



**WELCOME! PLEASE
CONSIDER FILLING OUT
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SURVEY!**

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Skin: Conditions and Concerns

Skin – Anatomy Overview
Dermatology & Care in BC
'Lesions', Infections, and Cancer

Michael Smith

BSc, UBC MD Class of 2026
Island Medical Program

January 13th, 2024
9:00 AM – 10:30 AM



THE UNIVERSITY OF BRITISH COLUMBIA
Faculty of Medicine



University
of Victoria

Mini Med School Lecture Series 2023/24

~~Nov 18th, 2023 - New Canadian Alcohol Use Guidelines~~

~~Nov 25th, 2023 - Accessing a Family Doctor in BC~~

Jan 13th, 2024 - Skin: Conditions and Concerns

Jan 20th, 2024 - Depression in the Elderly

Feb 3rd, 2024 - Ozempic and other GLP-1 Agonists

Feb 10th, 2024 - Artificial Intelligence (AI) in Health Care

About Us

Introduction



Michael Smith



Derek Anderson

Hello! I'm Michael Smith, a 2nd year medical student from UBC's Island Medical Program.

My colleague is Derek Anderson, also a 2nd year medical student at UBC's Vancouver Fraser Medical Program.



Our Research Question

UBC Medicine Flexible and
Enhanced Learning (FLEX)

“To learn about the effectiveness of our virtual Mini Med School (MMS) series of online learning lectures in addressing questions from its participants”

CONSENT FORM FOR PARTICIPANTS:

Virtual Mini Med School (MMS) 2023/2024 Lecture Series: Effectiveness in Addressing Questions from Participants

I. STUDY TEAM

Who is conducting the study?

Principal Investigator: Dr. Jane Gair

Teaching Professor, Division of Medical Sciences

Island Medical Program

Faculty of Medicine, UBC

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Co-Investigator(s):

Mr. Michael Smith

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Undergraduate Medical Education

Faculty of Medicine, UBC

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Mr. Derek Anderson

Student, Vancouver Fraser Medical Program

Undergraduate Medical Education

Faculty of Medicine, UBC

bpl20@student.ubc.ca



Territorial Acknowledgement

I would like to begin by acknowledging that I am joining you from the the unceded territory of the lək̓ʷəŋən (Lekwungen) speaking peoples, including the Songhees, Esquimalt, and W̱SÁNEĆ (hw̱a - say - netch) peoples whose historical relationships with the land continue to this day.





Disclosure

I am a second-year medical student. These talks do not constitute or substitute for medical advice. Please consult with a healthcare provider if you or others you know have any personal health-related concerns.

We are not experts in this topic, and many study statistics and biological mechanisms presented here are complex. To present the information in a simple manner, some details will be glossed over. We will make every attempt to present this information in the clearest way.





Final Notes:

1. Ask questions anytime in the chat box! (will be reviewed by our MMS team, most saved till end).
2. Lecture will be recorded – please turn off camera if you would like to.
3. Copy of these PowerPoint Slides will be sent to you all after the lecture! Recording will be available on Dr. Gair's website (see Resources).
4. There will be a 10-minute break in the middle of the lecture.
5. The lecture content is about 1 hour, leaving approx. 15 minutes of time at the end for questions.





Today's Agenda

Skin: Conditions and Concerns

Skin – Anatomy Overview

Dermatology & Care in BC

10 min BREAK

Common Skin 'Lesions'

Infections and Cancer



Today's Agenda

Skin: Conditions and Concerns

Let's Get Started!

Skin – Anatomy Overview

Dermatology & Care in BC

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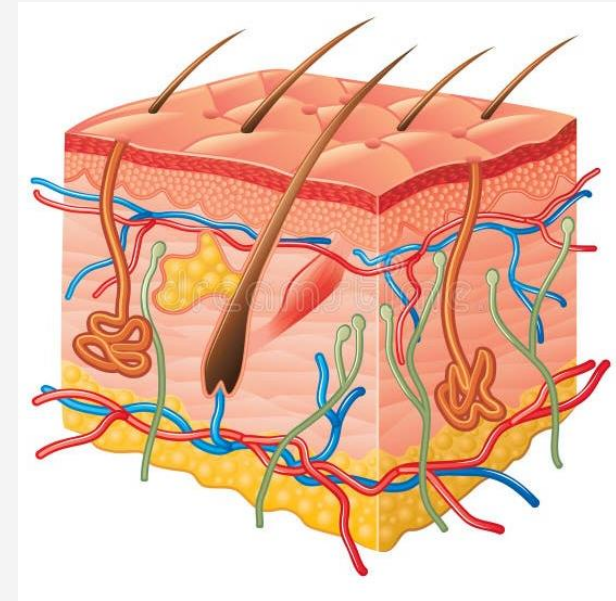
Integumentary System

- Def: “something that covers or encloses”
- Largest Organ in the Body
- Components
 - Hair
 - Nails
 - **Skin (layers x3)**
 - Associated Glands

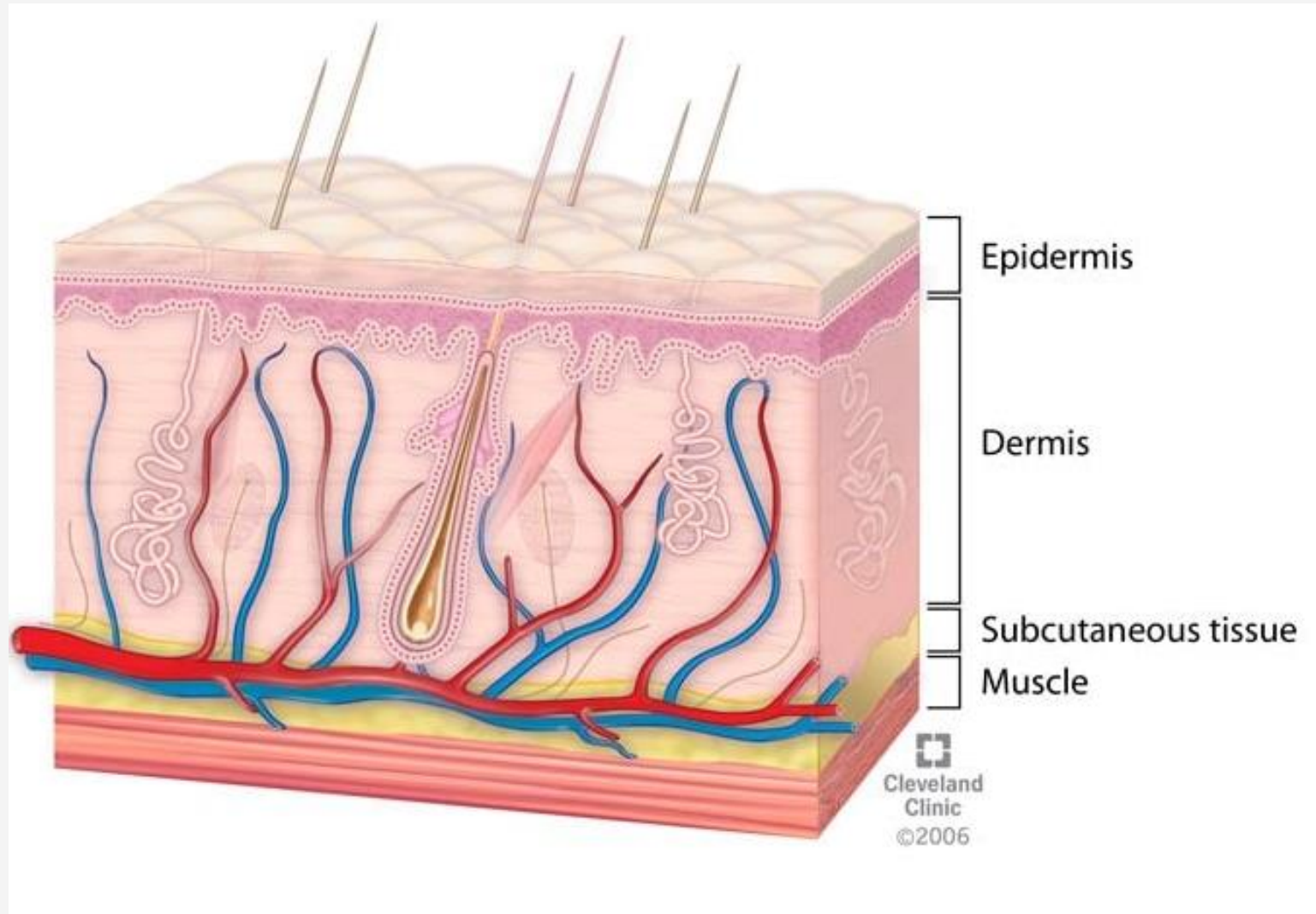


Functions of Skin (5)

1. Physical Barrier
 - microbes, UV light, trauma
 - dehydration
2. Immune Response
 - initiation / innate response
3. Temperature Regulation
 - conserve/release
4. Endocrine (Vitamin D) and Exocrine (Gland Function)
5. Sensation
 - pain, temperature, touch

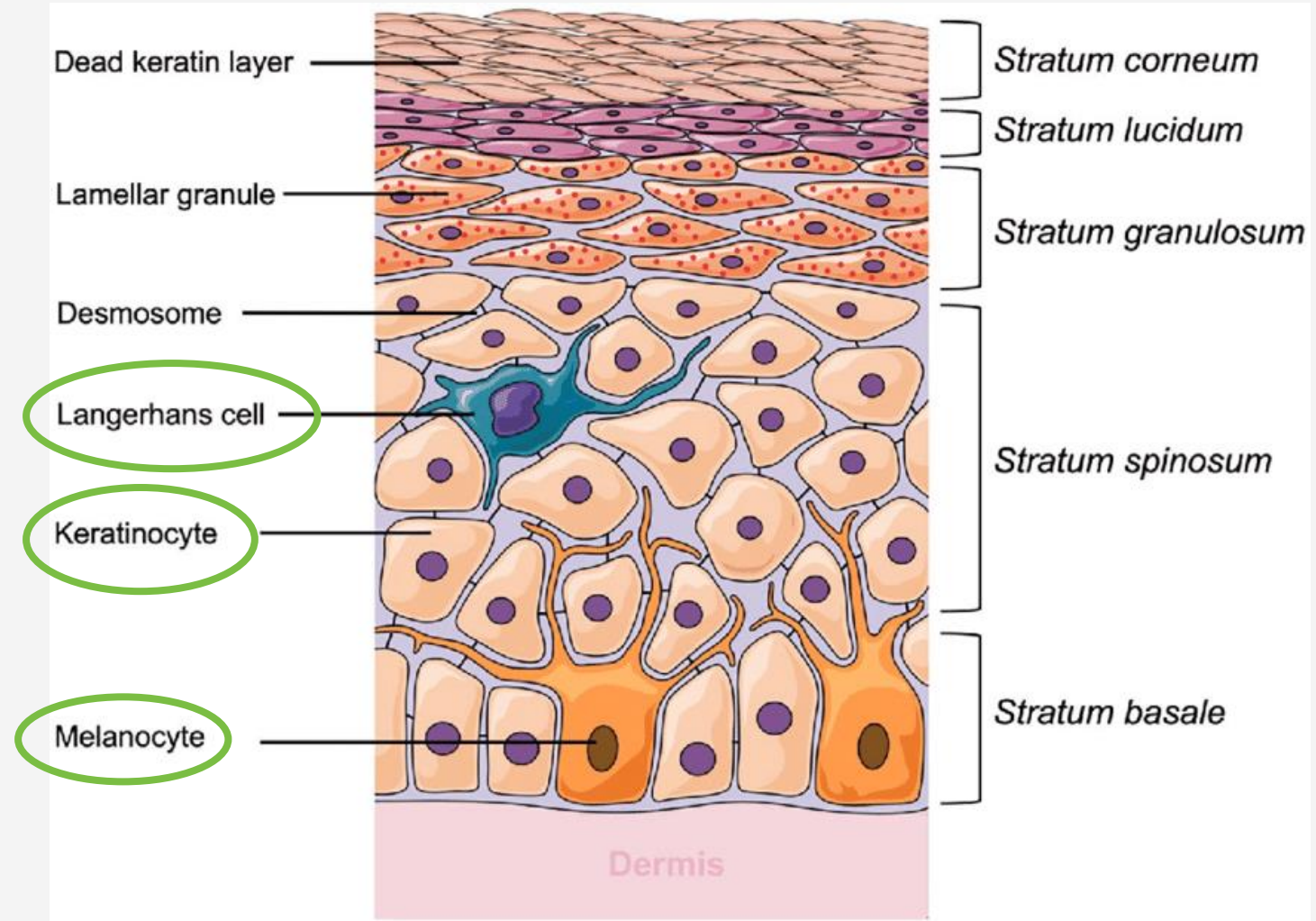


Structure of Skin - Layers



Epidermis

- Keratinocytes
 - 5 Layers
 - Growth from base to exterior
 - Constant renewal
- Melanocytes
 - Produce melanin
- Langerhans Cells
 - Immune response





How often does our skin renew on our body due to new cell growth?

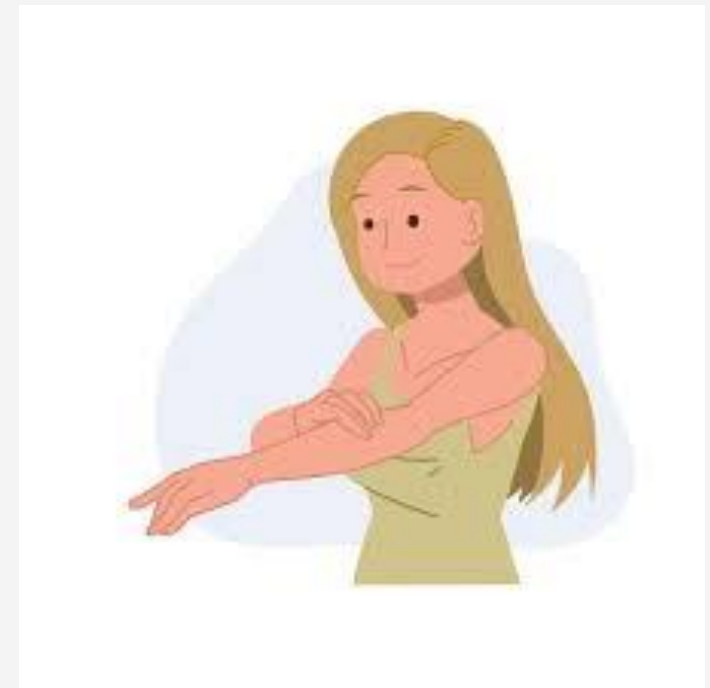
Every week

Every month

Every 6 months

Every year

Hint: Our body loses about 40,000 cells every minute





How often does our skin renew on our body due to new cell growth?

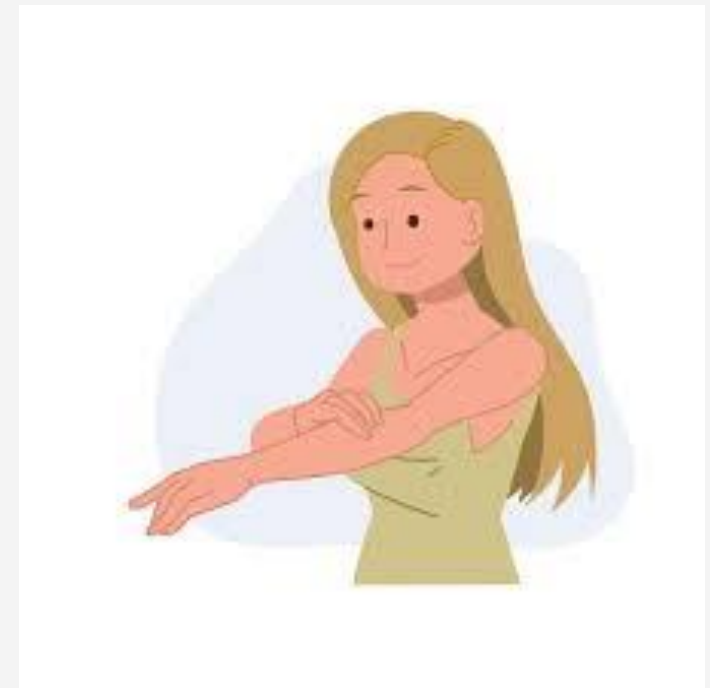
Every week

Every month

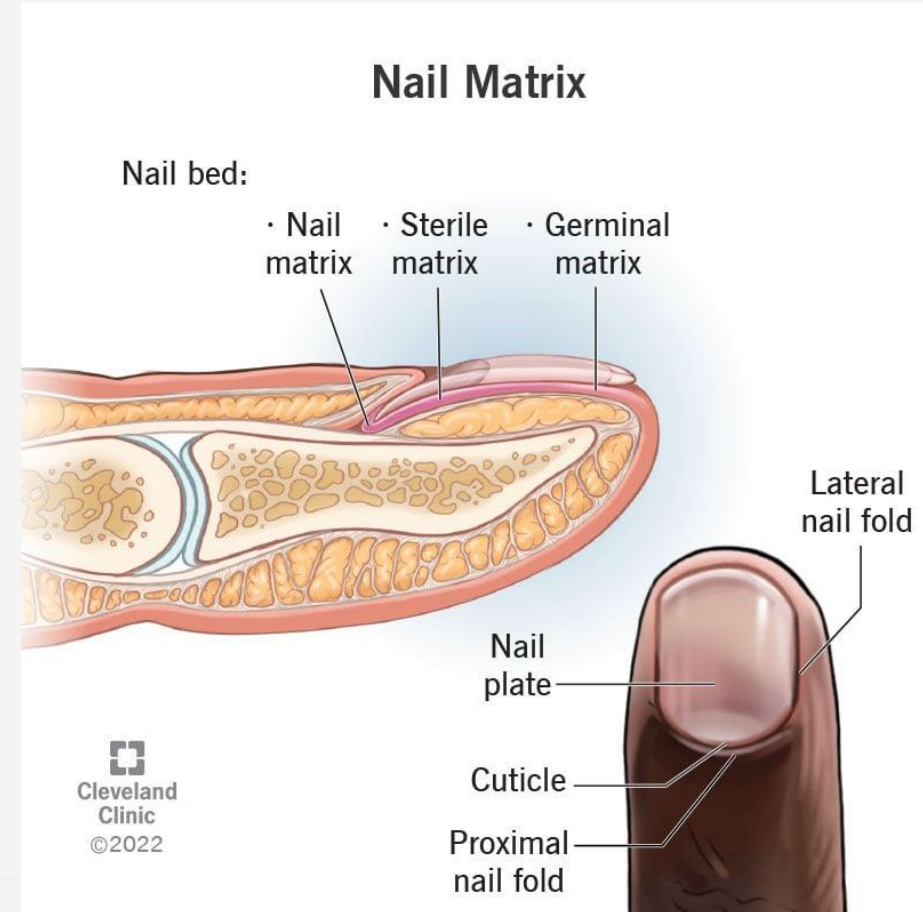
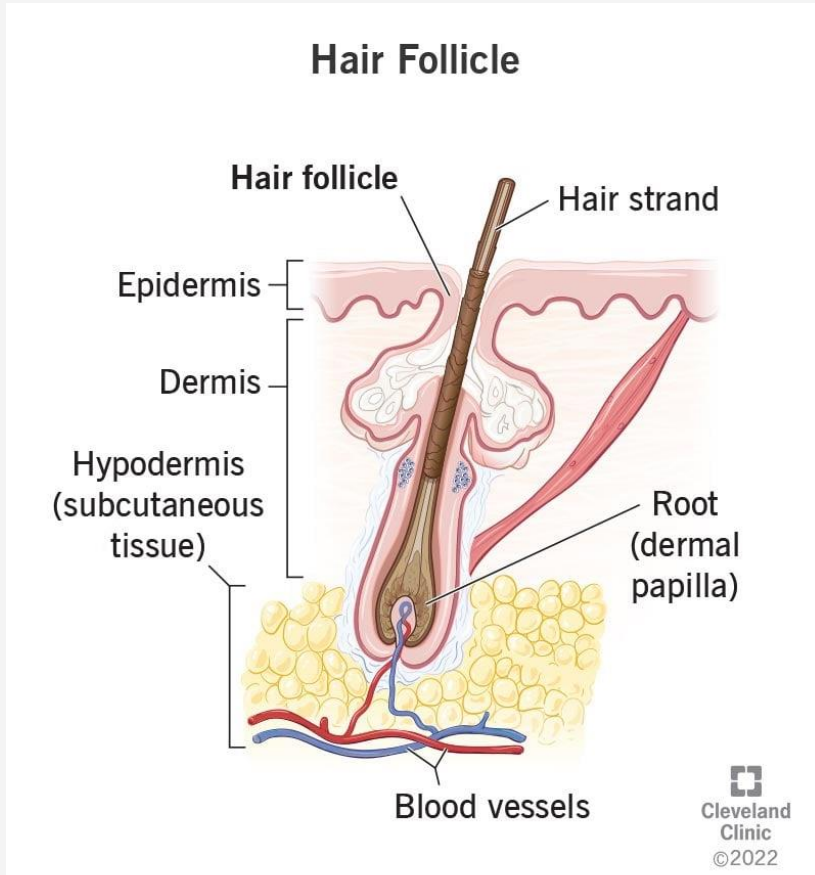
Every 6 months

Every year

Importance! – changes to cellular growth (rate, type) can lead to diseases (cancers, etc.)



Other Structures in the Skin / Integumentary System



“Pilosebaceous Unit” – Hair Follicle and Sebaceous Gland



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10 min BREAK

Common Skin 'Lesions'

Infections and Cancer

Scope of Issue

Wait times for dermatology appointments have patients lining up before dawn at this walk-in clinic

Avantderm's rapid-access clinic sees dozens of patients each day as referral waits stretch into years

Jason Vermes · CBC Radio · Posted: Oct 28, 2023 1:00 AM PDT | Last Updated: October 28, 2023



Home > Local News

B.C. critically short of dermatologists, doctor warns

B.C. has a critical shortage of dermatologists at a time when cases of skin cancer are increasing and early detection can be key to survival, says the head of B.C.'s dermatologists association. Dr.

Cindy E. Harnett
May 3, 2015 6:00 AM



[Dermatol Clin.](#) 2021 Oct; 39(4): 627–637.

Published online 2021 May 28. doi: [10.1016/j.det.2021.05.015](https://doi.org/10.1016/j.det.2021.05.015)

PMCID: PMC8162820

PMID: [34556252](https://pubmed.ncbi.nlm.nih.gov/34556252/)

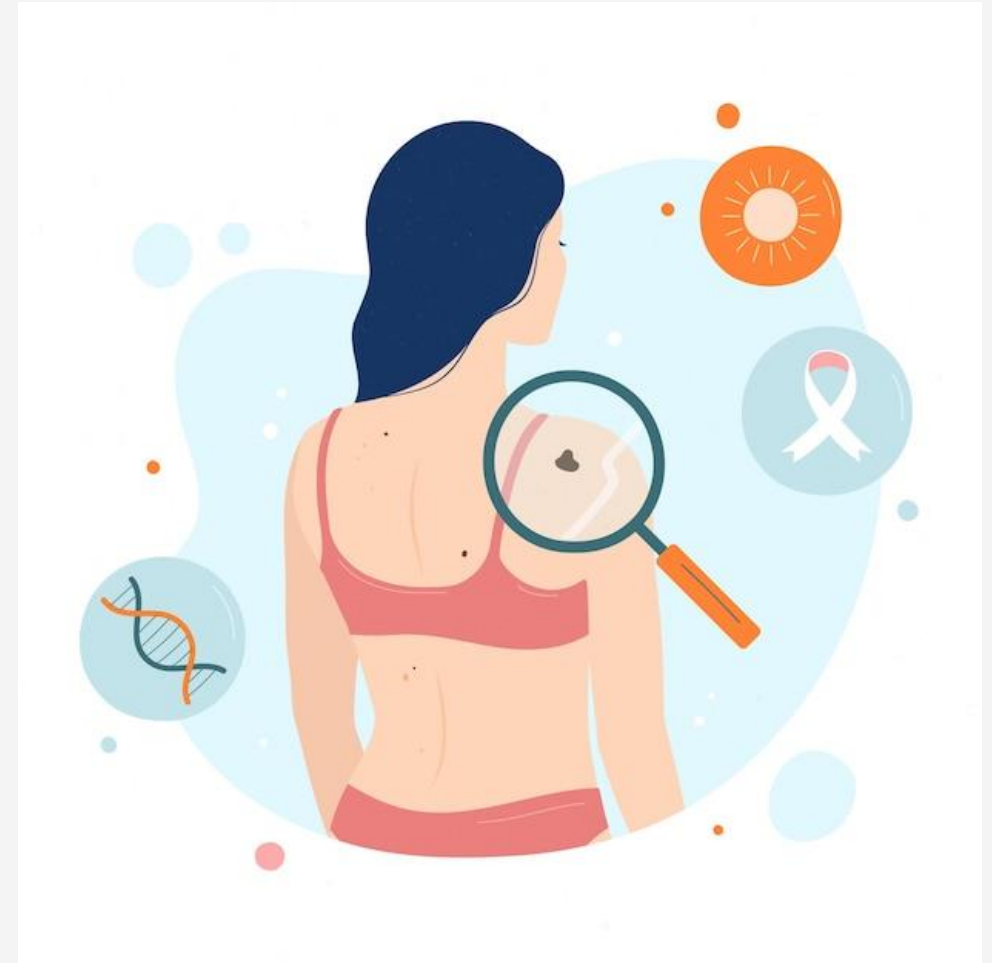
Effect of the COVID-19 Pandemic on Delayed Skin Cancer Services

[Sarem Rashid](#), BS^{a,b} and [Hensin Tsao](#), MD, PhD^{a,*}

► [Author information](#) ► [Copyright and License information](#) ► [PMC Disclaimer](#)

Implications – Skin Cancer

- Melanoma: Incidence increasing ~2% per year
- 7th most diagnosed cancer
- CCS Estimates (2023)
 - 9,700 diagnoses
 - 1,250 deaths
- Early surveillance (stage 1) has >99% for 5-year survival rate (US NIH)



More Concerns



Skin Infections, Inflammatory Disorders, Acne, etc.

Your Options for Care

Depends on your need! - 811

- Family Doctors
- Walk – In Clinics
- Pharmacists
- Urgent Care Centres
- Emergency Room
- Dermatologists
- Screening Clinics
- (virtual?)



See a pharmacist for minor ailments and contraceptives



See a pharmacist for minor ailments

Starting June 1, 2023, people in BC will be able to contact or walk into most pharmacies to have minor ailments assessed and treated

for minor ailments

Pharmacists will assess and prescribe for 21 common, uncomplicated conditions, such as pink eye, headaches and most UTIs



Minor Ailments and Contraception Service (MACS)

- Pharmacists can assess & treat 21 minor ailments (MSP covered)
- Since June 1, 2023 (inception)
 - 160,000 patients seen
 - 80% resulted in a prescription
 - 10% advice for referral



Minor Ailments and Contraception Service (MACS)

- Acne (mild)
- Allergies and hay fever
- Canker sores (oral ulcers)
- Cold sores
- Fungal infections
- Headaches
- Heartburn (acid reflux/ GERD)
- Hemorrhoids
- Hives and itching, including from bug bites (urticaria)

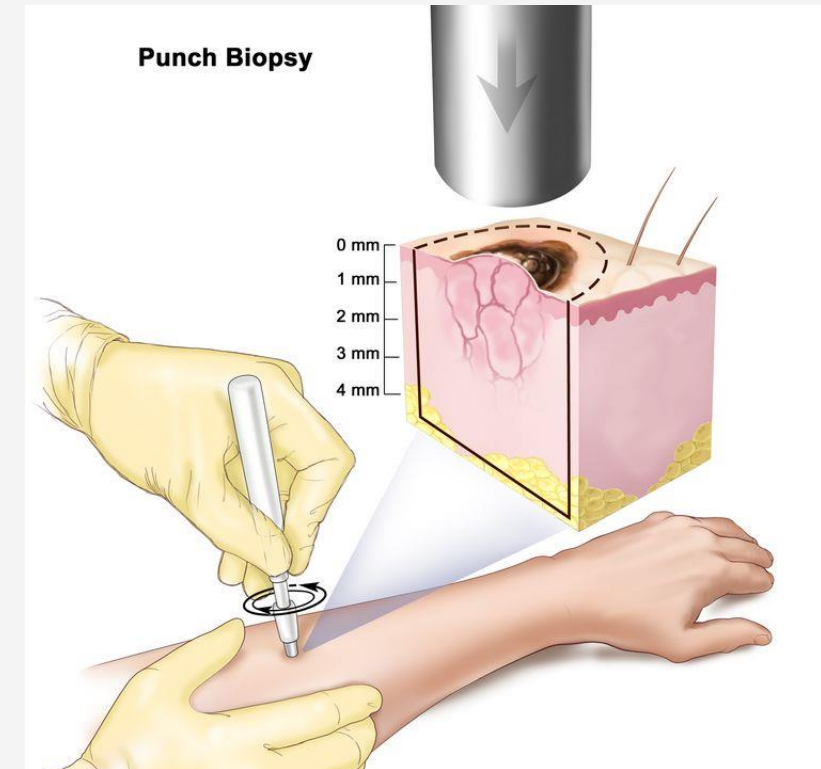
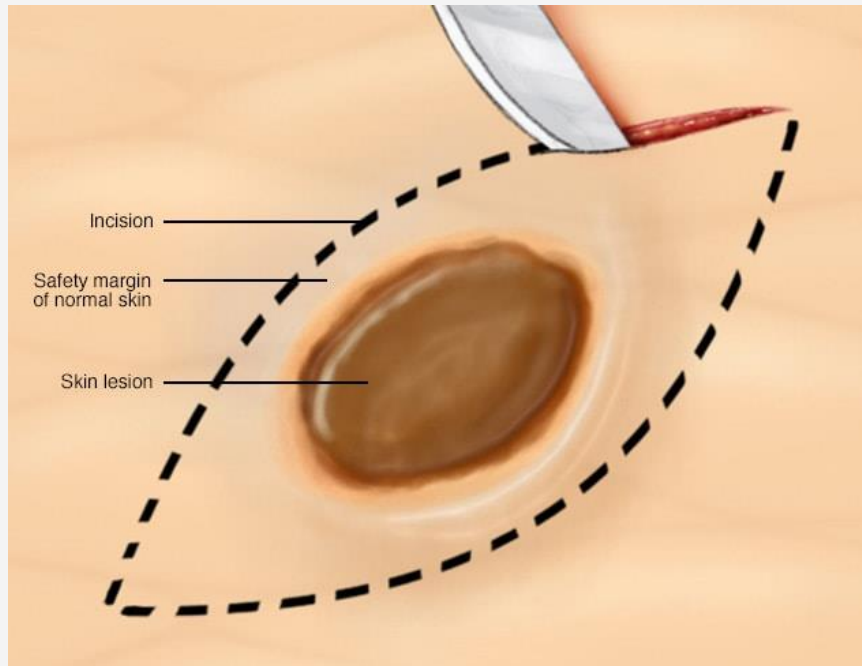
- Impetigo
- Menstrual pain
- Nicotine dependence
- Pink eye (conjunctivitis)
- Pinworms or threadworms
- Shingles
- Skin rash (dermatitis)
- Sprains and strains (musculoskeletal pain)
- Thrush (oral fungal infection)
- Upset stomach (indigestion)

Doctor's Visit & Dermatologist

- History
- Physical Exam
- Skin Biopsy
- Lab Testing
- Imaging
- Treatments
(Surgical/Medications)



Skin Biopsy



Excisional Biopsy, Skin Scrapings, Punch Biopsy, etc.



How many dermatologists are there in BC (as of 2019)?

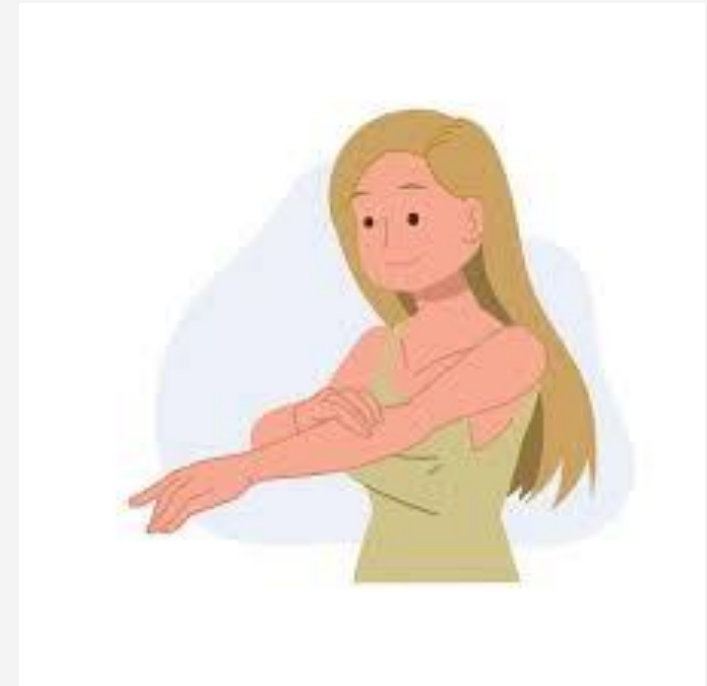
~30

~50

~70

~90

Hint: There are about 11 on Vancouver Island





How many dermatologists are there in BC (as of 2019)?

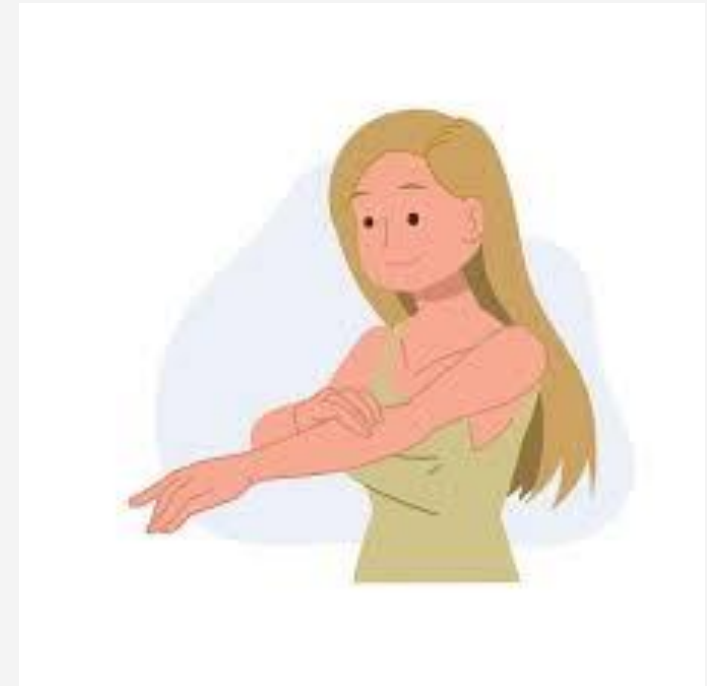
~30

~50

65 as of 2019

~90

**Importance: shortage in providers needs to be fixed,
but public education more important than ever!**





BREAK TIME FOR 10 MIN

**PLEASE CONSIDER
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https://ubc.ca1.qualtrics.com/jfe/form/SV_0BaujGaK34koAkK





Recall: What is the primary structural type of skin cell in the epidermis?

Langerhans Cells

Keratinocytes

Melanocytes

Adipocytes (fat cells)

Hint: it's all in the name!





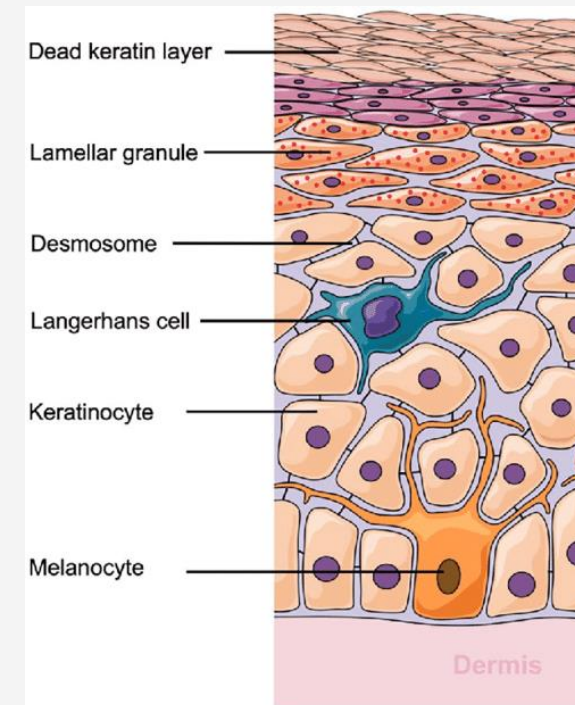
Recall: What is the primary structural type of skin cell in the epidermis?

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Adipocytes (fat cells)



Keratinocytes produce & contain Keratin (protein) for skin mechanical protection



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10 min BREAK

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Common Skin Lesions

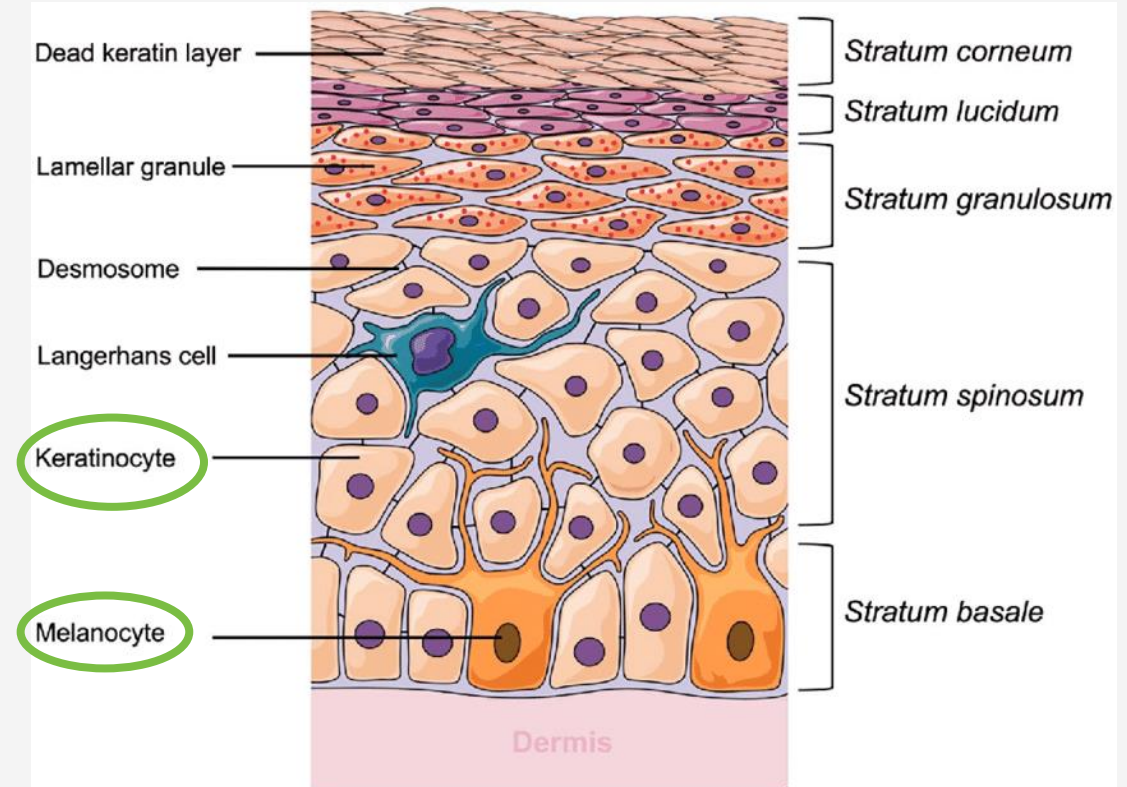
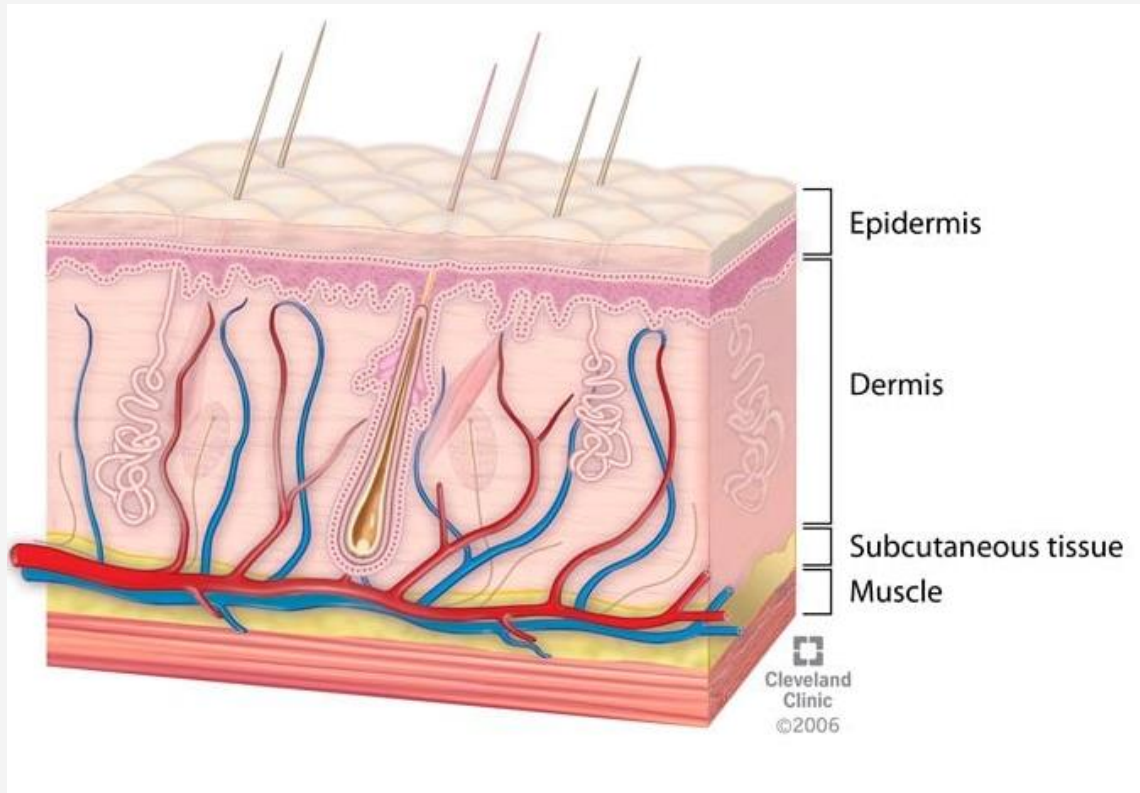
- Lesion – change in structure / different characteristics
- Derived from the cell types we mentioned earlier
- Examples - Benign (4)
 - Seborrheic Keratosis
 - Skin Tags
 - Moles
 - Hemangiomas



Images courtesy of UBC Medicine DermWeb and DermNet NZ – all show intact skin and common lesions



Structure of Skin - Review



Seborrheic Keratosis

- Variable in size, shape, and colour (and irritation)
- Main Characteristics
 - Well-circumscribed
 - “Stuck-on” appearance
 - Rough/ granular surface
 - Oily/waxy texture
- Benign, Biopsy if unsure



Skin Tags (Acrochordons)

- Main Characteristics
 - Colour: ~brown
 - Attached via stalk
“pedunculated”
 - Primarily in flexures/folds of body
 - Usually, multiple



Moles (Melanocytic Nevi)

- Common Characteristics
 - Well-Circumscribed
 - Uniform Colour
 - Small
 - Flat – Slightly Raised
 - Soft Texture
 - +/- Hair Growth
- Benign, but important for ongoing monitoring (Melanoma)



Junctional



Compound



Intraderma

Cherry Hemangiomas

- Main Characteristics
 - Bright red
 - Small
 - Usually, multiple
 - Bleed if irritated



Summary: all lesions should be reassessed if they change. When in doubt, biopsy and/or refer to Dermatology!



Today's Agenda

Skin: Conditions and Concerns

3 Types of Infections

- Viral
- Bacterial
- Fungal

3 Types of Cancer

- Basal Cell
- Squamous Cell
- Melanoma



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Infections and Cancer

Herpes Zoster (Shingles)

- Reactivation of varicella (chickenpox) virus
- Initial symptoms of pain and abnormal sensations
- Fluid-filled vesicle eruption then crust over
- Self-limiting, but recovery aided with antiviral medications
- BC Pharmacy Services MACS



Bacterial Infections

- Staph. Aureus, Strep pyogenes, ...
- Presents with superficial skin infections, pus filled, red, inflamed, hair follicle.
- Folliculitis, Boils, Cellulitis, etc.
- Swab and culture if necessary
- Treatment ranges from self-limiting / conservative to topical antibiotics to systemic treatment



Dermatophytosis (Fungal)

- Tinea, Ringworm, etc. Named after body part affected
- Ring/Circular, Peeling/Raised Edges, Red with central clearing, Itchy
- Testing with Skin Scrapings
- Conservatively + Antifungals
- BC Pharmacy Services MACS





What is the most common type of skin cancer diagnosed in Canada?

Squamous Cell Carcinoma

Basal Cell Carcinoma

Melanoma

Actinic Keratosis



Canadian
Skin Cancer
Foundation





What is the most common type of skin cancer diagnosed in Canada?

Squamous Cell Carcinoma

Basal Cell Carcinoma

Melanoma

Actinic Keratosis



Canadian Skin Cancer Foundation: 1/3 of new cancers is a skin cancer, and the vast majority are basal cell carcinomas (BCC). Most common of all cancers

Keratinocyte (Non-Melanoma) Carcinomas

- Basal Cell Carcinoma
 - Most common
 - Translucent, vascular, ulcerated
 - Various subtypes (nodular)
 - Low risk for malignancy
- Squamous Cell Carcinoma
 - 2nd most common
 - Hard, scaly, rough bump
 - Various precursor types
 - ~Low risk for malignancy



(Nodular) Basal Cell Carcinoma



Squamous Cell Carcinoma

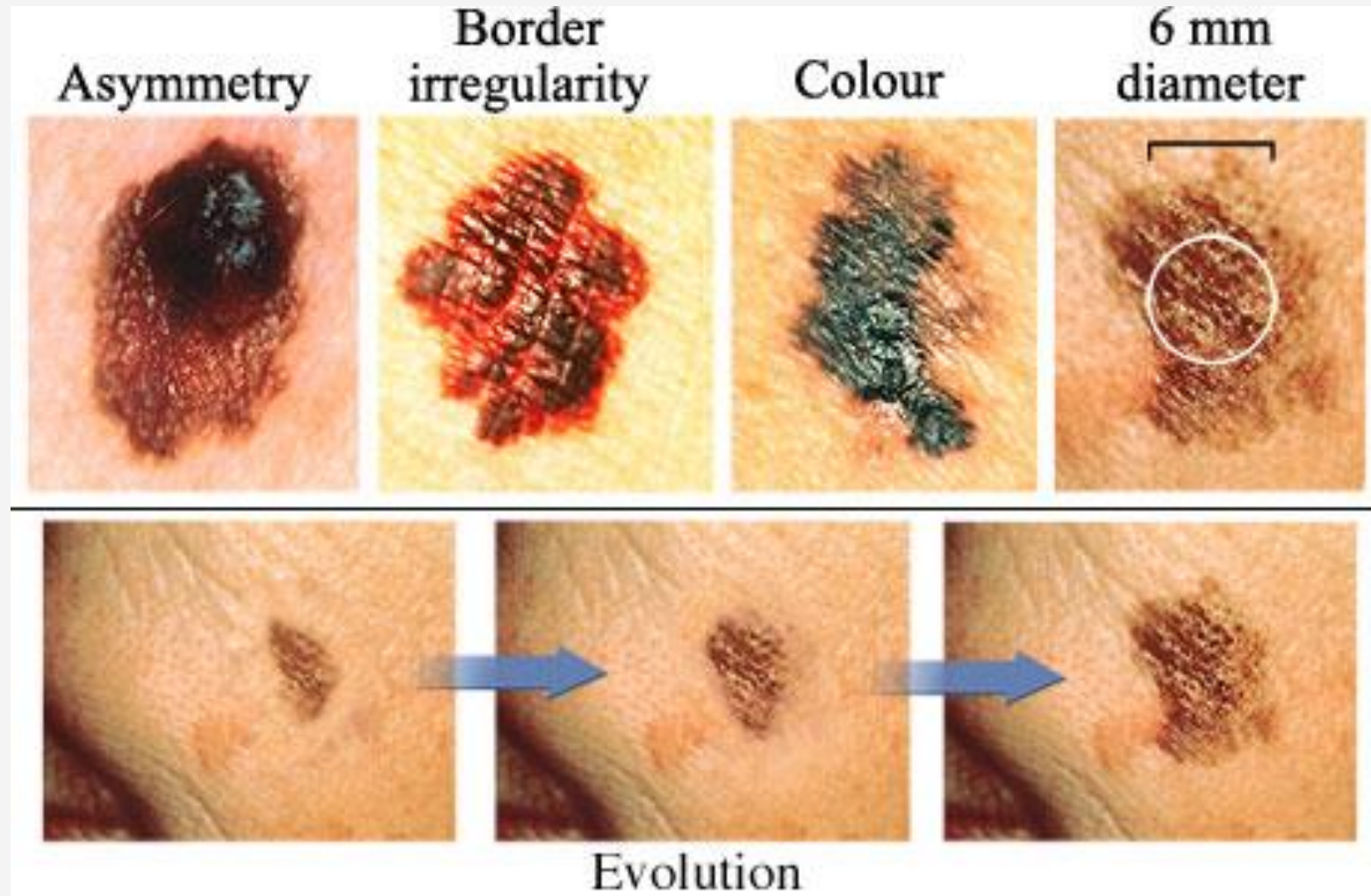


Melanoma

- 7th most common cancer
- Good prognosis if caught early
- High malignancy potential
- Characteristics of Melanoma (ABCDEs)
- “Ugly Duckling” Sign compared to other moles
- Various Subtypes



Melanoma ABCDEs



Summary – What to Do

- Protect yourself from UV Light
 - SPF at least 30, ideally 60
 - Avoid direct midday sun
 - Wear protective clothing
 - Avoid tanning beds
- Skin Self-Exams
 - Know your body
 - Partners/Family can help
 - Know the ABCDEs
- **And always, ask your doctor!**



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References



1. Integumentary System and Skin – Overview: <https://www.ncbi.nlm.nih.gov/books/NBK554386/>, <https://www.ncbi.nlm.nih.gov/books/NBK441980/>
2. Skin and Epidermis Anatomy and Functions: <https://my.clevelandclinic.org/health/body/21901-epidermis>, <https://my.clevelandclinic.org/health/body/10978-skin>
3. Dermatology Articles: <https://www.cbc.ca/radio/whitecoat/wait-times-dermatology-back-logs-avantderm-1.7006685>, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8162820/>, <https://www.timescolonist.com/local-news/bc-critically-short-of-dermatologists-doctor-warns-4622021>
4. Melanoma Cancer Statistics: <https://melanomacanada.ca/understanding-skin-cancer/melanoma/stats-and-facts/>, <https://cancer.ca/en/cancer-information/cancer-types/skin-melanoma/statistics>, <https://seer.cancer.gov/statfacts/html/melan.html>
5. Pharmacy MACS: <https://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/pharmacare/initiatives/sop/monitoring-evaluation-ppmac>
6. Dermatologist - DDx Skin Cancer: <https://cancer.ca/en/cancer-information/cancer-types/skin-melanoma/diagnosis>
7. Melanoma - Tx: <https://www.cancer.gov/types/skin/patient/melanoma-treatment-pdq>
8. Common Benign Skin Disorders: <http://dermweb.com/teaching/?fbclid=IwAR3Q19tROgurQA97lvqR-X5hOE9BYQddDRBbd4XG7yqXYU9-LZhoWlgUboY>
9. Skin Disorders Information: <https://www.ncbi.nlm.nih.gov/books/NBK545285/>, <https://www.ncbi.nlm.nih.gov/books/NBK448169/>, <https://www.ncbi.nlm.nih.gov/books/NBK563207/>, <https://www.ncbi.nlm.nih.gov/books/NBK470451/>
10. Skin Infections Information: <https://www.ncbi.nlm.nih.gov/books/NBK441824/>, <https://dermnetnz.org/topics/cellulitis>, <https://www.ncbi.nlm.nih.gov/books/NBK547754/>, <https://www.healthlinkbc.ca/illnesses-conditions/skin-nails-and-rashes/ringworm-skin>, <https://dermnetnz.org/topics/tinea-corporis>, <https://dermnetnz.org/topics/fungal-nail-infections>
11. Dermatological Images: <https://dermnetnz.org/>
12. Non-Melanoma Skin Cancer: <https://dermnetnz.org/topics/basal-cell-carcinoma>, <https://dermnetnz.org/cme/lesions/squamous-cell-carcinoma>, <https://www.healthlinkbc.ca/illnesses-conditions/cancer/skin-cancer-non-melanoma>, <https://www.healthlinkbc.ca/basal-and-squamous-cell-carcinoma>
13. Basal Cell Patient Handout: https://pathwaysbc-production-content-item-documents.s3.amazonaws.com/documents/1548/original/Basal_Cell_Cancer_PATIENT_cda.pdf?1486598448
14. Squamous Cell Patient Handout: https://pathwaysbc-production-content-item-documents.s3.amazonaws.com/documents/1570/original/Squamous_Cell_Cancer_PATIENT_cda.pdf?1489254377
15. Melanoma: <https://www.healthlinkbc.ca/illnesses-conditions/cancer/skin-cancer-melanoma>
16. Skin Protection: <https://www.healthlinkbc.ca/illnesses-conditions/cancer/skin-cancer-protecting-your-skin>



Helpful Resources

1. Minor Ailment Pharmacy Services BC:
<https://www2.gov.bc.ca/gov/content/health/accessing-health-care/pharmacy-services>
2. ABCDEs of Melanoma Handout:
<https://www.healthlinkbc.ca/illnesses-conditions/cancer/skin-cancer-melanoma>
3. Dermatology Images Resource: DermNet NZ
<https://dermnetnz.org/>
4. UBC/UVic MMS Lecture Recordings:
<https://www.uvic.ca/medsci/people/instructors/gair-jane.php>

MINI MED SCHOOL LECTURE SERIES

Future Talks:

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Any Questions?



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