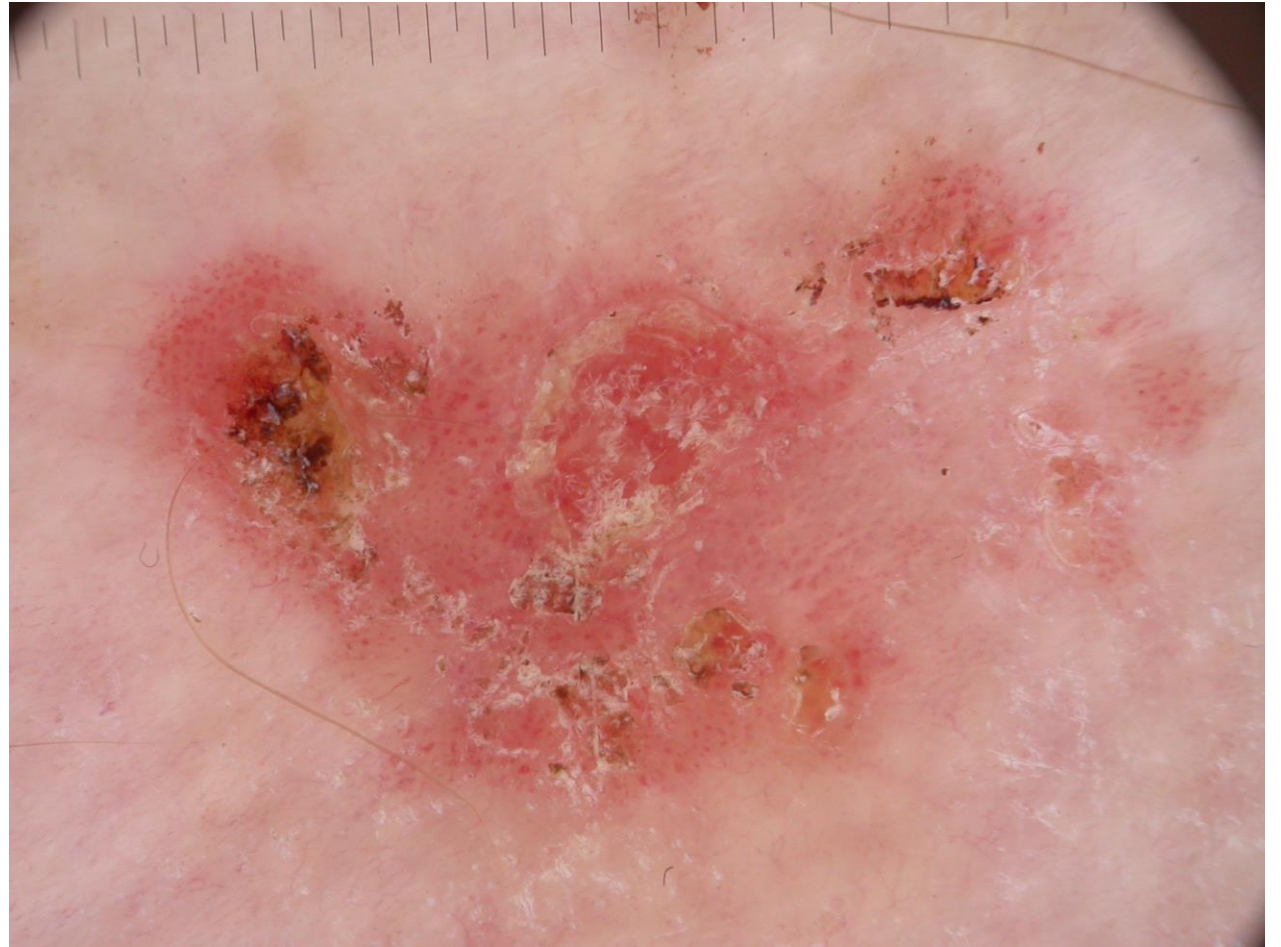


Arborizing/branched vessels

# Dermoscopy



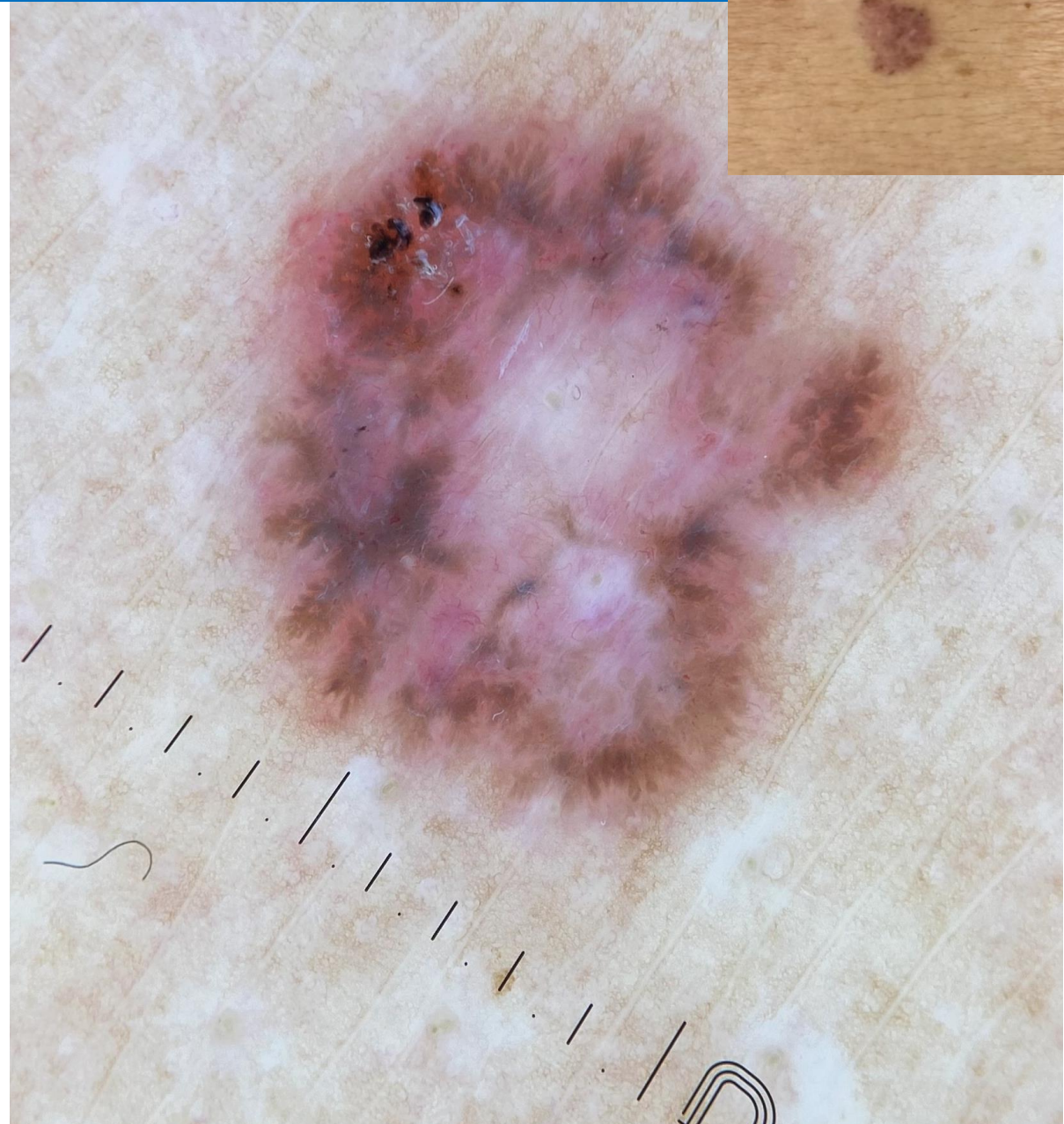
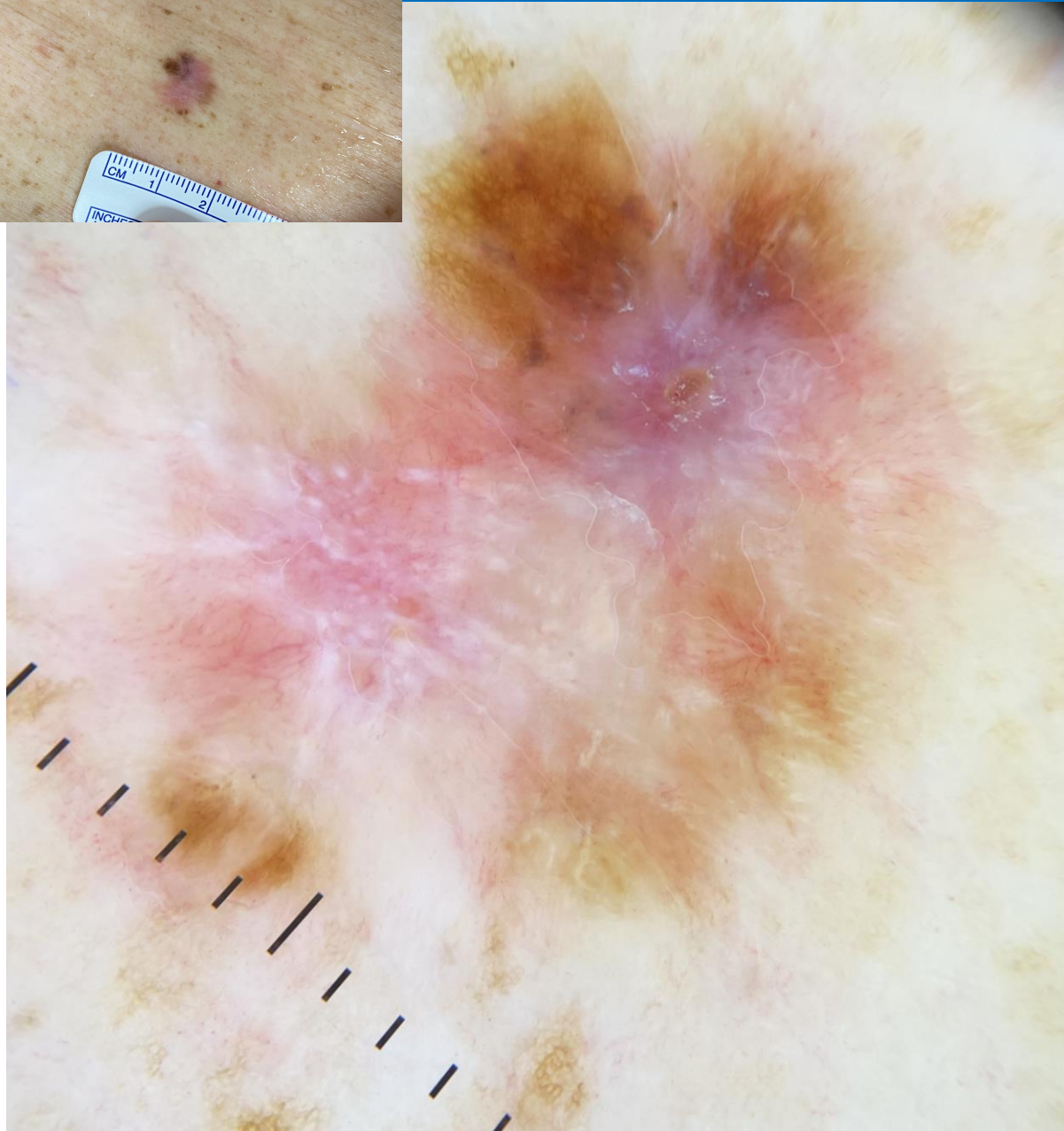
# Dermoscopy



# Dermoscopy



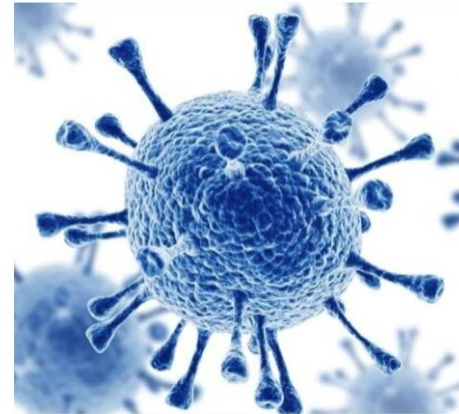
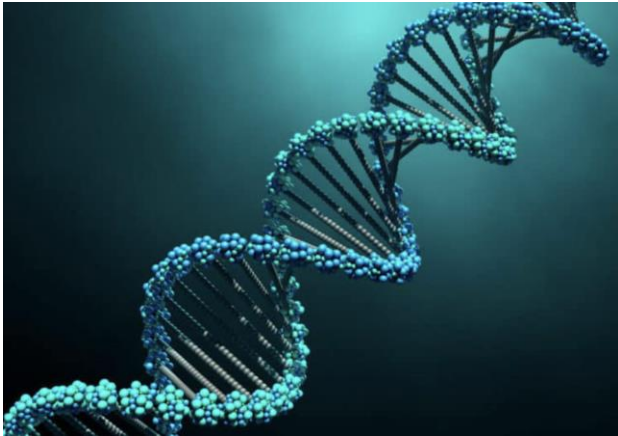
# Dermoscopy



# Screening

## Who in particular ?

Individuals with cumulative risk factors





Primary care practitioner

## Who in particular ?

- Personal history of skin cancer
- History of ionizing radiation
- Immunocompromised individuals (HIV, transplants,...)
- Old burn scars
- Atypical mole syndrom +/- Familial history of melanoma

When to refer ?



# When to refer ?

## If a suspicious lesion is detected

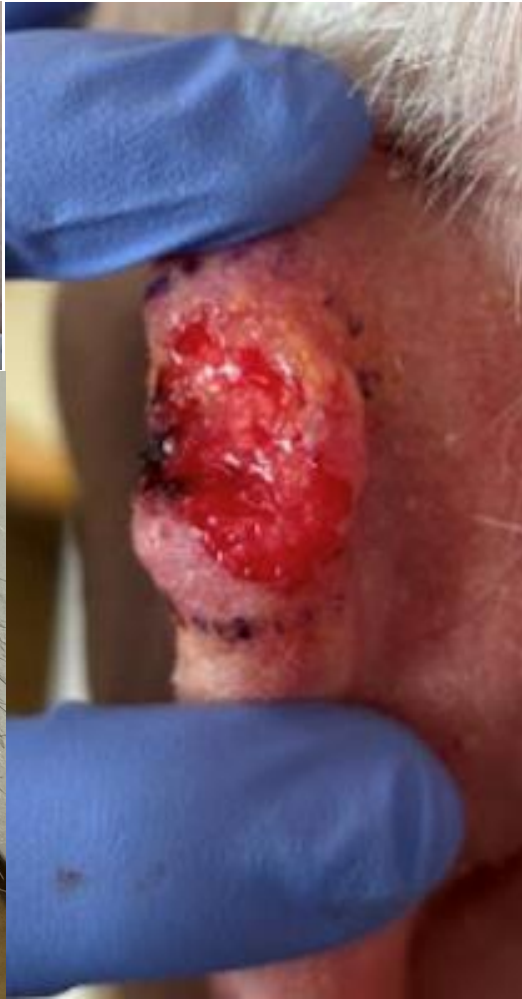


Lesion suspicious of  
**BCC or Bowen's disease**

Refer semi-urgently within 3 months

# When to refer ?

## If a suspicious lesion is detected



**Ulcerated and/or nodular lesion**  
Refer urgently within 3 weeks

# When to refer ?

**If a lesion suspicious of melanoma is detected**



**Non-palpable flat lesion**  
Refer semi-urgently within 4-6 weeks

# When to refer ?

## Multidisciplinary patient management



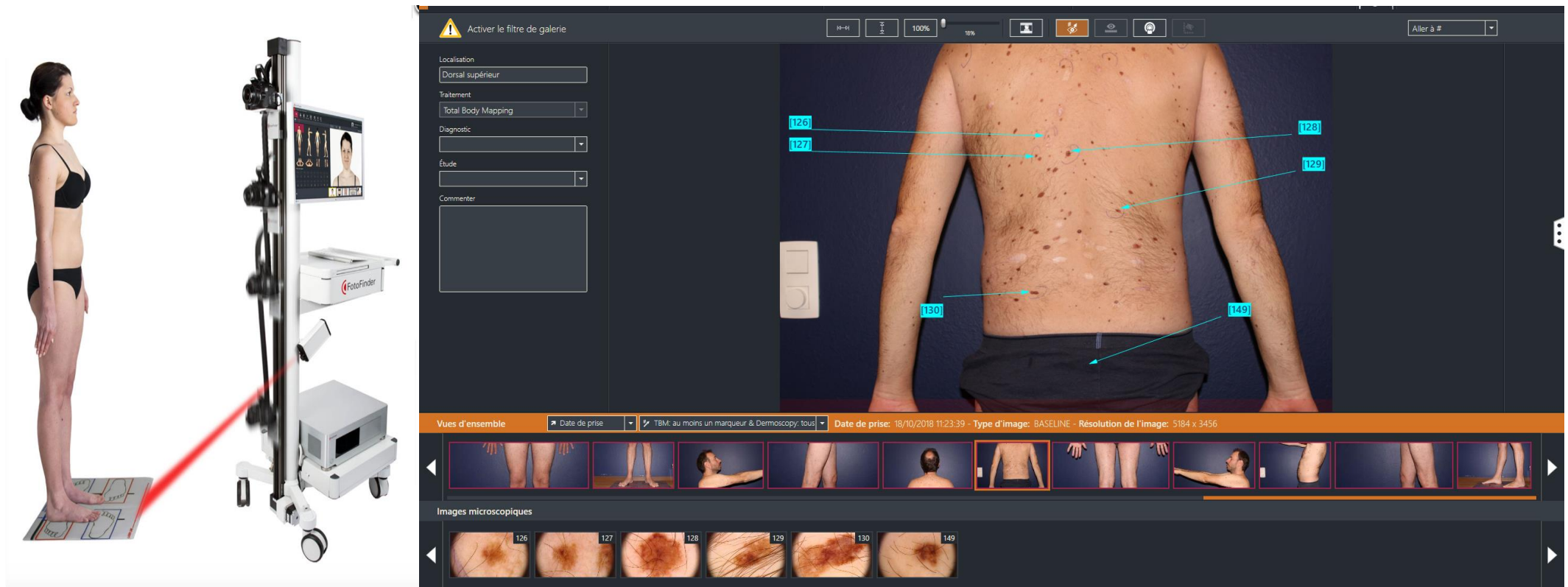
# When to refer ?

## **High-risk patients for specialized total-body monitoring**

- Personal history of skin cancer
- History of ionizing radiation
- Immunocompromised individuals (HIV, transplants,...)
- Family history of melanoma (*CDKN2A mutation*)
- Atypical mole syndrom

# When to refer ?

## High-risk patients for specialized total-body monitoring



# When to refer ?

## High-risk patients for non-invasive in vivo diagnostic technologies



In Vivo Confocal Microscopy



Line-Field Optical Confocal Microscopy



Thank you !

