Chelsea and Westminster Hospital
NHS Foundation Trust

‘Your Health’

Topic :

Recognition of skin cancers and sun exposure advice

Date: 20th June 2018

Speaker

Dr Louise Fearfield
Consultant Dermatologist

Skin Cancer lead for Chelsea and Westminster & Royal Marsden Hospital

Background

- Consultant Dermatologist at CWH and the Royal Marsden
- Specialist interest is skin cancer and effects on the skin from cancer and its therapies
- Chair the specialist skin cancer multidisciplinary meeting
- Member of the British Association of Dermatology skin cancer subcommittee

Summary of talk

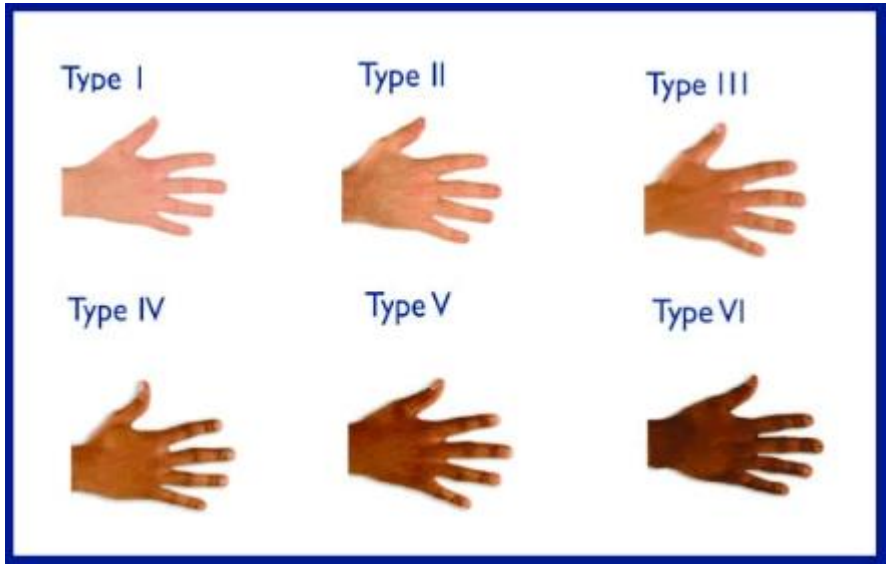
- Recognition of Skin Cancer
- Clinical history and examination
- BCC, SCC and Melanoma
- Sun awareness

Clinical history

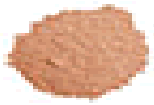
- How long
- Clinical characteristics: bleeding, growing, colour, itch
- Previous history skin cancer
- Medical history – immunosuppression?
- Family history
- Sun exposure history

Clinical history – skin type

I	always burn
II	burn but can tan
III	sometimes burn, generally tan
IV	rarely burn, generally tan
V	tan
VI	tan



Celebrity skin type!

	SKIN TYPE	ETHNICITY	CELEBRITY
	FAIR	Very Light Caucasian	Nicole Kidman Julianne Moore
	LIGHT	Caucasian Light Asian	Julia Roberts Anjolina Jolie Meryl Streep
	MEDIUM LIGHT	Tan Caucasian Light Hispanic	Pamela Anderson Jennifer Aniston Paris Hilton
	MEDIUM DARK	Hispanic Deeply Tanned Caucasian Medium Asian	Jessica Alba J LO Eva Longoria
	DARK	Islander Native American Mulatto Light African-American	Beyonce Halle Berry Nicole Ritchie
	DEEP	African-American	Tyra Banks Star Jones Oprah Winfrey

Examination - Dermoscopy

- To identify a melanocytic lesion

Examination - dermoscopy

- Dermoscopy refers to the examination of the skin using skin surface microscopy, and is also called ‘dermatoscopy’, ‘epiluminoscopy’ and ‘epiluminescent microscopy’.
- Dermoscopy is mainly used to evaluate pigmented skin lesions.
- In experienced hands it can make it easier to diagnose melanoma

Dermatoscopes

Heine

Dermlite

Basal cell carcinoma - BCC

- Most common cutaneous malignancy
- Incidence increasing
- Risk factors:
  - Age
  - Male
  - Chronic sun exposure
  - Immunosuppression
  - Previous radiotherapy
  - Rare genetic disorders – Gorlins syndrome, xeroderma pigmentosa

Clinical features

- Four main subtypes

– Nodular or ulcerative	45-60%
– Diffuse (infiltrating and morphoeic)	4-17%
– Superficial (multifocal)	15-35%
– Pigmented	1-7%

Differential diagnosis

- Sebaceous hyperplasia
- Squamous cell carcinoma
- Seborrhoeic keratosis
- Amelanotic (non pigmented) compound naevus (mole)
- Spider naevus/haemangioma
- Dermatofibroma

Which is the BCC?

- Differential diagnosis:
  - Benign compound naevus
  - Nodular BCC

What features do you look for when diagnosing a BCC ?

1. Telangectasia

2. Pearly appearance

3. Changing size

4. Or all of the above

ANSWER = 4

Are any of these lesions BCCs?

Differential diagnosis includes:

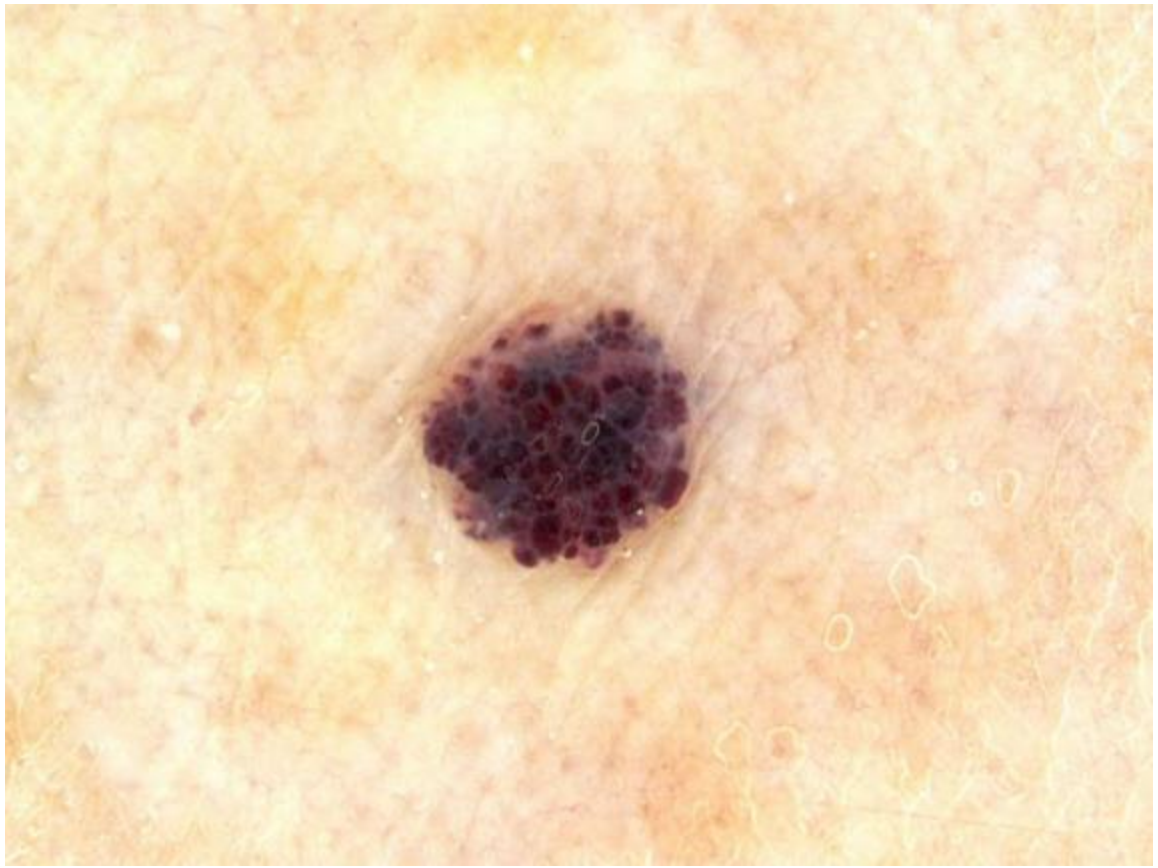
- Telangectasia

- BCC

- Dermatofibromas

- Sebaceous hyperplasia

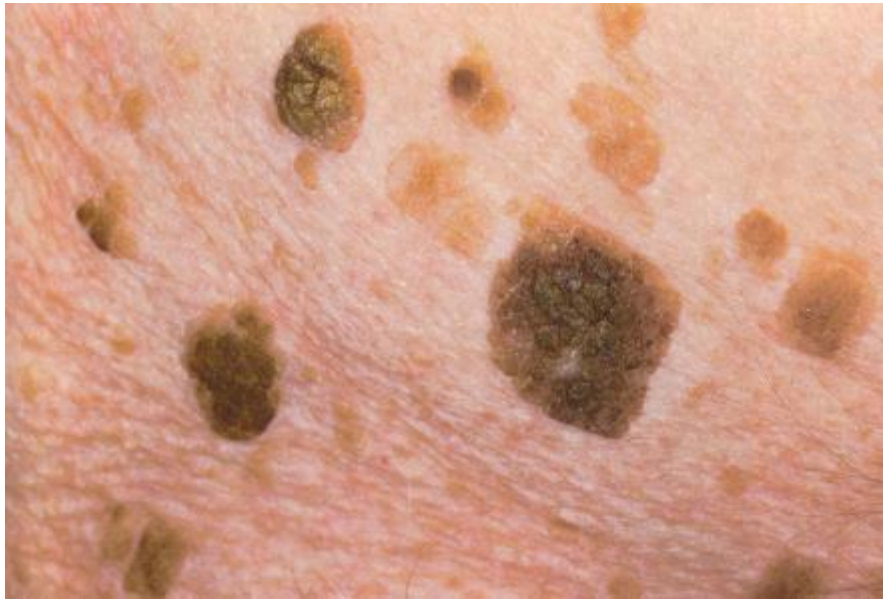
Dermoscopic image of a haemangioma



Seborrhoeic Keratoses

- Benign
- 30s onwards
- Inherited
- Trunk, face

Seborrhoeic Keratoses



Squamous cell carcinoma - SCC

- 20% cutaneous tumours – head and neck
- Incidence rising
- Risk factors
  - Age
  - Male
  - Chronic sun exposure
  - Previous radiotherapy
  - Human Papilloma Virus (16 and 18)
  - Chronic ulcers – Marjolins
  - Immunosuppression/ HIV
  - Rare – Xeroderma pigmentosa

Precursor lesions to SCC's

Actinic keratoses

- 25% remit spontaneously, up to 10% go on to nonmelanoma skin cancer - NMSC

SCC in situ

- Bowens

Clinical features - SCC

- Hyperkeratotic/warty/cutaneous horns
- Indurated tumid lesions/plaques
- Verrucous
- Ulcerated

Differential diagnosis

- Keratoacanthomas
- BCC
- Actinic Keratoses
- Viral wart
- Seborrhoeic Keratoses

Which one is the SCC?

- Differential diagnosis:
  - SCC
  - Keratoacanthoma
  - Bowens
  - Actinic keratosis
  - Wart

Which one is the SCC?

1. A – Actinic keratosis

2. B - Keratoacanthoma

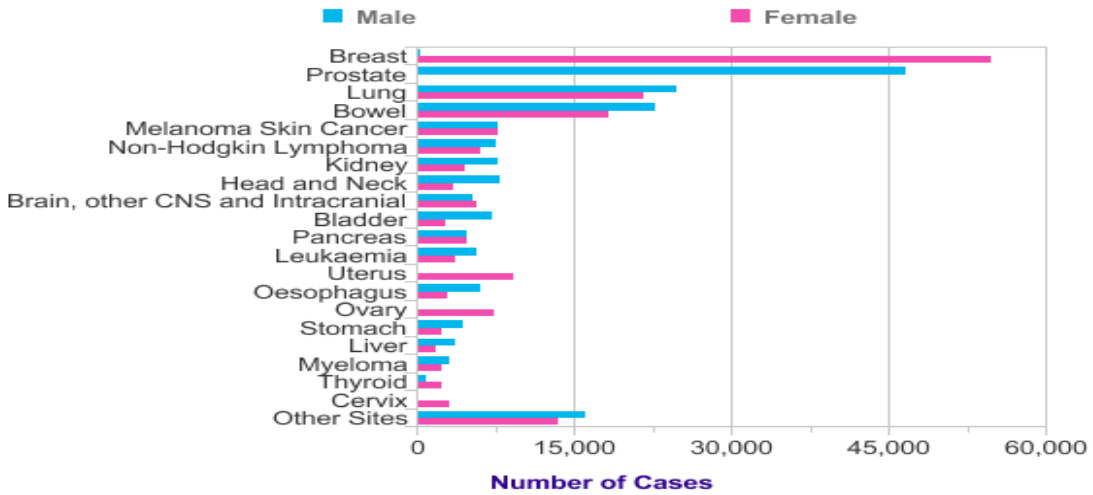
3. C - Wart

4. D - Bowens

5. E - SCC

Malignant melanoma

Worldwide number of cases is increasing faster than any other cancer



Data in this chart do not sum to the all cancers combined total provided elsewhere, because 'Brain, other CNS (central nervous system) and intracranial' includes tumours that are malignant, benign and of uncertain or unknown behavior but only the malignant tumours are included in 'all cancers combined' total.
Source: cruk.org/cancerstats
You are welcome to reuse this Cancer Research UK statistics content for your own work.
Credit us as authors by referencing Cancer Research UK as the primary source

Suggested style: Cancer Research UK, full URL of the page, Accessed [month] [year

UK cancer statistics - Melanoma

One of the commonest cancers in 15 to 34 year olds

Increasing faster than any other cancer

15,419 new cases per year

2500 deaths per year

Malignant melanoma

Slightly commoner in Men

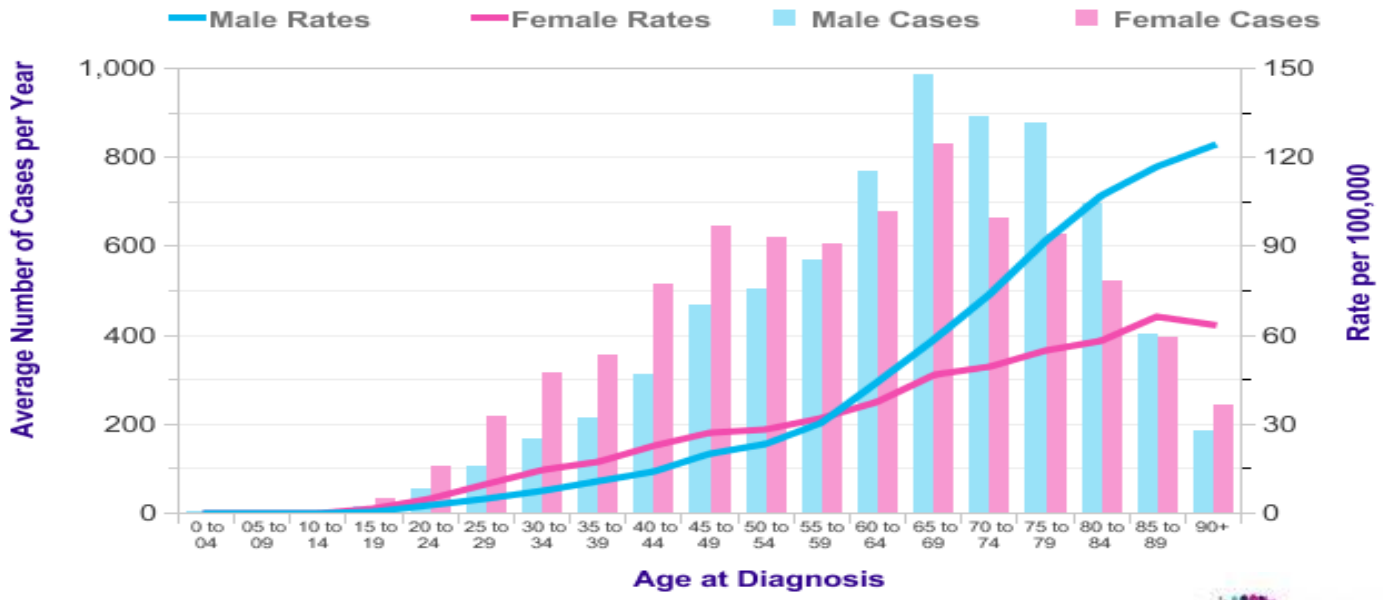
More women present with thinner lesions

More men die from melanoma

Recent statistics show an increase in Men over 70

Melanoma Skin Cancer (C43): 2012-2014

Average Number of New Cases Per Year and Age-Specific Incidence Rates per 100,000 Population, UK

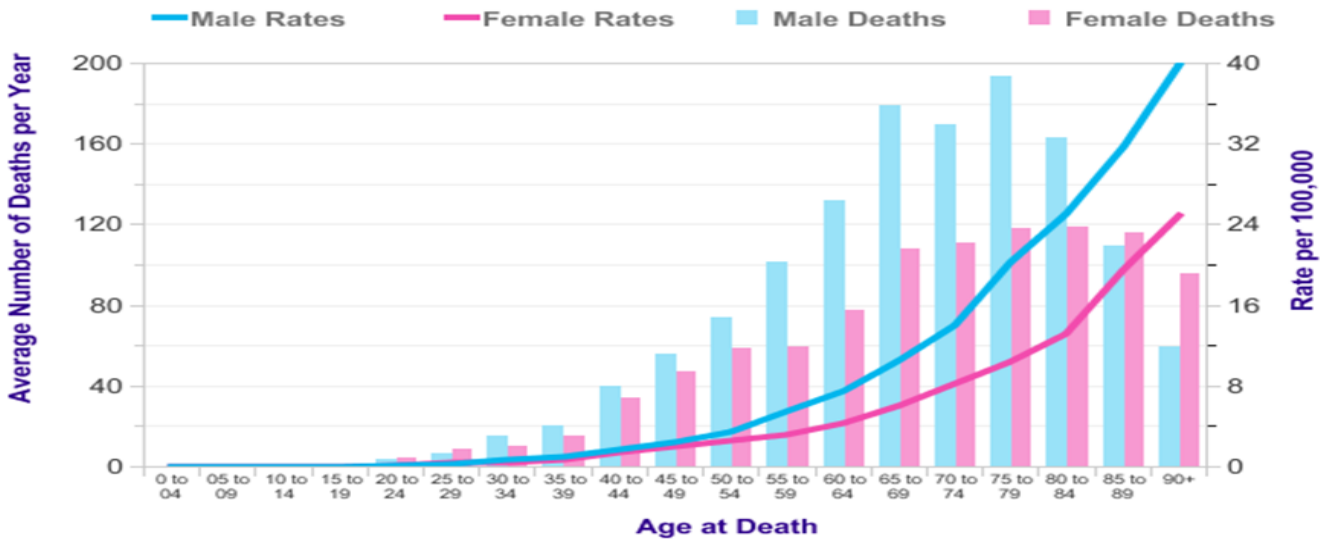


Source: cruk.org/cancerstats
Credit us as authors by referencing Cancer Research UK as the primary source

CANCER RESEARCH UK

Malignant Melanoma (C43): 2012-2014

Average Number of Deaths per Year and Age-Specific Mortality Rates per 100,000 Population, UK



CANCER RESEARCH UK

Source: cruk.org/cancerstats
Credit us as authors by referencing Cancer Research UK as the primary source

Malignant Melanoma and the GP

- Benign skin lesions account for 1-2% of all GP consultations
- Average GP will see up to 8 melanomas in their working life
- Diagnosis will be missed in up to 10% of cases (required 3 consultations or more prior to referral; Lyratzopoulos et al Br J Cancer 2013)

Aetiology - Sun exposure

- Sun exposure in childhood is a major risk factor
- Sun burn later on in life also increases risk
- Intermittent exposure + blistering sun burn

Sunbeds – BMJ article

Cutaneous melanoma attributable to sunbed use: systematic review and meta-analysis

Mathieu Boniol, Philippe Autier, Peter Boyle, Sara Gandini
(Published 24 July 2012) BMJ

The summary relative risk for first exposure to sunbed use starting before age 35 years is 1.59 (95% confidence interval 1.36 to 1.85)

Clinical history

Recent history of change

- New naevus
- Longstanding naevus

Diagnosis - Glasgow seven point checklist

Major features

- change in size
- irregular shape
- irregular colour

Minor features

- largest diameter 7mm or more
- inflammation
- oozing
- change in sensation

ABCDE

A Asymmetry

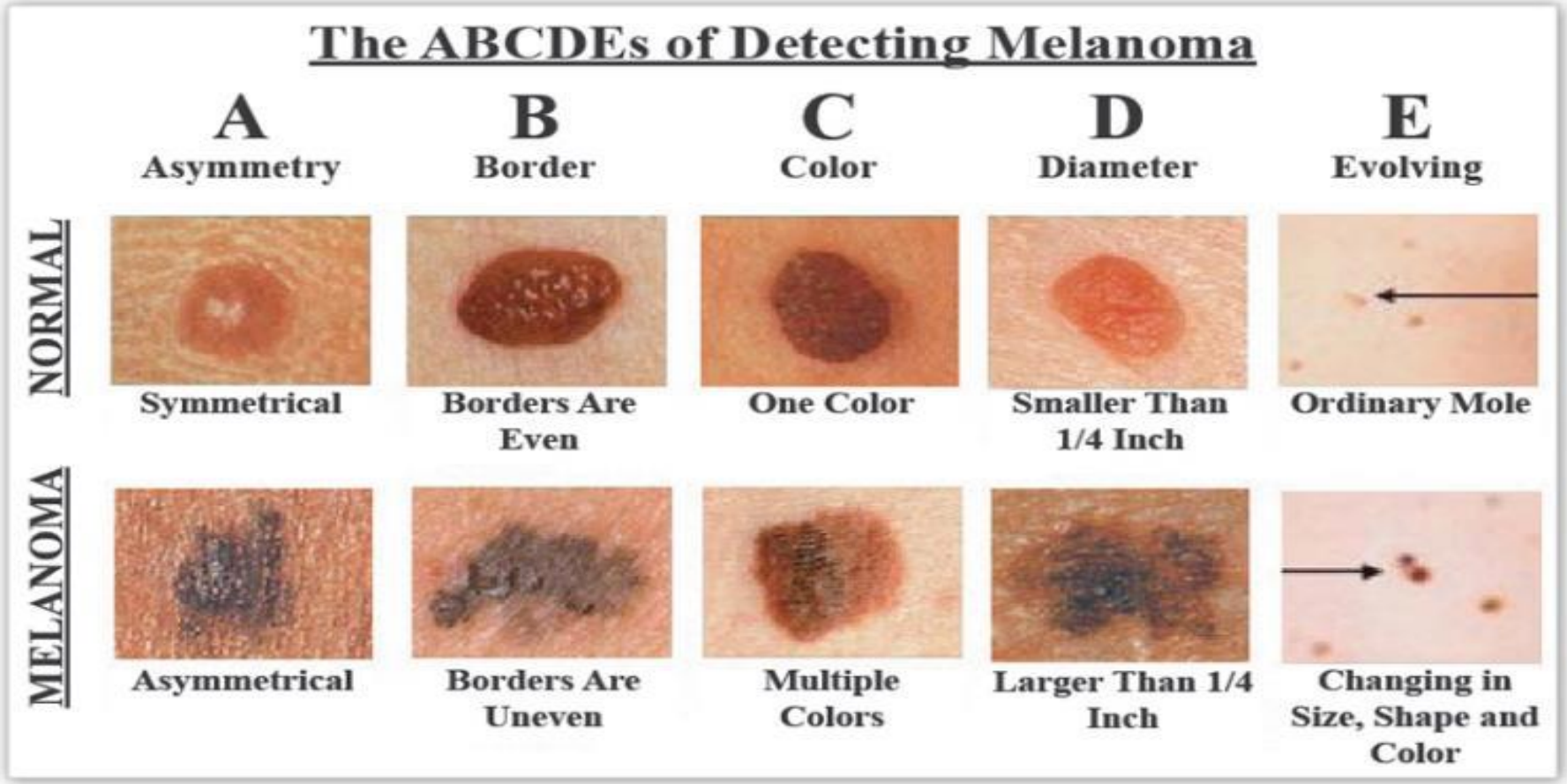
B Border irregularity

C Colour variation

D Diameter over 6 mm

E Evolving (enlarging, changing)

ABCDE


The ABCDEs of Detecting Melanoma
A
Asymmetry
B
Border
C
Color
D
Diameter
E
Evolving
NORMAL
Symmetrical
Borders Are Even
One Color
Smaller Than 1/4 Inch
Ordinary Mole
MELANOMA
Asymmetrical
Borders Are Uneven
Multiple Colors
Larger Than 1/4 Inch
Changing in Size, Shape and Color

Examination

- Skin type
- Freckling, red hair
- Evidence of sun damage
- Lots of naevi
- The ‘ugly duckling’ sign

Aetiology - host factors

- Atypical Naevi (mole)
  - >5mm diameter
  - irregular
  - variegate pigmentation

- Atypical (mole) naevus syndrome

Melanoma clinical types

Superficial spreading
90%

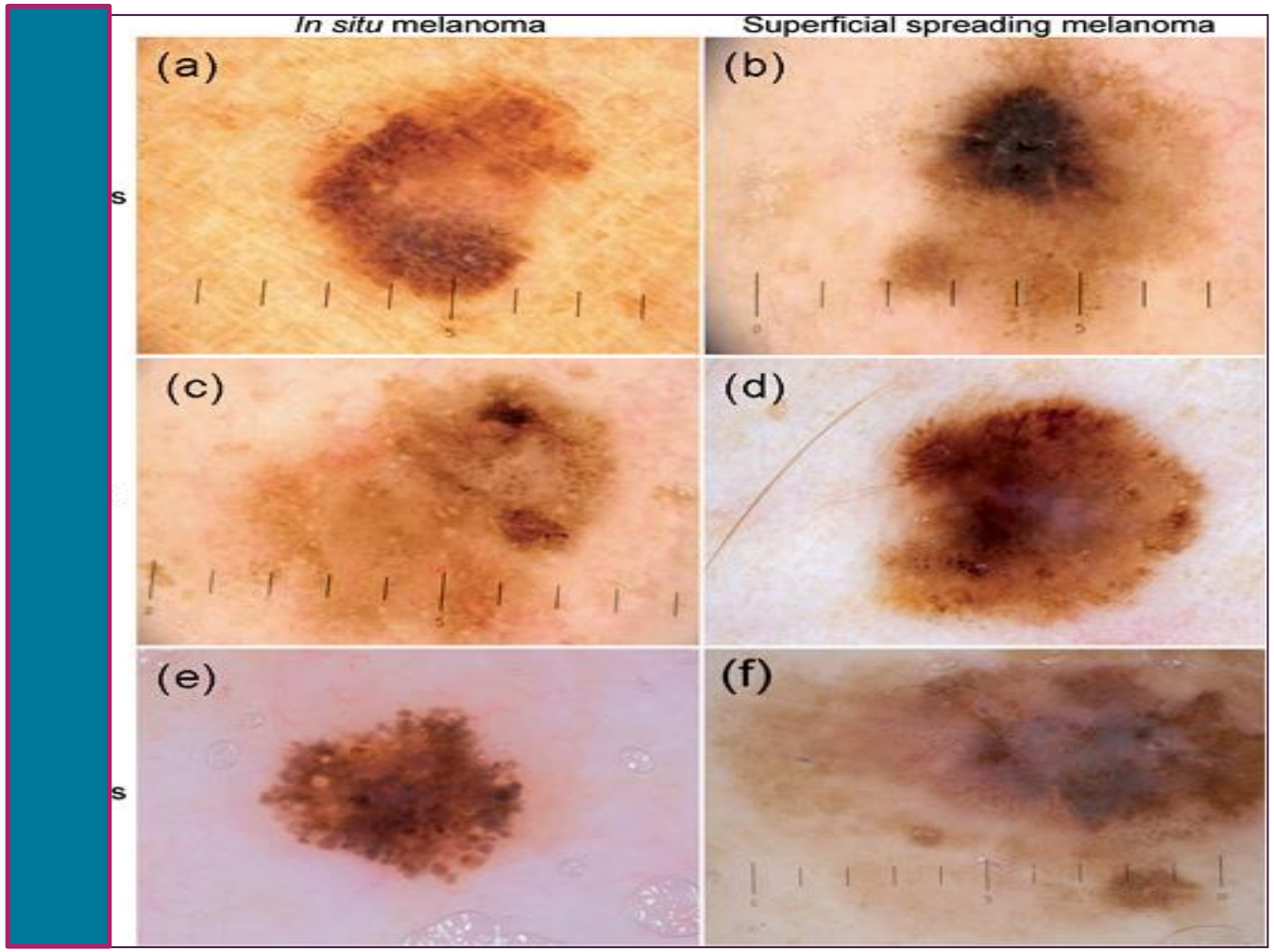
Lentigo maligna
3%

Nodular melanoma
5%

Acral lentiginous
2%

Superficial spreading melanoma

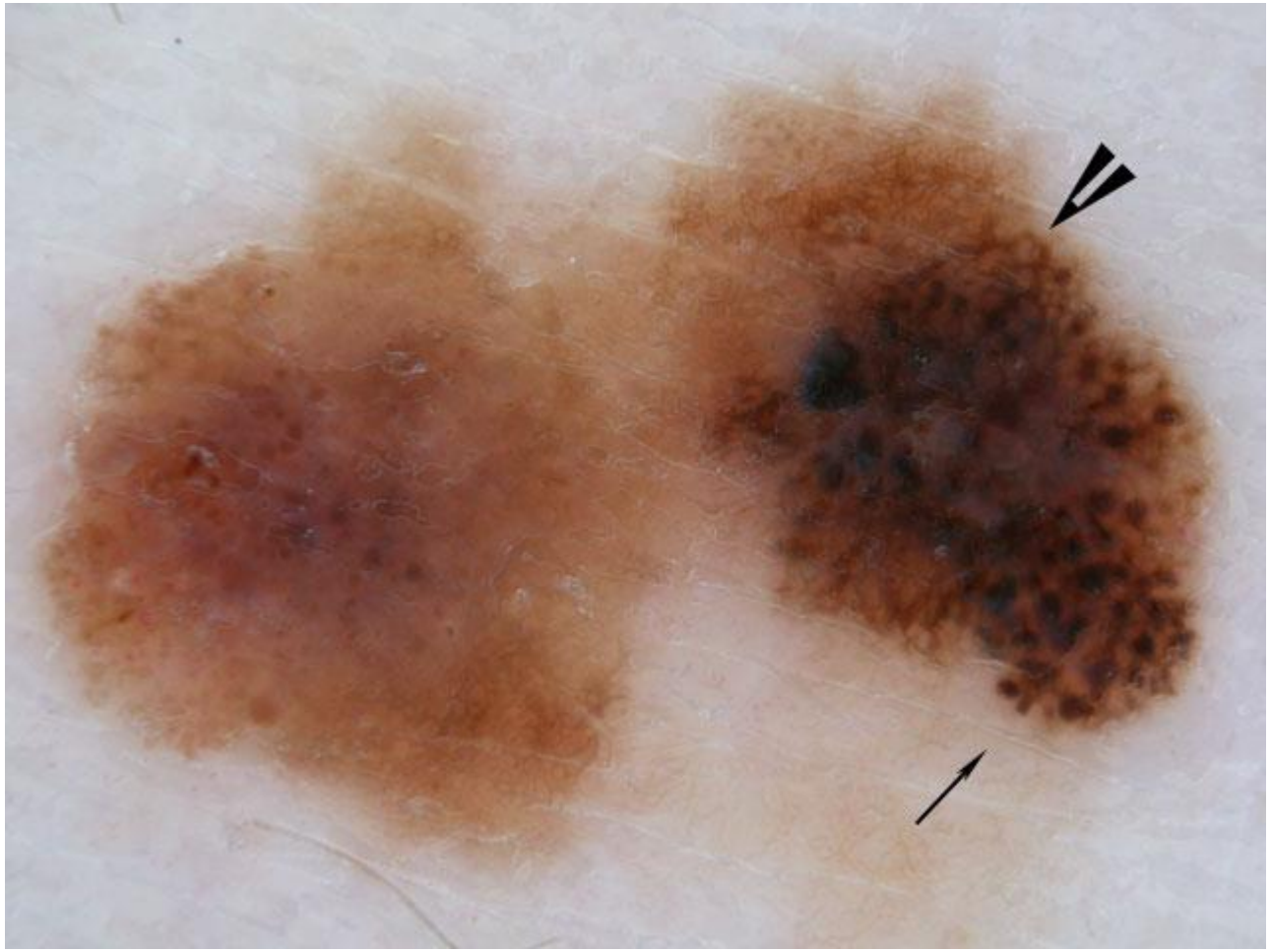
Superficial spreading melanoma



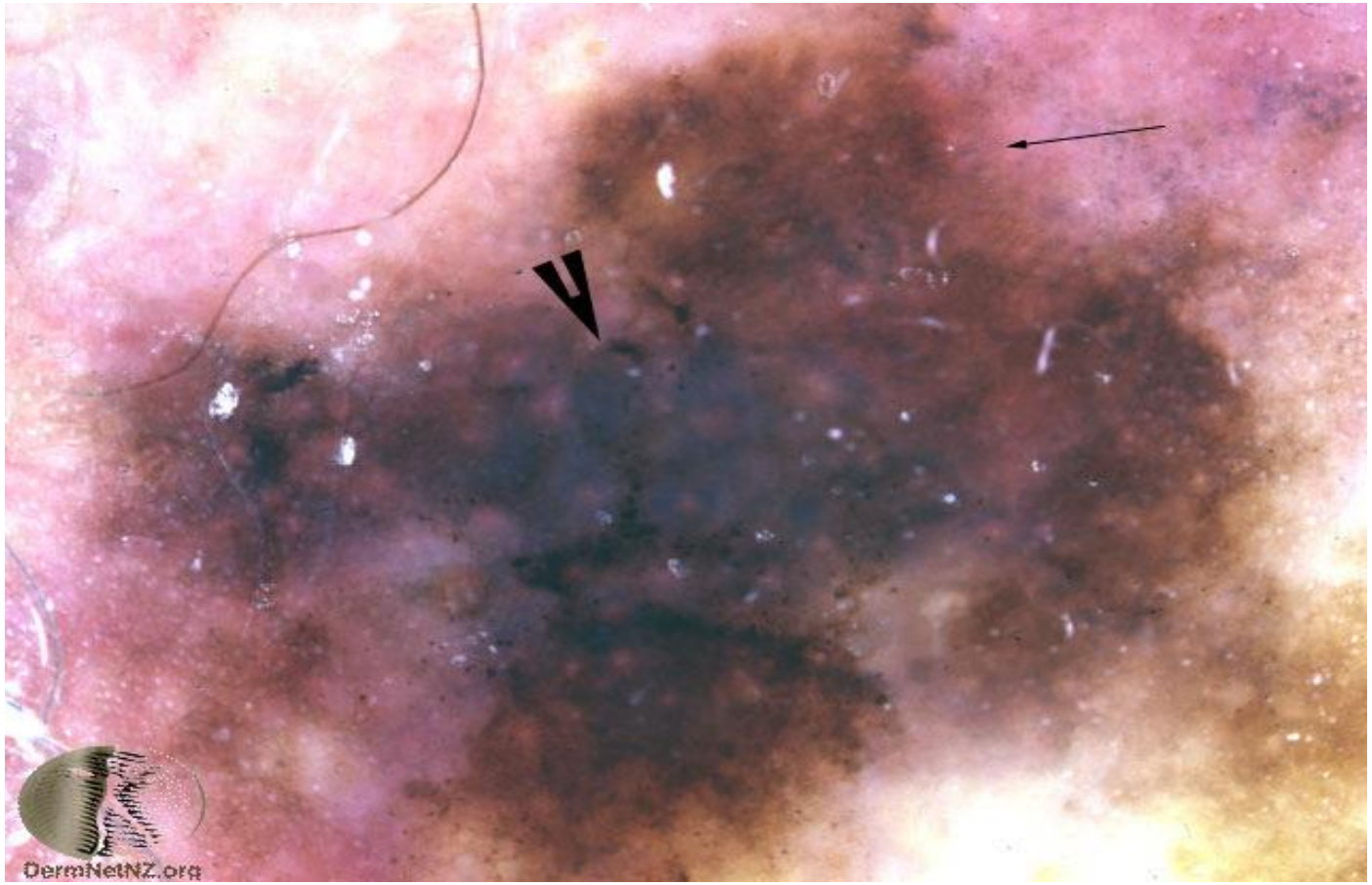
Nodular melanoma

Examination – Dermoscopy
REGULAR NETWORK – Benign naevus (mole)

Examination – Dermoscopy
IRREGULAR NETWORK - Melanoma



Examination – Dermoscopy
BLUE VEIL - Melanoma



Dermoscopy – 3 point checklist

- 1. Asymmetry
- 2. Atypical network – irregular holes and thick lines
- 3. Blue white structures
- Two out of three = positive = excise

Examination - Dermoscopy

- Often more helpful to reassure you it's benign
- Some studies shown better than naked eye examination – not consistent
- Reduces excision of benign lesions
- If clinically suspicious and 'normal' examination consider may be a melanoma excise anyway.

When to consider the diagnosis of melanoma

History of change

- One of the three Major criteria of the Glasgow 7 point checklist
- High risk factors – AMS, FHx
- Examination – ‘ugly duckling’, dermoscopic changes
- Can’t exclude a melanoma

Differential diagnosis

- Benign Naevi
- Seborrhoeic Keratoses
- Lentigenes and ephelides
- Dermatofibromas
- Pyogenic granulomas
- Pigmented BCC

Which one is the melanoma?

Differential diagnosis

- Pyogenic granuloma
- Seborrhoeic keratosis
- Benign naevus
- Melanoma
- Giant comedone
- Pigmented BCC

Which one is the melanoma?

1. A – Seborrhoeic keratosis

2. B – Pigmented BCC

3. C – Benign Naevus

4. D – Pyogenic granuloma

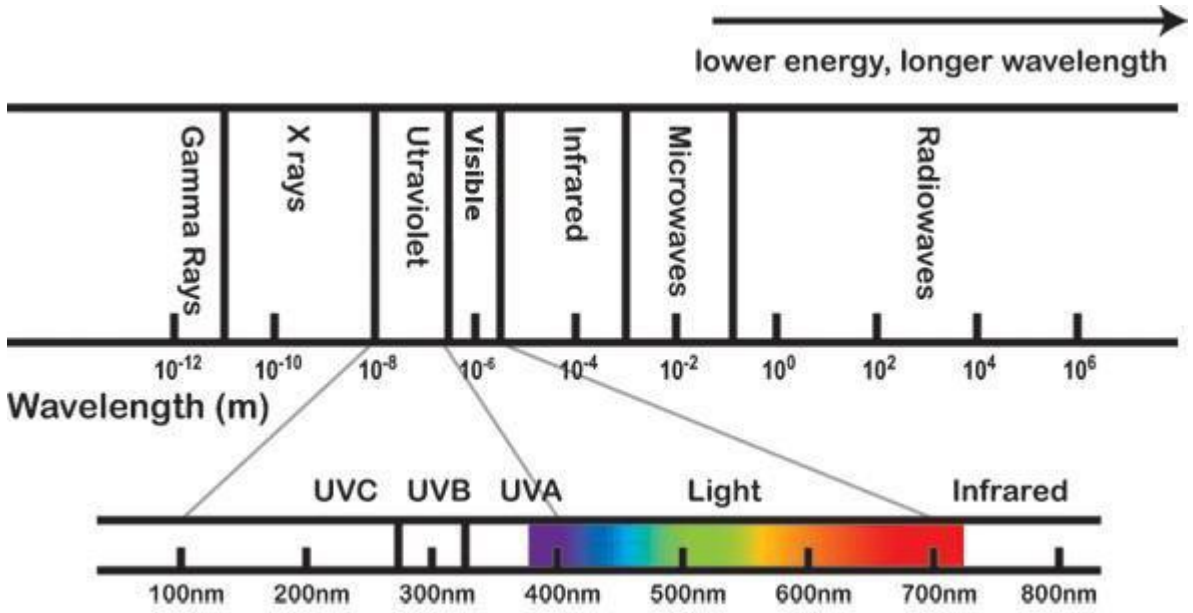
5. E – Giant comedone

6. F – Malignant melanoma

Sun protection

- Sun produces both visible and invisible rays
- Invisible rays UVA and UVB cause most of the problems – suntan, sunburn and sun damage
- UV index – prediction of ultraviolet intensity in a given location

Wavelength of visible and invisible light – electromagnetic radiation spectrum



Types of UV radiation

UVA is long-range 320 and 400nm.

- Penetrate deep into our skin (dermis)
- Immediate tanning and premature skin aging
- Play a role in the development of skin cancers (not as much as UVB).
- UVA is not readily absorbed by the ozone layer - about 95% gets through.

UVB short wave 280 and 320nm.

- It can just penetrate the outer protective layer of the skin
- Delayed tanning, sunburns and most skin cancers.
- UVB is absorbed by the ozone layer - only 5% reaches our planet's surface.

UVC most energetic 100 and 280nm,

- Very dangerous to all forms of life (even with short exposures)
- Fltered out by the ozone layer, and never reaches earth
- Used artificially to kill bacteria.

What affects ultraviolet levels?

Time of day – strongest at midday

Season – Spring summer

Ozone layer thickness – depletion

Weather conditions – rain clouds can absorb 80%, sparse clouds increase

Surface reflections - Fresh white snow reflects up to 85% of UV radiation. Other bright surfaces (like sand, concrete, and water) reflect less. If you are skiing on a spring day at the end of March, for example, the reported UV index may only be 4, but because of reflection from the snow, you may experience a UV index of 7.

Altitude - UV radiation increases with altitude (height above sea level) because there is less atmosphere to absorb the damaging rays. The UV index measured in Edmonton will be less than that measured at the top of a mountain in Jasper. At an altitude of around 2,000 metres, the amount of UV radiation can be up to 30% higher than at sea level.

Latitude - UV is strongest at the equator where the UV index can reach about 12. In Canada, the UV index is highest in southern Ontario and is lowest at the North Pole.

Did you know?

You need protection from UV rays on both sunny and cloudy days, since up to 80% of the sun's rays can get through light cloud, mist, and fog.

UV index

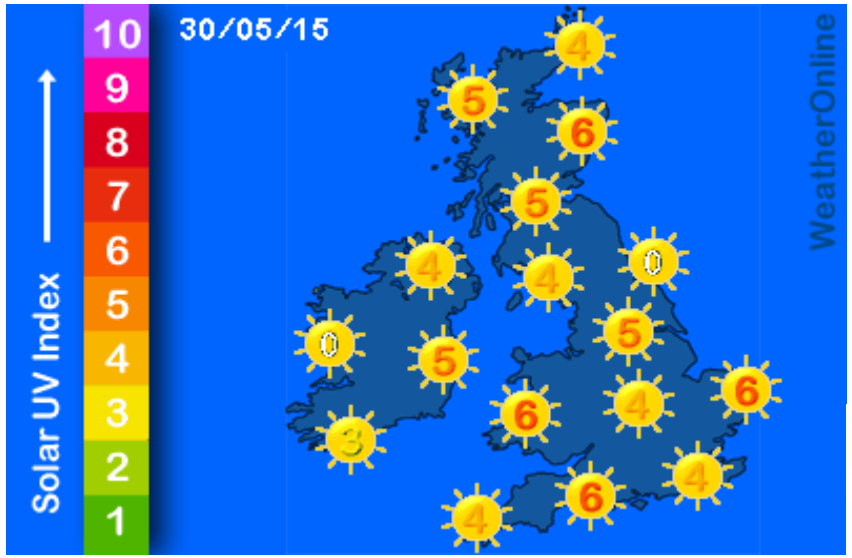
One UVI Unit is equivalent to 25mW/m2 UVR reaching the Earth's surface.

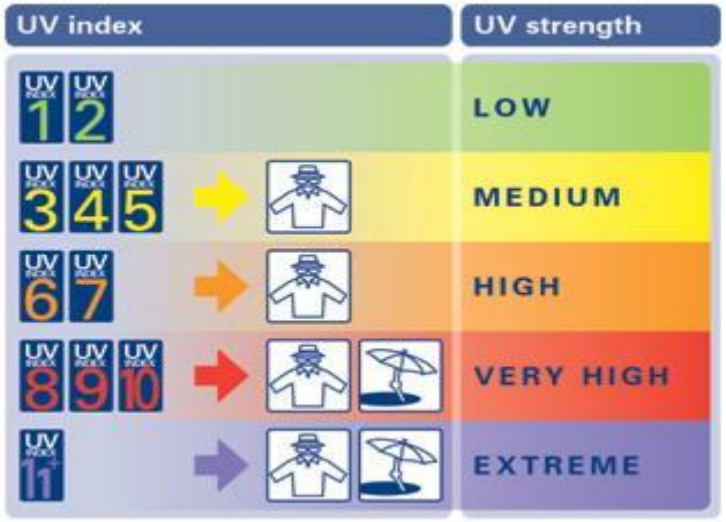
The UVI forecasts usually report at least the daily maximum UVR levels averaged over a 30-minute time period, assuming there is no cloud cover and other modifying factors

UV index what does it mean?

Levels 1 and 2: In the green band, levels one and two, the UV level is low. Low protection is needed and people can safely stay outside.
Levels 3 to 5: The yellow band, numbers three to five, indicates moderate UV levels. Protection is required when spending long periods outside.
Levels 6 and 7: Protection is essential at levels six and seven, represented by an amber band.
Levels 8 to 10: When UV levels are in the very high red band, eight to ten, it's recommended people seek shade between 11am and 4pm, and make sure reapply sunscreen at least every two hours.
Level 11+: Levels of 11 or higher, shown in a purple band, are regarded as extreme. Reschedule activities for the early morning and evening. Full protection is essential between 11am and 4pm.

UV index


Solar UV Index
10
9
8
7
6
5
4
3
2
1
30/05/15
WeatherOnline

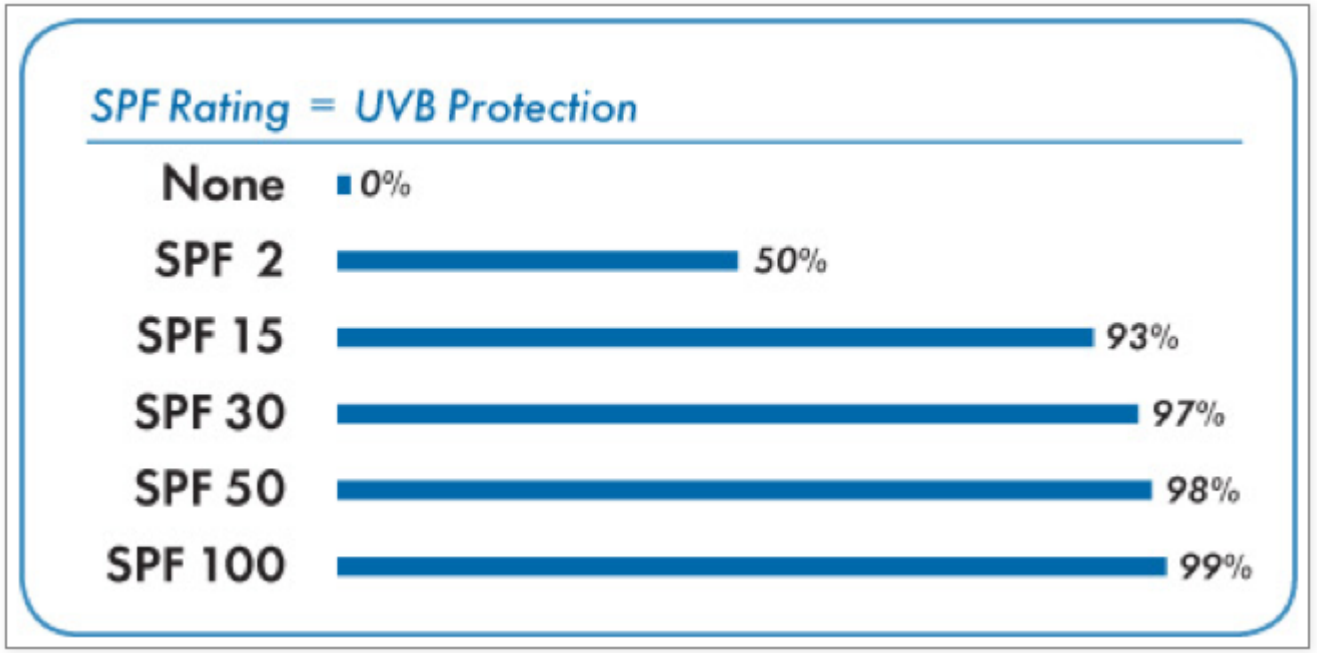

UV index
UV strength
LOW
MEDIUM
HIGH
VERY HIGH
EXTREME

Sun protection factor UVB

A rating system developed by the FDA to describe the level of sun protection provided by a sunscreen

For example an SPF of 30 allows an individual to stay out 30 times longer in the sun that they normally would be able to before developing some reddening

SPF UVB


SPF Rating = UVB Protection
None
0%
SPF 2
50%
SPF 15
93%
SPF 30
97%
SPF 50
98%
SPF 100
99%

Star rating – UVA protection

Sun protection

NICE guidance published January 2011

Skin cancer: prevention using public information, sun protection resources and changes to the environment

What the guidance covers

The recommendations focus on preventing the first occurrence (primary prevention) of skin cancer attributable to overexposure to natural and artificial ultraviolet (UV).

NICE guidance

Factors to consider when planning and delivering the recommended activities

Exposure to the sun has a number of benefits. For example, it increases people's sense of wellbeing, allows them to synthesise vitamin D and provides opportunities for physical activity.

Ultimately, a balance needs to be struck to attain an adequate vitamin D status without increasing the risk of skin cancer.

NICE guidance

- **Avoid getting sunburnt**

Avoid excess or prolonged sun exposure. This includes staying in the sun until the skin goes red. If you need to be out in the sun (for example, for work purposes), then protect your skin as much as possible to avoid burning.

NICE guidance

- When and how to protect

Avoid the midday sun between 11am and 3pm.

Where possible, wear clothing that protects areas which may be vulnerable to burning and apply sunscreen. This includes a broad brimmed hat that shades the face, neck and ears, a long-sleeved top and trousers. Where possible, choose close-weave fabrics that don’t allow the sun through.

Sunscreens – 2 types

Chemical absorbers - absorb ultraviolet (UV) radiation and can be further differentiated by the type of radiation they absorb, UVA or UVB, or both UVA and UVB.

Physical blockers work by reflecting or scattering the UV radiation – titanium dioxide and zinc oxide

Daily use of sunscreens has found to be safe and has not been associated with increased any-cause mortality

Sunscreens

Apply liberally – most studies show people don't put enough on

Re-apply frequently – even if states water resistant

Sun seeking behaviour/ false sense of security

Sunscreens – recent water resistant claims challenged by Which?

Water resistant sunscreen claims 'meaningless', says Which?

Which? tested two products claiming to be water resistant and found the

Sunprotection factor (SPF) dropped by up to 59% after 40 minutes in salt water.

Current UK tests allow manufacturers to claim a sunscreen is water resistant if the SPF drops by as much as 50% after two 20-minute periods of immersion. The tests are carried out using tap water.

Which? said its more rigorous tests in salt water, chlorinated water and fast moving water – conditions typically found on holidays - exposed "serious flaws" in the testing regime.

NICE guidance

- **Sunscreens**

Not an alternative to clothing and shade, rather they should offer additional protection. (Note, no sunscreen product provides 100% protection against the sun.)

Choose a 'broad spectrum' sunscreen which offers both UVA and UVB protection.

At least SPF 15 to protect against UVB and offer high UVA protection (in the UK, at least four stars and the circular UVA logo indicate it protects against UVA)

Use water resistant products if sweating or contact with water is likely.

SPF 15 is sufficient if applied adequately, however, to take account of behavioural factors (such as people not applying sufficient quantities of sunscreen) SPF 30 was also recommended in an expert paper.

NICE guidance

- **Sunscreen application**

Apply liberally half an hour before and after going out in the sun (don't forget your head, neck and ears).

Re-apply at least every 2 hours and immediately after being in water, even if the sunscreen is 'water resistant'.

Also re-apply after towel drying. If applied adequately, SPF 15 should be sufficient.

Challenge to change behaviour

Sun protection

Winter sun

Snow reflects 80% of the sun's rays causing sunburn and damage to uncovered skin

Less atmosphere at high altitudes to block the sun's rays

Negative effects of the sun

Sunburn

Skin cancer

Ageing and wrinkles

Allergic reactions

Exacerbate conditions that are photosensitive

e.g. Lupus

Sun protection - Summary

Use a broad spectrum sun-screen of at least SPF 15

Sun screen should be water resistant if swimming or sweating

Reapply frequently – every 2 hours

Wear a broad-brimmed hat and sunglasses

Avoid peak sunlight hours

Wear protective, tightly woven clothing


Chelsea and Westminster Hospital
NHS
NHS Foundation Trust

Thank you