Skin disorders

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Skin disorders

Histology of skin

. ***Layers of skin***

- Epidermis — Ectoderm
- Dermis — Mesoderm
- Hypodermis

Epidermis: Stratified keratinizing Squamous Epithelium.
Melanocytes, Langerhans cells, lymphocytes, Merkel cells are present in it .

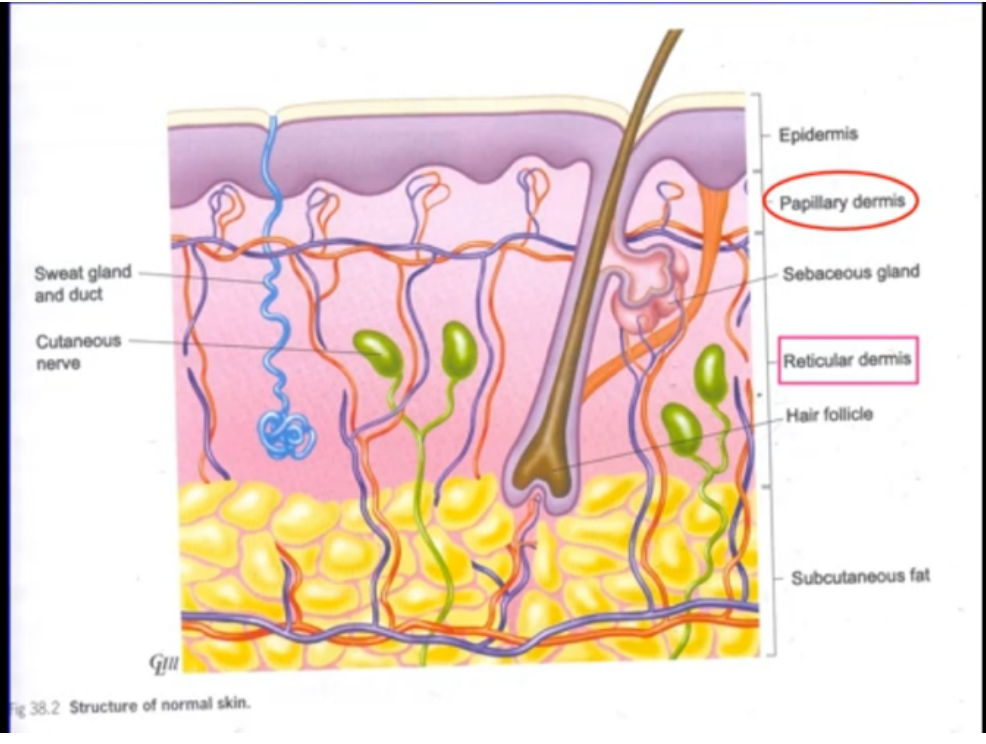
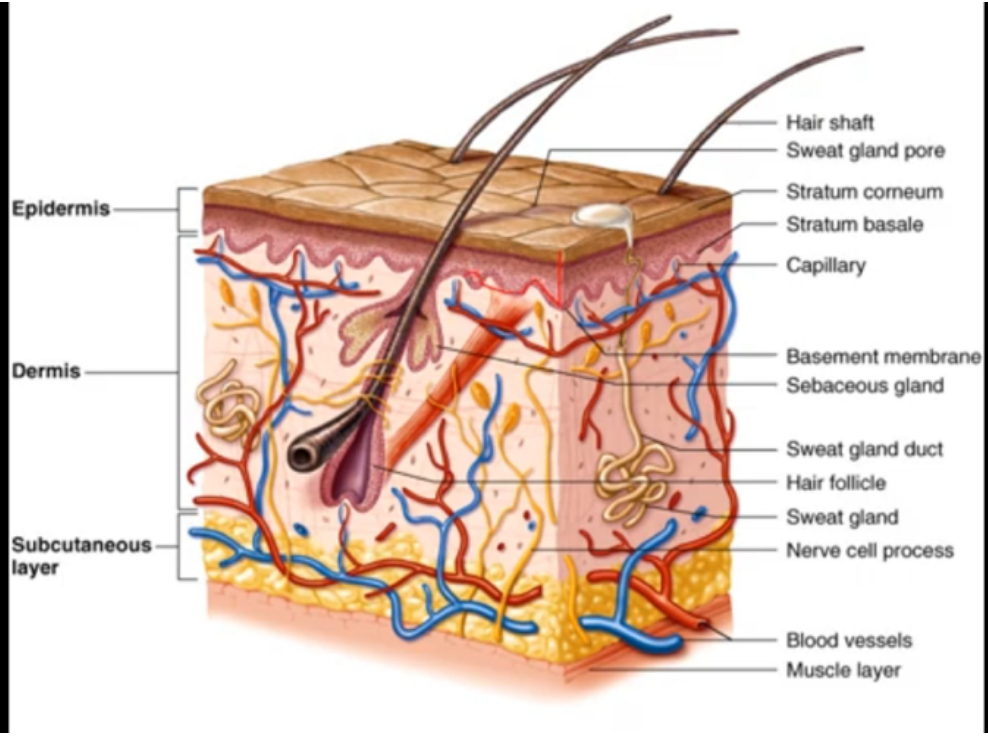


Fig 38.2 Structure of normal skin.


Epidermis
Dermis
Subcutaneous layer
Hair shaft
Sweat gland pore
Stratum corneum
Stratum basale
Capillary
Basement membrane
Sebaceous gland
Sweat gland duct
Hair follicle
Sweat gland
Nerve cell process
Blood vessels
Muscle layer

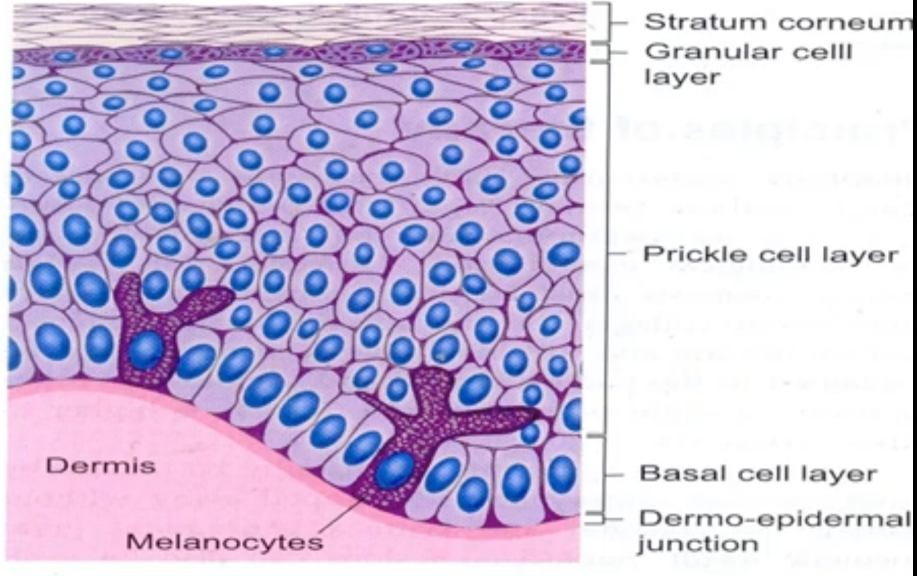


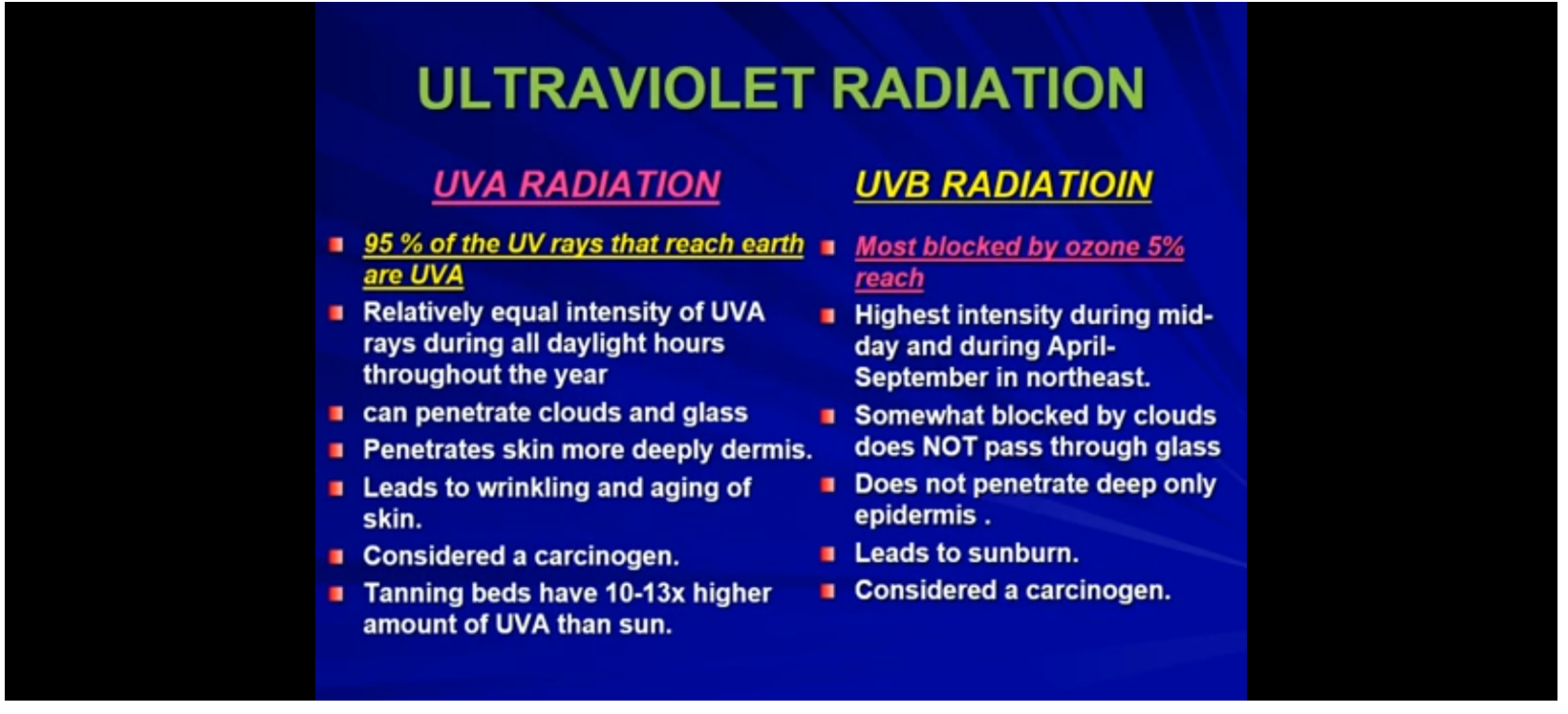
Fig 38.1 **Structure of normal epidermis.**

Dermis

- Major component is *CT* rich in collage fibers.
- Blood vesseles,nerves,and lymphatics
- Sweat glands, sebaceous glands,hair follicles
- Dermal collagen is responsible for elasticity, and produced by fibroblasts.

Ageing of skin

- Is a natural process
- Accelerated by exposure to UVR *(A)*
- Epidermis becomes thinner because No of melanocytes & Langerhans decrease.
- Dermal collagen content decreases.
- Skin appendages decrease in No & function.
- The result is ***sagging, stretched and wrinkled*** skin of the elderly .


ULTRAVIOLET RADIATION
UVA RADIATION
95 % of the UV rays that reach earth are UVA
Relatively equal intensity of UVA rays during all daylight hours throughout the year
can penetrate clouds and glass
Penetrates skin more deeply dermis.
Leads to wrinkling and aging of skin.
Considered a carcinogen.
Tanning beds have 10-13x higher amount of UVA than sun.
UVB RADIATIOIN
Most blocked by ozone 5% reach
Highest intensity during mid-day and during April-September in northeast.
Somewhat blocked by clouds does NOT pass through glass
Does not penetrate deep only epidermis .
Leads to sunburn.
Considered a carcinogen.

Examination of skin

- ***Pinch test :*** If you can pinch the skin over swelling the swelling is not in skin
- If there is *Irregularity* of skin surface or *Elevation* the swelling is Epidermal.
- If swelling is *Pigmented* means melanocyte activity.
- Always examine *Entire Skin* even if lesion is solitary.
- Examine draining *LN.*



INFECTIONS

- Furuncle (Boil) , Stye ,paronycia
- Cellulites & Erysipelas *(leg and face)* CS.
- Hidradenitis suppurativa
- Carbuncle.
- Necrotizing fasciitis
- Impetigo
- Herpes simplex.
- Herpes zoster.



Carbuncle





Hidradenitis suppurativa



Impetigo

- Contagious flaccid blisters in the face of children due to staff Aureus.
- Rupture gives raw eroded base.





Herpes





Herpes simplex

- *"Cold Sores"*





Herpetic Whitlow

Herpes Zoster.



Shingles

A.D.A.M.

Streptococcal Infections



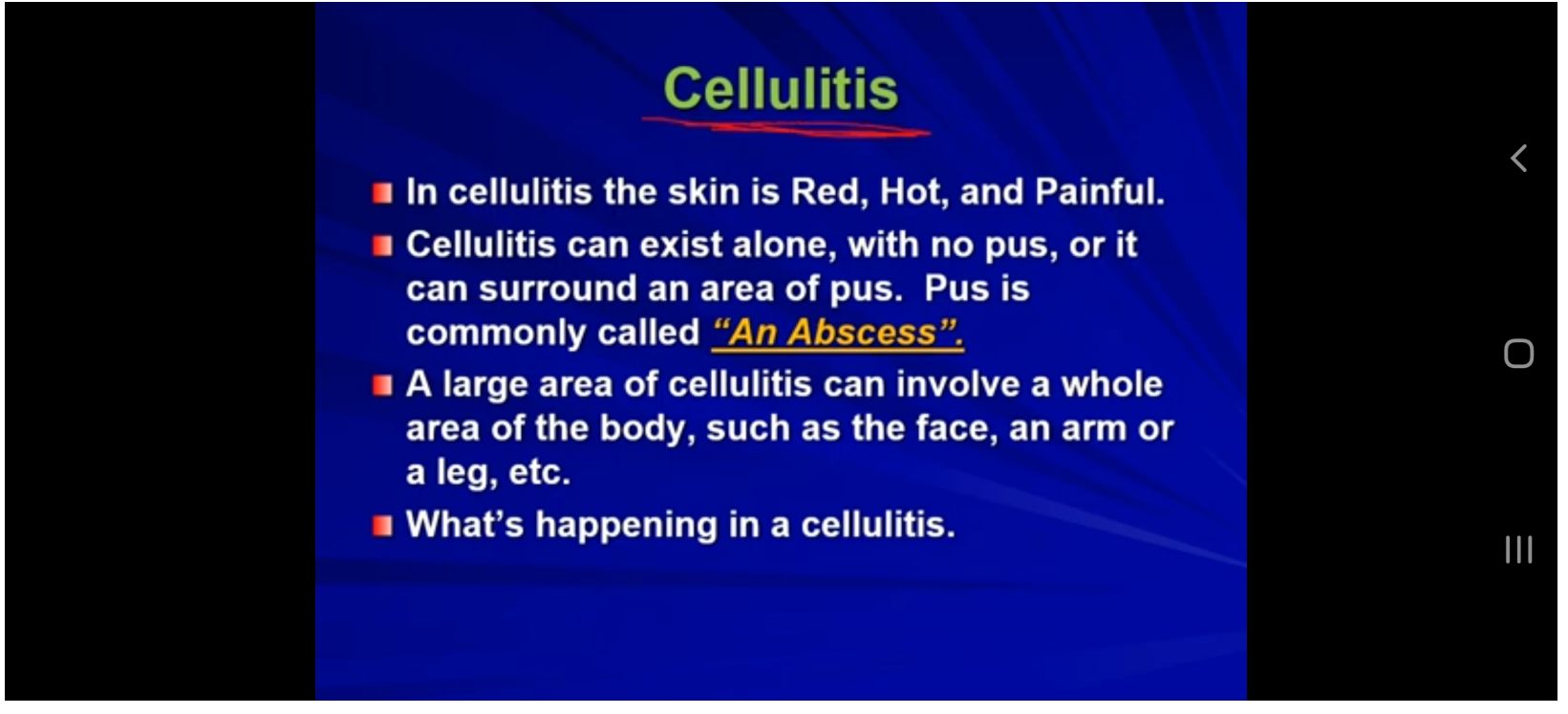



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Cellulites

Erysipelas






Cellulitis
In cellulitis the skin is Red, Hot, and Painful.
Cellulitis can exist alone, with no pus, or it can surround an area of pus. Pus is commonly called "An Abscess".
A large area of cellulitis can involve a whole area of the body, such as the face, an arm or a leg, etc.
What's happening in a cellulitis.

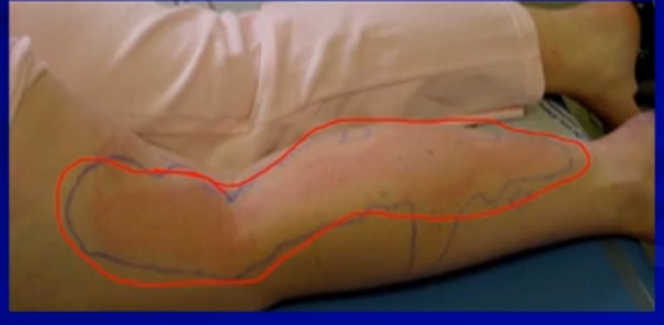
Cellulitis



Features:

- Red (Rubor)
- Swollen (Tumor)
- Warm to touch(Calor)
- Painful (Dolor)
- Tender
- No areas of pus

Cellulitis

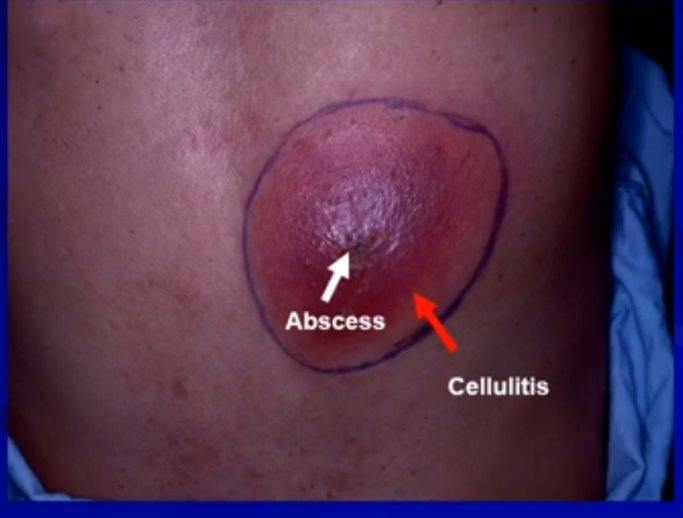


Describe the features that make this cellulitis

Abscess

- Pus under the surface of the skin, the collection of pus is termed an ***"Abscess"***
- The pus in the abscess consists of dead, liquefied tissue, billions of white blood cells (the infection fighting cells).
- The most common bacteria in the abscess is "staph", or Staphylococcus Aureus.

Abscess



Features:

- Cellulitis present
- Swollen
- Soft center, feels like fluid underneath
- Painful
- Tender

Abscess



- Large abscess.
- Possibly up to a cup of pus when opened.
- wrinkling of the skin suggests the swelling is going down.

Abscess



Large abscess about to be incised (cut open) and drained of pus. This is too large to drain in the office.


The result of “skin popping”
Multiple injection site abscesses

Necrotizing Fasciitis

- When the bacteria in a cellulitis or abscess start spreading quickly between the fat layer and the muscle underneath it is termed Necrotizing Fasciitis.
- Necrotizing means turning living flesh to dead flesh.
- Fasciitis means the infection is spreading along the space between the fat and the muscle underneath.
- The infection cuts off the blood supply to the tissue above it and the tissue dies.
- The bacteria also enter the bloodstream and cause severe systemic illness called “sepsis ***"Mortality 30%.***

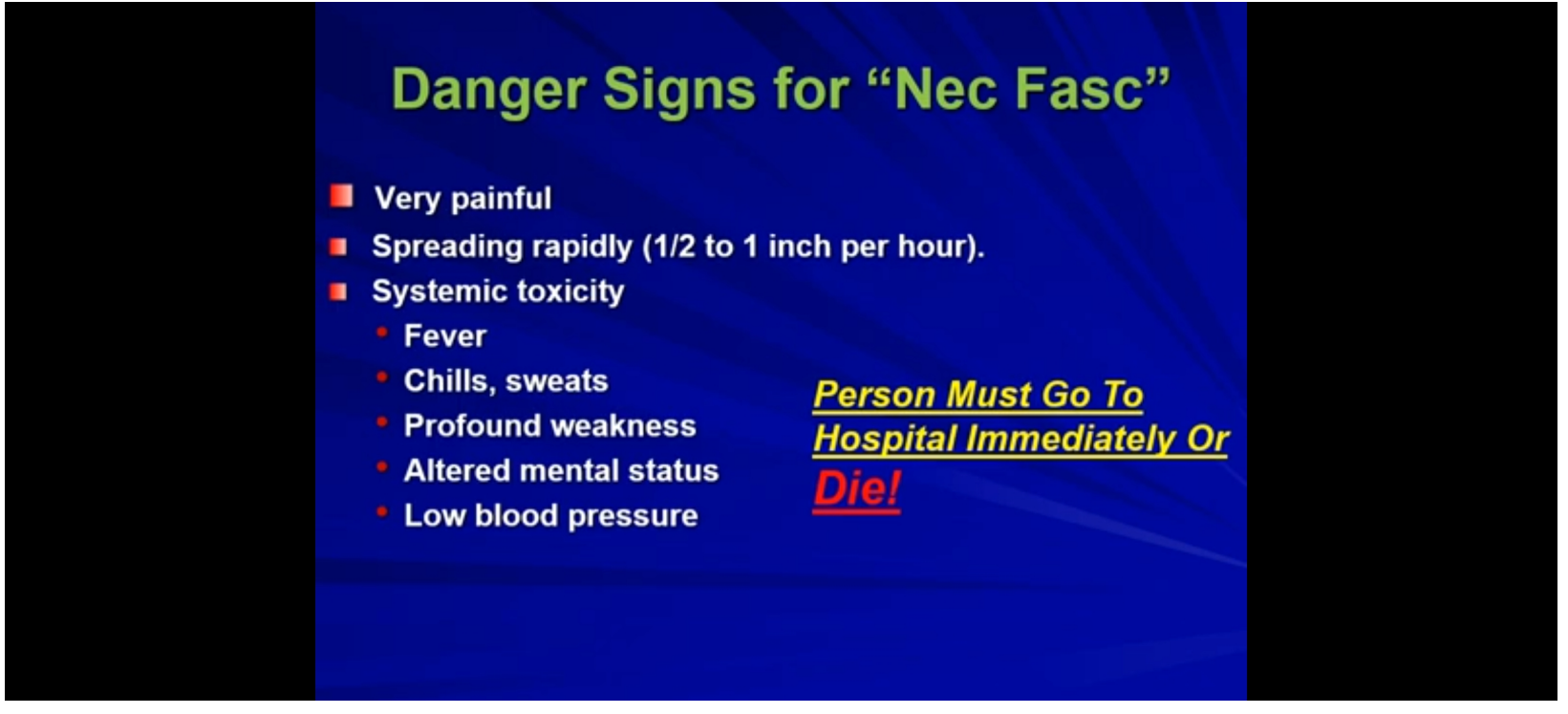

Indications of Necrotizing Fasciitis
If the area of redness is spreading rapidly (This Means about ½ Inch or More Per Hour) this may be "Nec Fasc".
If the area is extremely painful.
If the person shows signs of bacteria getting into the bloodstream (fever, change in mental function such as delirium, profound weakness).
Draw a line around the red area with a pen, then watch for spreading beyond the line
If spreading ½ inch or more per hour, go to a hospital.
70% have comorbidities.


Cellulitis
with abscess
If rapid spreading beyond this line
occurs, this may be necrotizing
fasciitis, and requires surgery


Necrotizing fasciitis


Necrotizing Fasciitis after Debridement




Danger Signs for "Nec Fasc"
Very painful
Spreading rapidly (1/2 to 1 inch per hour).
Systemic toxicity
Fever
Chills, sweats
Profound weakness
Altered mental status
Low blood pressure
Person Must Go To Hospital Immediately Or Die!

Dercum's Disease





Keratoses

Seborrheic keratoses

- Very common,trunks,eldery.
- Multiple , brown-black , Waxy , flaky plaques.

Solar keratoses(Actinic)

- Raised,Red,Hard.
- Sun exposed areas face ,hands, forearms
- 20% change to SCC in one year

Bowen's Disease SCC in situ

- Poorly defined scaly,erythematous plaques
- Head and neck, ultraviolet A-B exposure

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Actinic keratosis



- Pre-cancerous lesions
  - Caused by photo-damage
  - Can become skin cancer
- Highly prevalent, chronic condition
  - Affects 50% of Caucasians >40 yrs
  - 58 million North Americans
  - 8.2 million treatments annually (1)
- 78% of cases have multiple lesions
- Surgical


Actinic keratosis
Seborrheic keratosis
Actinic keratosis


Actinic keratoses
Seborrheic keratosis


Bowen's Disease

Squamous Cell Carcinoma

- ***Bowen's Disease:*** *is Squamous Cell* carcinoma *In Situ*
- Well-circumscribed , slowly enlarging erythematous scaly patch with irregular border, present with pruritus.
- Chronic Solar Damage.
- Up 3-11% progress to SCC.





Keratoacanthoma

- Benign, self limited epithelial neoplasm.
- Keratoacanthoma arises from hair follicle skin cells for unknown reasons.
- Usually on face elderly men 60-70y.
- Sun exposed areas , trauma , virus infection.
- Painless , firm, solitary , raised nodule.
- Shiny color fleshy, depressed keratin center.
- Rapid growth (1-3)cm in 6-8 weeks, stationary 6-8 weeks, regress 6-8 weeks.
- May progress to invasive SCC 6%.



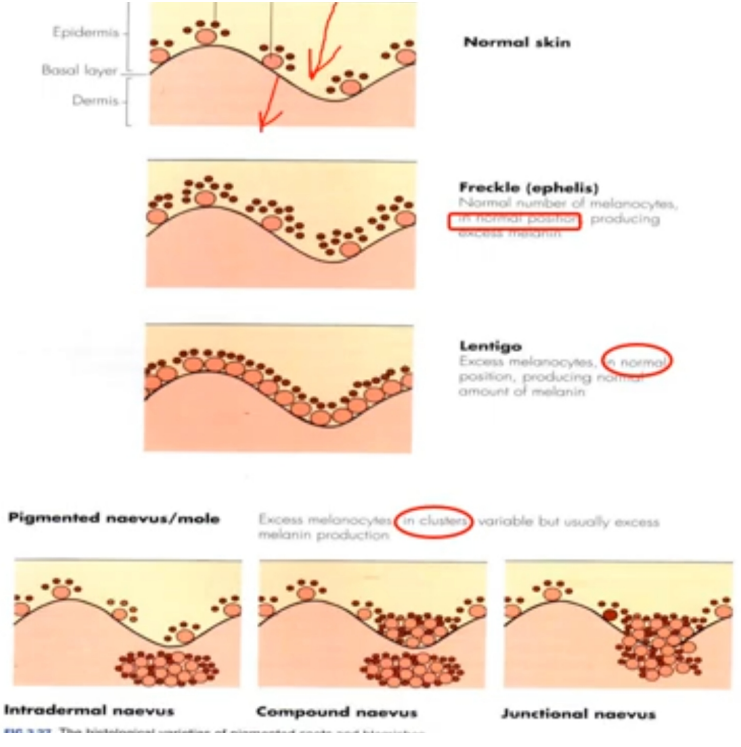
- Low grade SCC.
- Rapid growth over weeks
- Trauma, sun exposure, HPV 11 and 16.
- May progress to invasive SCC





Pigmented lesions

- ***Freckle***: Excess production of melanin by normal number of melanocytes in *Normal* position.
- ***Lentigo:*** Increase number of melanocytes in there *Normal* position, producing Normal quantity of melanin.
- ***Nevus:*** Increase number of melanocytes in *Abnormal* position, producing Normal or increase number of melanin.


Epidermis
Basal layer
Dermis
Normal skin
Freckle (ephelis)
Normal number of melanocytes, in normal position, producing excess melanin
Lentigo
Excess melanocytes, in normal position, producing normal amount of melanin
Pigmented naevus/mole
Excess melanocytes in clusters, variable but usually excess melanin production
Intradermal naevus
Compound naevus
Junctional naevus





Freckle

Lentigo

Pigmented lesions

- ***Melanocytic lesion (Nevus):***

Is Defined as Benign Proliferation of Melanocytes

TYPES

- Junctional nevus
- Compound nevus
- Intra-dermal nevus
- Dysplastic nevus



Clinical characteristics- DN



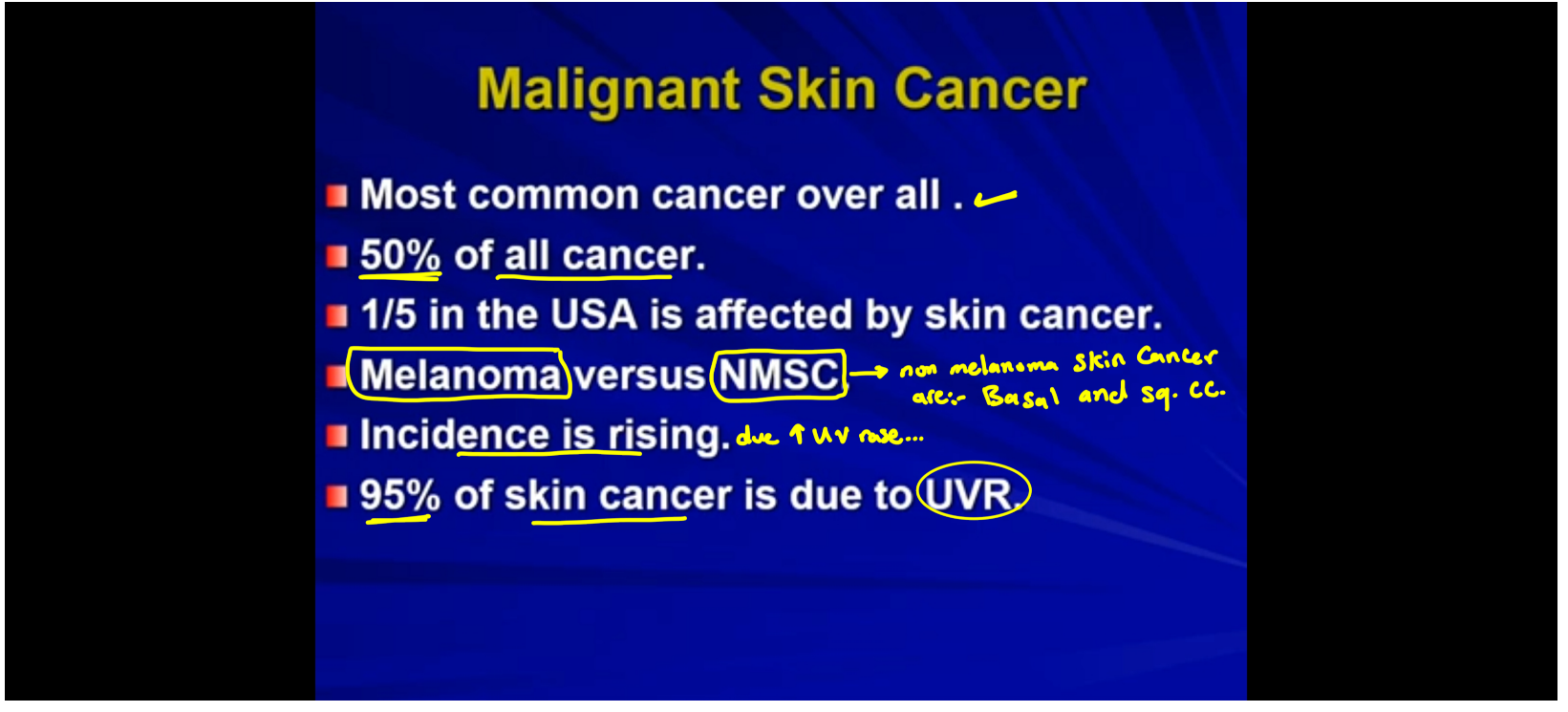


Diameter >6mm

Tan color with darker brown or black

Elevated center

Irregular border


Malignant Skin Cancer
Most common cancer over all .
50% of all cancer.
1/5 in the USA is affected by skin cancer.
Melanoma versus NMSC
non melanoma skin cancer are:- Basal and sq. cc.
Incidence is rising.
due ↑ UV rate...
95% of skin cancer is due to UVR.

*skin
- dermis..
- epidermis..
- hypodermis...

Malignant lesions

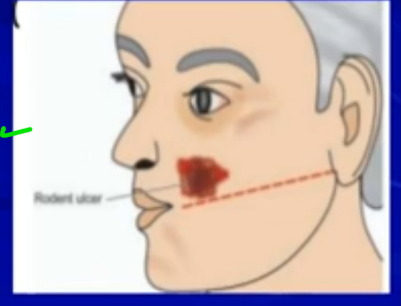
* all skin malignant lesion arise from the epidermis...

Basal cell carcinoma BCC

- Most common skin malignancy.
- Arise from Basal Layers of the epidermis.
- Face 90% scalp ,ear ,nose , periorbital region.
  - above the line between the ear and mouth [upper face]...
- Chronic ultraviolet A-B radiation.

Types

- Nodular BCC . (mc type)
- Superficial.
- Micronodular,infiltrative BCC
- Sclerosing BCC.
- Pigmented BCC



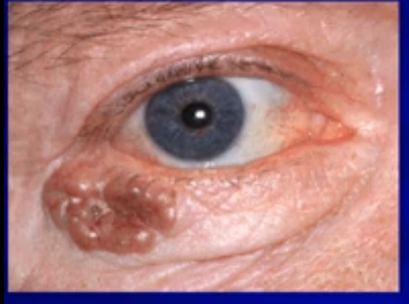
* 1st mc malignant skin lesion is:- BCC...
* 2nd mc malignant skin lesion is: SCC...
* 3rd mc malignant skin lesion is: Melanoma...



- BCC is the most frequent skin cancer 80% MCQ
- BCC is 4x more frequent than SCC BCC > SCC
- 86% are in the head.
- Metastasis are rare (<1% of cases)
- Local destruction of tissue [can penterate deep]


Basal Cell Carcinoma

Nodular BCC [the commonest type] شكل اللؤلؤة





- Chronic lesion.
- Commonest type.
- Easy bleeding.
- Pearly border. لؤلؤة
- Central depression(umbilication)
- Surface telangiectasia. dilated BV
- Head and neck, trunk, and extremities.

Superficial BCC





Erythematous scaly plaque

Slow growth

Asymptomatic

Trunk, extremities, face

Morpheaform BCC





- Resembles scar
- Asymptomatic and slow growing
- Ill-defined margins
- Marked subclinical extension

لو شبّه بيغمنت سبب melanin فهو malignant melanoma...

Pigmented BCC





- Similar to nodular but with ***Black Discoloration***
- **Melanin deposits**
- **Pigmented races**
- **Face, trunk, and scalp**

Differential diagnosis- BCC

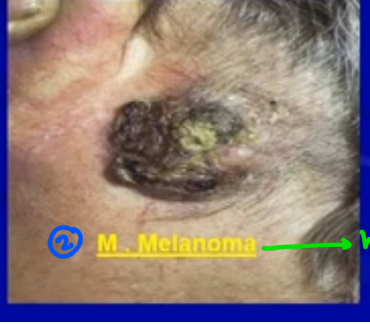
MM
SCC





may lead to metz [fatal]





has high mortality rate...


Superficial Basal Cell Carcinoma



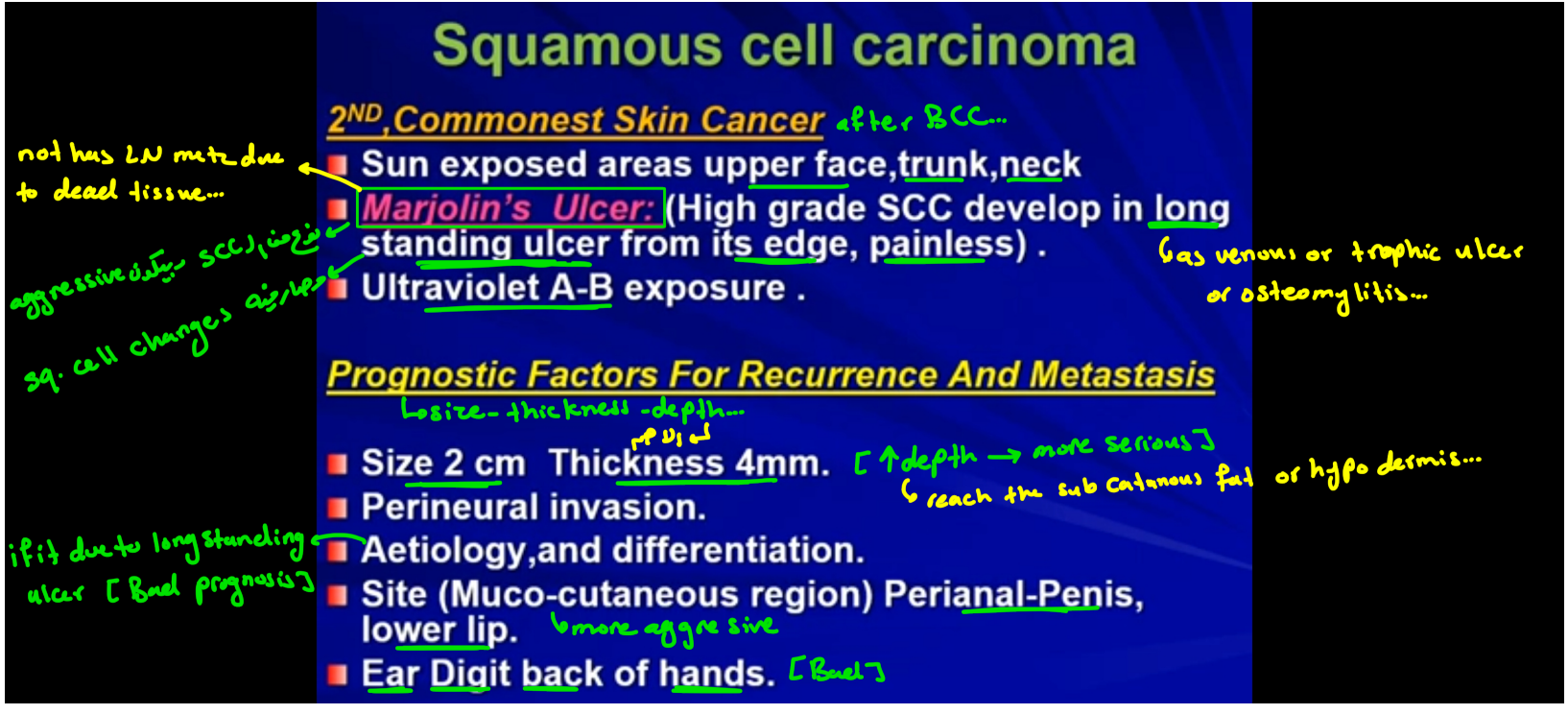
g 38.10 Cystic basal cell carcinoma on temple showing entral breakdown and ulceration.



Fig 38.13 Sclerotic basal cell carcinoma on forehead showing depressed white plaque.



Fig 38.11 Pigmented basal cell carcinoma showing pigmentation of lesion.



not has LN metz due to dead tissue...

aggressive بيكون SCC في ماجولين

sq: cell changes في بيرلز

if it due to long standing ulcer [Bad prognosis]

Gas venous or trophic ulcer or osteomyelitis...

[↑depth → more serious] reach the sub Cutaneous fat or hypo dermis...

* most of upper lip cancer is BCC...
* most of lower lip cancer is SCC...
  ↳ more aggressive...

Squamous Cell Carcinoma





Invasive SCC





Erythematous nodule

Indurated lesion

Sun-exposed skin

Men > women

Slow growth

Invasive SCC







SCC is locally invasive and destructive

Metastases in 1-3% of cases → to LN - lung

To lymph nodes 50-73%

survival except the marjolins ulcer...

Distant sites (lungs)

Incurable


SCC
Actinic Cheilitis [pre cancerous lesion]
become SCC

BCC ← Differential diagnosis- SCC



Squamous cell carcinoma





Basal cell carcinoma



Squamous Cell Carcinoma

Table 2: Indicators of Metastatic Potential	
Size > 2cm	Poorly differentiated (Broders 3 or 4)
Thickness > 2mm	Perineural invasion.
Invasion of Reticular Dermis or Subcutaneous Tissue	Immunosuppression
Invasion of muscle, bone, or cartilage	Marjolin's Ulcer
Anatomic site: digit, Ear, lip,	Locally recurrent

mucocutaneous junction

or perianal area...

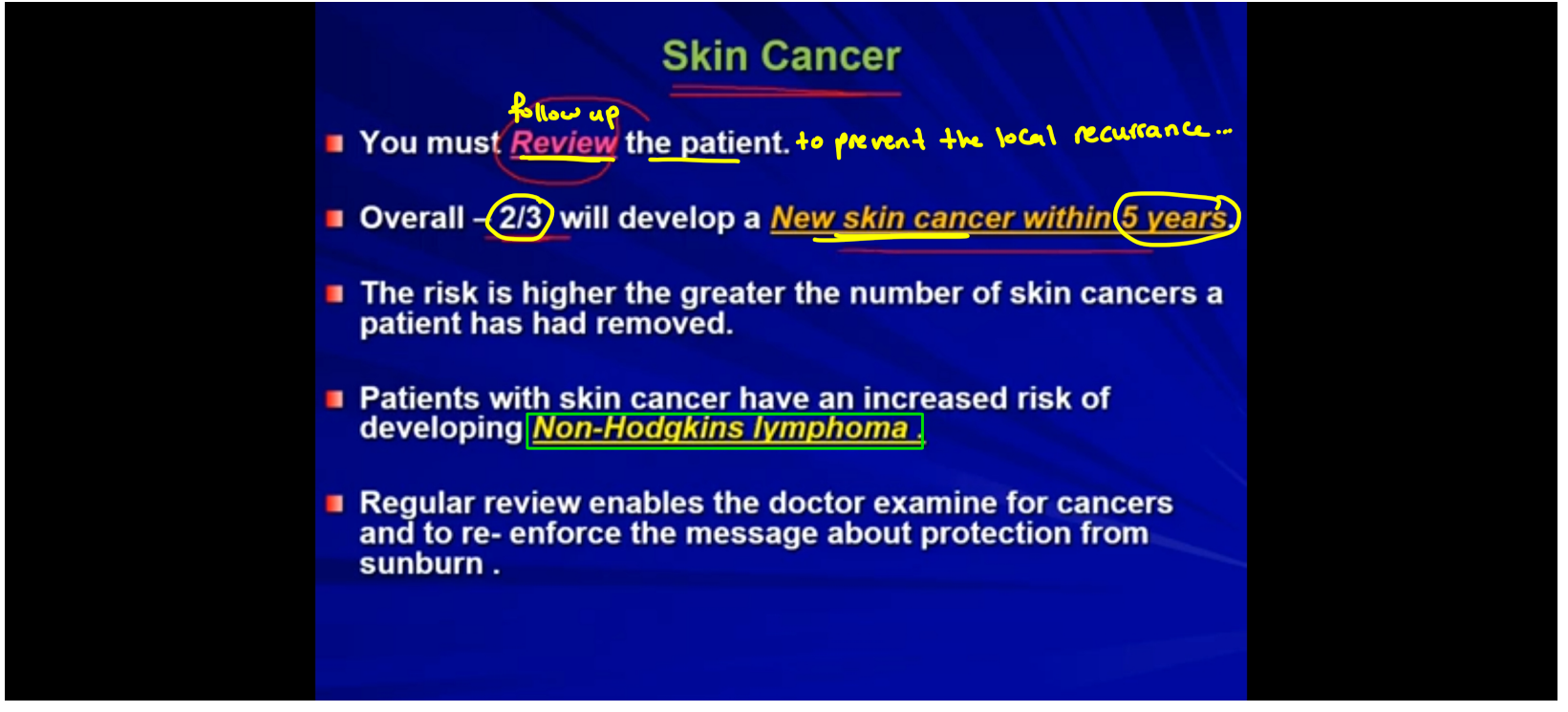
Merkel cell carcinoma

from merkel cell [Basal tumor]
Biopsy تشخيص نهائي

very rare.

- Arise from Mechanoreceptors in Basal layers of epidermis
- Head and neck most common site.
- Aggressive tumor.
- Metastasis to lymph nodes in 20% at presentation.

40 % will develop dis metz, and die from their tumor. [1/3 pt die]


Skin Cancer
follow up
You must Review the patient. to prevent the local recurrance...
Overall – 2/3 will develop a New skin cancer within 5 years.
The risk is higher the greater the number of skin cancers a patient has had removed.
Patients with skin cancer have an increased risk of developing Non-Hodgkins lymphoma .
Regular review enables the doctor examine for cancers and to re- enforce the message about protection from sunburn .

You must review your patients



A Recurrent Skin Cancer

Malignant melanoma [common + Bad tumor]...

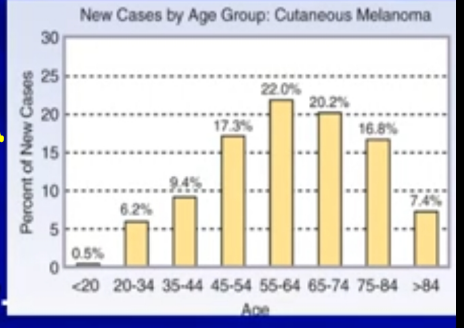
- The incidence increased over last 4 decades. (last 40 years) due to UVR
- 5TH cancer in men 1 in 74 in US will develop M.
- 90% are Cutaneous. (in the skin)
- 5 % of Malignant Skin Cancer.
- 20 time more common in whites.
  ... UV ... has weak melanin
- MC site in men is Back and Trunk
- MC site in female is LL.



* 10% (very Bad [fatal]) are not Cautanous but presented in the:- eyes- ocular- Anal region- Valva...

Malignant melanoma

- 40 % arise from Benign nevus. (Benign proliferation of melanocyte - or denovo, especially the junctional type..)
- 60 % are present above 60y.
- 1% less than 20 y, 3-5% have another primary. (has 2 MM)
- 10% are familial.
- 4% metastasis no primary. (called occult MM)
- 5-10% are Non-Pigmented. (melanin is absent)..



* Types of nevi:-
- junctional..
- compound..
- intradermal..
mature subset

Common features of melanoma

- A Asymmetry
- B Border irregularity
- C Color changes
- D Diameter > 6 mm
- E Evolving
  - Enlarge
  - Itch
  - Ooze
  - Elevation





Histo لعمل استئصال وعمل Study → ممكن يعيد نترة lesion mete ...

recent change in the skin tag...

تنز

ulcer ادما

Melanoma

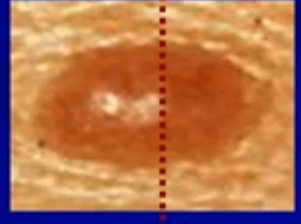
- When you see a pigmented lesion
- Draw a line down the middle
- If one half does not look like the other half -
- TAKE A BIOPSY



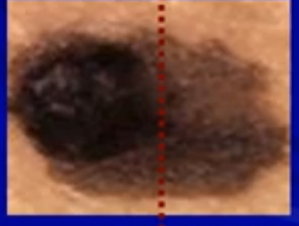
It is Asymmetrical

ABCDEs of Melanoma Screening

"A" = ASYMMETRY



NORMAL



ABNORMAL

ABCDEs of Melanoma Screening

"B" = BORDERS



NORMAL



ABNORMAL

Border

ABCDEs of Melanoma Screening

"C" = COLORS



ABcDEs of Melanoma Screening

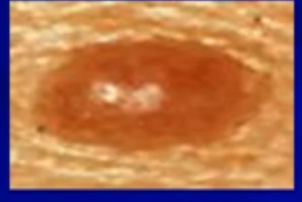
"D" = DIAMETER



ABcDEs of Melanoma Screening

"E" = Elevation

ooze
elevation
itching
enlargement



NORMAL



ABNORMAL

Raised Area

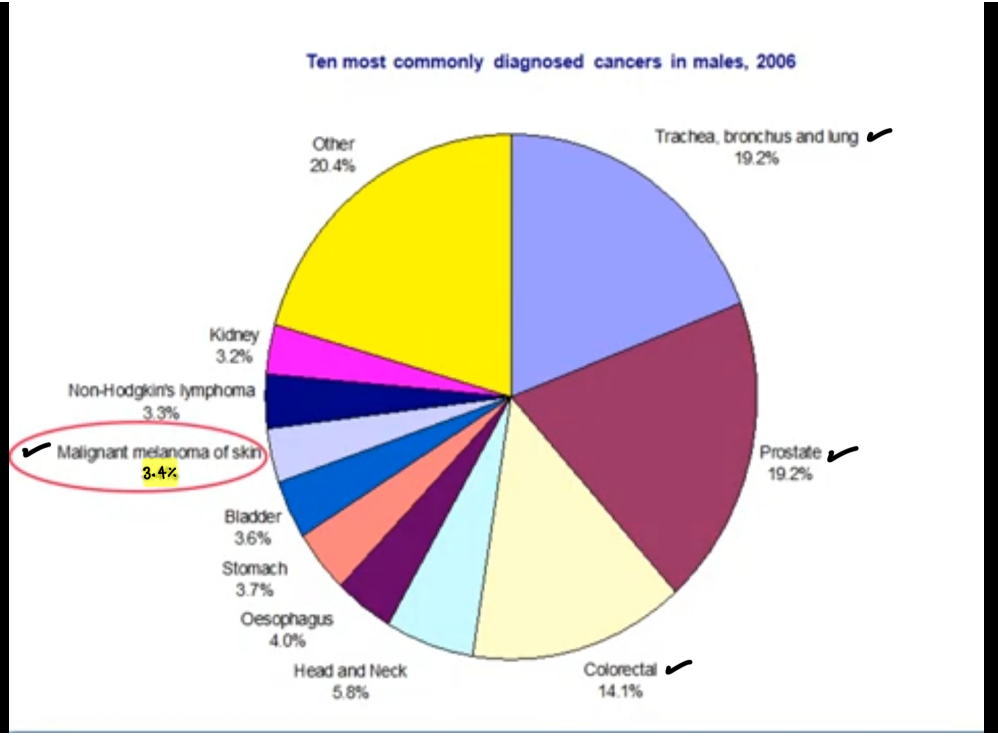
Flat Area

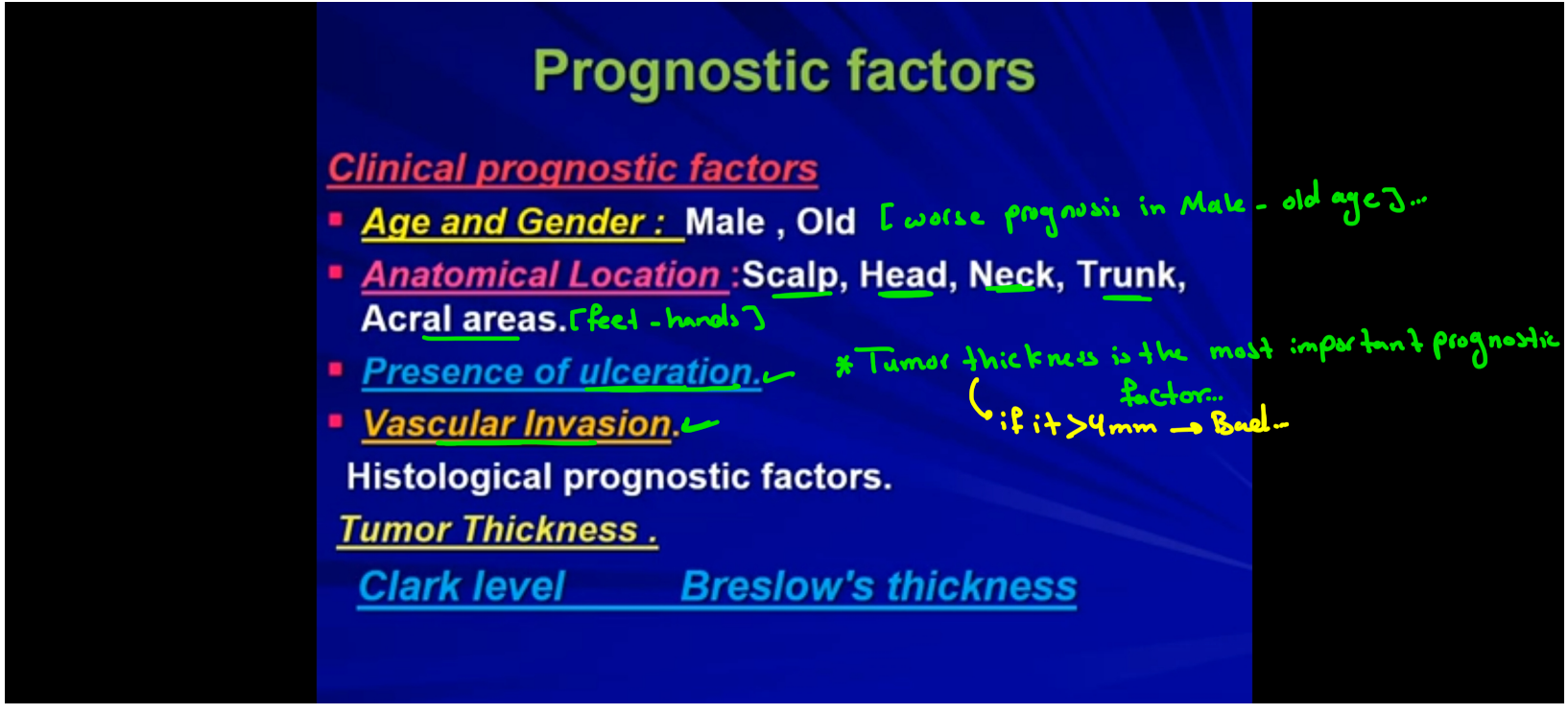
Melanoma with ulcer has worse Prognosis

- This melanoma is thick – at the inferior end
- It is ulcerated
- Thickness and Ulceration are the two most important prognostic factors




Melanoma


Ten most commonly diagnosed cancers in males, 2006
Other
20.4%
Trachea, bronchus and lung
19.2%
Kidney
3.2%
Non-Hodgkin's lymphoma
3.3%
Malignant melanoma of skin
3.4%
Prostate
19.2%
Bladder
3.6%
Stomach
3.7%
Oesophagus
4.0%
Head and Neck
5.8%
Colorectal
14.1%


Prognostic factors
Clinical prognostic factors
Age and Gender : Male , Old
Anatomical Location :Scalp, Head, Neck, Trunk, Acral areas.
Presence of ulceration.
Vascular Invasion.
Histological prognostic factors.
Tumor Thickness .
Clark level
Breslow's thickness
[worse prognosis in Male - old age]...
* Tumor thickness is the most important prognostic factor...
if it >4mm → Bad...

Melanoma

- Prognostic factors (a worse prognosis)

- Thickness must important
- Ulceration
- Male sex

- Site: Ear, Palms, Soles
- Old age
- Level IV in thin melanomas
  - thickness >4mm...

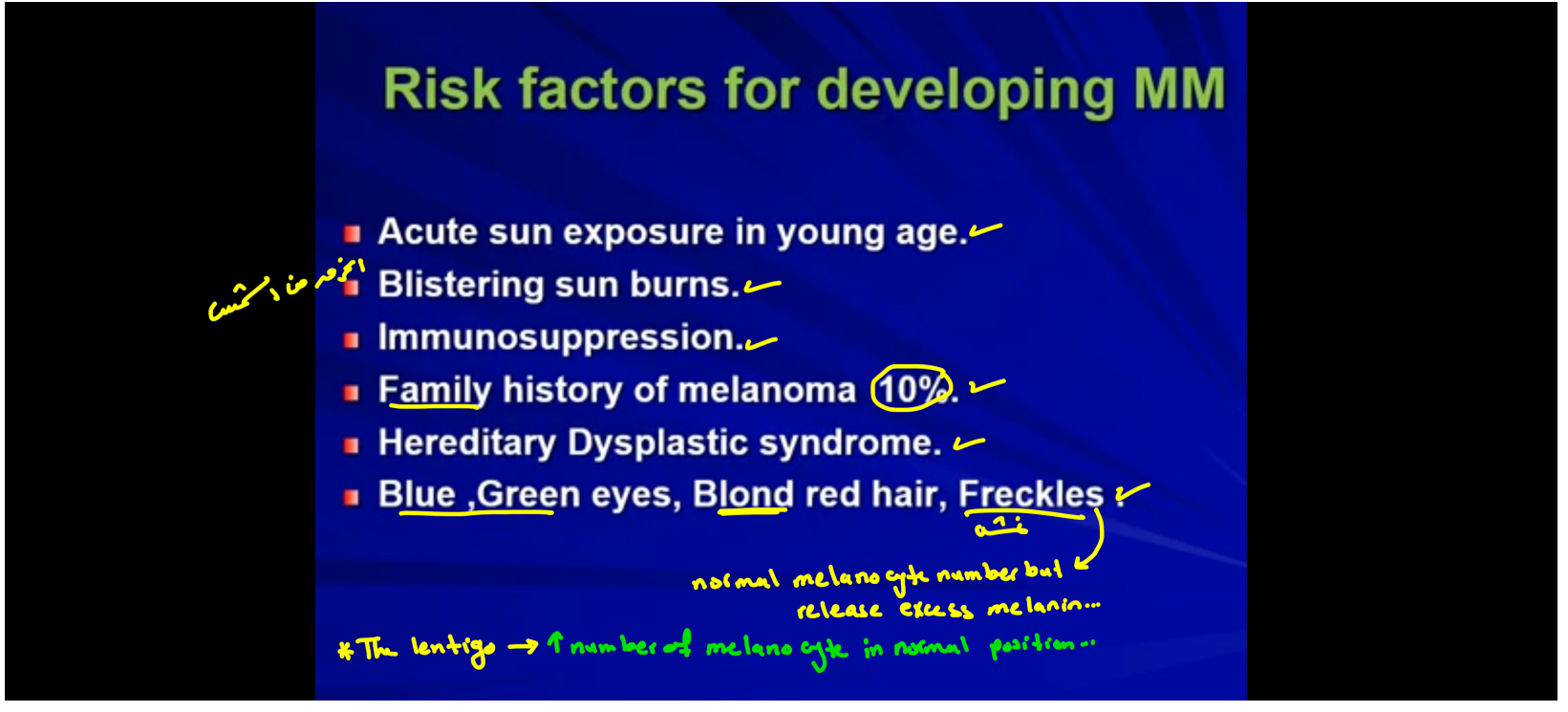


حتى تشوف لما عندها بشكل أوضح..

Dermatoscope






Risk factors for developing MM
Acute sun exposure in young age.
Blistering sun burns.
Immunosuppression.
Family history of melanoma 10%.
Hereditary Dysplastic syndrome.
Blue ,Green eyes, Blond red hair, Freckles
normal melanocyte number but release excess melanin..
#The lentigo → ↑ number of melanocyte in normal position..

Clark's Staging

Level	Description
I	Lesions only involve epidermis
II	Invasion of papillary dermis, has not reached papillary-reticular dermal interface
III	Invasion fills and expands papillary dermis, but reticular dermis is not penetrated
IV	Reticular dermis penetrated, but subcutaneous tissue is not
V	Subcutaneous tissue invaded via reticular dermis

[epi & junction ↓, inc]

fat

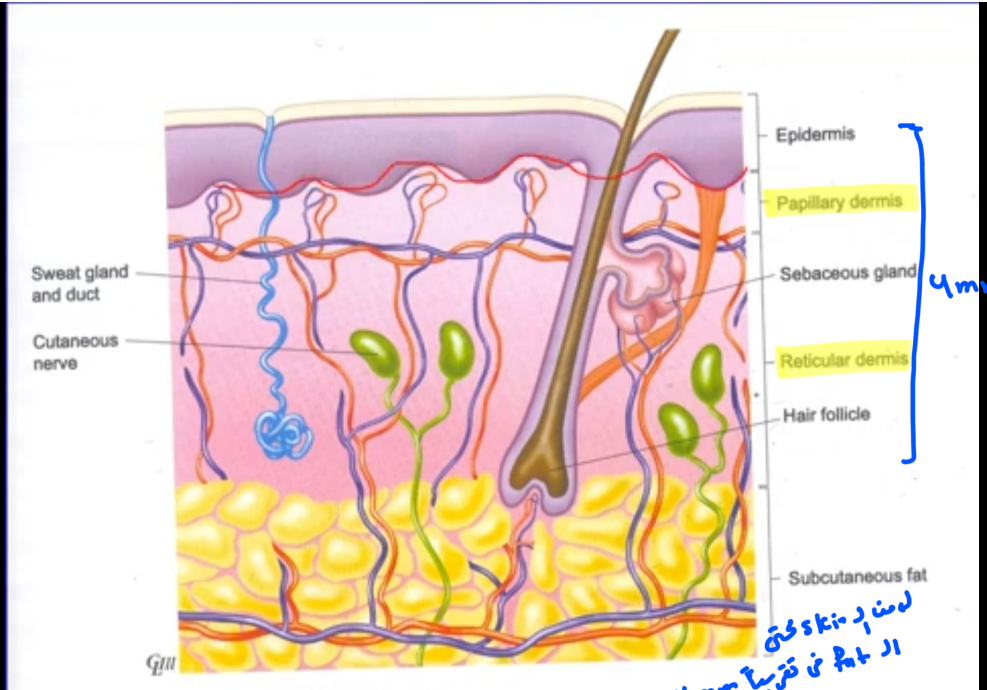
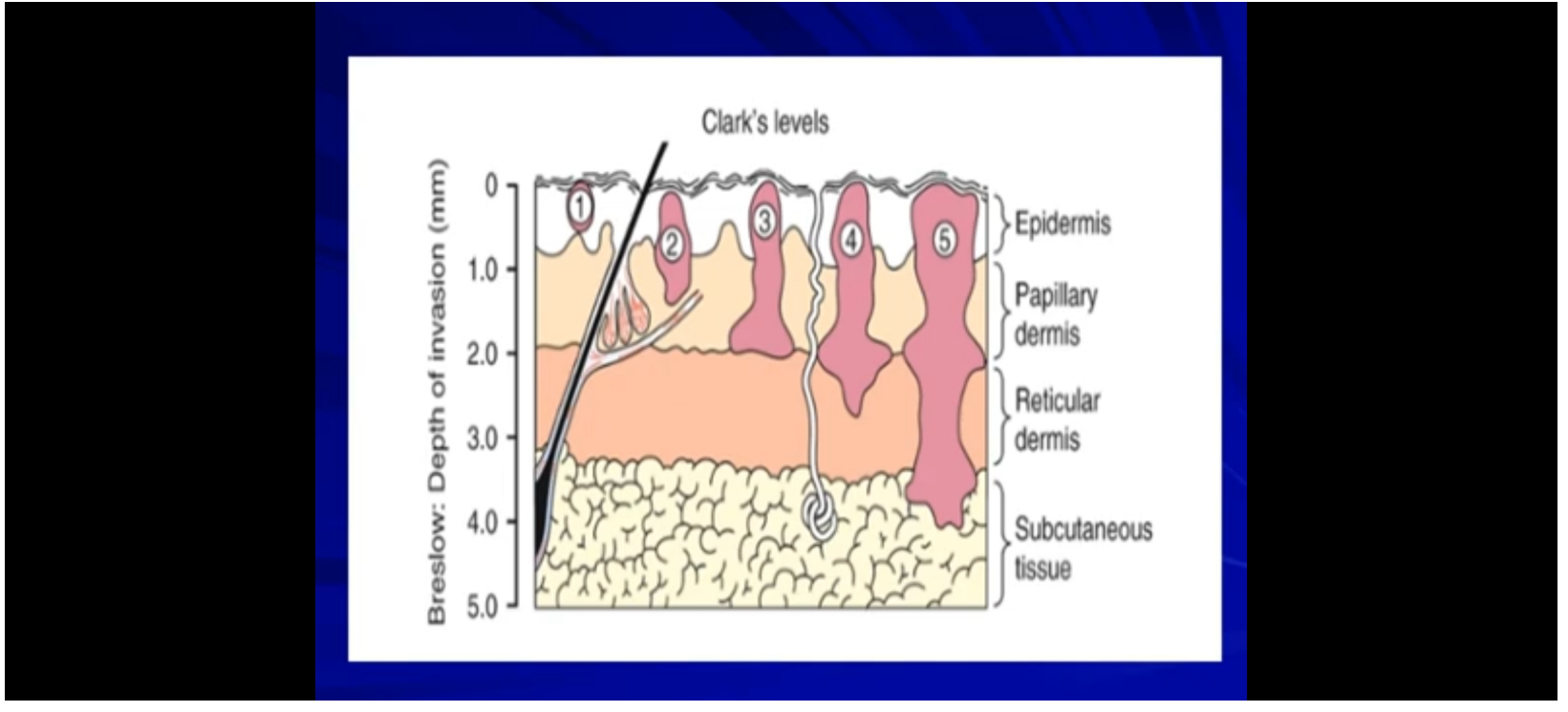
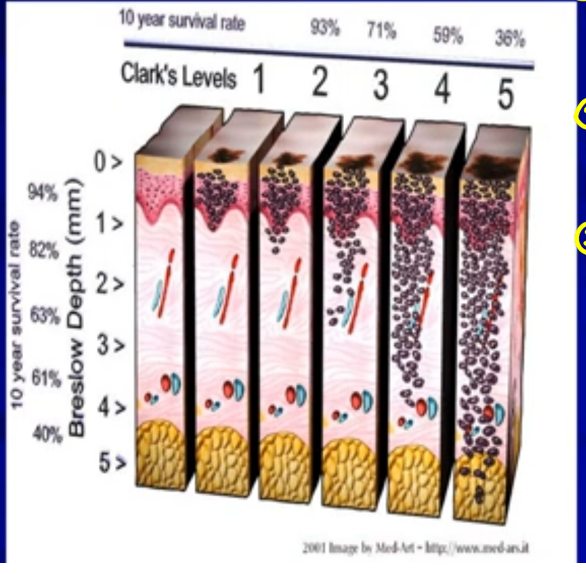


Fig 38.2 Structure of normal skin.

لحد ما skin وحتى ال fat في تقريباً 4mm...


Clark's levels
Breslow: Depth of invasion (mm)
0
1.0
2.0
3.0
4.0
5.0
1
2
3
4
5
Epidermis
Papillary dermis
Reticular dermis
Subcutaneous tissue

Prognostic features- MM



1. Good prognosis
   - Breslow's < 1mm
   - Clark level I-III
2. Intermediate prognosis
   - Breslow's 1-4mm
3. Bad prognosis fatal
   - Breslow's > 4mm
   - Clark level IV-V
   - Angiolymphatic invasion
   - Ulceration

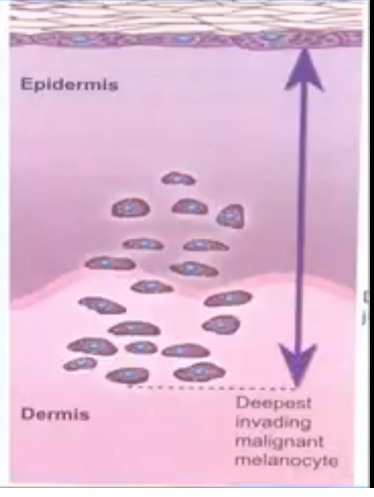
Histological classification of M M

- **Clark's classification** **Breslow's thickness**

Table 38.2
Clark's classification of levels of malignant melanoma

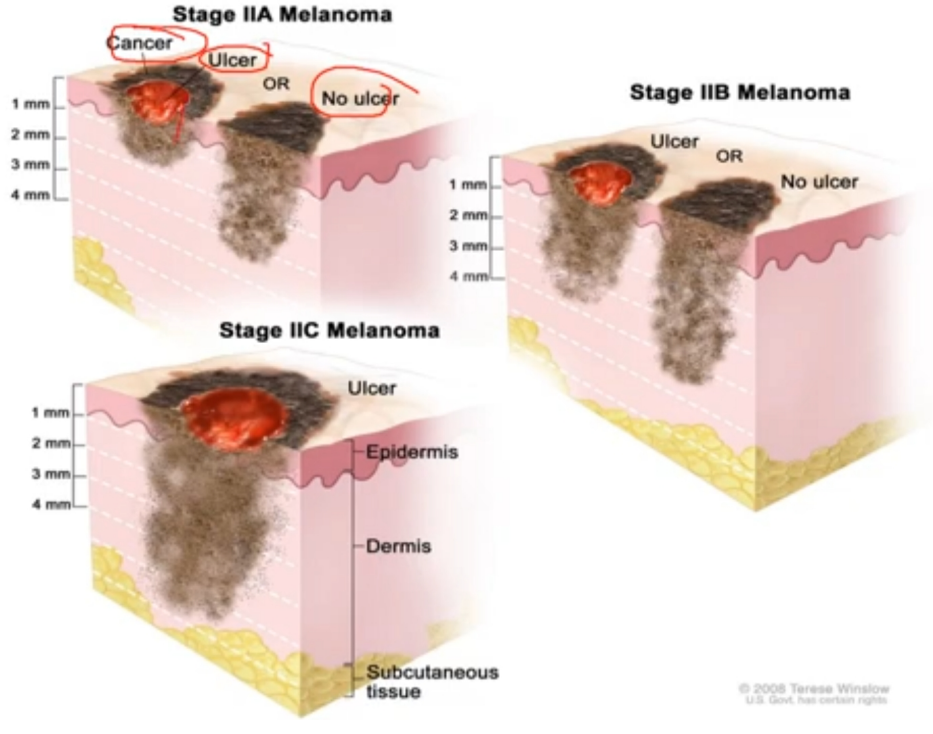
Level I	Lesion confined to epidermis (melanoma in-situ)
Level II	Invasion into upper (papillary) dermis
Level III	Occupation and expansion of papillary dermis by melanoma cells
Level IV	Invasion into deeper (reticular) dermis
Level V	Invasion into subcutaneous fat

Five years survival figures fall steadily with deeper layers.

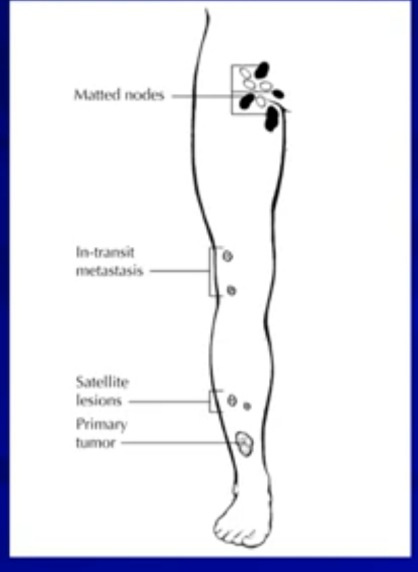


Breslow Thickness	5-year survival
< 1 mm	95-100%
1-2 mm	80-96%
2.1-4 mm	60-75 %
> 4 mm	37-50%

* ↑depth of the tumor → worst prognosis..


Stage IIA Melanoma
Cancer
Ulcer
OR
No ulcer
1 mm
2 mm
3 mm
4 mm
Stage IIB Melanoma
Ulcer
OR
No ulcer
1 mm
2 mm
3 mm
4 mm
Stage IIC Melanoma
Ulcer
1 mm
2 mm
3 mm
4 mm
Epidermis
Dermis
Subcutaneous tissue
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Schematic of N Status

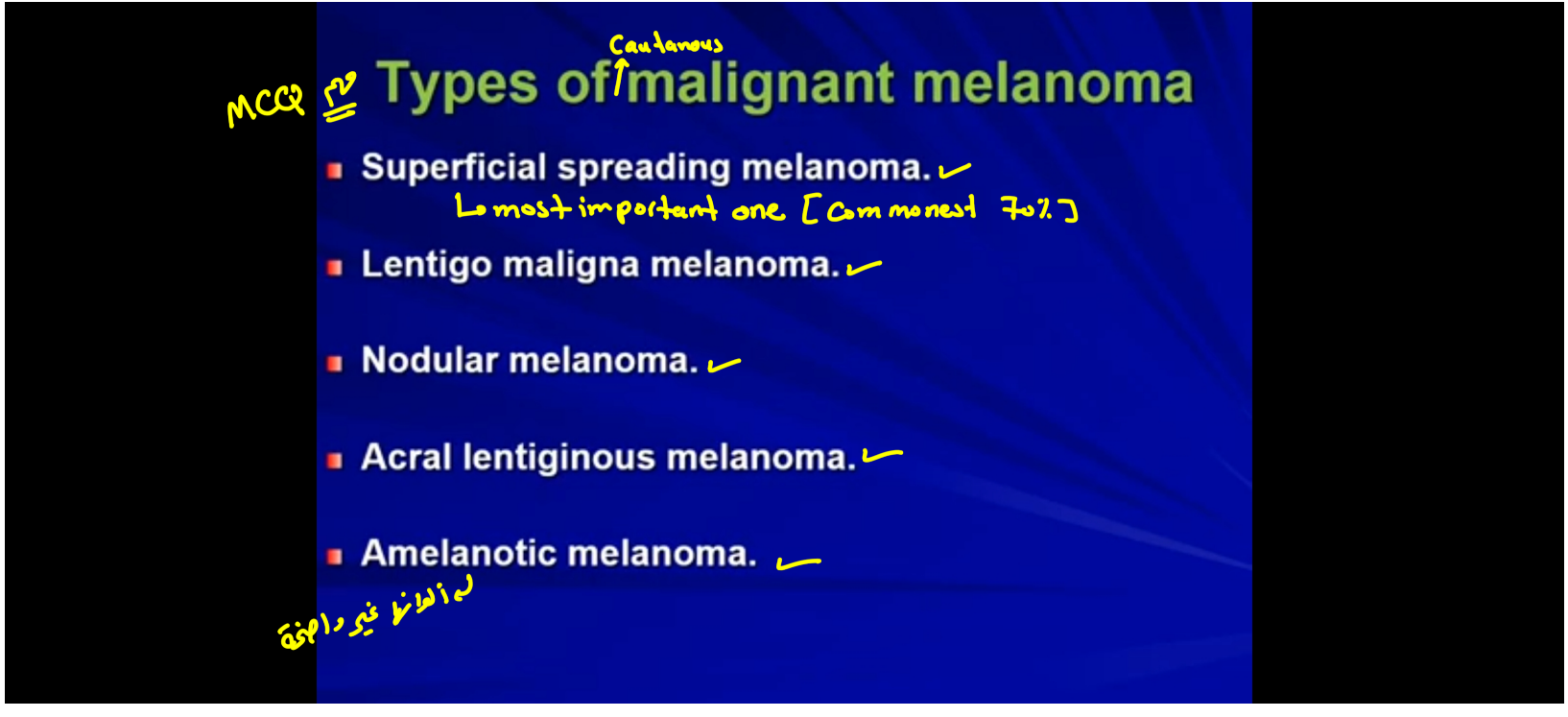


* ↑ LN involvment → worst prognosis

- **Node Numbers**
  - 1-3 vs. 4+
- **Type of Metastasis**
  - Micrometastasis → clinically -ve
  - Macrometastasis → clinically +ve
- **Satellite vs. In-transit lesions**
  - ↳ there is intracytoplasmic [intra lymphatic] metz.
  - ↓ spread from Pry tumor [> 2cm عن الـ]

يتشتت بـ Pry tumor بـ يتشتت
2cm من بتاع Pry عن بعيد


A
B


MCQ
Cutaneous
Types of malignant melanoma
Superficial spreading melanoma.
Lentigo maligna melanoma.
Nodular melanoma.
Acral lentiginous melanoma.
Amelanotic melanoma.

Superficial Spreading Melanoma

- 70% Most Common
- Horizontal Spread
- 5th Decade
- Back in Men, Legs in Women







Nodular melanoma

- 10% of MM
- *Vertical spread* [deep]
- Aggressive
- Commoner in males
- Trunk is common site
- Black, brown nodule
- Ulceration, and bleeding common
- Bad prognosis



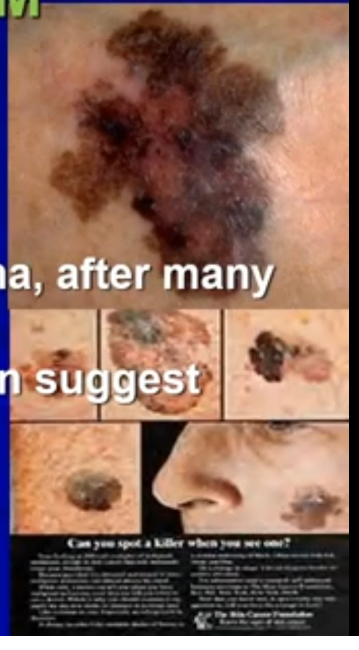



Superficial spreading M M

Types of MM

Lentigo Maligna Melanoma

- 10 % in face and head.
- Elderly patient.
- Change from Lentigo Maligna, after many years.
- Any thickening of skin lesion suggest invasion
- Good prognosis




Rapid growth
Poor differentiation melanocytes
Amelanotic melanoma
Lentigo maligna melanoma

Acral lentiginous melanoma

(hands and feet..)

- 3-5% of MM
- Palms,soles,and subungal region (تحت الظفر)
- Has flat lentigionus,and invasive element
- Commonest MM in non white (Black)
- Worst prognosis







Subungal melanoma

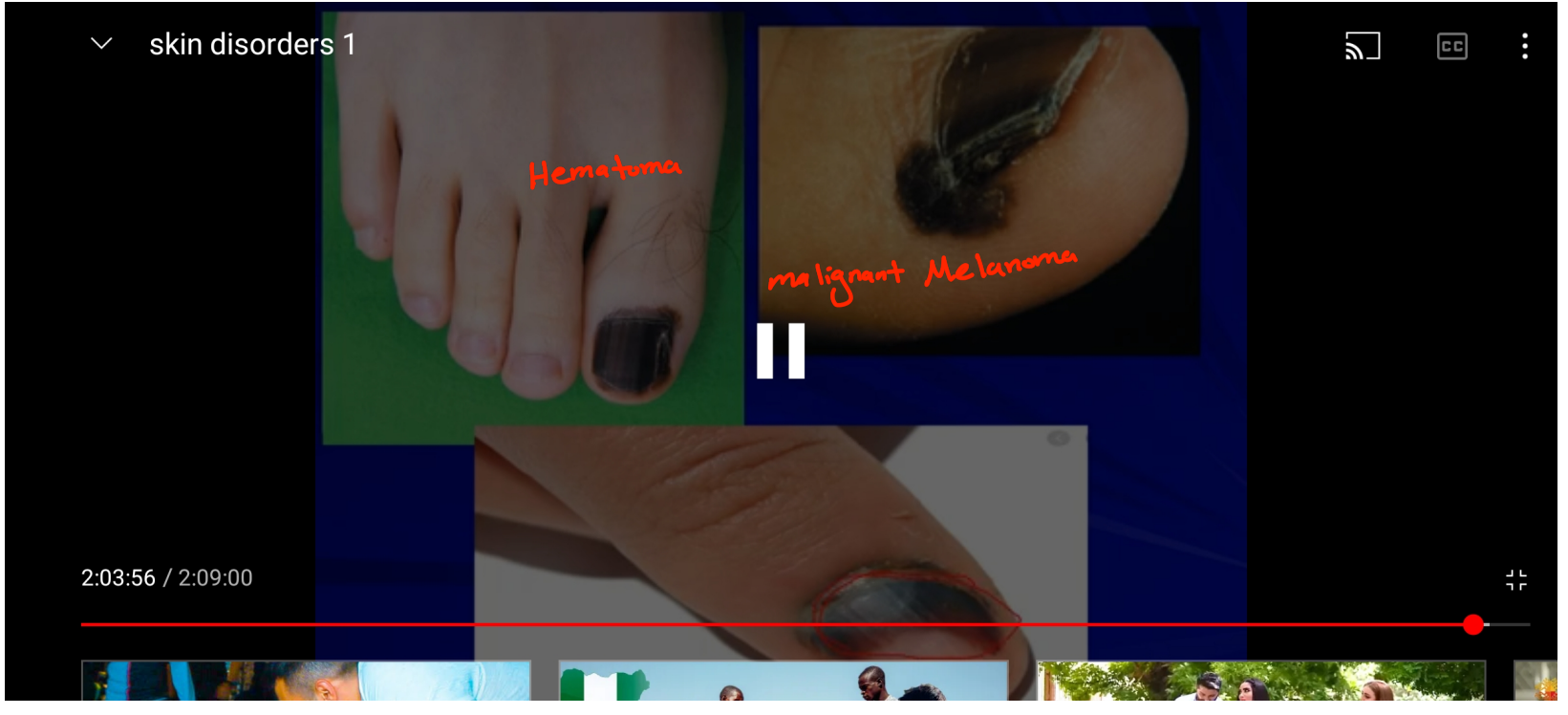


- ***Hutchinson's sign***
  Spillage of pigmentation from the nail into under and around nail

trauma in the finger lead to Blood under the finger to diff it from the MM we see the spread

لون الكدمة طالع بلاوي.. بيني MM...

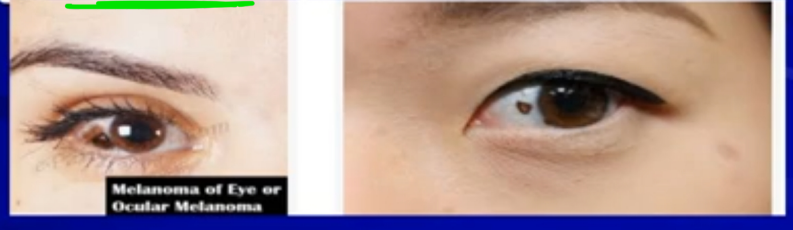
لون الكدمة بسنع وطالع بيني Hematoma...


skin disorders 1
Hematoma
malignant Melanoma
2:03:56 / 2:09:00

Non-Cutaneous Melanoma

in eye - meninges - anal canal - vulva - vagina - para nasal sinus..

- 4-5% of Melanoma are Outside skin
- Ocular: Most common cancer of eye [MM of the eye] (mc [80%])
- Mucosal: Meninges, vulva , vagina anal canal
- Paranasal sinuses.
- Aggressive bad prognosis (very Bad)



Metastatic melanoma





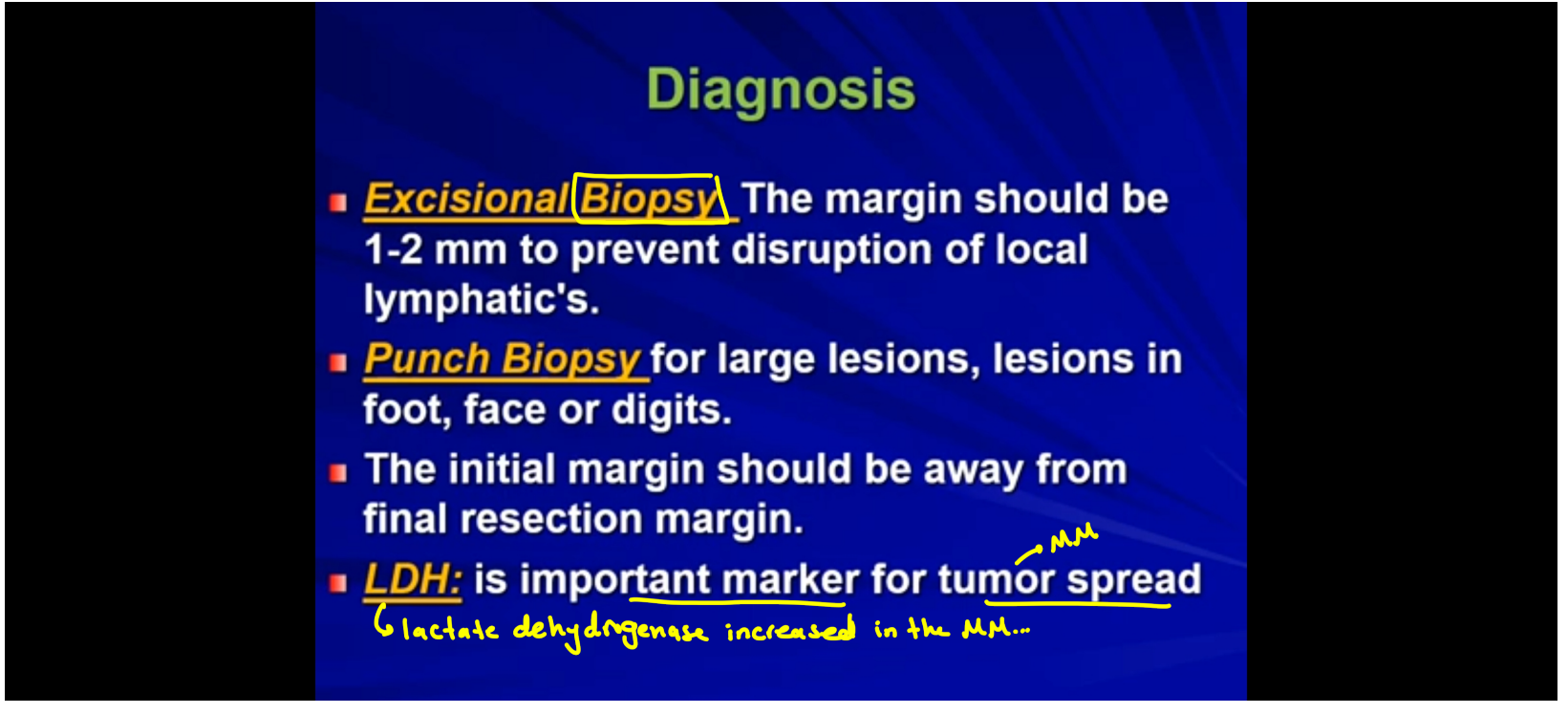
> 2cm away of lrg:- intransit disease

< 2cm away of lrg:- satelite...

Prognosis

Breslow depth	5 y survival
Less than 1 mm	95-100 %
1-2 mm	80-95 %
2-4 mm	60-75 %
More than 4 mm	50%

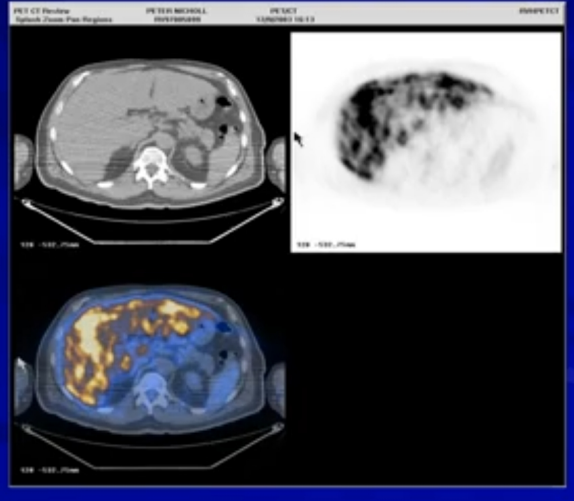
grey area.


Diagnosis
Excisional Biopsy The margin should be 1-2 mm to prevent disruption of local lymphatic's.
Punch Biopsy for large lesions, lesions in foot, face or digits.
The initial margin should be away from final resection margin.
LDH: is important marker for tumor spread
MM
lactate dehydrogenase increased in the MM...

Diagnosis

- Search for Metz in any lesion more than1mm thick.
- CBC, LFTS, LDH
- US abdomen
- Chest X-ray
- CT+CT PET abdomen,chest,pelvis

PET CT → to see if there is metastasis..



Clinical types- MM



① Superficial spreading melanoma
mc [70%]



② Lentigo maligna mela 10%



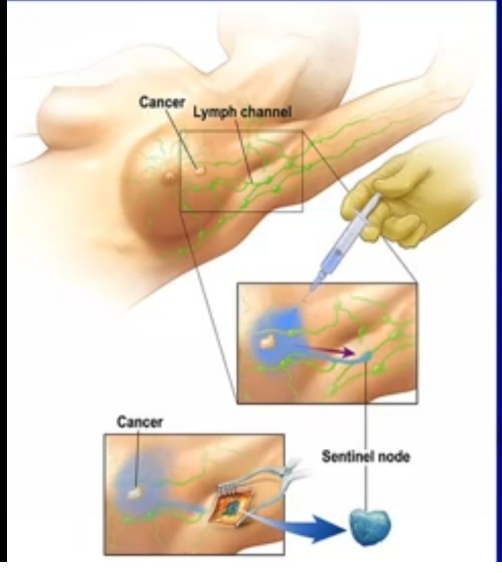
③ Acral lentiginous melanoma 5%



④ Nodular melanoma 15%

Sentinel lymph node biopsy- MM

Go to see if the LN tumor-me to excision if or not



Recommended for MM with Breslow's 1-4 mm

Lymphadenectomy for positive nodes

Powerful prognostic feature for disseminated disease

It does not affect survival of patients

