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ACRRM - Diploma Primary Skin Cancer Management

SKIN CANCER 101: AN APPROACH TO PRIMARY CARE SKIN CANCER – ASSESSMENT/MANAGEMENT

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Conflicts of Interest

- I have no industry affiliations.

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Is it Cancer? - Quiz

1)



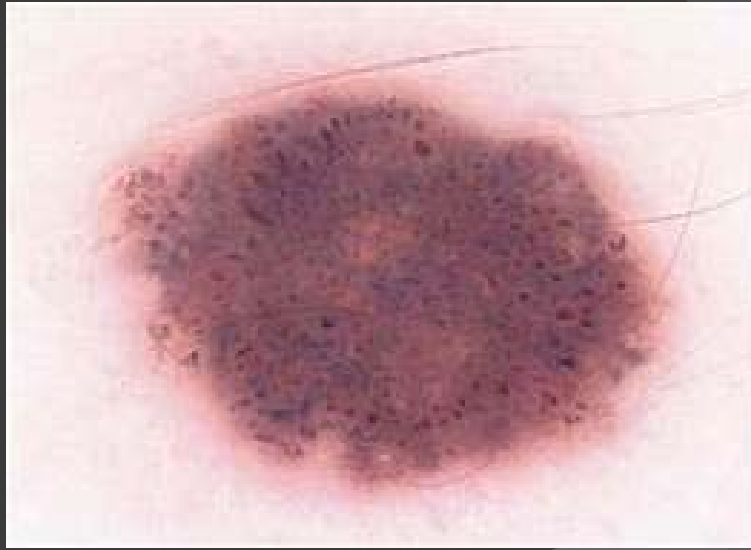
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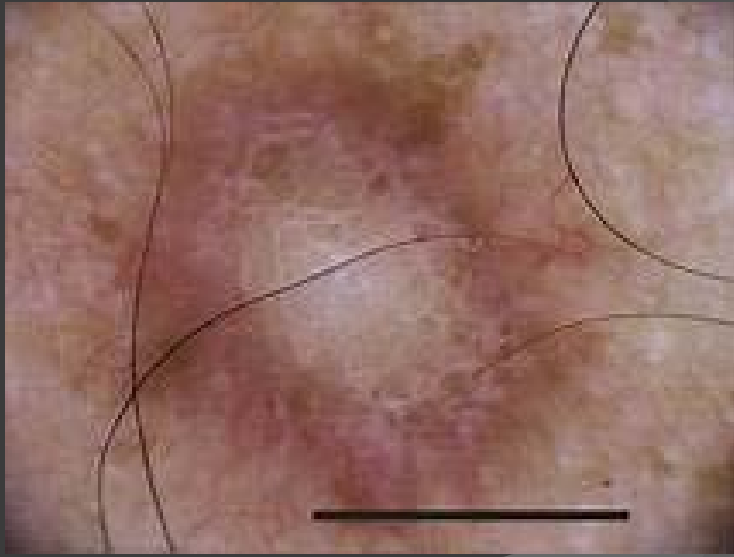
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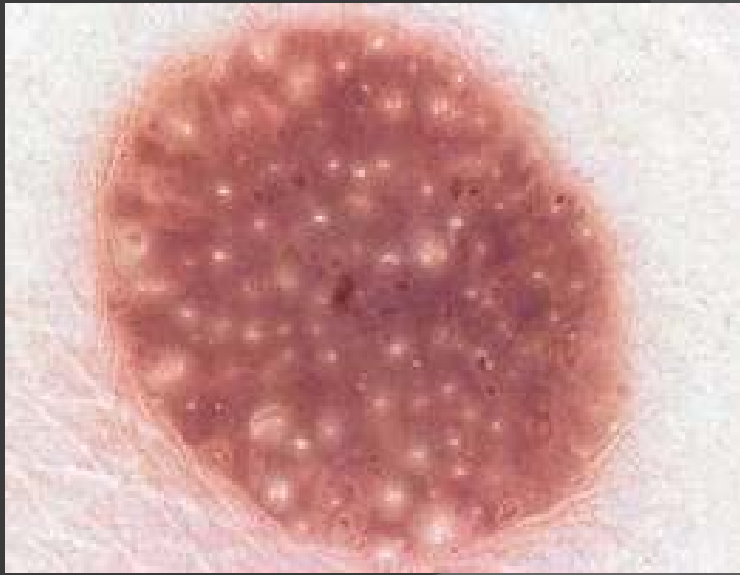
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What's the cost?

Skin Cancer Cases and Deaths in Canada Estimated Actual (2004) and Projected (2031) Base Scenario Involving Low Annual Percent Change in Incidence Rates				
	2004		2031	
	Cases	Deaths	Cases	Deaths
Melanoma	4,755	745	9,070	1,644
Non-melanoma skin cancer	75,953	204	201,302	608
Basal cell carcinoma	60,587	80	157,711	237
Squamous cell carcinoma	15,366	124	43,591	371

Projected Economic Burden of Skin Cancer in 2031

Several assumptions were applied in the analysis to determine the economic burden of skin cancer in Canada, including both direct medical costs and indirect costs related to lost productivity. The results derived from the estimated cases and deaths in 2004 are summarized in the following table.

Annual Direct and Indirect Costs of Skin Cancers in Canada 2004 (in \$millions, 2004 constant dollars, undiscounted)								
Type of Cost	MM	%	BCC	%	SCC	%	Total	%
Primary care	1.76	0.4%	24.90	51.5%	6.34	15.9%	33.00	6.2%
Hospital-based day surgery	17.01	3.8%	0.91	1.9%	2.22	5.5%	20.14	3.8%
Hospital inpatient care	10.78	2.4%	0.58	1.2%	1.56	3.9%	12.92	2.4%
Total direct costs	29.55	6.7%	26.39	54.6%	10.12	25.3%	66.05	12.4%
Mortality	410.07	92.5%	18.20	37.7%	28.73	71.9%	457.00	85.9%
Morbidity	3.86	0.9%	3.74	7.7%	1.10	2.8%	8.70	1.6%
Total indirect costs	413.93	93.3%	21.94	45.4%	29.83	74.7%	465.70	87.6%
Total costs	443.48	100%	48.32	100%	39.95	100.0%	531.75	100%

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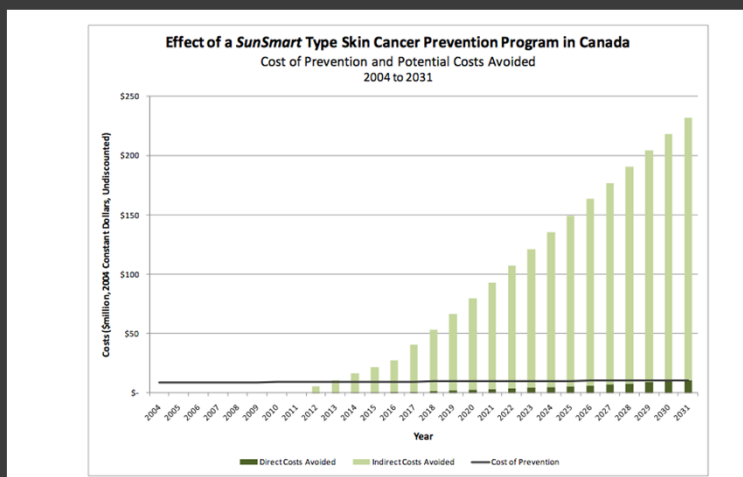
Annual Direct and Indirect Costs of Skin Cancers in Canada
Low APC Scenario
2031 (in \$millions, 2004 constant dollars, undiscounted)

Type of Cost	MM	%	BCC	%	SCC	%	Total	%
Primary care	3.35	0.5%	64.76	52.7%	17.95	17.4%	86.06	9.3%
Hospital-based day surgery	36.75	5.3%	2.35	1.9%	6.12	5.9%	45.22	4.9%
Hospital inpatient care	24.62	3.5%	1.53	1.2%	4.43	4.3%	30.58	3.3%
Total direct costs	64.72	9.3%	68.64	55.9%	28.50	27.7%	161.86	17.6%
Mortality	624.78	89.8%	45.44	37.0%	71.74	69.6%	741.96	80.5%
Morbidity	6.46	0.9%	8.73	7.1%	2.79	2.7%	17.98	2.0%
Total indirect costs	631.24	90.7%	54.17	44.1%	74.53	72.3%	759.94	82.4%
Total costs	695.96	100%	122.81	100.0%	103.03	100.0%	921.80	100%

Note: MM, malignant melanoma; BCC, basal cell carcinoma; SCC, squamous cell carcinoma.

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SunSmart Prevention Strategy



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SunSmart Strategy

- Slip on sun protective clothing that covers as much of your body as possible.
- Slop on SPF 30 or higher broad-spectrum, water-resistant sunscreen, at least 20 minutes before sun exposure. Reapply every two hours when outdoors or more often if perspiring or swimming.
- Slap on a broad-brimmed hat that shades your face, neck and ears.
- Seek shade.
- Slide on sunglasses.

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Pre-Test Probability: Who's At Risk?

6 Skin Types – spectrum of risk for sun damage

- Type I – burns all the time in the sun – highest risk for BCC/SCC/Melanoma
- Type II – burns most of the time ..., Type III..
- Ages 0-18 –skin most susceptible to damage from UV
- Familial Dysplastic Nevi Syndrome – 10-12 X higher risk of Melanoma

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Table 1: Risk Factors	
Risk Factor	Examples
Skin type	Fair skin Freckles Blonde or red hair Blue eyes
Environmental exposure	Excessive exposure to sunlight or tanning booths Tendency to burn, not tan History of severe sunburns
Preexisting skin lesions	Atypical moles (dysplastic nevi) Many benign moles
History	Personal history of melanoma Personal history of other skin cancers Family history of melanoma Immunosuppression

Source: References 8, 9.

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Type I Skin:



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Type II Skin



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Familial Dysplastic Nevus/Familial Atypical Multiple Mole Syndrome



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How To Think About Skin Cancer

Essentially two types:

1. Non-Melanoma – includes BCC, SCC (varieties thereof and other less common)
2. Melanoma (different stages ie. MIS vs Invasive/Metastatic)

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Non-Melanocytic vs Melanocytic/ Pigmented Skin Lesions

2 Step Procedure For Diagnosis

Melanocytic

Ephelis (freckle)
Lentigo (solar freckle)
Nevi (congenital/acquired..)
Melanoma

Non-Melanocytic

Seb K
Hemangioma
Dermatofibroma
BCC/SCC ...etc

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An Approach to Skin Lesions: Benign, Pre-malignant, Malignant

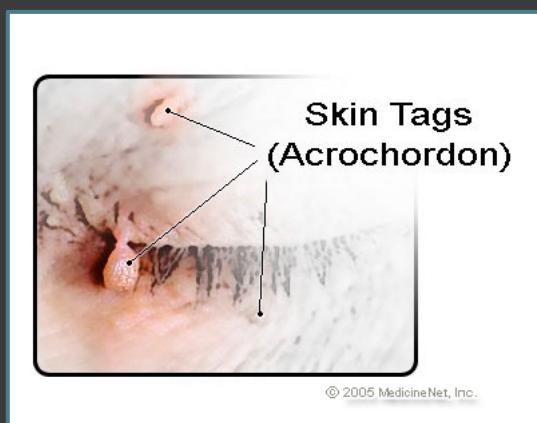
Benign

Skin tags, hemangiomas, seborrheic keratoses, sebaceous hyperplasia, congenital nevi, compound acquired nevi, junctional nevi...

- General Clinical features: if not already present, develop slowly and do not change quickly
- Can be flat or polypoid, do not bleed spontaneously, not tender to palpation
- Features under dermoscopy – architecturally organized, often with classical, typical features

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Skin Tags



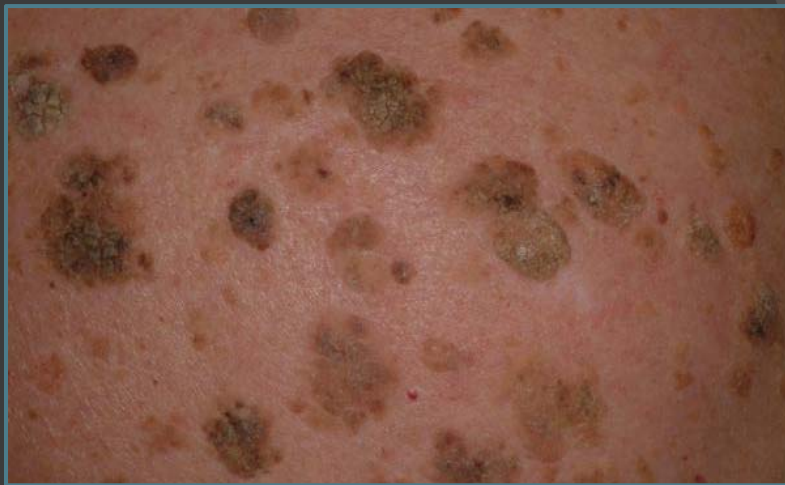
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Neck, Eyelid, Axilla...



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Seborrheic Keratosis



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Seb Ks

- Most common benign skin lesion developed with age (generally at least one by age 60)
- 'glued on' appearance
- Often confused as a possible malignant lesion
- Dermoscopic features: milia-like cysts and several comedo-like openings, gyri (brain like appearance)

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Dermoscopic Features



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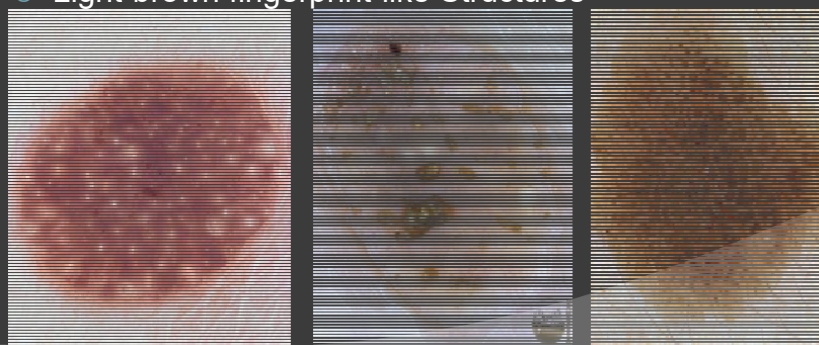
Dermoscopic Features



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Criteria for Seb K

- Multiple Milia-like Cysts (exception – seen in occasional dermal/cong. Nevi)
- Irregular Crypts (exceptions above)
- Fissures/Ridges
- Light-brown fingerprint-like Structures



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Non-Pigmented Lesions

Benign

- Dermatofibroma
- Keloids
- Sebaceous Cysts
- Lipomas
- Clear Cell Acanthomas
- Sebaceous Hyperplasia

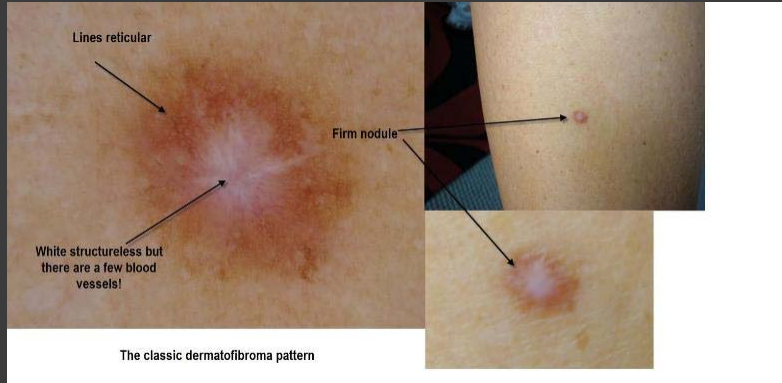
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Dermatofibroma - superficial benign fibrous histiocytoma



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Dermoscopic Features Of Dermatofibroma



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Keloid



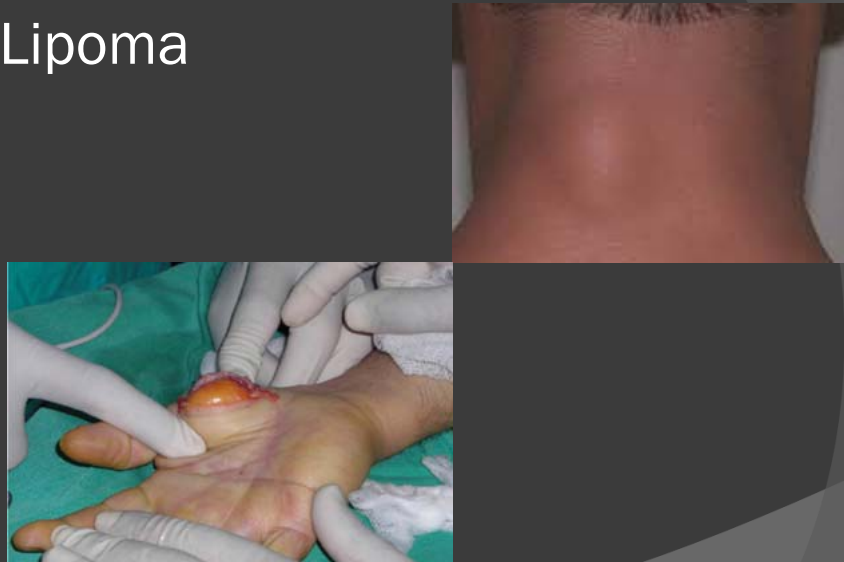
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Sebaceous Cyst



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Lipoma



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Clear Cell Acanthoma



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Sebaceous Hyperplasia



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Benign Pigmented Skin Lesions

- Congenital/ Acquired Nevi
- Junctional Nevi
- Compound Nevi
- Spitz Nevis
- Lentigo
- Hemangioma

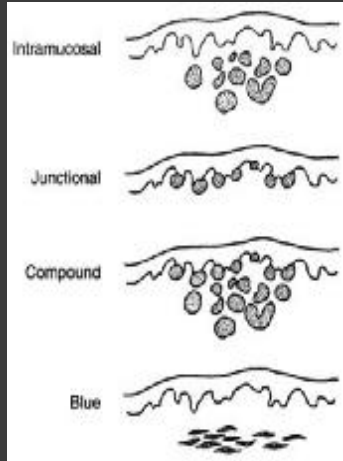
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Congenital / Acquired Nevi



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Junctional Nevi



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Compound Nevi

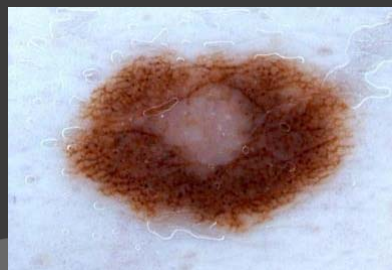


FIGURE 3: Dermaphoto (10X) of a compound melanocytic nevus. Note peripheral regular pigmented network, central homogeneous area and central black dots

Melanocytic Nevus
Junctional → Compound → Intradermal

Range in size 2-10 mm; most 3-7 mm in diameter.
Remarkably round, evenly pigmented, soft on palpation.
Occur on sun-exposed areas - **vast majority on face & neck**

Junctional Maculopapular	Compound Papule	Intradermal Nodule



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Spitz Nevus



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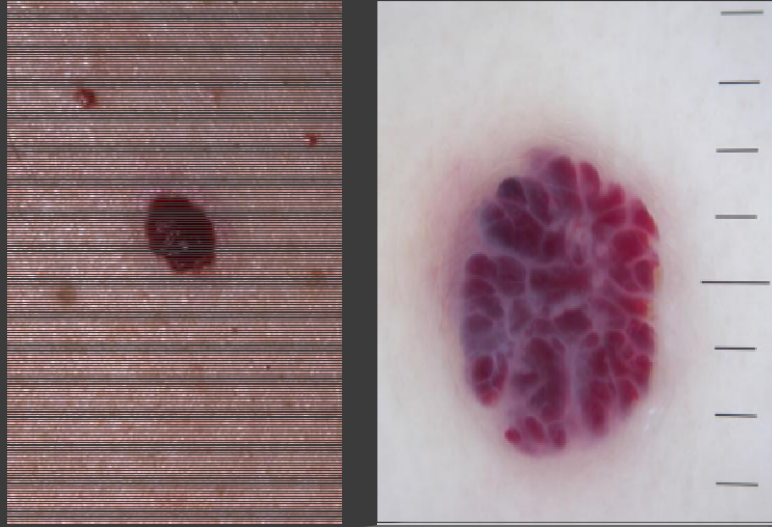
Lentigo Simplex/Senilis/Solar



©1994, Arthur C. Hunley, MD

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Hemangioma



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Pre-Malignant, Non-Pigmented

Actinic/Solar Keratoses



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Treatment

○ Localized vs Field Treatment

- Cryotherapy – 10 sec freeze/thaw, can repeat if thickened lesion
- Efudex / Actikerall (Topical 5-fluorouracil +/- Salicylic Acid) (\$70 for 40gm tube) – 2-5% solution/cream BID 2-6 weeks
- Aldara/ Zyclara (Imiquimod) \$\$(\$400 x 6 weeks) - (A) 2 x per week at bedtime x 16 weeks (8hrs), (Z) up to 2 packets / 2 pumps daily x 2 weeks on, 2 weeks off, 2 weeks on again
- Picato (ingenol mebutate) \$\$(\$400 per treatment course) - 2 strengths – Body (500mcg) x 2 days, Face (250mcg) x 3 days
- PDT – Phototherapy \$\$\$

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What does Topical 5-fluorouracil treatment look like?



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Imiquimod



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Non-Pigmented Skin Cancers

BCC

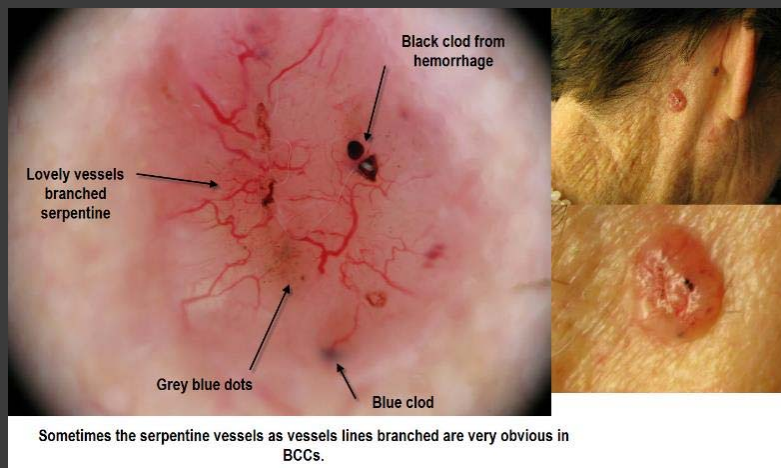
Types – Superficial / Nodular / Mosaic/
Pigmented

SCC

Types – In Situ (Bowen's), invasive

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Typical Dermoscopic Features of BCC

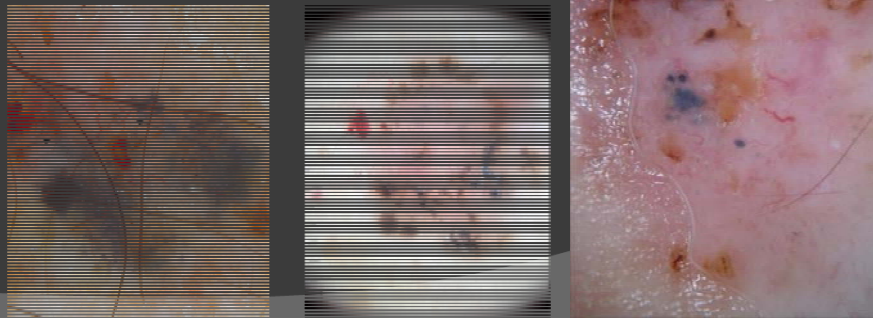


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An Exception -Pigmented BCC

Absent pigment network and one or more of:

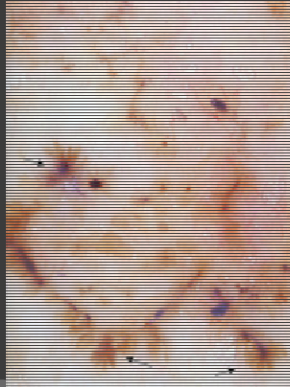
- Arborizing vessels
- Leaf-like areas
- Large blue-gray ovoid nests



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Pigmented BCC

- ◉ Spoke wheel areas
- ◉ Ulceration



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Dermoscopic Features of SCC



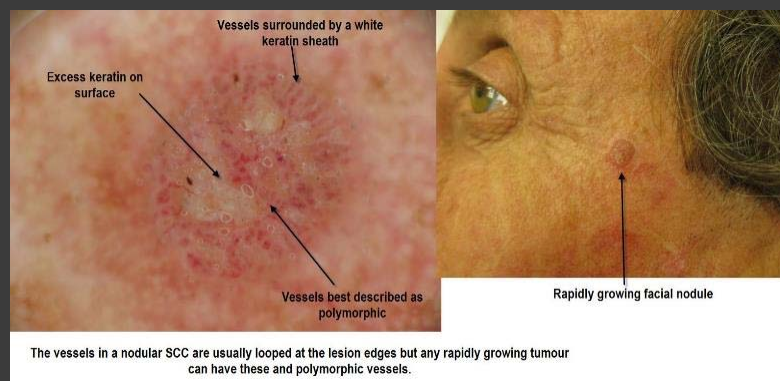
Porokeratosis



Red circles of an SCC in situ in part of a porokeratosis

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More SCC Features / Thickened Keratotic Lesion (Porokeratosis)



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Pigmented Lesions

- Know your ABCDEFs
 - A. Asymmetry – can't fold it on itself
 - B. Borders – 'moth-bitten', irregular
 - C. Colouration – multi-coloured/dark
 - D. Diameter - greater than 0.5 cm
 - E. Evolution – changing quickly
 - F. Funny-Looking - Ugly Duckling Sign

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What's The Risk?

- Up to 10 atypical moles – increases risk of melanoma – 12 x
- Atypical Moles + Family History of Melanoma – extremely high risk for melanoma
- Atypical Moles w/o Family History – up to 27% increased relative risk

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Menzies Method Reference For Pigmented Lesions

- <http://www.dermoscopy.org/consensus/2c.asp>
- Negative Features
 - Symmetry of Pattern
 - Presence of a single colour

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Negative Features

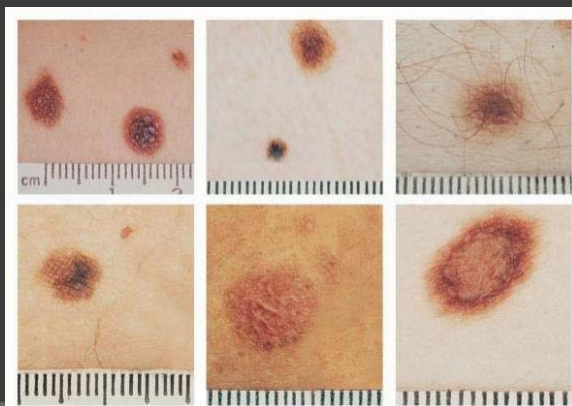
- Symmetrical pigmentation pattern
- Presence of only a single colour



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Pre-Malignant Pigmented (?)

Atypical Moles / Nevi
(formerly Dysplastic / Clark's Nevi)



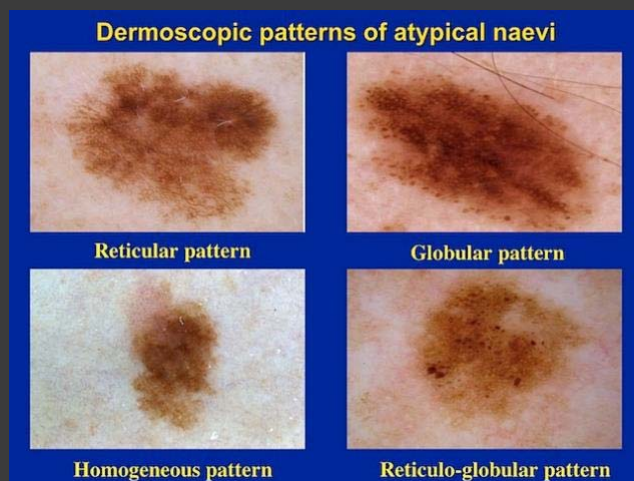
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Atypical/ Dysplastic Nevi

- **ATYPICAL MOLES** are unusual-looking benign (noncancerous) **moles**, also known as **dysplastic nevi** (the plural of “**nevus**,” or **mole**). **Atypical moles** may resemble melanoma, and people who have them are at increased risk of developing melanoma in a **mole** or elsewhere on the body.

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Dermoscopy



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Positive Features (At least one present) – req. Dermoscopy to ID

- ⦿ Blue-White Veil
- ⦿ Multiple Brown Dots
- ⦿ Pseudopods
- ⦿ Radial Streaming
- ⦿ Scar-Like Pigmentation
- ⦿ Peripheral Black Dots/ Globules
- ⦿ Multiple Colours (5-6)
- ⦿ Multiple Blue/Gray Dots
- ⦿ Broadened Network

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Positive Features

Aggregated brown/black globules



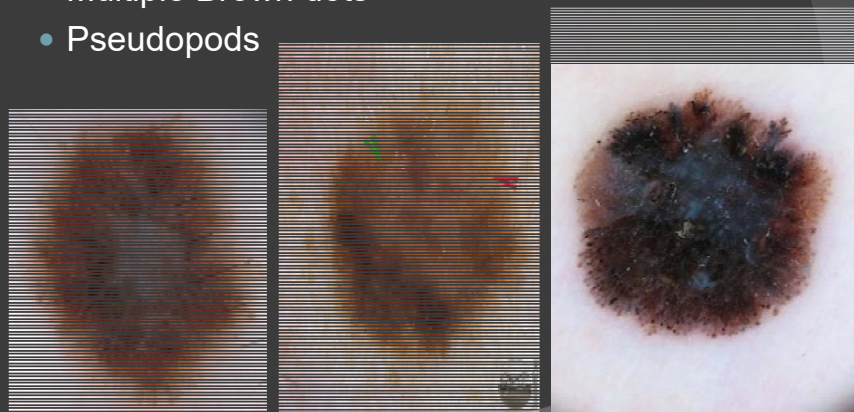
Pseudopods or radial streaming



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Positive Features

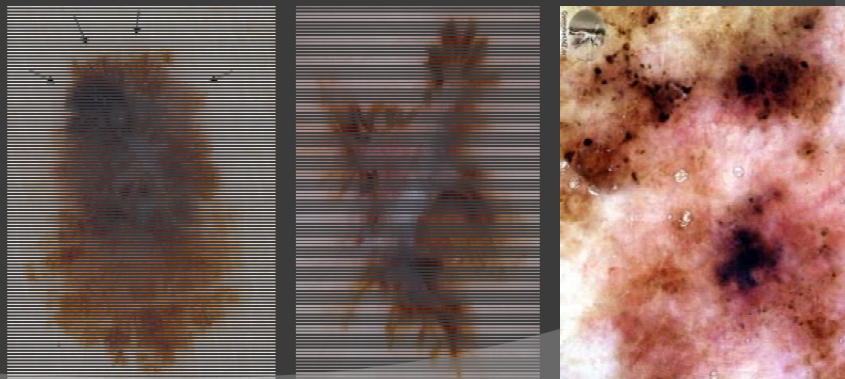
- Blue-White Veil
- Multiple Brown dots
- Pseudopods



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Positive Features

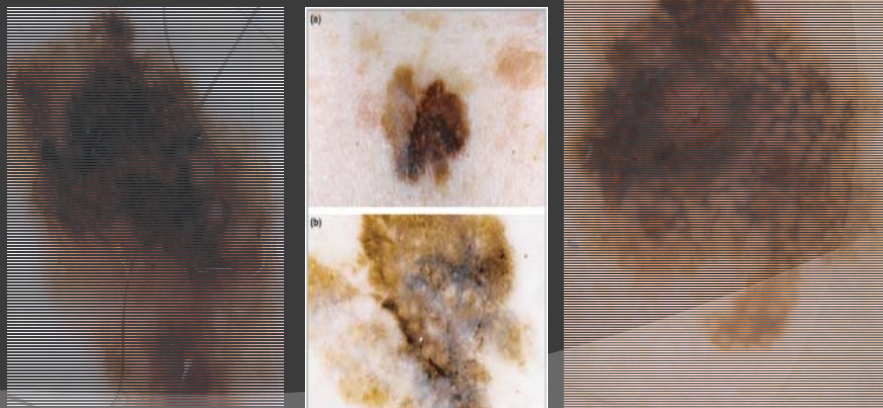
- ◉ Radial Streaming
- ◉ Scar-Like Depigmentation
- ◉ Peripheral black dots/ globules



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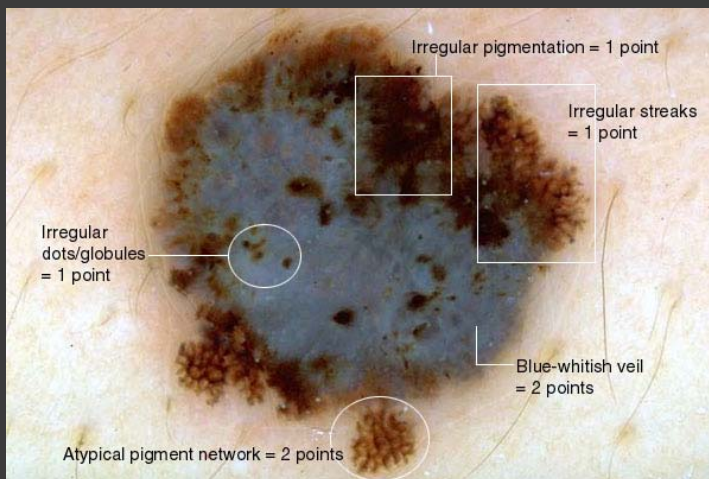
Positive Features

- ◉ Multiple Colouration (5-6)
- ◉ Multiple Blue-gray dots
- ◉ Broadened Network



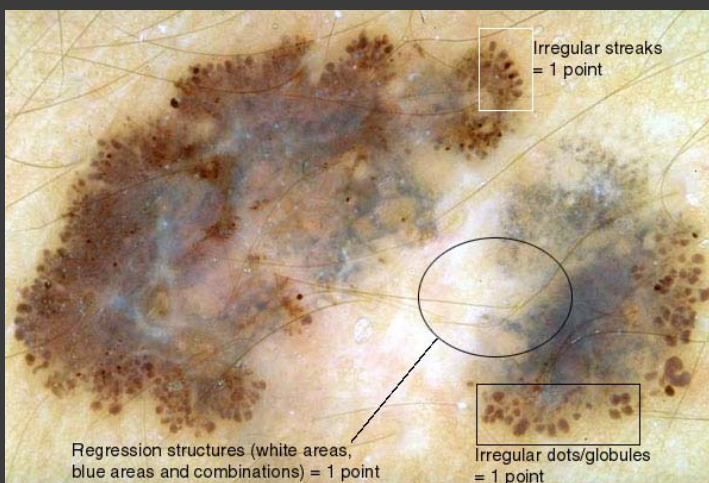
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Dermoscopic Diagnosis of Melanoma



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Dermoscopic Diagnosis of Melanoma



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Broadened/pseudo-broadened network



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On Palms / Soles – Acral Nevi/Lenitiginous Melanoma

Parallel Pattern – Furrow – Benign/ Ridge - Melanoma

Clinical Image	Dermatoscopic Image	
		<ul style="list-style-type: none"> • parallel furrow pattern (arrows) • white oval openings of eccrine glands (circle) on the surface ridge
		<ul style="list-style-type: none"> • parallel furrow pattern with foci of lattice-like pattern
		<ul style="list-style-type: none"> • parallel furrow pattern • fibrillar pattern is also present (circle)



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More Benign Acral Nevi



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Acral Lentiginous Melanoma



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Nail Melanoma vs Melanonychia

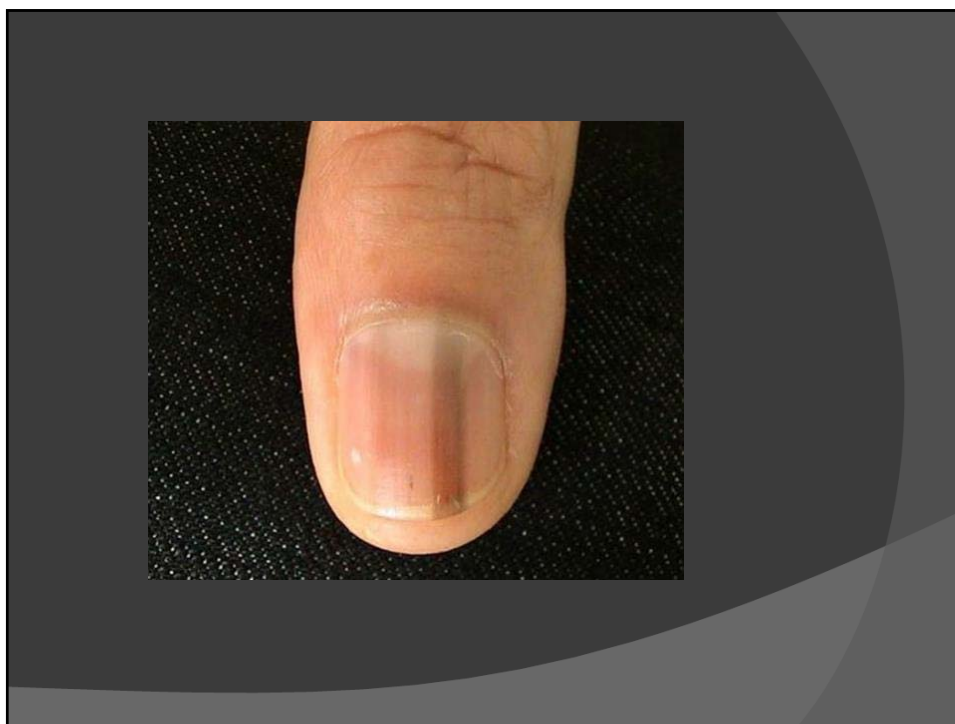


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Benign vs Malignant

- BENIGN
- Light to Dark Brown Lines or Bands that are Parallel, regular in colour and width as the band extends from the nail fold to free nail edge
- Borders should be clearly defined and width is usually $\leq 3\text{mms}$.

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Malignant (Melanoma)

- Pigmentation becomes wider at proximal end
- More irregular pigmentation (multiple tones)
- Extends to involve adjacent nail fold (Hutchinson Sign)
- May develop nodule, ulcerate or bleed
- May cause thinning, cracking, distortion of the nail plate

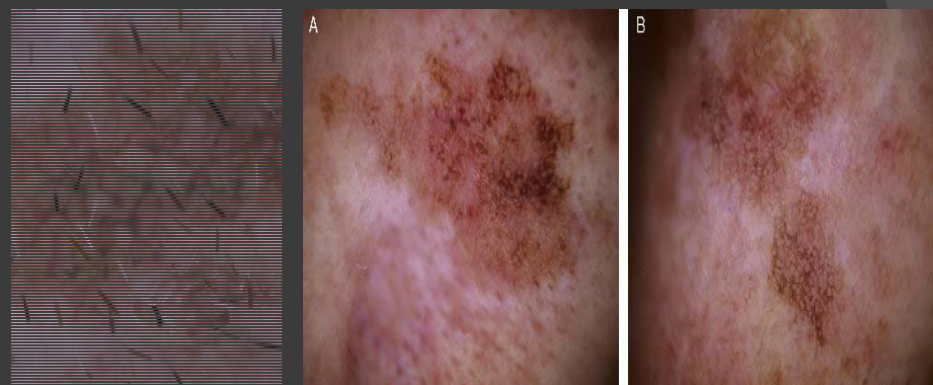
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Additional Positive Features for Lentigo Maligna

- Rhomboid Structures
- Annular Granular Pattern



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Monitoring

Short Term (3-6 months)

- Suspicious lesions that do not meet dermoscopic criteria for melanoma *, lesions with minor atypia but recent history of patient noted change
- Reasons to excise - any change other than:
 - a. Increase/decrease in milia-like cysts
 - b. Diffuse increase/decrease in pigmentation without architectural change,
 - c. Increase in size of Spitz nevi/ nevi with simple peripheral brown globules

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Monitoring Cont'd

- 84% of melanocytic lesions do not change over a 2.5-4.5 month period
- 12 % are early melanoma and these usually show none of the dermoscopic features of melanoma – only identified by changes with computer/photo monitoring
- 99.2% of lesions unchanged at 2.5-4.5 months are benign
- 94% of melanoma will change (only 75% of lentigo maligna – therefore require 6-12 month f/u)

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Long Term Monitoring (12 m)

- Photos of lesions which are confidently non-melanoma
- Features requiring excision:
 - Enlargement or shape change
 - Regression
 - Change in colour (new colours)
 - Appearance of known melanoma features

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Long Term Monitoring

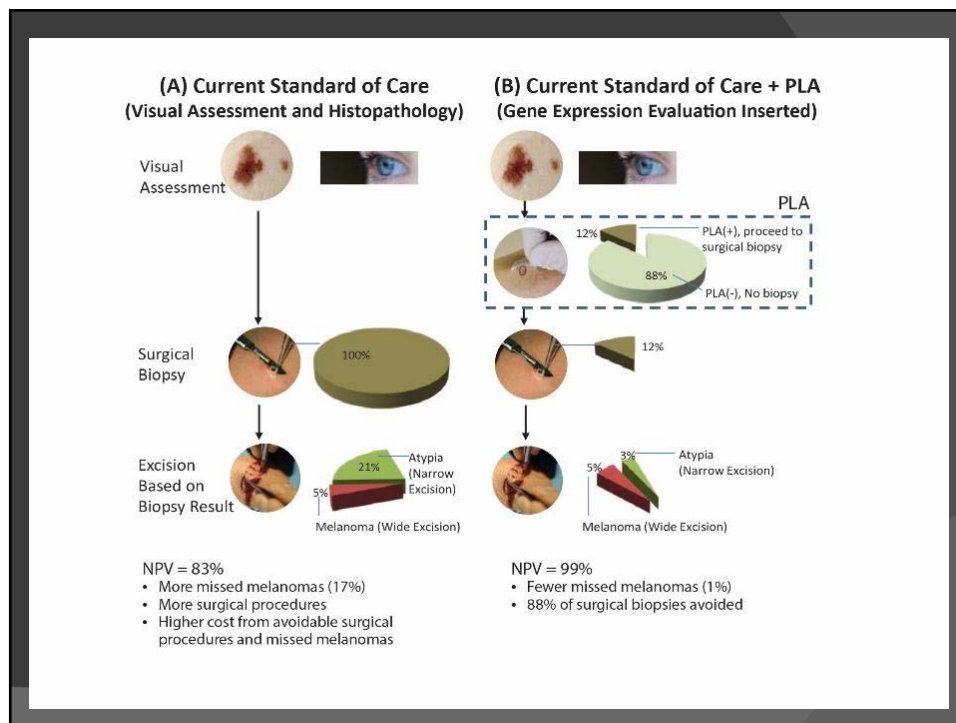
- Changes occur in approx. 4-5% of melanocytic nevi
- Features such as: broadening network, increased black dots/globules and focal increase in pigmentation – more predictive of Melanoma

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Biopsy

- Non-Pigmented
 - Curette /Cryo, Shave
 - Complete excision with margins (0.4 cm)
- Pigmented
 - Complete excisional biopsy with narrow margins for diagnosis
 - Selective Punch Biopsy
- Pigmented Lesion Assay (PLA) New Non-Invasive Gene Expression Testing – NPV – 99%! (e) only misses 1 %
- Reduces Number Needed to Biopsy to 2.7 (vs 20-25)

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TNM Staging (N-nodes/M-Mets)

(American Joint Committee on Cancer)

○ Primary Tumour

- Tx – cannot be assessed (ie) curettaged/ severely regressed / incompletely excised)
- T0 – No evidence of primary tumour
- Tis – MIS
- T1 – 1.0 mm or less in thickness
- T2 – 1.01mm- 2.0 mm
- T3 – 2.01mm – 4.0 mm
- T4 - >'er than 4.0 mm

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Newest Guidelines for Margins

- Non-Pigmented – 0.4 cms
- Pigmented
 - MIS – 0.5-1.0 cm
 - SSM /T1 – 1 cm
 - T2 and greater (ie) Thicker Melanoma spread - require sentinel node biopsy – much wider excision – typically need Plastics/ General Surgery consult

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Office1

Is it Cancer? - Quiz

1)

Seborrheic Keratosis (non-pigmented)



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2)

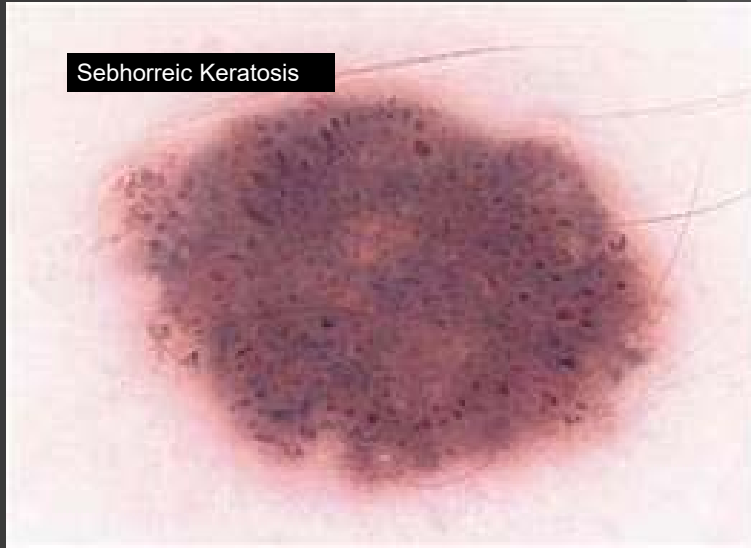
Pigmented Basal Cell Carcinoma



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3)

Seborrheic Keratosis



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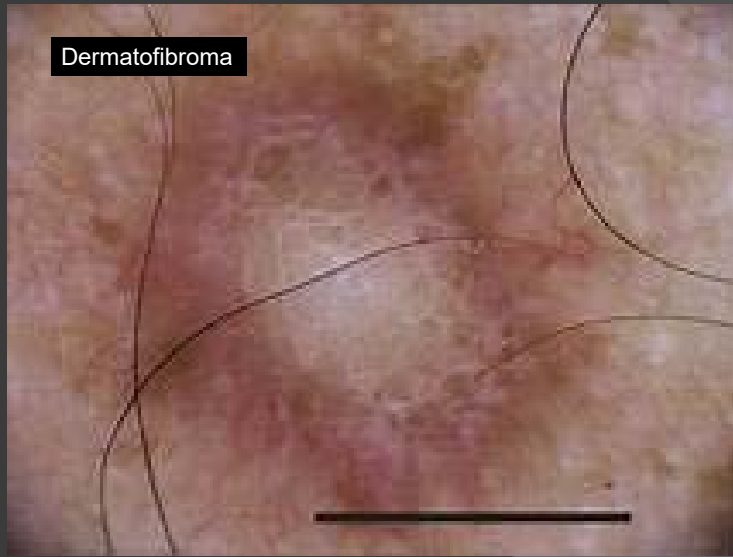
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Spitz Nevus



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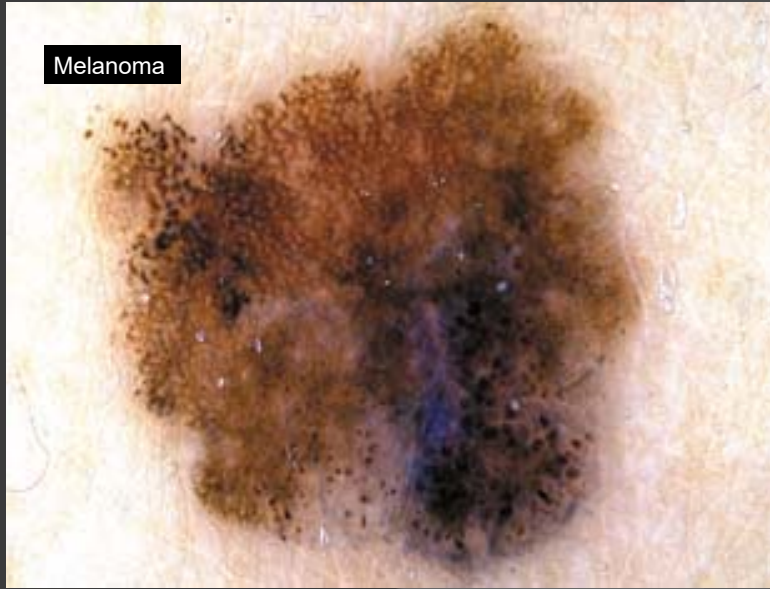
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Melanoma



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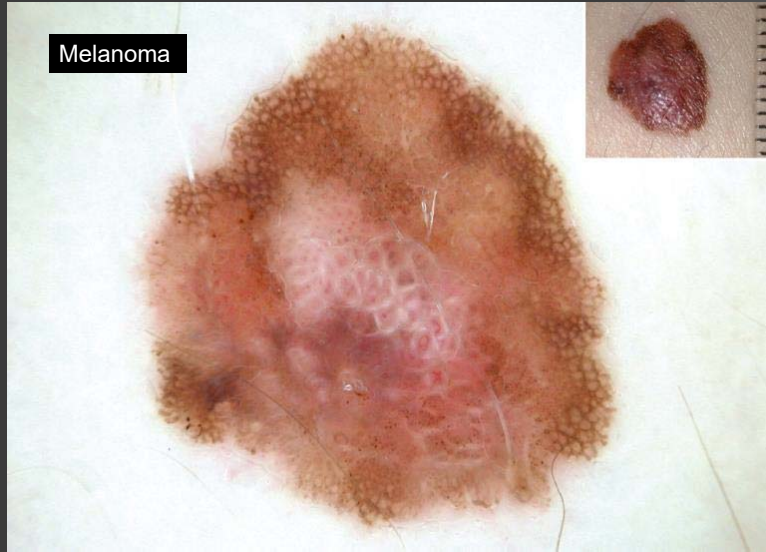
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Benign
Acquired Nevus



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Melanoma



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12)

Seborrheic Keratosis



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13)

Benign Blue Nevus



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14)

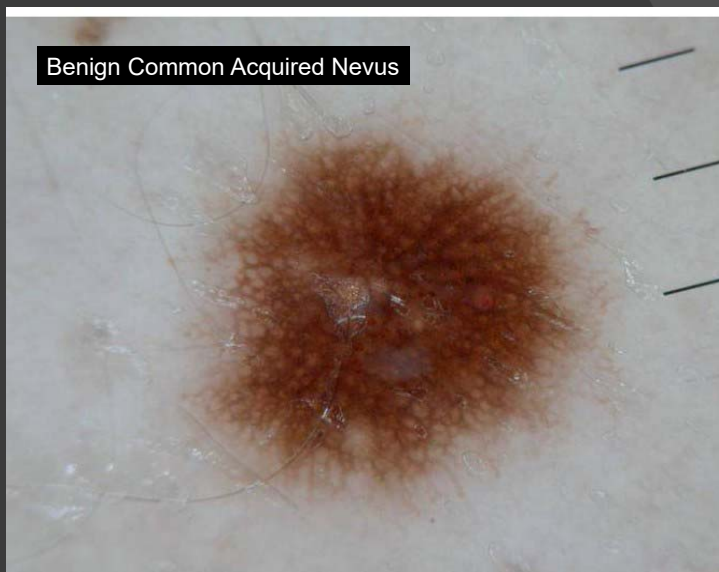
Atypical Nevus



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Benign Common Acquired Nevus

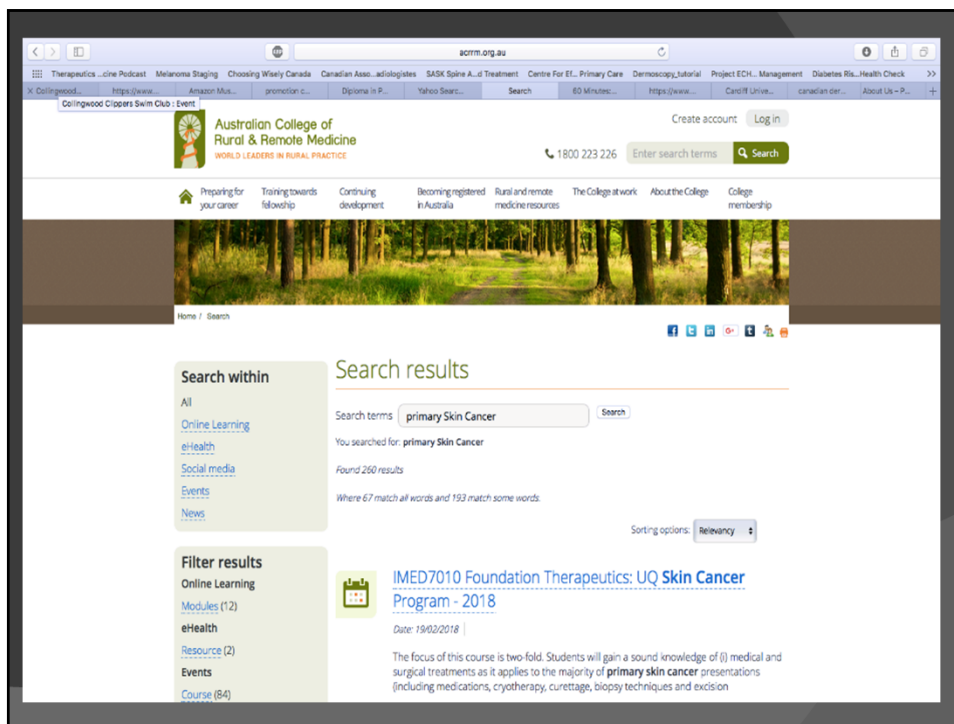


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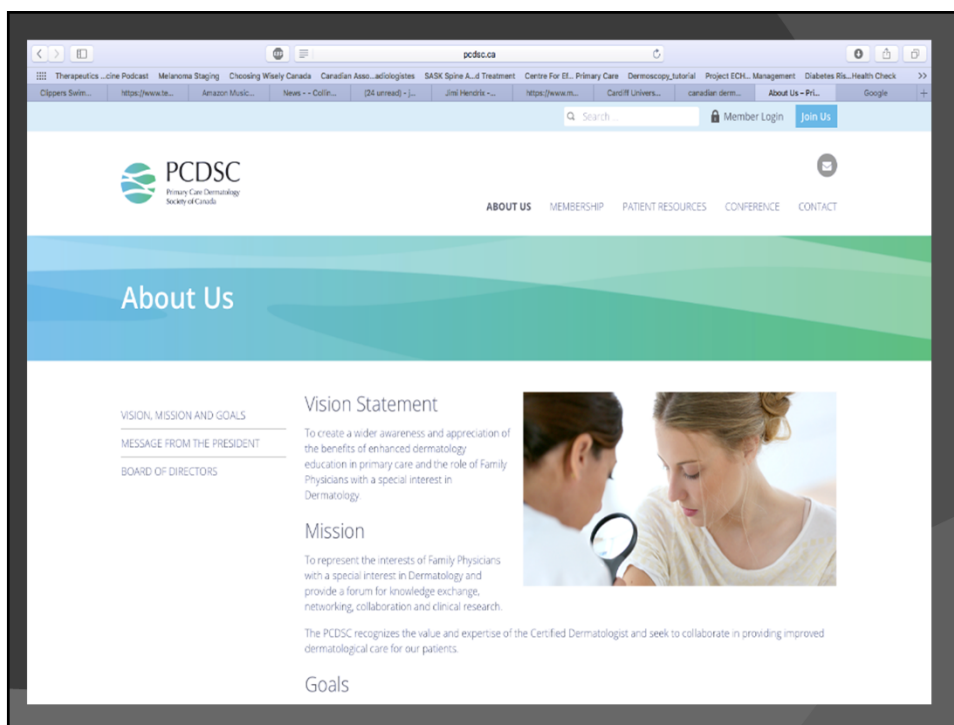
Take Home Queries?

- Is your patient at higher risk? (Skin Type)
- Have they noticed any lesions that bleed easily, are changing in colouration, size or appearance?
- Is it pigmented or not ?
- What features does it have macroscopically and under the dermoscope?
- Does it need to be excised or monitored? If monitored how often and when?

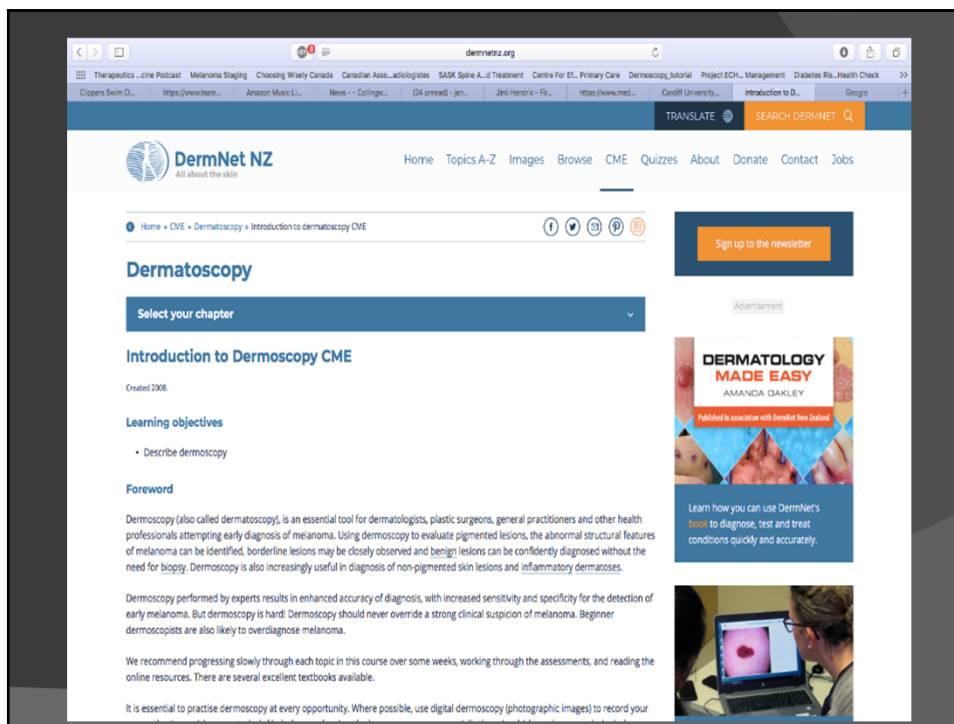
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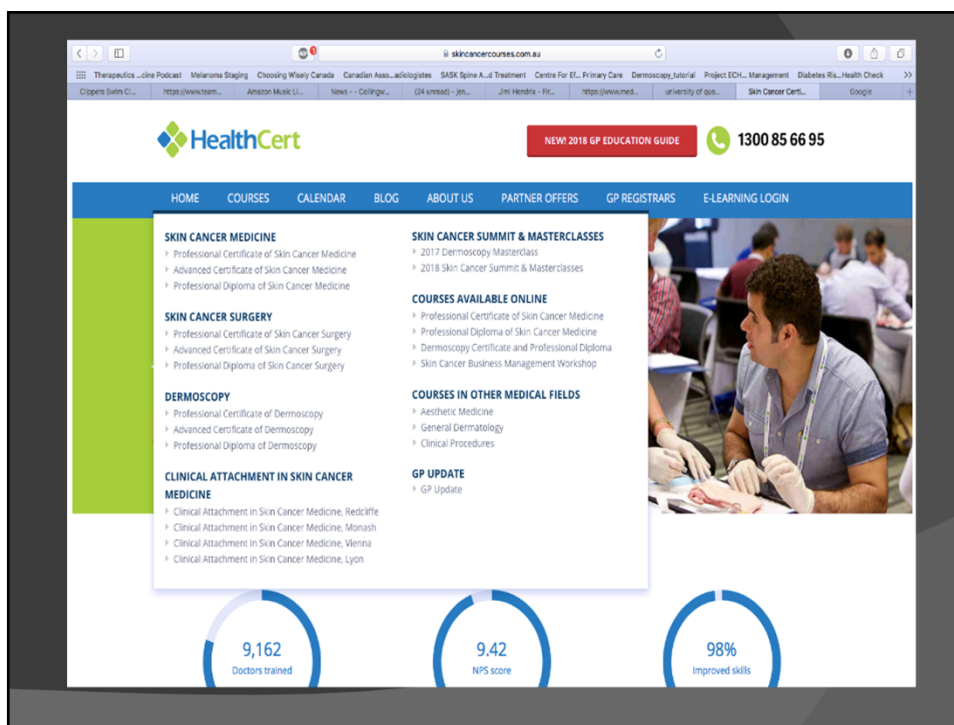
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