STIKES NOTOKUSUMO YOGYAKARTA

KONTRAK PERKULIAHAN FORMULASI DAN TEKNOLOGI SEDIAAN KOSMETIK

Semester Genap Tahun Ajaran 2023 / 2024

KONTRAK PERKULIAHAN

1

TIM DOSEN

1. apt. Trifonia Rosa Kurniasih, M.Biotech (Koord)
2. apt. Felicia Satya Christania, M.Farm

2

JUMLAH PERTEMUAN

14 PERTEMUAN TEORI
UJIAN TENGAH SEMESTER
UJIAN AKHIR SEMESTER

3

JADWAL PERKULIAHAN : kelas FSBA

Selasa, 08.00 - 09.40

SISTEM PERKULIAHAN

01

KEHADIRAN

HADIR TEPAT WAKTU, SESUAI JADWAL
TOLERANSI KETERLAMBATAN 15 MENIT

02

JUMLAH KEHADIRAN

JUMLAH KEHADIRAN MINIMAL **75%**
→ DAPAT MENGIKUTI DAN MENDAPAT NILAI UAS

1. BERHAK REMIDIAL (JIKA DIBUKA)
2. TIDAK HADIR :
   - ✓ SAKIT (DENGAN SURAT KETERANGAN DOKTER)
   - ✓ IZIN : TUGAS KAMPUS
   - ✓ KEDUKAAN

03

SISTEM PEMBELAJARAN

SELAMA KULIAH, MEDIA PEMBELAJARAN YANG DIGUNAKAN AKAN MENYESUAIKAN

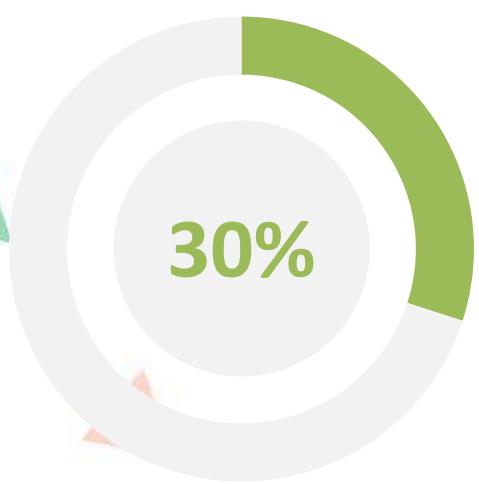
04

PEMBAGIAN MATERI

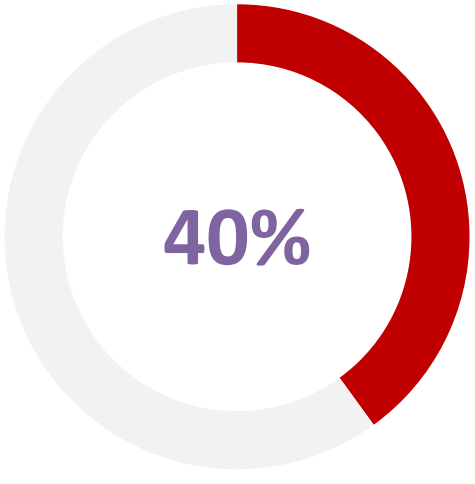
4 TOPIK KULIAH : IBU ROSA

10 TOPIK KULIAH : IBU NIA

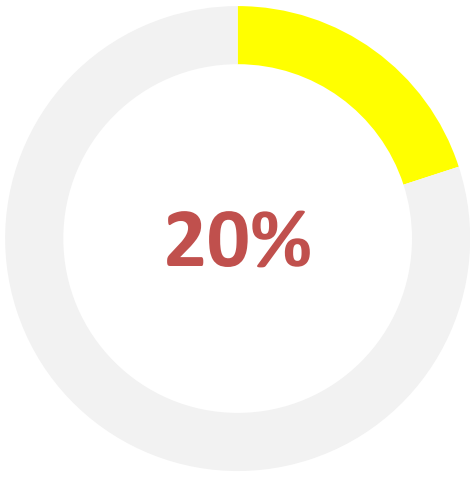
BOBOT NILAI



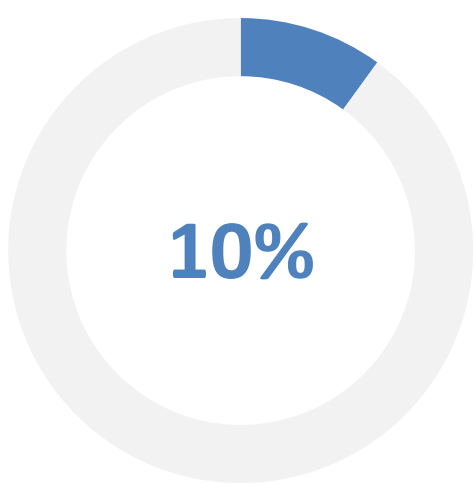
UJIAN TENGAH SEMESTER



UJIAN AKHIR SEMESTER



TUGAS / DISKUSI



SIKAP

NILAI ABSOLUT	HURUF	ANGKA MUTU
79 – 100	A	4,00
68 – 78	B	3,00
58 - 67	C	2,00
41 - 57	D	1,00
0 - 40	E	0,00

TOPIK PERKULIAHAN

Materi UTS

- Pengantar kuliah kosmetik
- Anatomi dan fisiologi kulit
- Fungsi kulit
- kosmetik pembersih
- Kosmetik pelembab dan pelindung
- Anatomi dan fisiologi rambut dan kuku
- Kosmetik untuk rambut dan kuku

Materi UAS

- Kosmetik medik
- Kosmetik dekoratif
- Skin care
- Body care
- CPKB
- Aspek keamanan kosmetik
- Aspek mikrobiologis kosmetik

REFERENSI

1. Handbook of Cosmetics Science and Technology. Edited by: Andre O Barrel, Marc Paye, Howard L. Maibach
2. Retno Iswari Trenggono dan Fatma Latifah, Buku Pegangan Ilmu Pengetahuan Kosmetik. Jakarta: Gramedia
3. Cosmetic Dermatology: Product and Procedure. Edited by: Zoe Diana Draelos
4. Cosmeceuticals: Drugs vs. Cosmetics. Edited by: Peter Elsner and Howard L. Maibach
5. Peraturan Kepala Badan Pengawas Obat Dan Makanan Republik Indonesia Nomor 19 Tahun 2015 Tentang Persyaratan Teknis Kosmetika (mengikuti keterbaharuan)
6. Peraturan Kepala Badan Pengawas Obat Dan Makanan Republik Indonesia Nomor 34 Tahun 2013 Tentang Perubahan Atas Peraturan Kepala Badan Pengawas Obat Dan Makanan Nomor Hk.03.1.23.12.10.11983 Tahun 2010 Tentang Kriteria Dan Tata Cara Pengajuan Notifikasi Kosmetik (mengikuti keterbaharuan)
7. Peraturan Kepala Badan Pengawas Obat Dan Makanan Republik Indonesia Tentang Petunjuk Operasional Pedoman Cara Pembuatan Kosmetik Yang Baik (Terbaru)
8. Damaharyuningtyas, M., Kombinasi Fase Minyak dalam Formula Lotion Herbal. STIKES Notokusumo Yogyakarta. 2021.
9. Damaharyuningtyas, M., Formulasi Serum Herbal Ekstrak Tanaman Sebagai Antioksidan. STIKES Notokusumo Yogyakarta. 2021

STIKES NOTOKUSUMO YOGYAKARTA

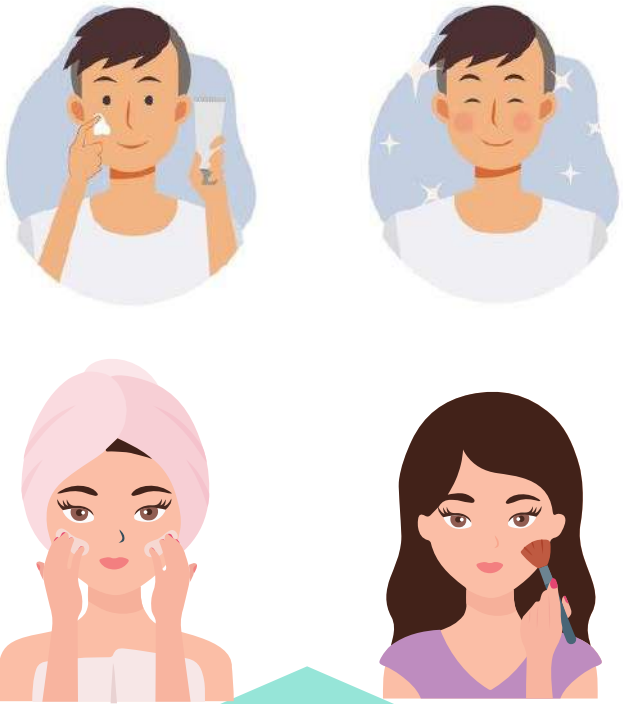
FORMULASI DAN TEKNOLOGI SEDIAAN KOSMETIK

PERTEMUAN 1

apt. Trifonia Rosa Kurniasih, M.Biotech

TOPIK BAHASAN

KOSMETIK

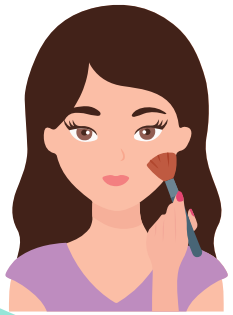


APA ITU KOSMETIK ?

Berdasarkan peraturan **BPOM no. 31 Tahun 2020** Tentang Perubahan Atas Peraturan Badan Pengawas Obat Dan Makanan Nomor **25 Tahun 2019** Tentang **Pedoman Cara Pembuatan Kosmetika Yang Baik**

"Kosmetika adalah bahan atau sediaan yang dimaksudkan untuk digunakan pada ***bagian luar tubuh*** *manusia seperti epidermis, rambut, kuku, bibir dan organ genital bagian luar, atau gigi dan membran mukosa mulut terutama untuk* ***membersihkan, mewangikan, mengubah penampilan dan/atau memperbaiki bau badan atau melindungi atau memelihara*** *tubuh pada kondisi baik"*

KOSMETIK



Perbedaan Kosmetik dengan sediaan Farmasi lainnya ?

Tujuan penggunaan kosmetik :
untuk **membersihkan, mewangikan, mengubah penampilan dan/atau memperbaiki bau badan atau melindungi atau memelihara**

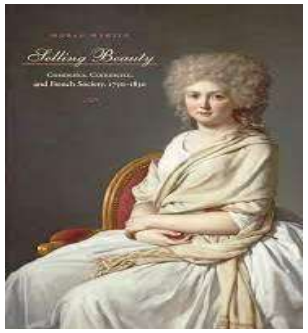
tidak dimaksudkan untuk pengobatan atau penyembuhan suatu penyakit

Obat adalah zat/bahan baik alami maupun sintetis yang dengan jumlah tertentu dan penggunan tepat dapat digunakan sebagai **diagnosa, pencegahan, penyembuhan suatu penyakit & memelihara kesehatan**

SEJARAH KOSMETIKA

Cosmetics in the Ancient World
10.000 SM – 1000 SM

- Di Mesir → penggunaan kosmetika yang erat hubungannya dengan keagamaan
- Di China → penggunaan pewarna kuku dengan getah, lilin, gelatin, dan telur, dan setiap warna mewakili tingkatan sosial tertentu
- Masyarakat China dan Jepang menggunakan bedak beras untuk memutihkan wajah.
- Di Yunani→ penggunaan kosmetika untuk kesehatan dan kecantikan.



Cosmetics in the Early Common Era (CE)
100 M – 400 M

- Di Roma → tepung gandum dan mentega dipakai untuk menutupi jerawat, tren mandi lumpur, rambut *blonde*
- Di India → penggunaan Henna sebagai pewarna rambut, mehndi untuk pernikahan Hindu

Cosmetics in the Middle Ages
1200 – 1300 M

- Parfum pertama kali diimpor ke Eropa dari Timur Tengah sebagai akibat dari Perang Salib
- Pada zaman pemerintahan Ratu Elizabeth di Inggris, mencelup rambut menjadi warna merah menjadi tren. Wanita dari kalangan atas menggunakan putih telur di wajah mereka untuk menciptakan warna kulit pucat

SEJARAH KOSMETIKA

Renaissance Cosmetics
1400 – 1600 M

- Italia dan Prancis muncul sebagai pusat utama manufaktur kosmetik di Eropa, dan hanya kaum bangsawan yang memiliki akses. Mulai muncul berbagai macam wewangian
- Wanita di Eropa mulai menggunakan berbagai produk untuk mencerahkan kulit, termasuk memakai cat. Ratu Elizabeth I dikenal sebagai pengguna timah putih yang membuat penampilannya terkenal sebagai the *Mask of Youth*.

19th and Early 20th Century
Global Cosmetics Developments

- Penggunaan Zinc oksida sebagai pengganti campuran timbal dan tembaga
- Di Edwardian Society, tekanan meningkat pada wanita paruh baya untuk tampil awet muda saat bertindak sebagai *hostes*. Akibatnya, penggunaan kosmetik meningkat, tetapi belum sepenuhnya dipopulerkan.

NOW ?

https://www.cosmeticsinfo.org/get-the-facts/a-history-of-cosmetics-from-ancient-times/

SEJARAH KOSMETIKA

Kosmetik di Indonesia sudah mulai dikenal sejak jaman kerajaan. Ken Dedes, Roro Jonggrang dan juga wanita-wanita keraton yang telah mengenal kecantikan seperti :

- cat bibir agar bibir merah dengan cara makan sirih
- penebal alis menggunakan jelaga
- pewangi menggunakan daun pandan, bunga mawar, melati, dsb

PENGGOLONGAN KOSMETIK

Berdasarkan Bentuk Sediaan :

- Kosmetika Bentuk Padat : tabur, *cake*, stik
- Kosmetika Bentuk Semi Solid : Emulsi dan Suspensi
- Kosmetika Bentuk Cair

Berdasarkan Fungsi

- Kosmetika Perawatan
- Kosmetika Dekoratif
- Kosmetika Toileteris

PENGGOLONGAN KOSMETIK

Berdasarkan kegunaan dan lokalisasi pemakaian pada tubuh

Untuk bayi
- Minyak bayi
- Bedak bayi, dll

Untuk rambut
- Cat rambut, hairspray
- Pengeriting rambut

Untuk *make up*
- Lipstik, bedak muka

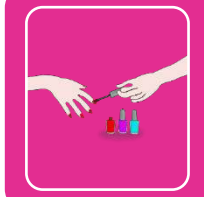
Untuk mandi
- Sabun mandi
- Bath capsules, dll

Untuk cukur
- Sabun cukur
- Lotion cukur

Untuk kebersihan mulut
- Mouth washes, pasta gigi, breath freshener

Untuk mata
- Maskara
- Eye shadow, dll

Untuk kebersihan badan
- Deodoran



Untuk kuku
- Cat kuku, krem dan lotion kuku

Perawatan kulit
- Pembersih, pelembab, pelindung

Pelindung

* *Suntan* dan *sunscreen*

Wangi-wangian
- Parfum dll

PENGGOLONGAN KOSMETIK

Berdasarkan kegunaanya bagi kulit

Skin Care Kosmetika

- Kosmetik untuk membersihkan kulit (*Cleansing*). Contoh : cleaning cream, penyegar, susu pembersih.
- Kosmetik untuk melembabkan (*Mousturizer*). Contoh : night cream, anti aging cream, mousturizer cream, cream anti kerut.
- Kosmetik pelindung (*Protecting*) kulit. Contoh : sun cream, sun block
- Kosmetik untuk menipiskan (*Thinning*). Contoh : scrub cream

Kosmetika Riasan (*Make Up*)

- Kosmetik rias kulit pada wajah, rambut, bibir dan mata
- Kosmetik pewangi, deodorant dan parfum

PENGGOLONGAN KOSMETIK

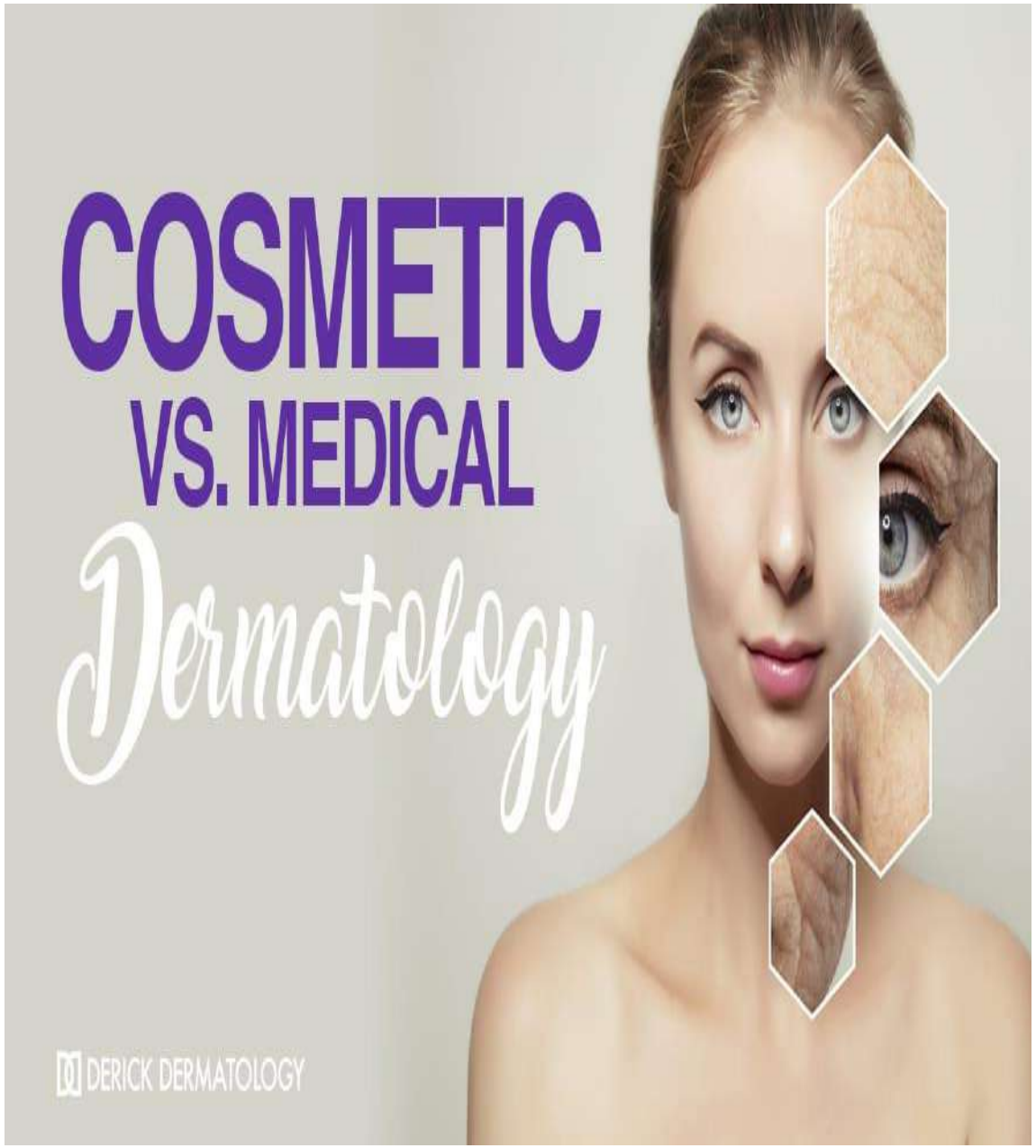
Berdasarkan Pemberian kosmetika

Sesuai bagian yang dirawat :

- Kosmetika perawatan kulit.
- Kosmetika perawatan rambut dan kuku.
- Kosmetika perawatan muka.
- Kosmetika perawatan badan dan lengan.
- Kosmetika mulut dan gigi.

Sesuai cara perawatan :

- Kosmetika pembersih.
- Kosmetika pelembab.
- Kosmetika pelindung.



Perkembangan ilmu kosmetik serta industrinya baru di mulai secara besar-besaran pada abad ke 20 dan kosmetik menjadi salah satu bagian dari dunia usaha.

Dewasa ini, teknologi kosmetik begitu maju dan merupakan paduan antara kosmetik dan obat (pharmacuetical) atau dikenal dengan istilah kosmetik medik (cosmeceuticals).

COSMETICS MADICATED

Cosmedics merupakan penggabungan kosmetika dengan bahan-bahan tertentu yang memiliki efek farmakologis aktif untuk mempertahankan fisiologi kulit yang sudah baik, memperbaiki fisiologi kulit yang kurang baik atau menyembuhkan kelainan-kelainan kulit tertentu.

COSMEDICS

Semacam kosmetik yang juga bermanfaat untuk memperbaiki dan mempertahankan kesehatan kulit, seperti preparat anti ketombe, deodorant, preparat antipespirant, preparat untuk mempengaruhi warna kulit, dan preparat anti jerawat

KOSMETIKA HIPOALERGIK

Kosmetika yang di dalamnya tidak mengandung zat-zat yang dapat menyebabkan reaksi iritasi dan sensitasi.

Kosmetika jenis ini merupakan kosmetika yang lebih aman untuk kesehatan kulit.

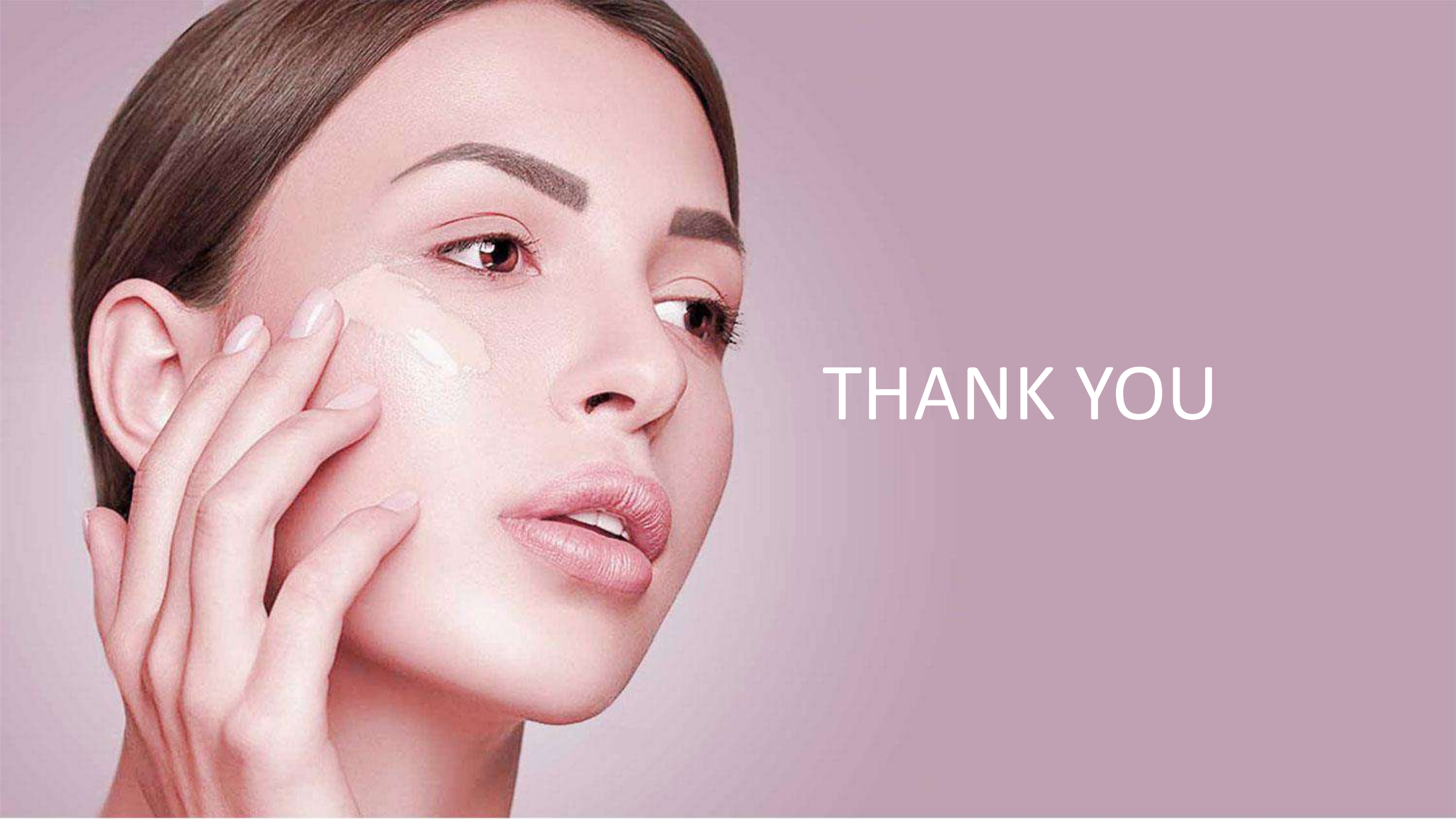
Banyak bahan yang sering menimbulkan reaksi iritasi dan sensitasi telah dikeluarkan dari daftar kosmetika hipoalergik seperti arsenic compounds, aluminium sulfat, aluminium klorida, balsam of peru, fenol, fern, formaldehide, gum arabic, lanolin, mercury compounds, paraphenylennediamin, bismuth compounds, oil of bergamot, oil of lavender, salicylic acid, resoisinol, heksaklorofen dan lain-lain.

KOSMETIKA TRADISIONAL

- Kosmetika yang terdiri dari bahan-bahan yang berasal dari alam dan diolah secara tradisional.
- Kosmetika semi-tradisional, yaitu kosmetika tradisional yang pengolahannya dilakukan secara modern dengan mencampurkan zat-zat kimia sintetik ke dalamnya

PERSYARATAN KOSMETIK

- Kosmetik tersebut menggunakan bahan – bahan yang berkualitas tinggi, tidak menimbulkan reaksi iritasi, alergi pada kulit dan jaringan sekitarnya
- Tidak menimbulkan bau yang tidak enak
- Harus mempunyai manfaat, antara lain : menghaluskan kulit, melindungi kulit dari gangguan luar serta mencegah timbulnya kelainan kulit
- Mempunyai pH yang seimbang pada kulit antara 5,5 – 6
- Penggunaan zat pewarna dan pewangi yang tidak menimbulkan reaksi jika terkena sinar matahari
- Kemasan tidak merusak produk maupun kulit pemakai
- Diolah secara hygienis
- Sebelum disebar-luaskan, kosmetik harus mengalami pengujian klinis terlebih dahulu


THANK YOU

FORMULASI DAN TEKNOLOGI SEDIAAN KOSMETIK

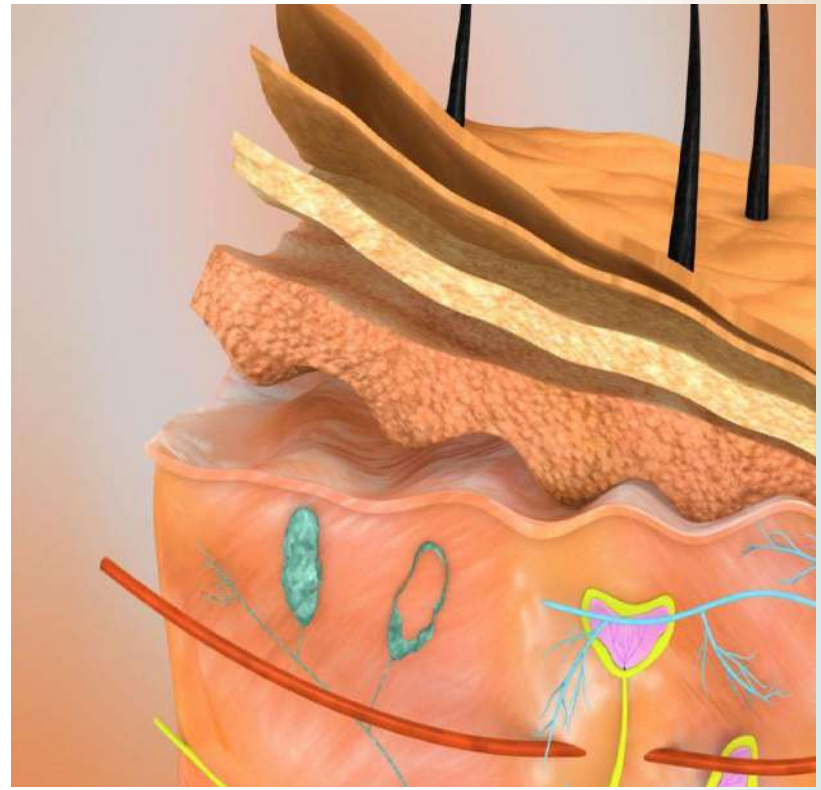
Pertemuan 2

apt. Trifonia Rosa Kurniasih, M.Biotech

STIKES NOTOKUSUMO YOGYAKARTA

TOPIK PEMBAHASAN

1. **STRUKTUR KULIT**
2. **FISIOLOGI KULIT**



KULIT

Kulit bagian terluar dari tubuh yang selalu berhubungan dengan lingkungan.

Penampilan kulit akan menunjukkan penampilan seseorang

Kulit kotor akan kurang sehat, penampilan jelek

Kulit perlu dijaga kebersihan dan kesehatannya

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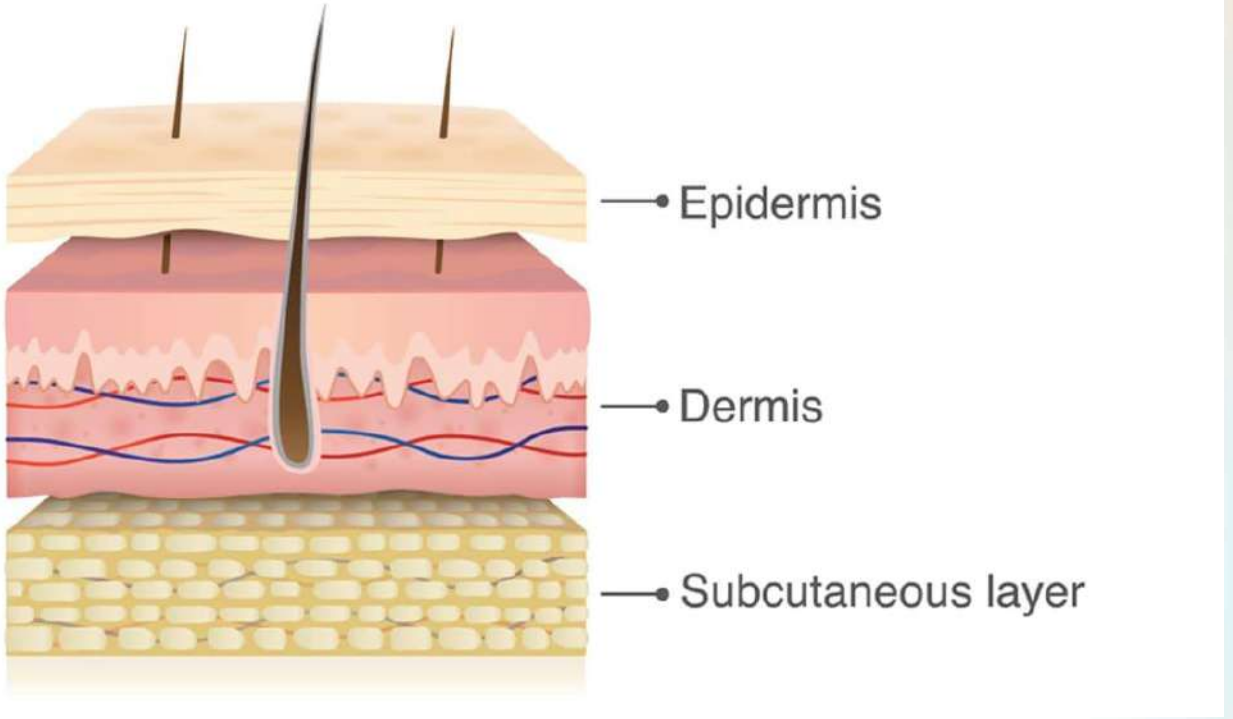
STRUKTUR KULIT



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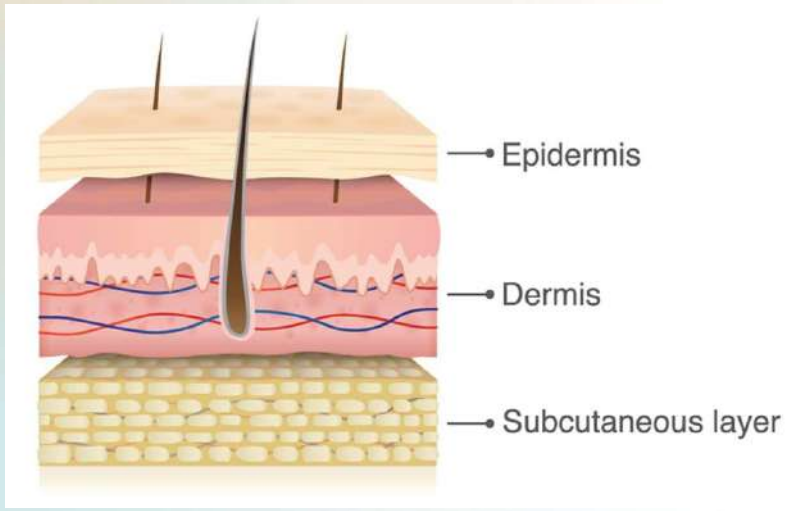
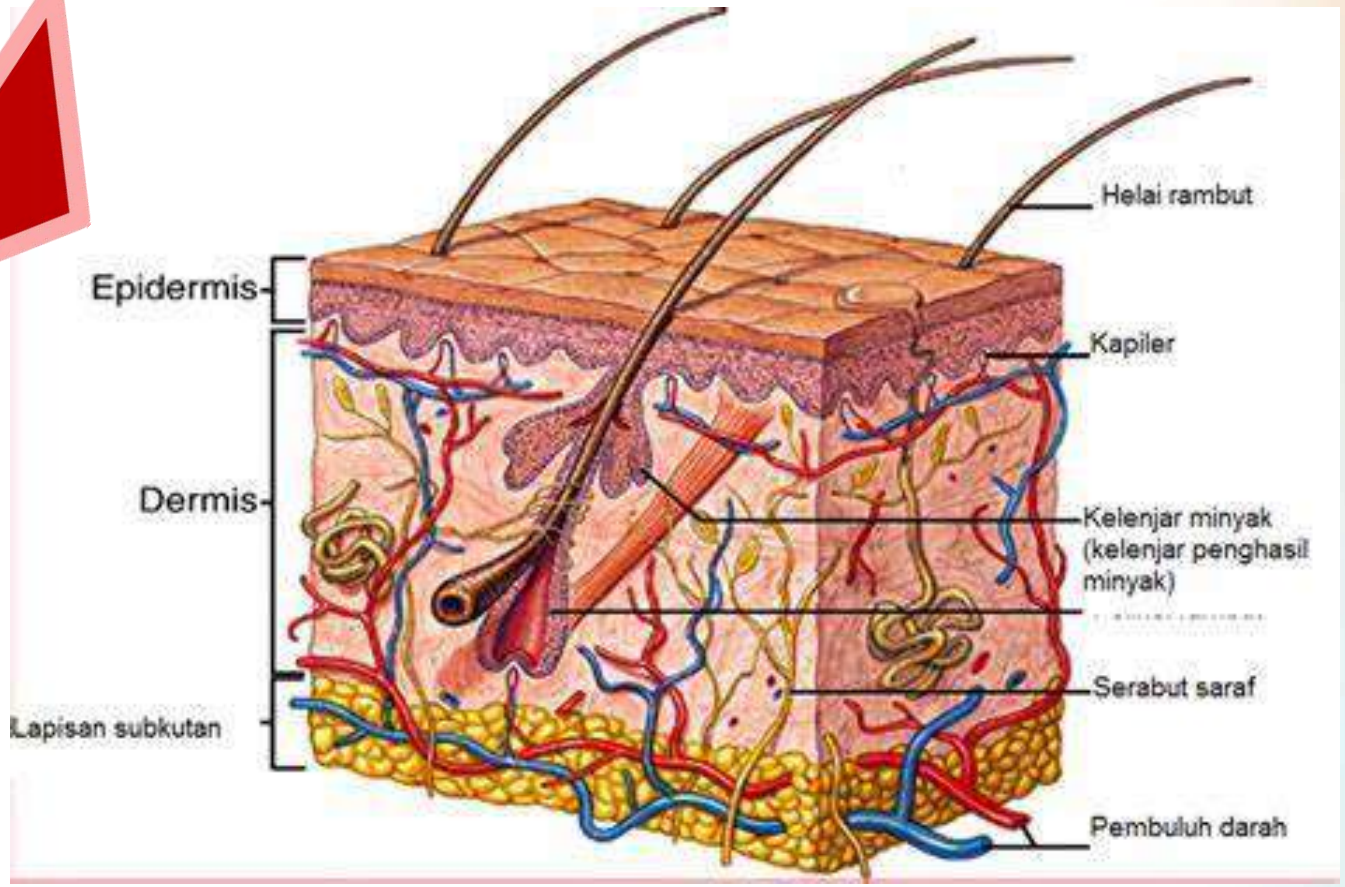
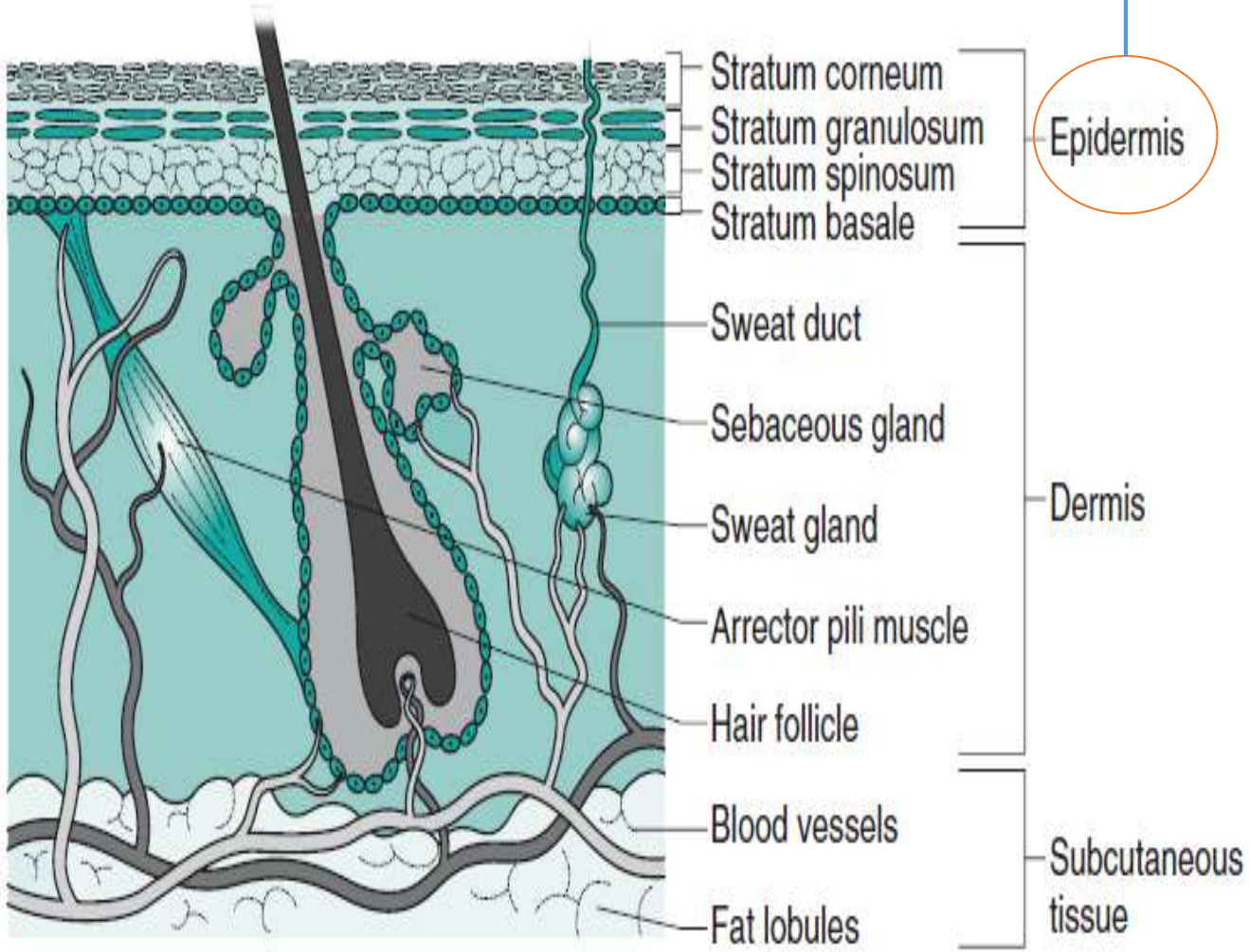




STRUKTUR KULIT



Lapisan paling luar / kulit ari

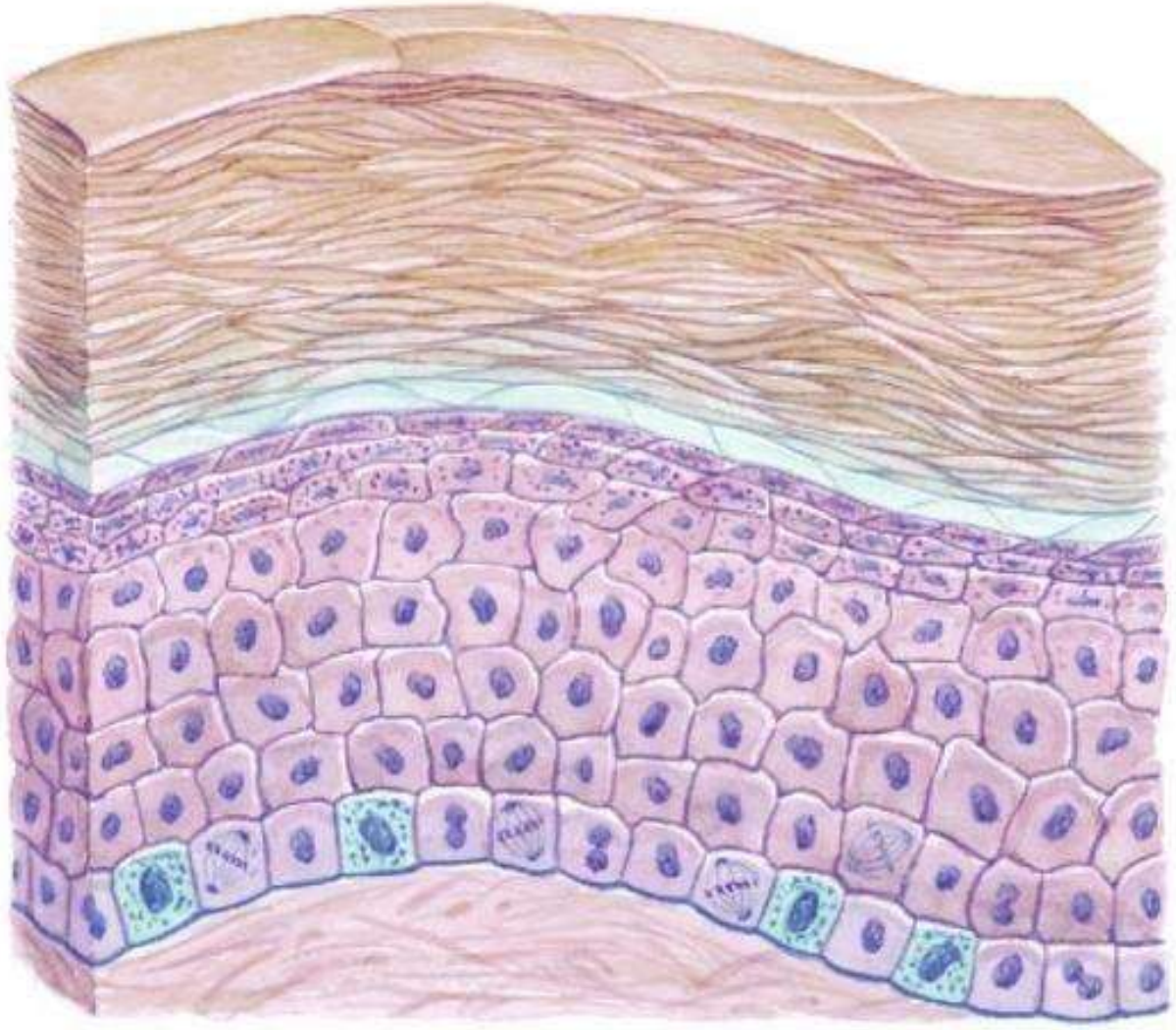
- Lapisan tanduk (stratum corneum)
- lapisan bening (stratum lucidum)
- Lapisan butir (stratum granulosum)
- Lapisan taju (stratum spinosum)
- Lapisan tunas (stratum basale)

Lapisan-lapisan ini tumbuh dari lapisan TUNAS (basale) ke arah lapisan tanduk.

Makin keatas makin gepeng, pada lapisan tanduk makin gepeng dan mati.

Pertumbuhan dari lapisan tunas sampai lapisan tanduk butuh waktu hari (14 – 21 hari)

Ini penting pada perawatan kulit, tidak semua lapisan tanduk mau lepas dengan sendirinya, perlu dilepas supaya kulit tidak kusam, tebal, kotor.



Layer of Epidermis

Stratum corneum
Consists of many layers of keratinized dead cells that are flattened and nonnucleated; cornified

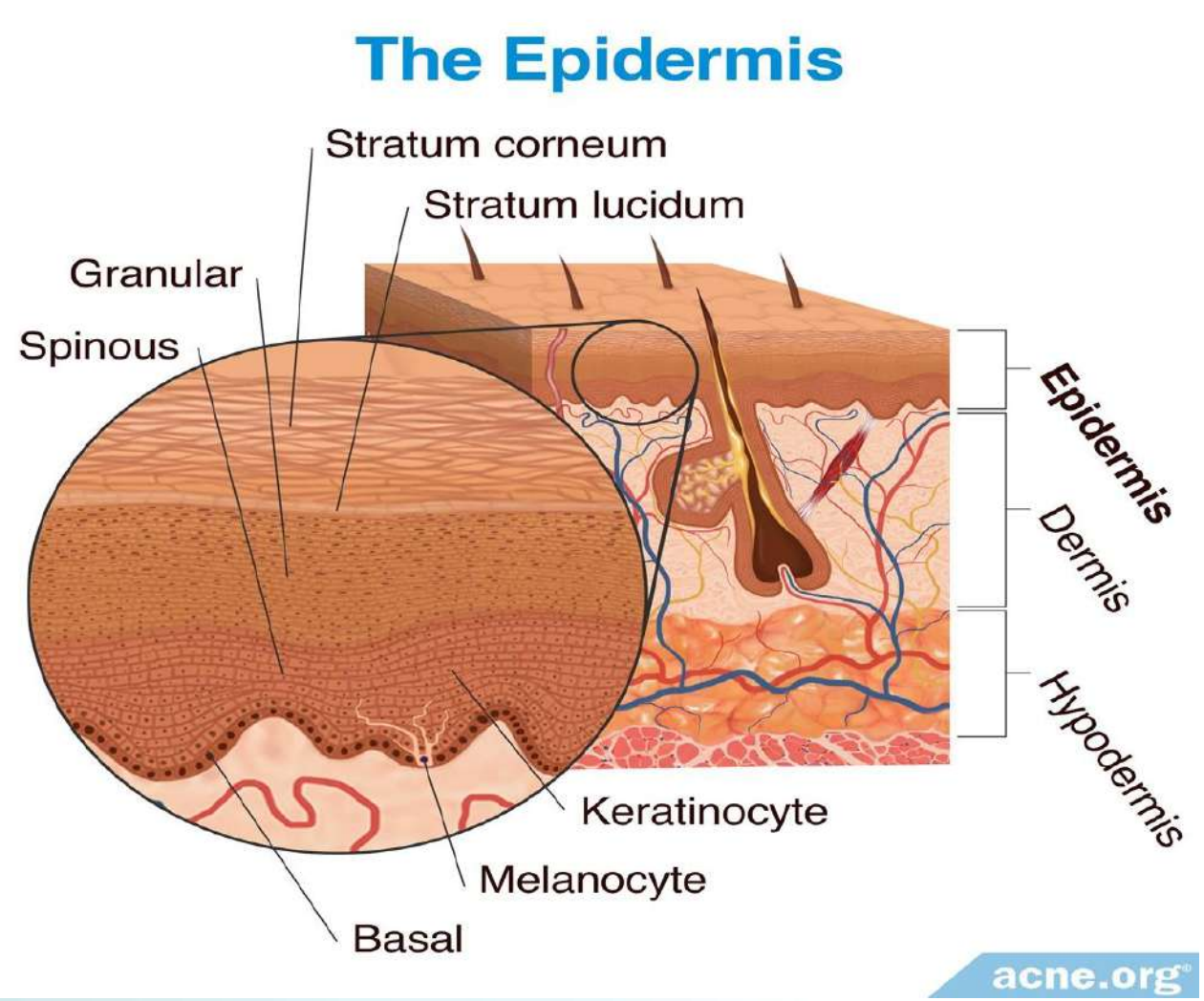
Stratum lucidum
A thin, clear layer found only in the epidermis of the lips, palms, and soles

Stratum granulosum
Composed of one or more layers of granular cells that contain fibers of keratin and shriveled nuclei

Stratum spinosum
Composed of several layers of cells with centrally located, large, oval nuclei and spinelike processes; limited mitosis

Stratum basale
Consists of a single layer of cuboidal cells in contact with the basement membrane that undergo mitosis; contains pigment-producing melanocytes

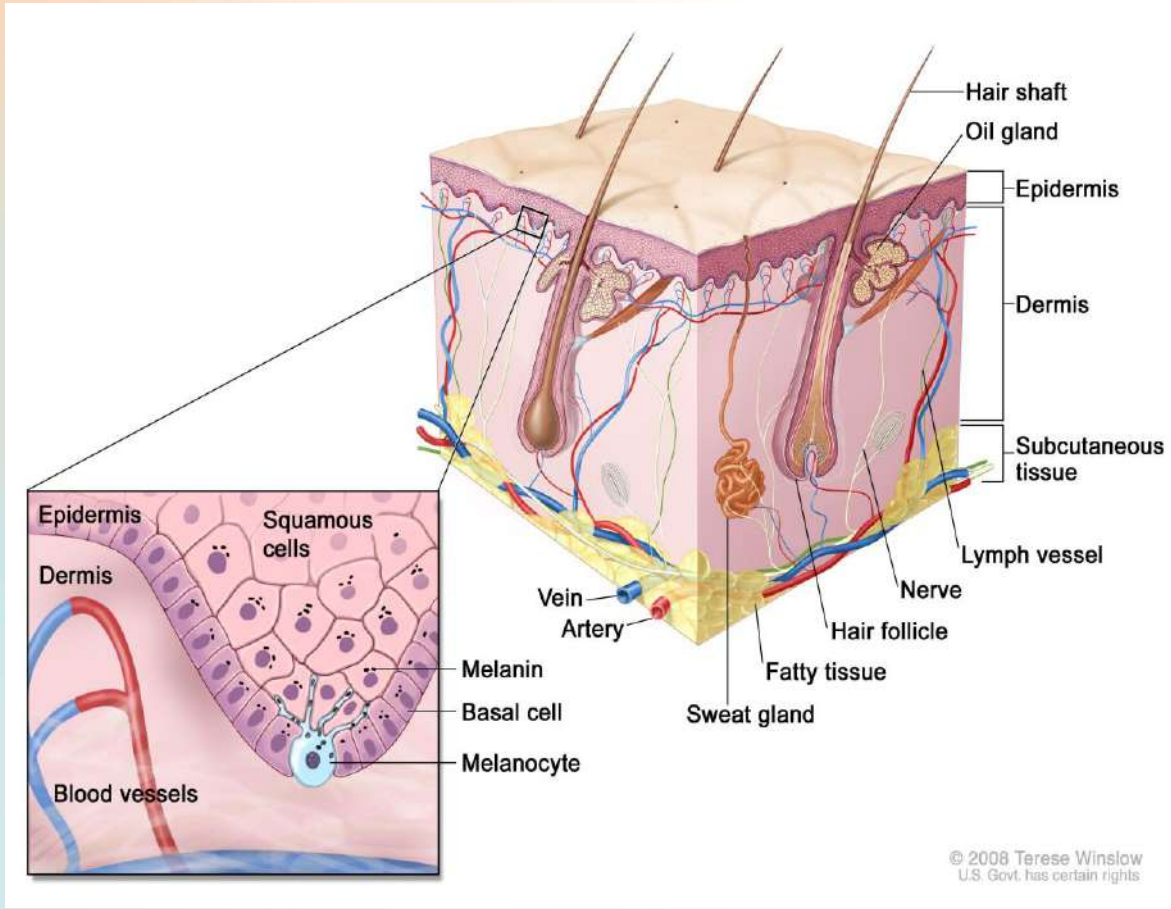
STRUKTUR KULIT

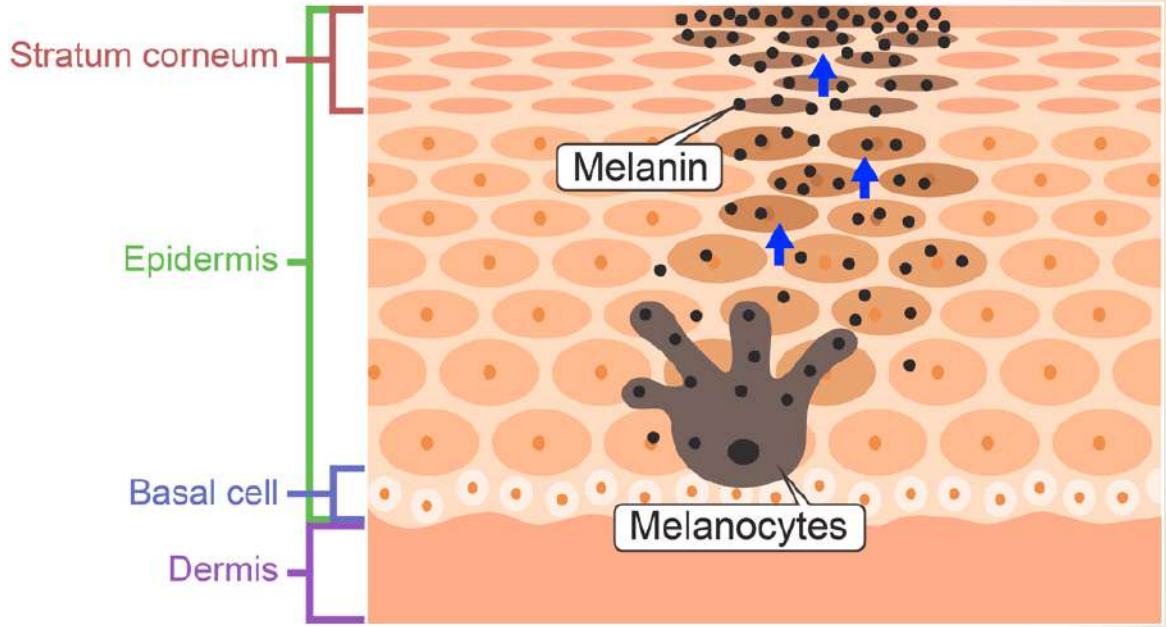


Lapisan Basal/Paling bawah Terdapat Melanosit dan keratinosit

- Pigmentasi kulit memastikan fotoproteksi yang efisien dan bergantung pada pigmen melanin, yang diproduksi oleh melanosit epidermis dan ditransfer ke keratinosit di sekitarnya.

STRUKTUR KULIT

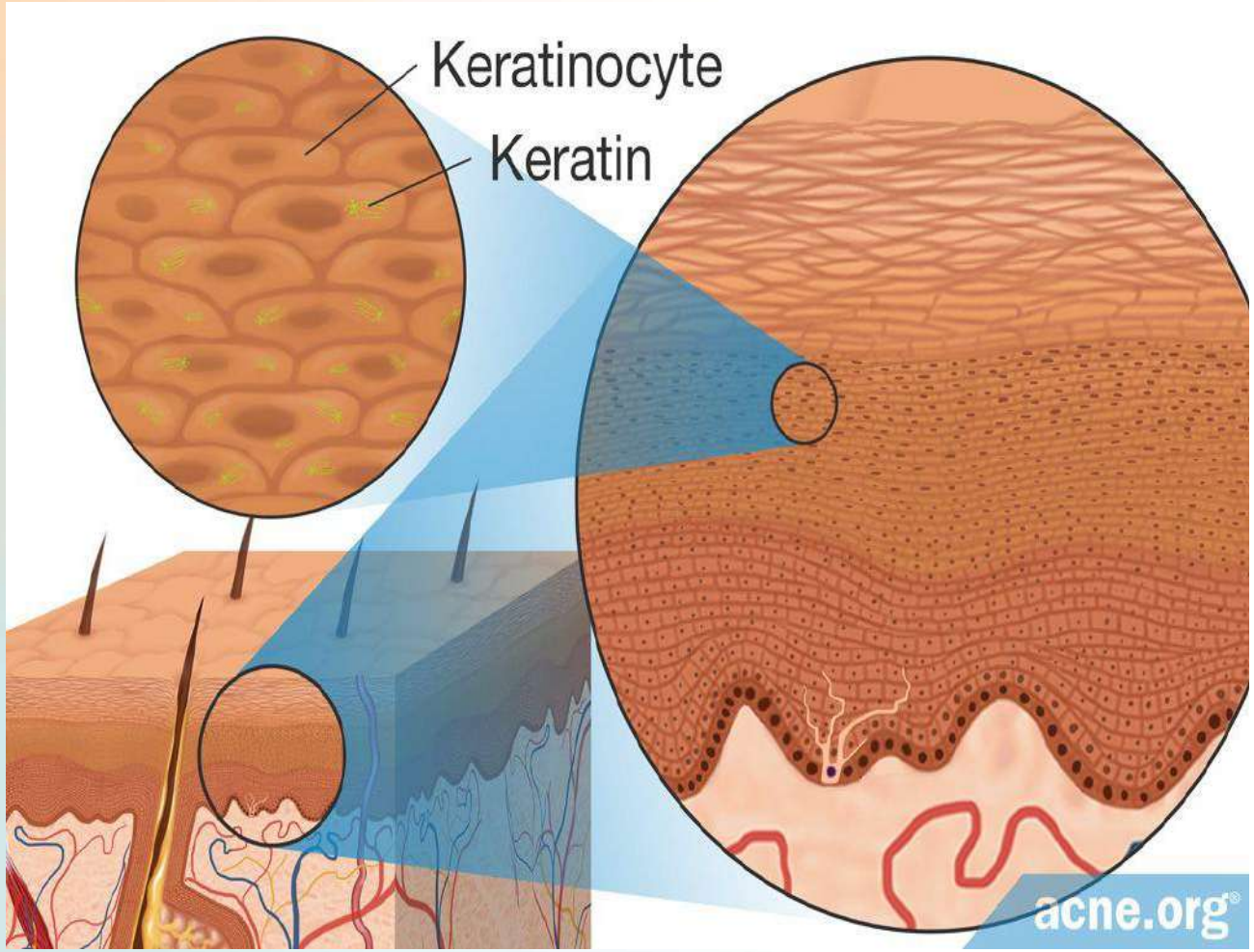




Melanosit adalah Sel membentuk **melanin (pigmen kulit)** → warna rambut, kulit, dan mata pada manusia dan hewan.

- Fungsi Melanin = Melindungi kulit terhadap Radikal Bebas Sinar Matahari
- Melanosit tersebar di seluruh stratum basale dan dapat memperluas dendrit hingga berkontak hingga keratinosit, membentuk “unit melanin epidermal”

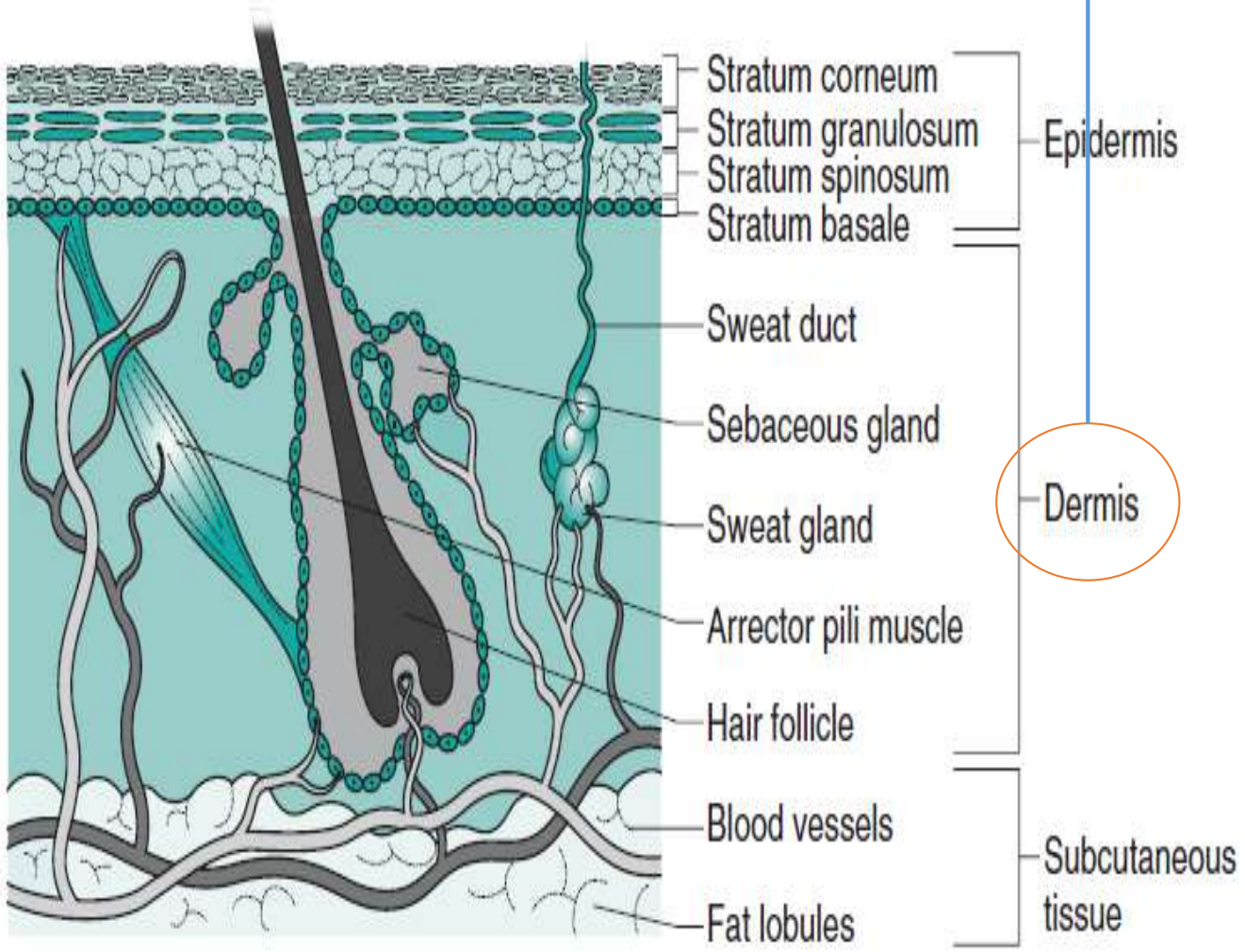
STRUKTUR KULIT



Stratum Lucidum (lapisan bening) Lapisan ini disebut juga sebagai **lapisan barrier yang terletak di bawah lapisan tanduk yang menghubungkan stratum korneum dengan stratum granulosum**. Di lapisan inilah proses keratinisasi dimulai.

- **Keratinosit** merupakan sel terbanyak (85-95%), berasal dari ektoderm permukaan. Merupakan sel epitel yang mengalami keratinisasi, menghasilkan lapisan kedap air dan perisai pelidung tubuh
- Proses **keratinisasi berlangsung 2-3 minggu** mulai dari proliferasi mitosis, diferensiasi, kematian sel, dan pengelupasan (deskuamasi)

STRUKTUR KULIT



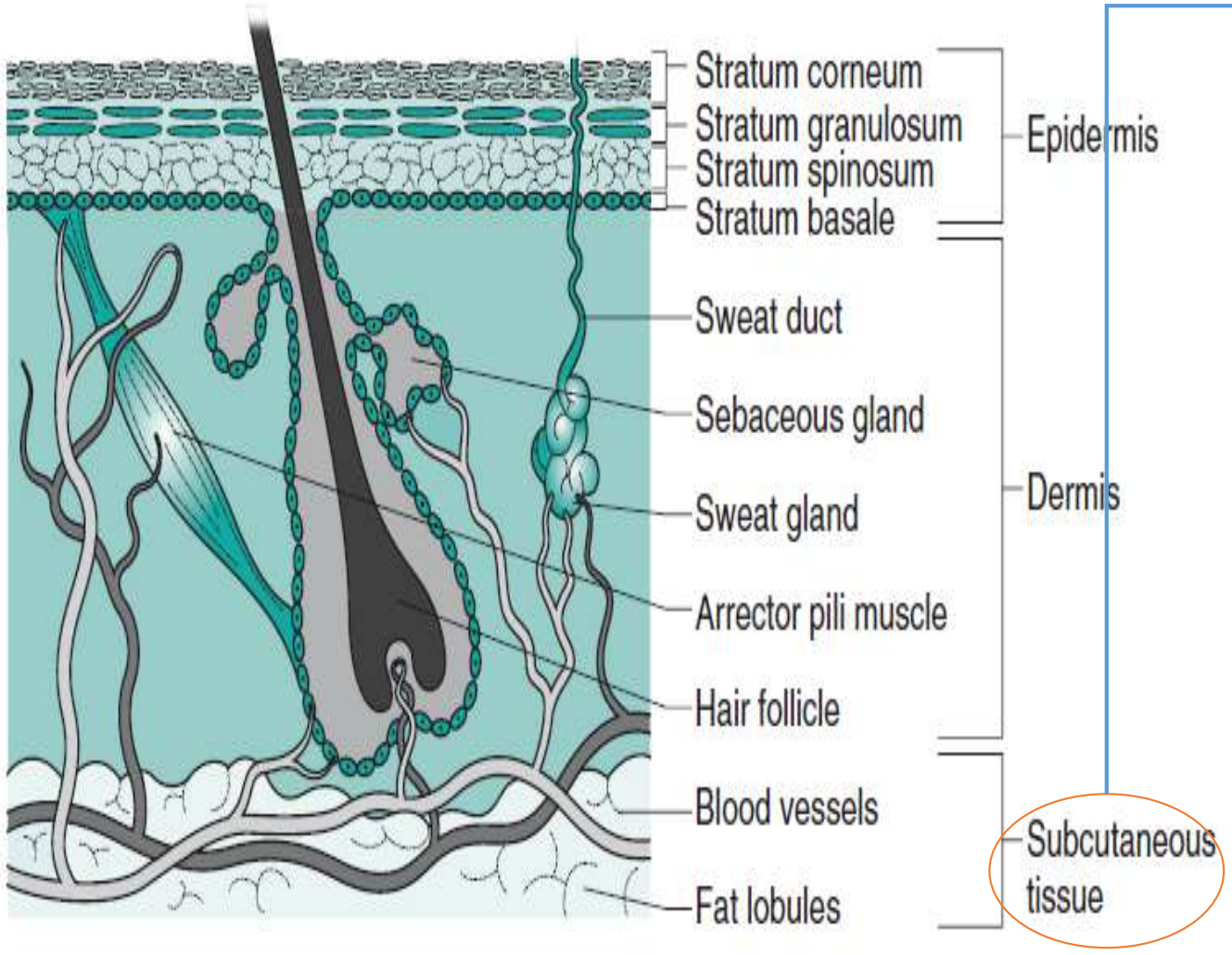
Lapisan Dermis : Lebih tebal

- Kelenjar minyak kulit (kelenjar sebasea) sebagai penghasil sebum (minyak kulit)
- Pembuluh darah
- Ujung syaraf
- Akar rambut
- Otot penggerak rambut

Bagian dari dermis ini berada dalam jaringan penunjang dan penghubung yang disebut kolagen dan elastin.

Bila jaringan ini rusak → kulit tidak elastis, kendur dan keriput

STRUKTUR KULIT



Lapisan subkutis (hypodermis)

Sel Terbanyak adalah Liposit, menghasilkan Banyak Lemak

Pembuluh Darah dan Limfe

Syaraf

STRUKTUR KULIT

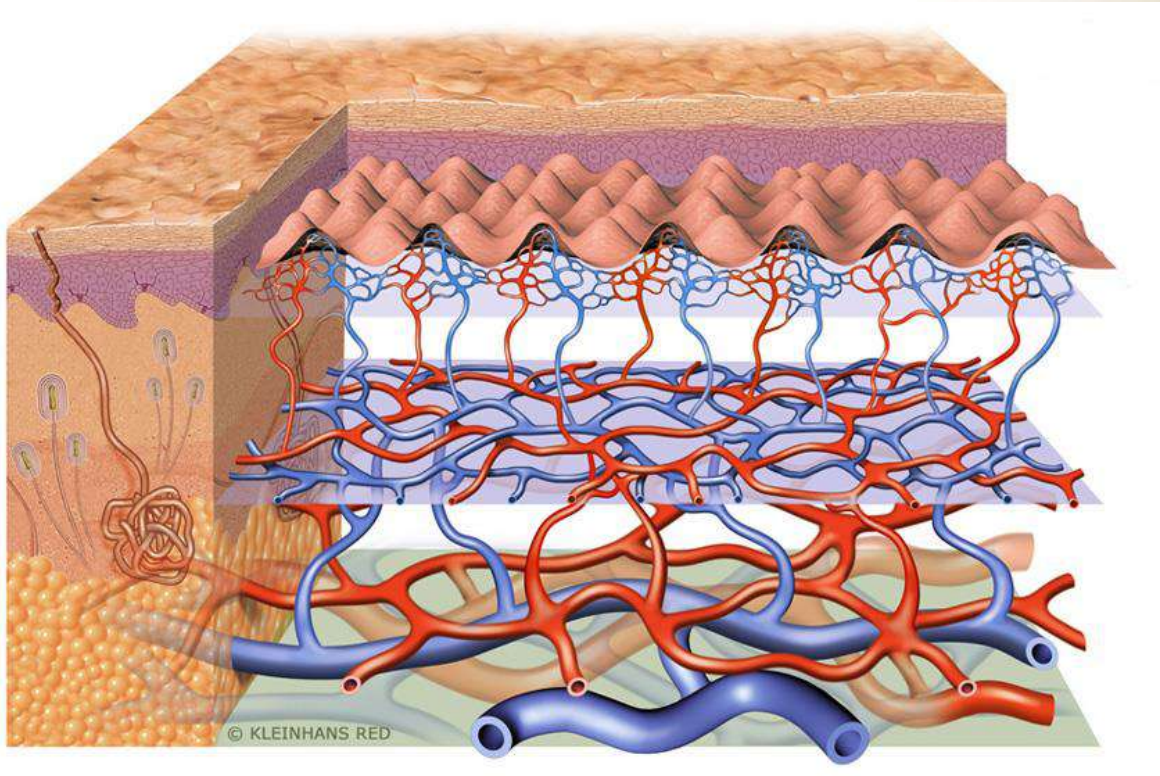
The largest blood supply, the subcutaneous/deep dermal supply, is composed of arteries and veins that branch superficially into the middermis to form the cutaneous plexus.

The cutaneous plexus is responsible for supplying blood to the adnexal structures of the dermis, including follicles and glands.

The skin's blood vessel system supplies the cells and tissue with nutrients and oxygen, regulates the blood pressure, regulates the body temperature, and provides a barrier against absorption and remove cellular waste and products.

The blood vessels also transport the hormone vitamin D back to the rest the body.

Blood vessel



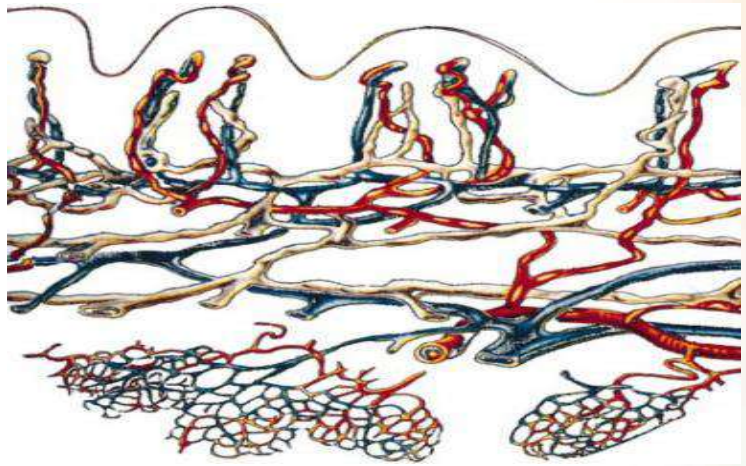
STRUKTUR KULIT

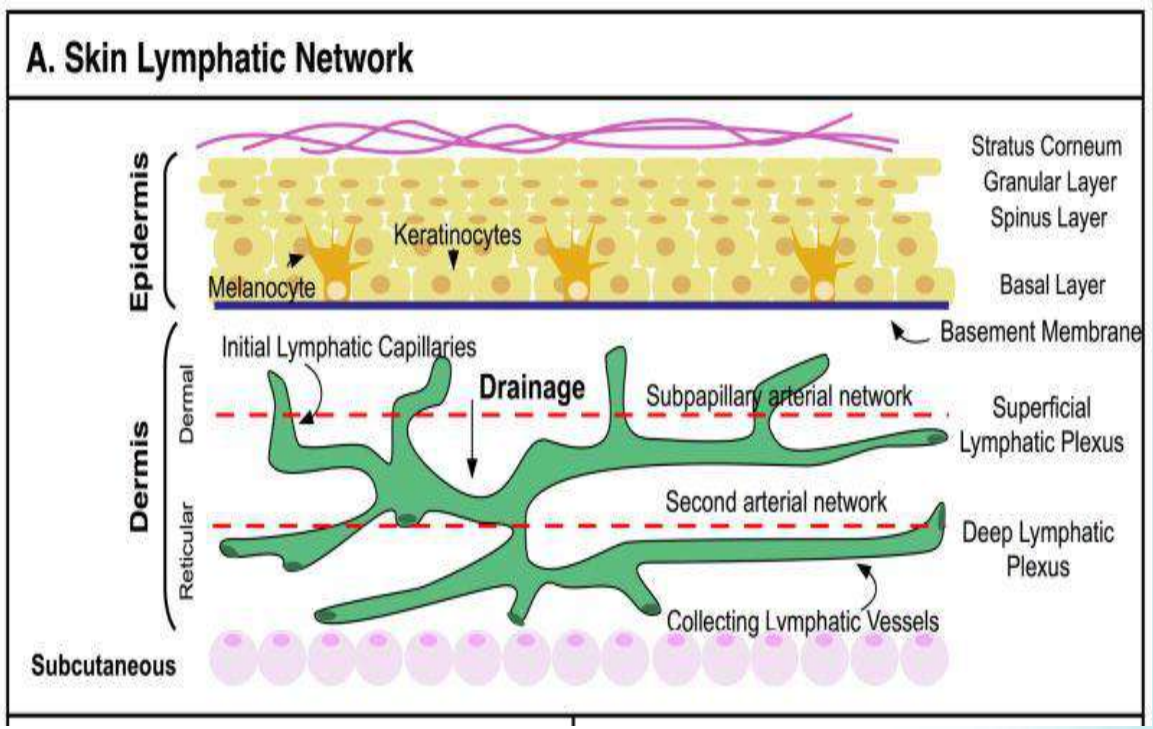
Lymphatic Vessels

The lymphatic system, acting in concert with the blood vascular system, is of fundamental importance in maintaining tissue homeostasis, and disorders of the lymphatic system are common, often resulting in chronic, disabling conditions.

Lymph is a colourless fluid that circulates throughout the lymphatic system. The main role of the lymphatic system is to act as a filter against microbes, organic wastes, toxins and other debris. It carries lymphocytes throughout the body that fight against infections.

When enlarged they can be felt or seen as raised lumps underneath the skin, most commonly in the neck, the armpits, or in the groin area





FUNGSI KULIT

Pelindung

- Membatasi masuknya benda2 dari luar
- Melanin yang memberi warna pada kulit melindungi kulit dari akibat radikal bebas

Pengatur suhu

- Diwaktu suhu dingin, peredaran darah dikulit berkurang guna mempertahankan suhu badan.
- Pada waktu suhu panas, peredaran darah dikulit meningkat dan terjadi penguapan keringat dari kelenjar keringat sehingga suhu tubuh dapat dijaga tidak terlalu panas.

Penyerap

- Kulit dapat menyerap zat tertentu, terutama zat2 yang larut dalam lemak dapat diserap ke dalam kulit
- Hormon yang terdapat pada krim muka dapat masuk melalui kulit
- Penyerapan terjadi melalui muara kandung rambut kulit dan masuk ke dalam serta merembes melalui pembuluh darah ke dalam peredaran darah kemudian ke berbagai organ lainnya.

FUNGSI KULIT

Indera Peraba

- Fungsi Indera peraba yang pokok adalah : Nyeri, Perabaan, Panas-dingin

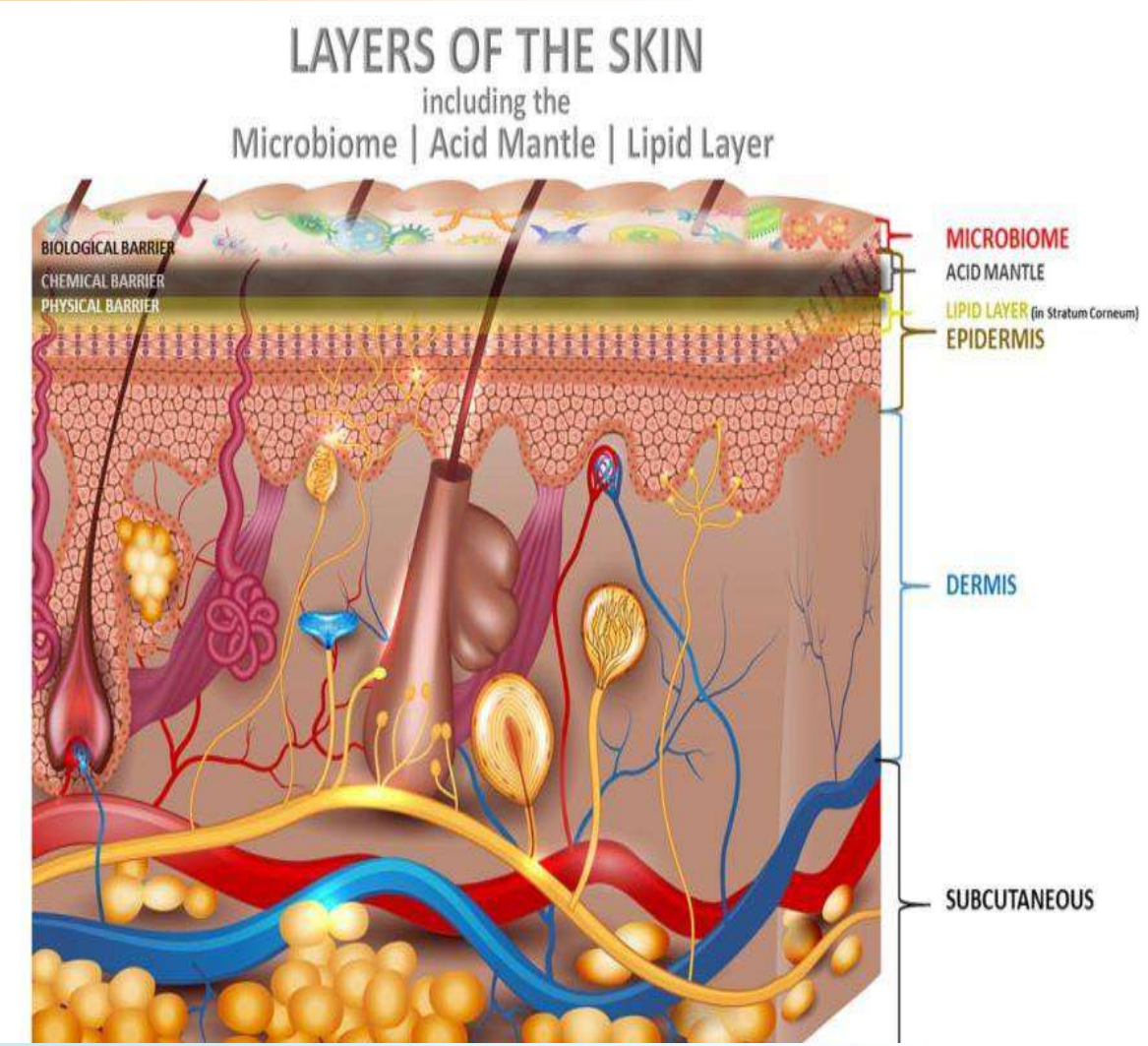
Pengeluaran (ekskresi)

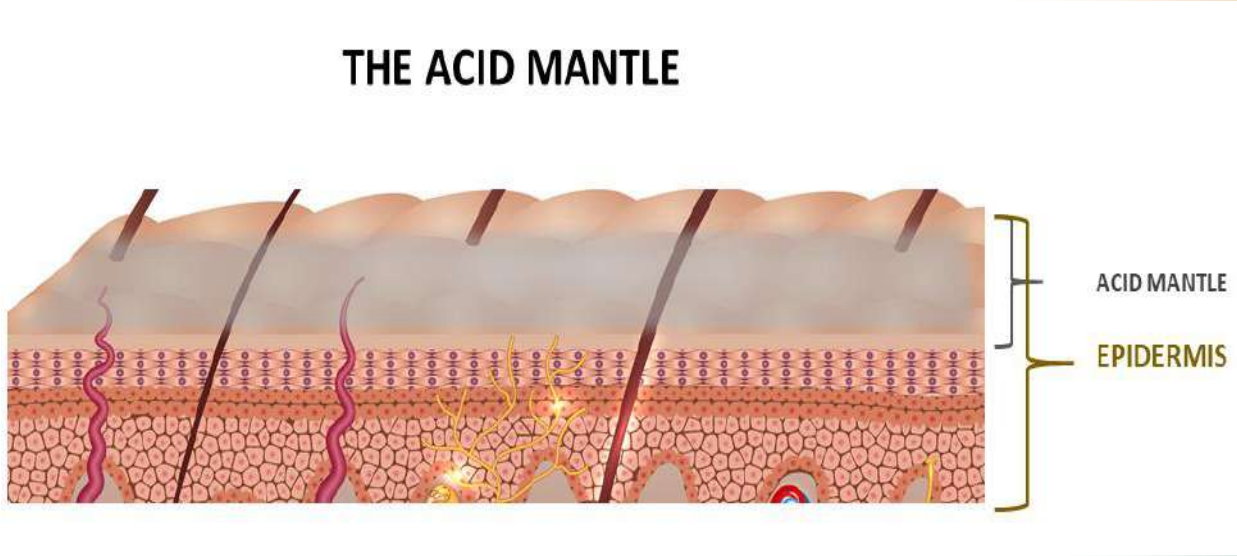
- Sebum, sejenis zat lemak yang membuat kulit menjadi lentur
- Keringat

Penunjang penampilan

- Fungsi yang terkait dengan kecantikan yaitu keadaan kulit yang tampak halus, putih dan bersih.
- Fungsi lain dari kulit yaitu kulit dapat mengekspresikan emosi seseorang seperti kulit memerah, pucat maupun konstraksi otot penegak rambut.

FISIOLOGI KULIT

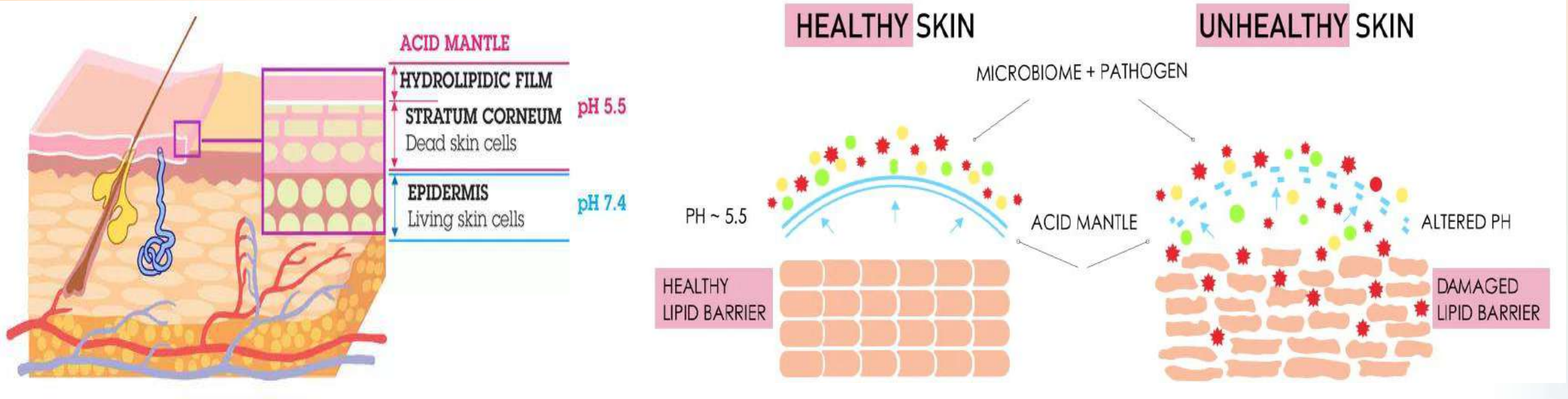




Stratum corneum dilapisi oleh suatu lapisan tipis lembab yang bersifat asam, sehingga disebut sebagai “mantel asam kulit” (sauremantel).

”Mantel asam” kulit disebut sebagai *“ the first line barrier of the skin*” (perlindungan pertama kulit)

FISIOLOGI KULIT



tiga fungsi pokok “ mantel asam kulit” yaitu;

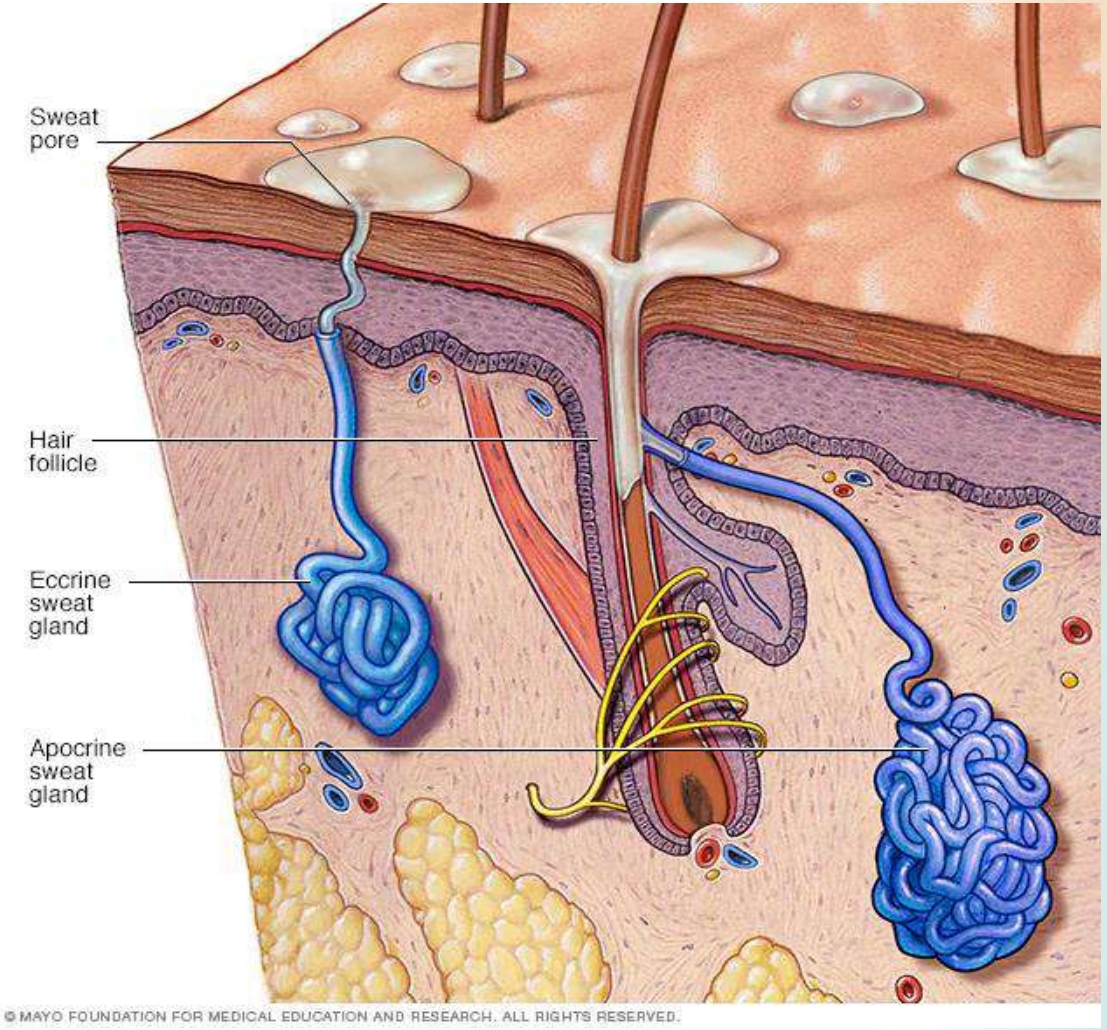
- Sebagai penyangga (buffer yang berusaha menetralisir bahan kimia yang terlalu asam atau terlalu alkalis yang masuk ke kulit).
- Membunuh dengan sifat asamnya atau setidaknya menekan pertumbuhan mikroorganisme yang membahayakan kulit.
- Dengan sifat lembabnya sedikit banyak mencegah kekeringan kulit.

FISIOLOGI KULIT

Keringat merupakan bagian dari fungsi ekskresi dan termoregulasi (pengaturan panas tubuh), serta mengandung air, elektrolit, garam, sisa-sisa karbohidrat, glukosa, protein, dan asam laktat

Pada suhu lingkungan tinggi (panas), kelenjar keringat menjadi aktif dan pembuluh kapiler di kulit melebar (vasodilatasi). Melebarnya pembuluh kapiler akan memudahkan proses pembuangan air dan sisa metabolisme.

Aktifnya kelenjar keringat mengakibatkan keluarnya keringat ke permukaan kulit dengan cara penguapan. Penguapan mengakibatkan suhu di permukaan kulit turun sehingga kita tidak merasakan panas lagi



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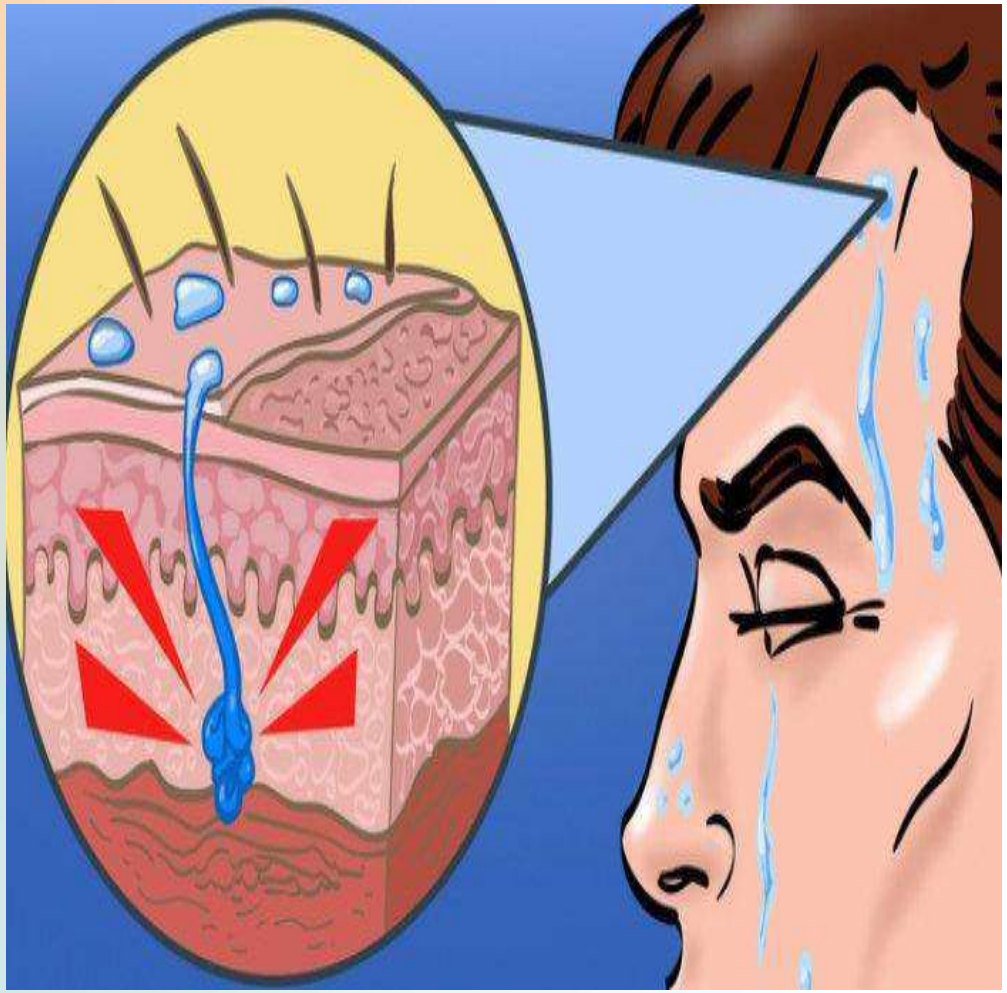
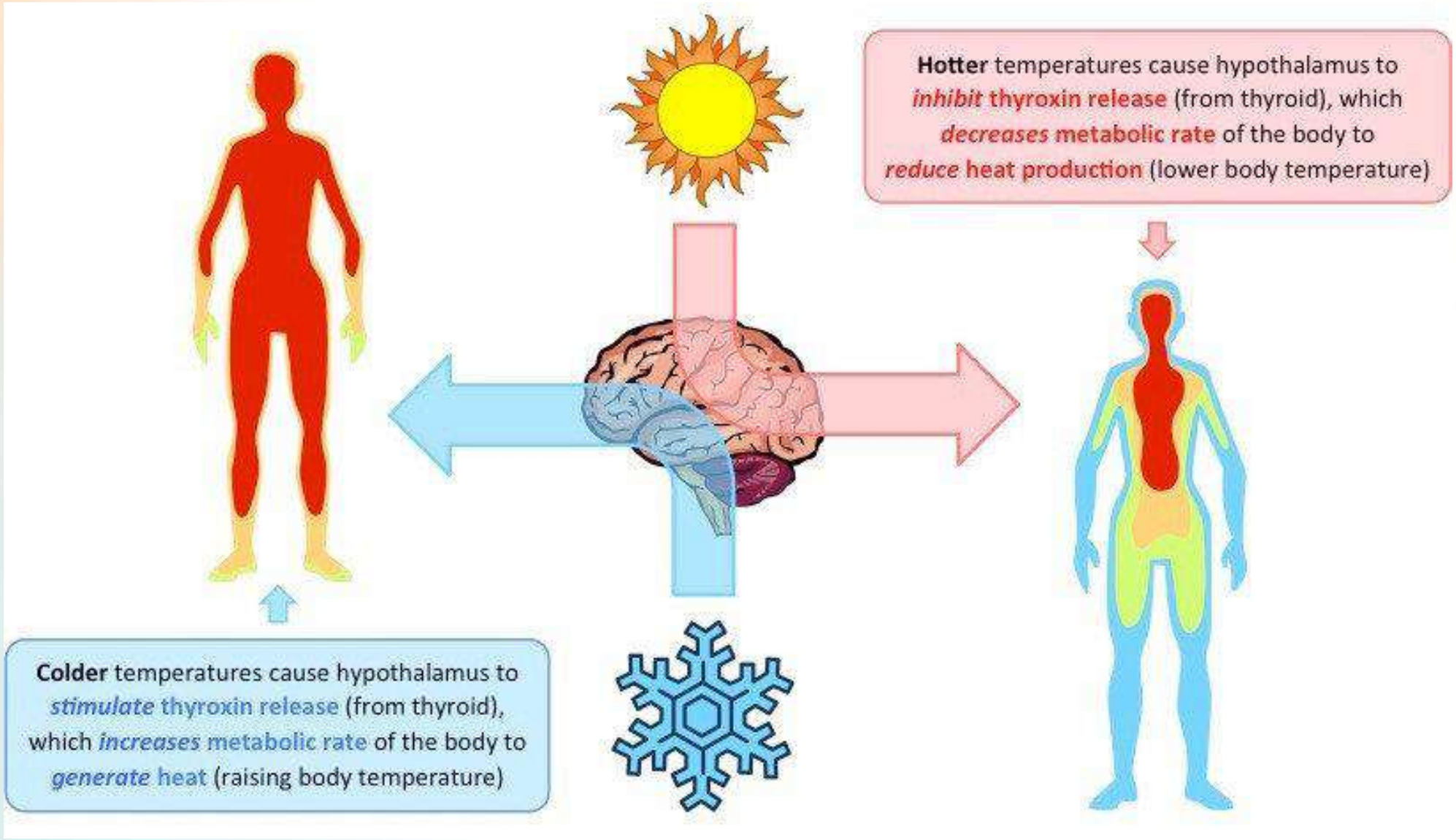
FISIOLOGI KULIT



Sebaliknya, saat suhu lingkungan rendah (dingin), kelenjar keringat tidak aktif dan pembuluh kapiler di kulit menyempit (vasokonstriksi).

Pada keadaan ini darah tidak membuang sisa metabolisme dan air. akibatnya penguapan sangat berkurang, sehingga suhu tubuh tetap dan tubuh tidak mengalami kendinginan.

Keluarnya keringat dikontrol oleh hipotalamus (bagian dari otak).

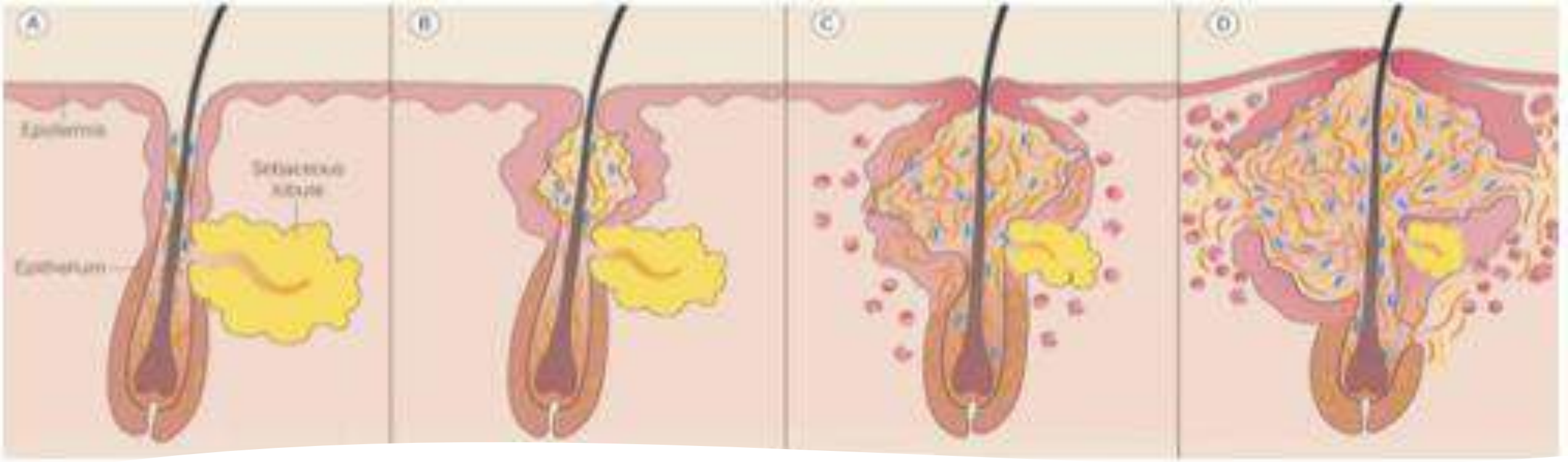

Hotter temperatures cause hypothalamus to *inhibit* thyroxin release (from thyroid), which *decreases* metabolic rate of the body to *reduce* heat production (lower body temperature)
Colder temperatures cause hypothalamus to *stimulate* thyroxin release (from thyroid), which *increases* metabolic rate of the body to *generate* heat (raising body temperature)

FISIOLOGI KULIT

Kelenjar palit / minyak terletak pada bagian atas kulit jangat berdekatan dengan kandung rambut terdiri dari gelembung-gelembung kecil yang bermuara ke dalam kandung rambut (folikel)

Folikel rambut mengeluarkan lemak yang meminyaki kulit dan menjaga kelembutan rambut.

Kelenjar palit membentuk sebum atau urap kulit. Terkecuali pada telapak tangan dan telapak kaki, kelenjar palit terdapat di semua bagian tubuh terutama pada bagian muka.



FISIOLOGI KULIT

- Pada umumnya, satu batang rambut hanya mempunyai satu kelenjar palit atau kelenjar sebasea yang bermuara pada saluran folikel rambut.
- Pada kulit kepala, kelenjar palit menghasilkan minyak untuk melumasi rambut dan kulit kepala. Pada kebotakan orang dewasa, ditemukan bahwa kelenjar palit atau kelenjar sebasea membesar sedangkan folikel rambut mengecil.
- Pada kulit badan termasuk pada bagian wajah, jika produksi minyak dari kelenjar palit atau kelenjar sebasea berlebihan, maka kulit akan lebih berminyak sehingga memudahkan timbulnya jerawat.

Integumentary System

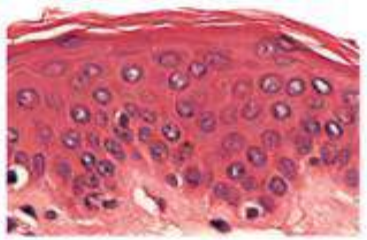
FUNCTIONS

- Physical protection from environmental hazards
- Storage of lipids
- Coordination of immune response to pathogens and cancers in skin
- Sensory information
- Synthesis of vitamin D_3
- Excretion
- Thermoregulation

Cutaneous Membrane

Epidermis

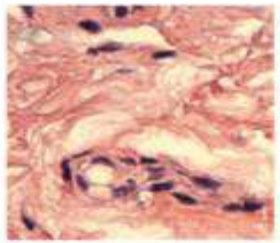
Protects the dermis, prevents water loss and the entry of pathogens, and synthesizes vitamin D_3. Sensory receptors detect touch, pressure, pain, and temperature



Dermis

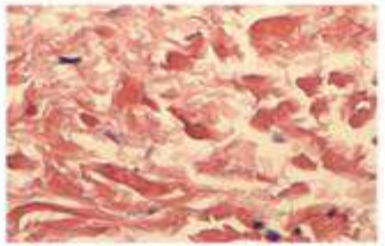
Papillary Layer

Nourishes and supports epidermis



Reticular Layer

Has sensory receptors that detect touch, pressure, pain, vibration, and temperature. Blood vessels assist in thermoregulation



Accessory Structures

Hair Follicles

Hairs protect skull and provide delicate touch sensations on general body surface

Exocrine Glands

Assist in temperature regulation and waste excretion

Nails

Protect and support tips of fingers and toes

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Penghantaran bahan aktif kosmetik melalui kulit

Harus mempunyai sifat fisiko-kimia yang memudahkan penyerapan bahan aktif oleh stratum corneoum, penetrasi bahan aktif melalui viable epidermis, pengambilan bahan aktif melalui mikrosirkulasi dalam *dermal papillary layer*

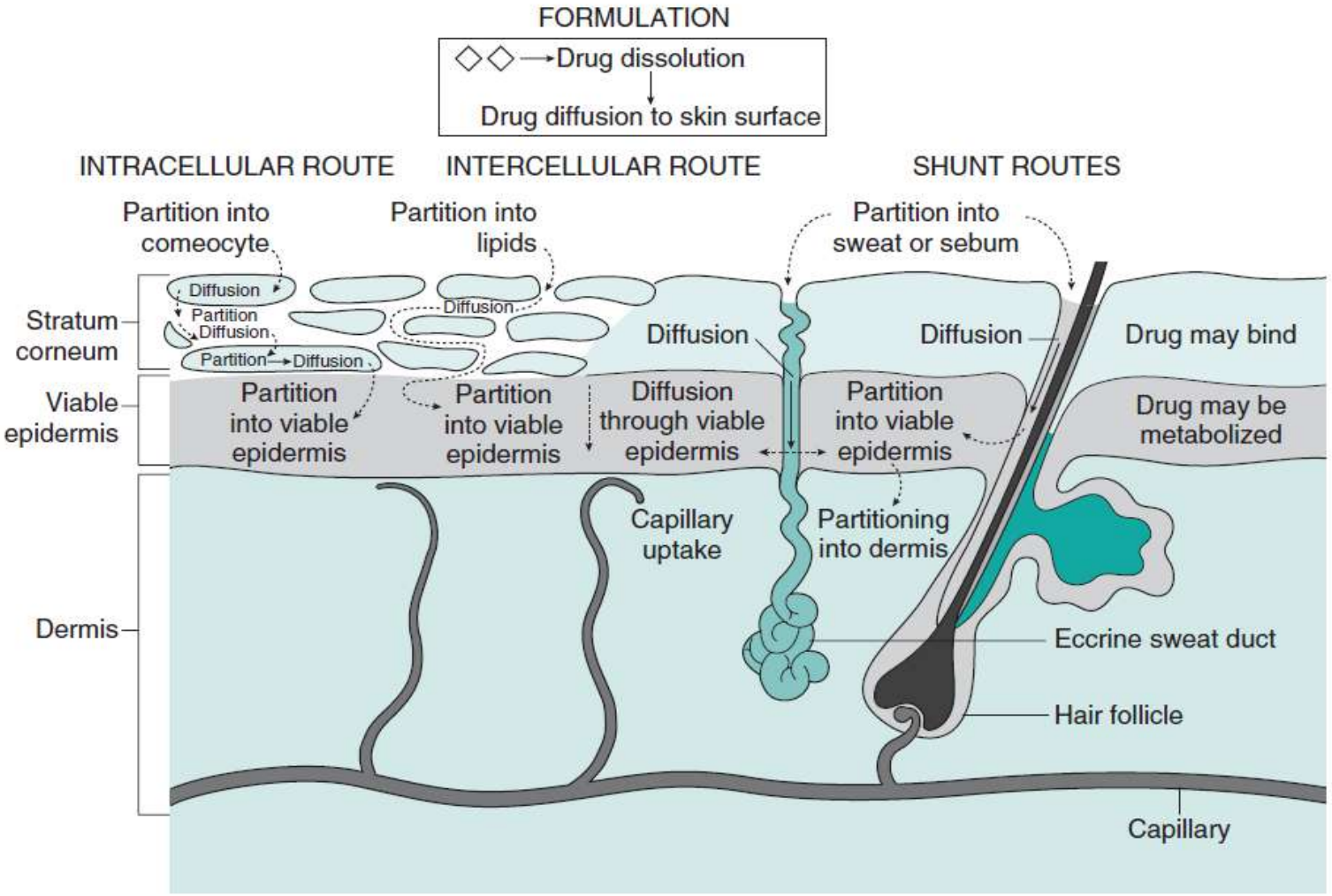

Fig. 40.2 • Some of the processes occurring during transdermal drug delivery from a suspension formulation.

Istilah

- **Permeasi :** pergerakan zat aktif melalui membrane.
- **Penetrasi :** Zat aktif masuk ke dalam jaringan
- **Difusi :** Pergerakan molekul melalui domain, dari konsentrasi tinggi ke konsentrasi rendah, dengan gerakan molekul acak
- **Partisi :** Proses molekul mendistribusikan diri di antara dua domain. Dalam pengiriman obat transdermal, partisi umumnya digunakan untuk menggambarkan redistribusi molekul dari satu domain ke domain lain, seperti dari domain berair ke domain lipid.

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Thank you

FORMULASI DAN TEKNOLOGI SEDIAAN KOSMETIK

Pertemuan 3

apt. Trifonia Rosa Kurniasih, M.Biotech

STIKES NOTOKUSUMO YOGYAKARTA

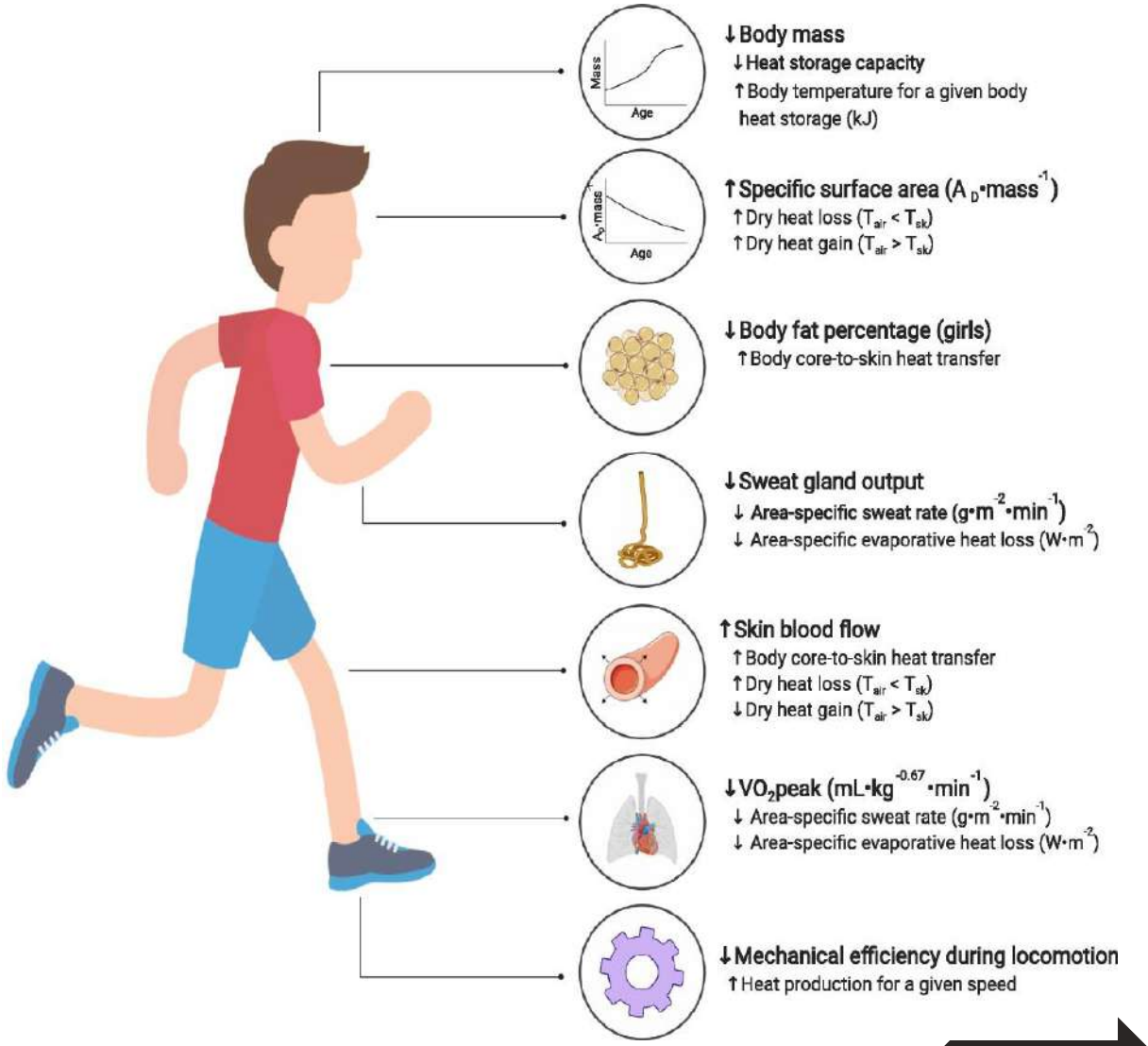
T O P I K
BAHASAN

1. Fungsi Kulit
2. Warna Kulit
3. Tipe Kulit
4. Permasalahan Pada Kulit

DISKUSI MATERI SEBELUMNYA

Kenapa ada orang yang jarang keringat dan tubuh terasa panas ?

1. Usia
2. Berat badan/ukuran
3. Rasio suhu tubuh terhadap suhu eksternal
4. Tingkat kebugaran
5. Pilihan gaya hidup
6. Secara umum, baik pria maupun wanita memiliki jumlah kelenjar keringat yang sama, sekitar 2 juta kelenjar keringat



DISKUSI MATERI SEBELUMNYA

Kenapa ada orang yang jarang keluar keringat dan tubuh terasa panas ?

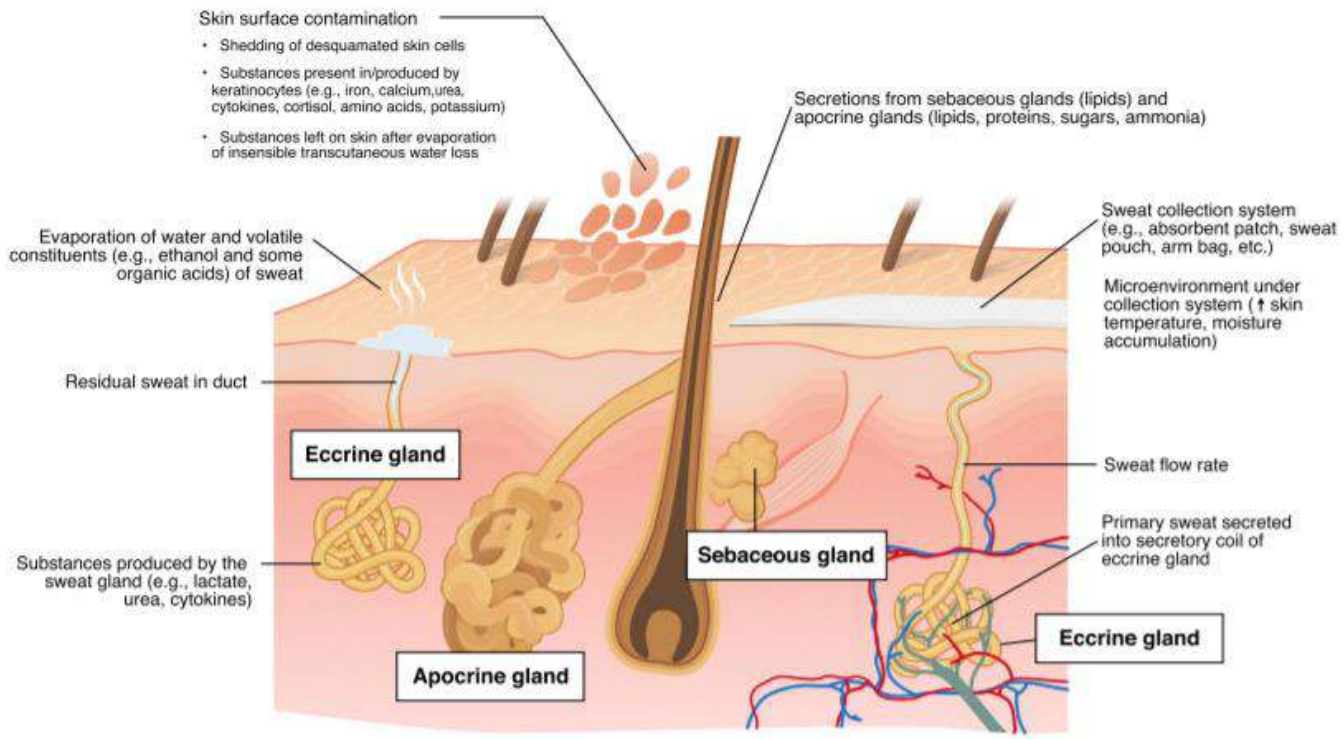


Fig. 1 Physiological and methodological factors impacting the composition of final sweat collected from the skin surface

https://link.springer.com/content/pdf/10.1007/s00421-020-04323-7.pdf

Kelenjar keringat ekrin: Ini bervariasi dalam kepadatan, ditemukan di seluruh tubuh dan merupakan solusi untuk mendinginkan tubuh. Kelenjar ekrin terbuka langsung ke permukaan kulit.

Kelenjar keringat apokrin: Ditemukan di telinga, ketiak, dan kelopak mata, kelenjar ini tidak aktif sebelum pubertas. Tetapi setelah pubertas, mereka umumnya lebih aktif selama masa stres atau energi ekstrem. Kelenjar ini mengeluarkan keringat ke kulit melalui folikel rambut.

DISKUSI MATERI SEBELUMNYA

DISCUSS

Kenapa ada orang yang jarang keluar keringat dan tubuh terasa panas ?

Anhidrosis adalah ketidakmampuan untuk berkeringat secara normal. Saat Anda tidak berkeringat (berkeringat), tubuh Anda tidak dapat mendinginkan dirinya sendiri, yang dapat menyebabkan kepanasan dan terkadang sengatan panas — kondisi yang berpotensi fatal

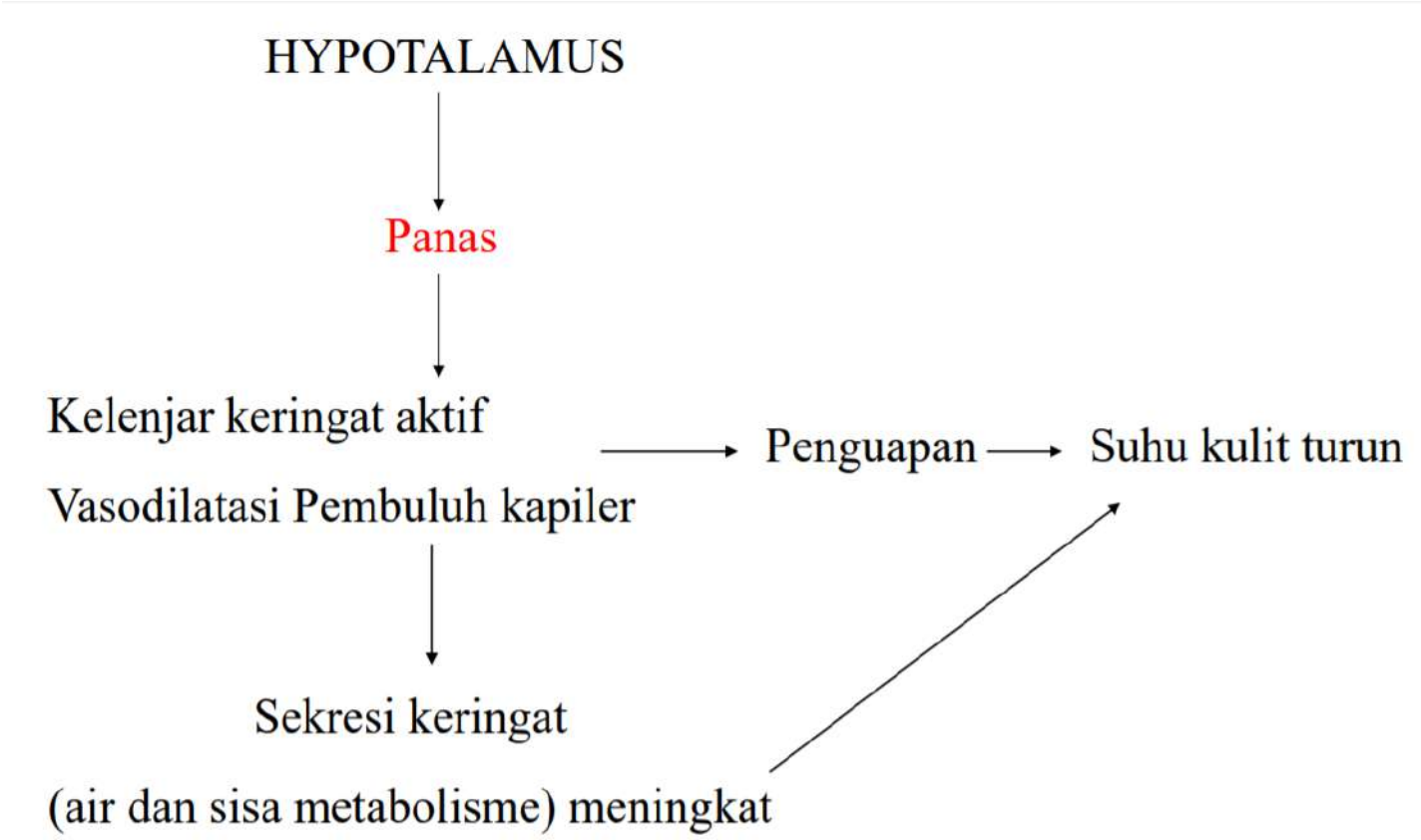
- Kondisi yang dialami sejak lahir, seperti displasia kongenital tertentu yang memengaruhi perkembangan kelenjar keringat
- Kondisi bawaan yang memengaruhi sistem metabolisme, seperti penyakit Fabry
- Penyakit jaringan ikat, seperti sindrom Sjogren, yang menyebabkan mata dan mulut kering
- Kerusakan kulit, seperti dari luka bakar atau terapi radiasi, atau penyakit yang menyumbat pori-pori Anda (oklusi pori), seperti psoriasis
- Kondisi yang menyebabkan kerusakan saraf (neuropati), seperti diabetes, alkoholisme, dan sindrom Guillain-Barre
- Obat-obatan tertentu, seperti morfin dan toksin botulinum tipe A, dan yang digunakan untuk mengobati psikosis

https://www.mayoclinic.org/diseases-conditions/anhidrosis/symptoms-causes/syc-20369400#:~:text=Anhidrosis%20is%20the%20inability%20to,heatstroke%20%E2%80%94%20a%20potentially%20fatal%20condition.

DISKUSI MATERI SEBELUMNYA

Kenapa ada orang yang jarang keluar keringat dan tubuh terasa panas ?

MEKANISME THERMOREGULASI

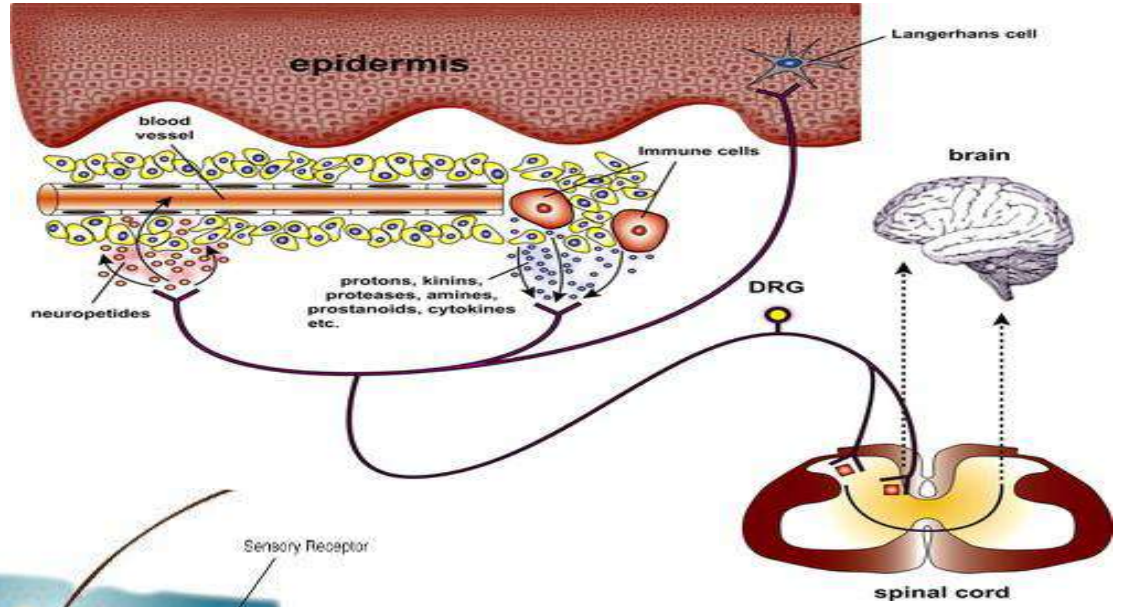


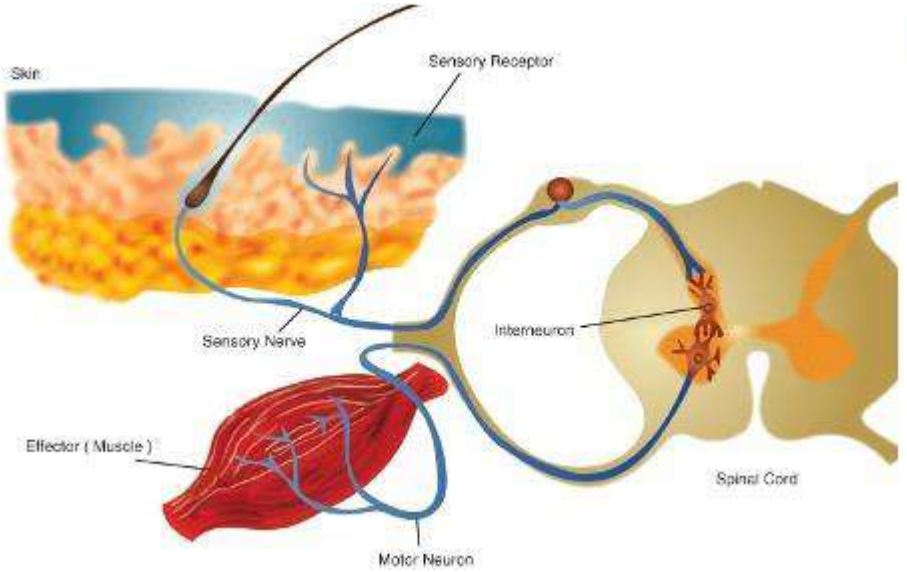
FUNGSI BIOLOGI KULIT

Sensory receptors in skin:

Receptor	Sensory Modality
Meissner's corpuscles	Touch (rapidly adapting) Vibration
Pancinian corpuscles	Touch (rapidly adapting) Proprioception Pressure Vibration
Merkel's disks	Touch (slowly adapting) Texture
Ruffini endings	Touch (slowly adapting) Pressure
Krause's corpuscles	Touch Temperature?
Nerve endings	Cold Warmth Touch Pressure
Nociceptors	Pain

6





FUNGSI BIOLOGI KULIT

Kulit yang sehat tidak mudah menyerap air, larutan, maupun benda padat.

Cairan yang mudah menguap lebih mungkin diserap kulit, begitu pula zat yang larut dalam minyak.

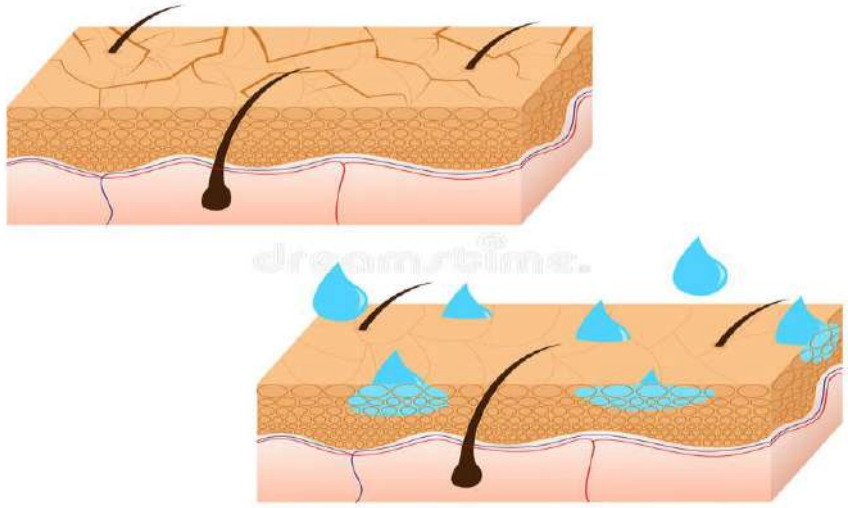
Mekanisme absorpsi, melalui :

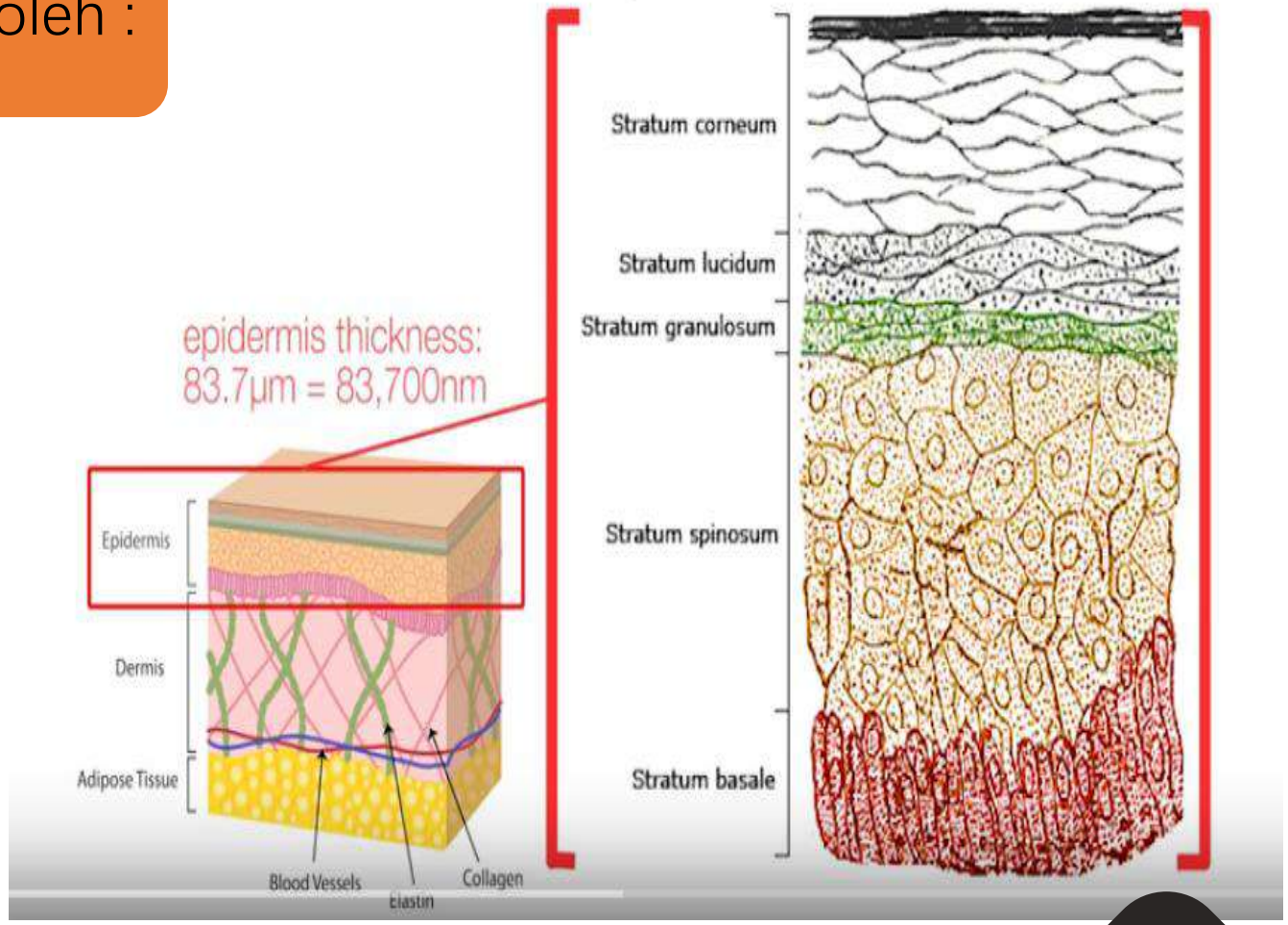
- Celah antar sel epidermis (transepidermal 97%)
- Celah folikel rambut (transfolikular 0,2 %)
- Celah antarsel saluran kelenjar keringat (transekrinal sisanya)

FUNGSI BIOLOGI KULIT

Kemampuan absorpsi kulit, dipengaruhi oleh :

- Tebal tipisnya kulit
- Hidrasi, kelembaban udara
- Metabolisme (lipid, glukosa, protein)
- Vehikulum zat yang menempel di kulit

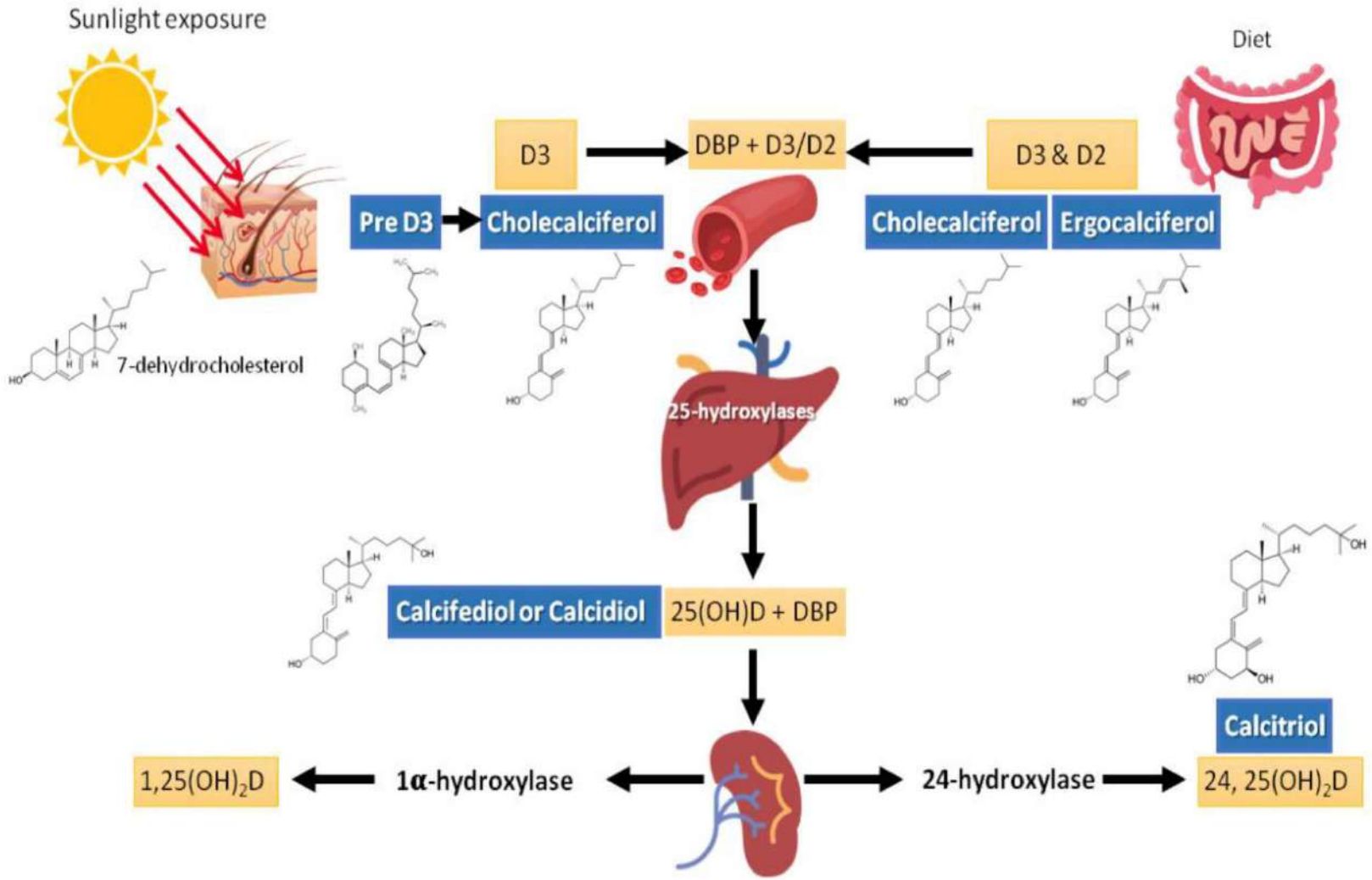




FUNGSI BIOLOGI KULIT

Metabolisme Vitamin D

- The main source of vitamin D is cutaneous synthesis. Contribution from food sources is less prominent because foods containing vitamin D are generally not a daily part of most dietary patterns.
- That is why it is often necessary to prescribe vitamin D supplements to persons who are experiencing vitamin D deficiency due to limited sun exposure, or when cutaneous vitamin D synthesis decreases (e.g., in older adults).
- Food : Cod liver oil, egg, Salmon, tuna fish, mushroom



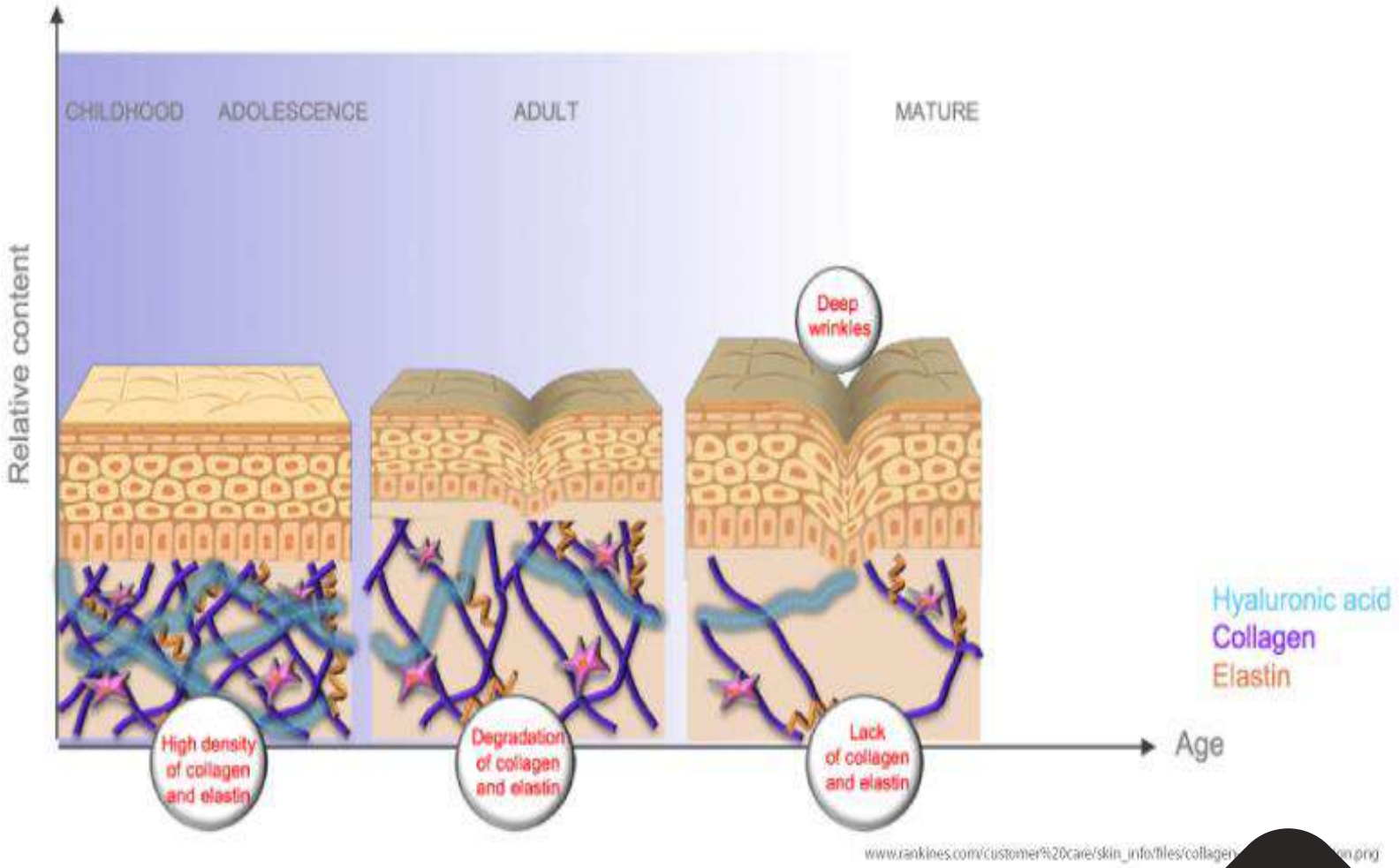
FUNGSI BIOLOGI KULIT

The dermis is composed of a meshwork of collagen-rich fibrous connective tissue.

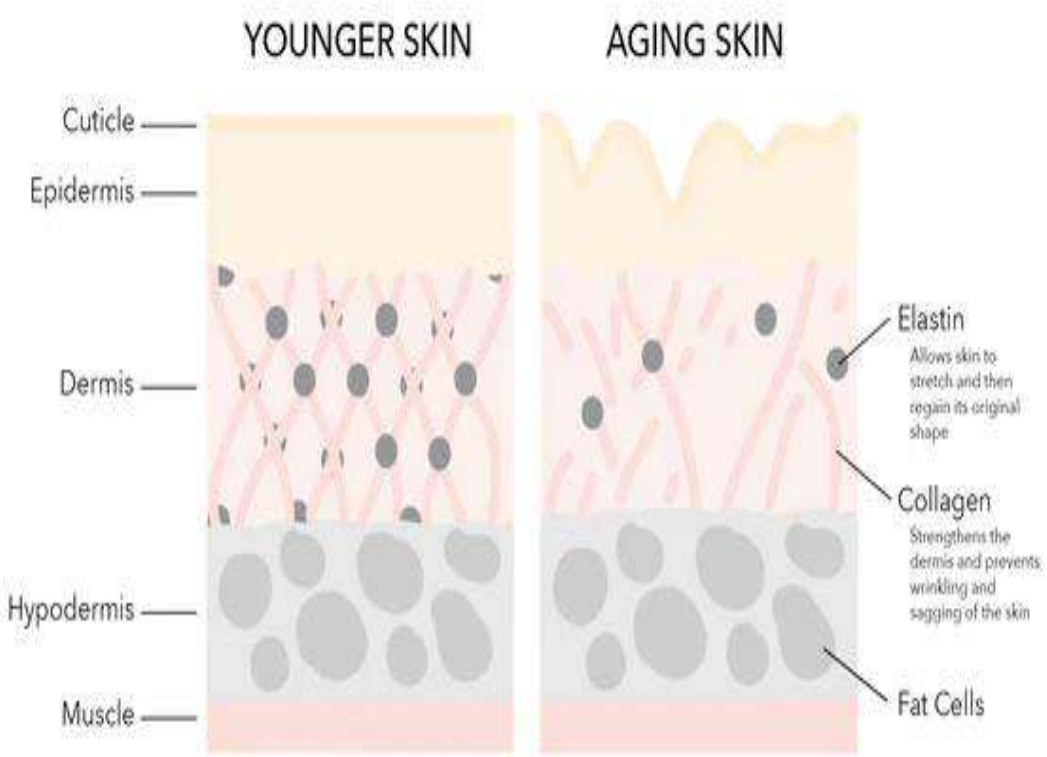
Collagen is the primary structural protein of the dermis. Elastin, an elastic protein, is present in lesser amounts but contributes to flexibility of the dermis.

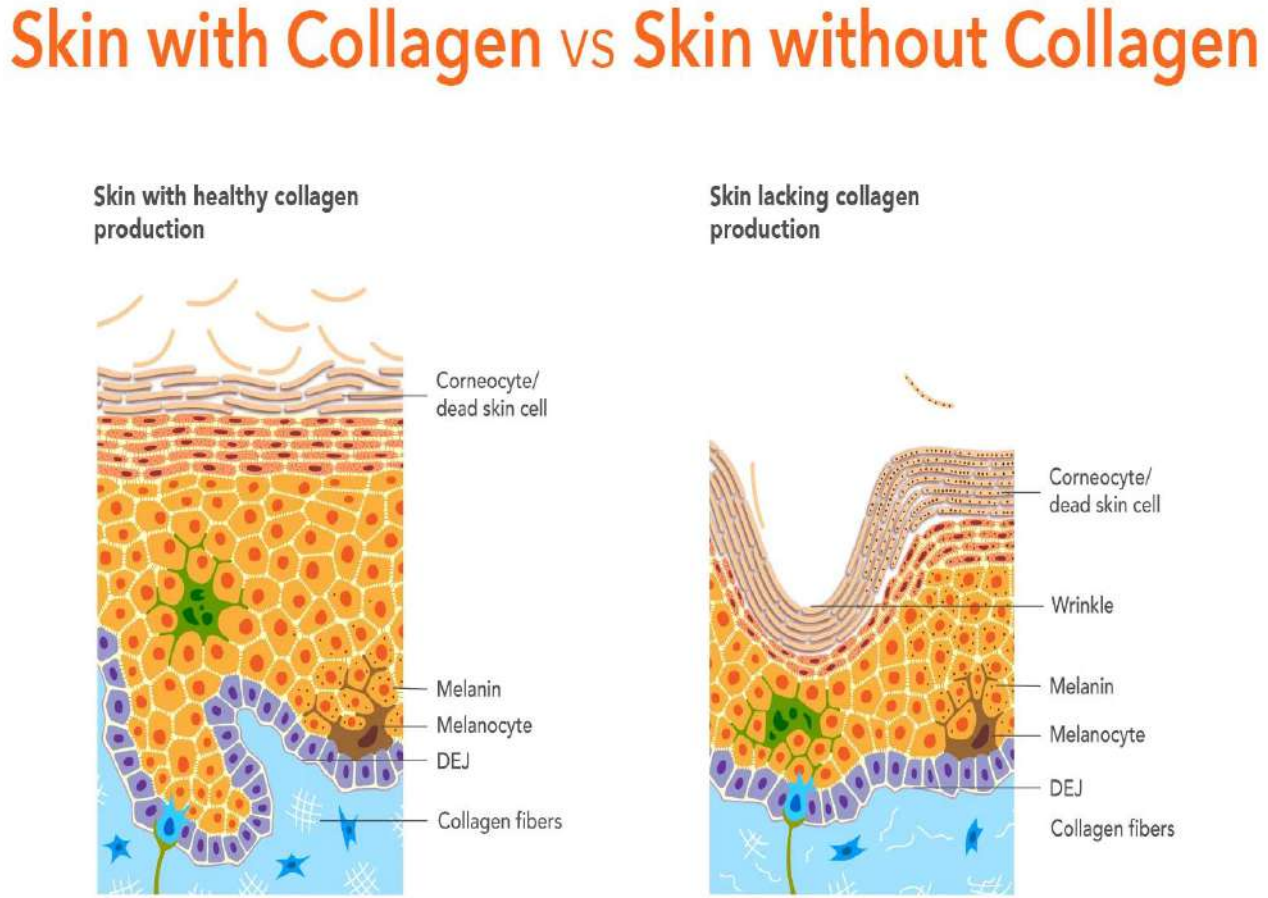
The structural proteins are interspersed with a gel-like ground substance composed of extracellular fluid and **glycoaminoglycans**. In this way, the dermis is similar to a sponge where dynamic compression is possible.

Hyaluronic acid is a natural substance found in the fluids in the eyes and joints. It acts as a cushion and lubricant in the joints and other tissues. Different forms of hyaluronic acid are used for cosmetic purposes.



FUNGSI BIOLOGI KULIT

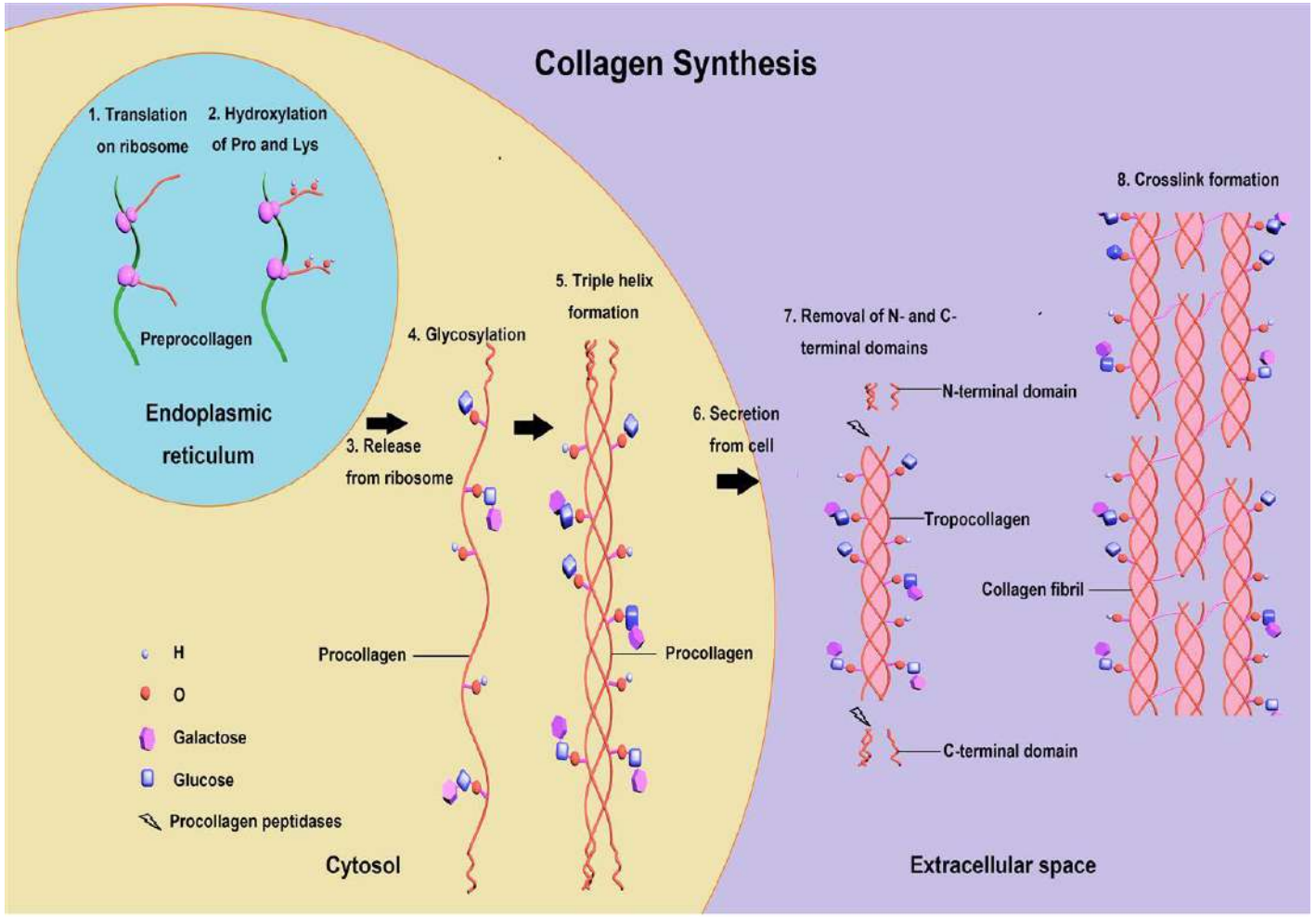




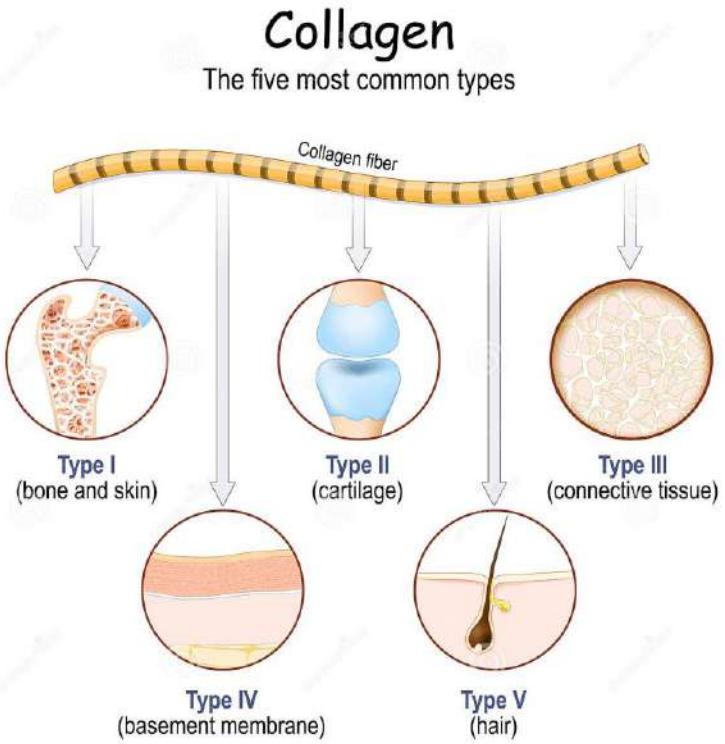
FUNGSI BIOLOGI KULIT

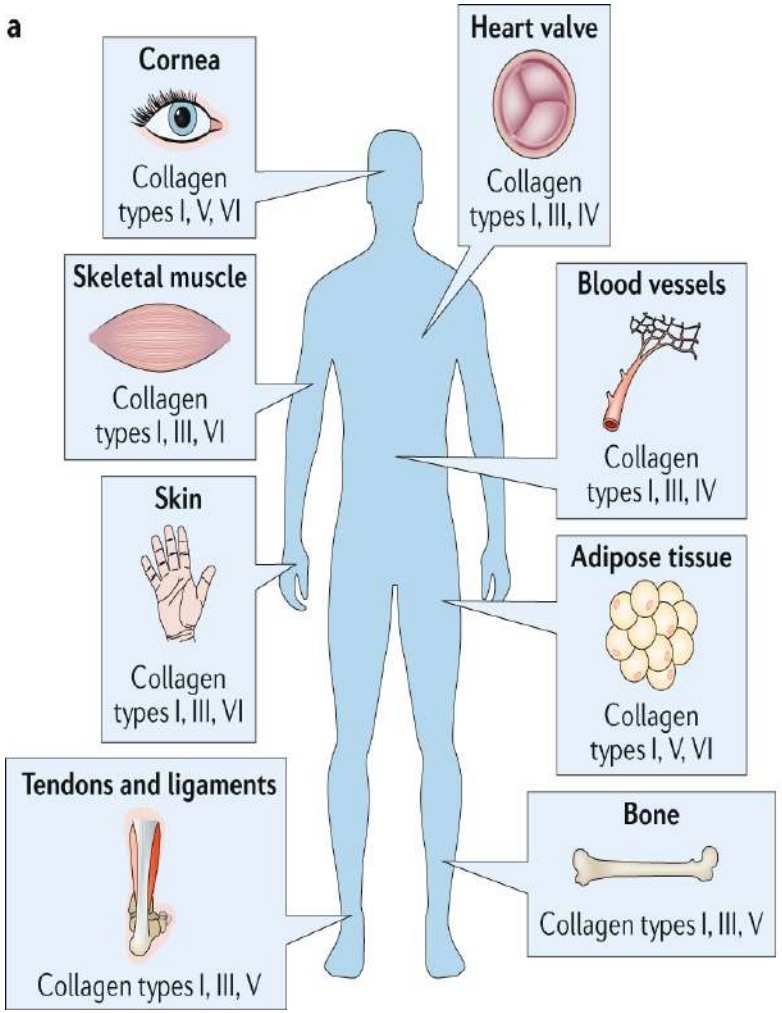
The process of collagen synthesis occurs mainly in the cells of fibroblasts which are specialized cells with the main function of synthesizing collagen and stroma. Collagen synthesis occurs both intracellularly and extracellularly

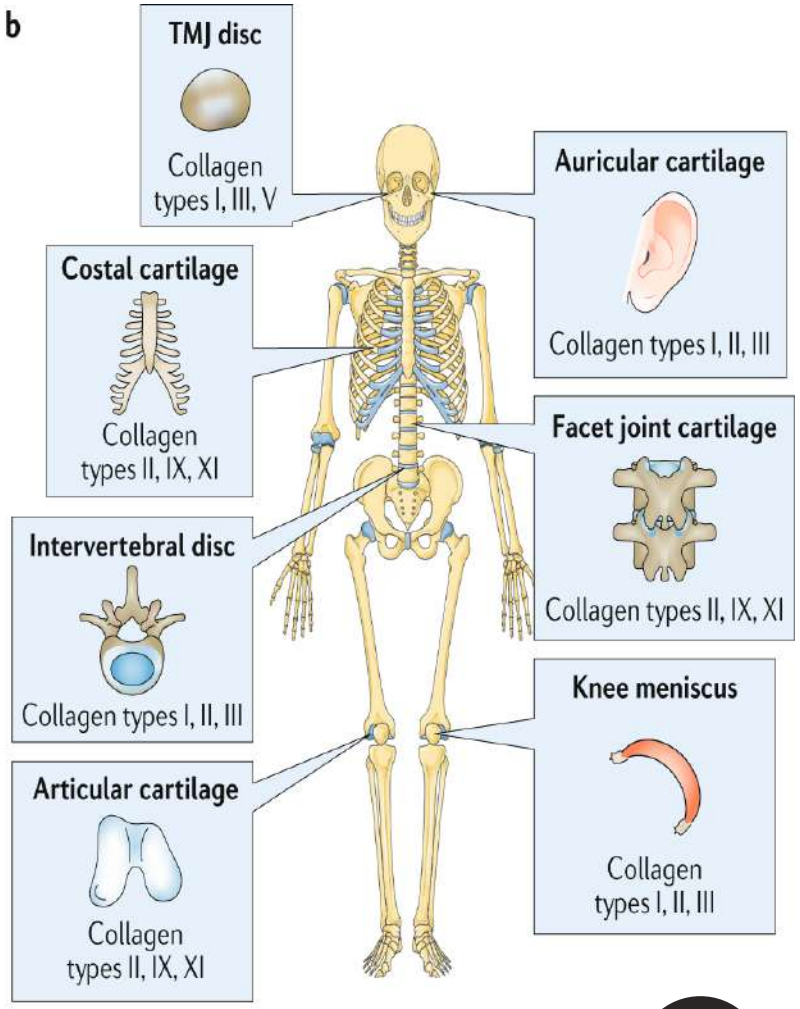
Collagen is the most abundant protein in the human body. Therefore, it can be divided into many types. The most common types of collagen are types I through V each serving different functions.



FUNGSI BIOLOGI KULIT

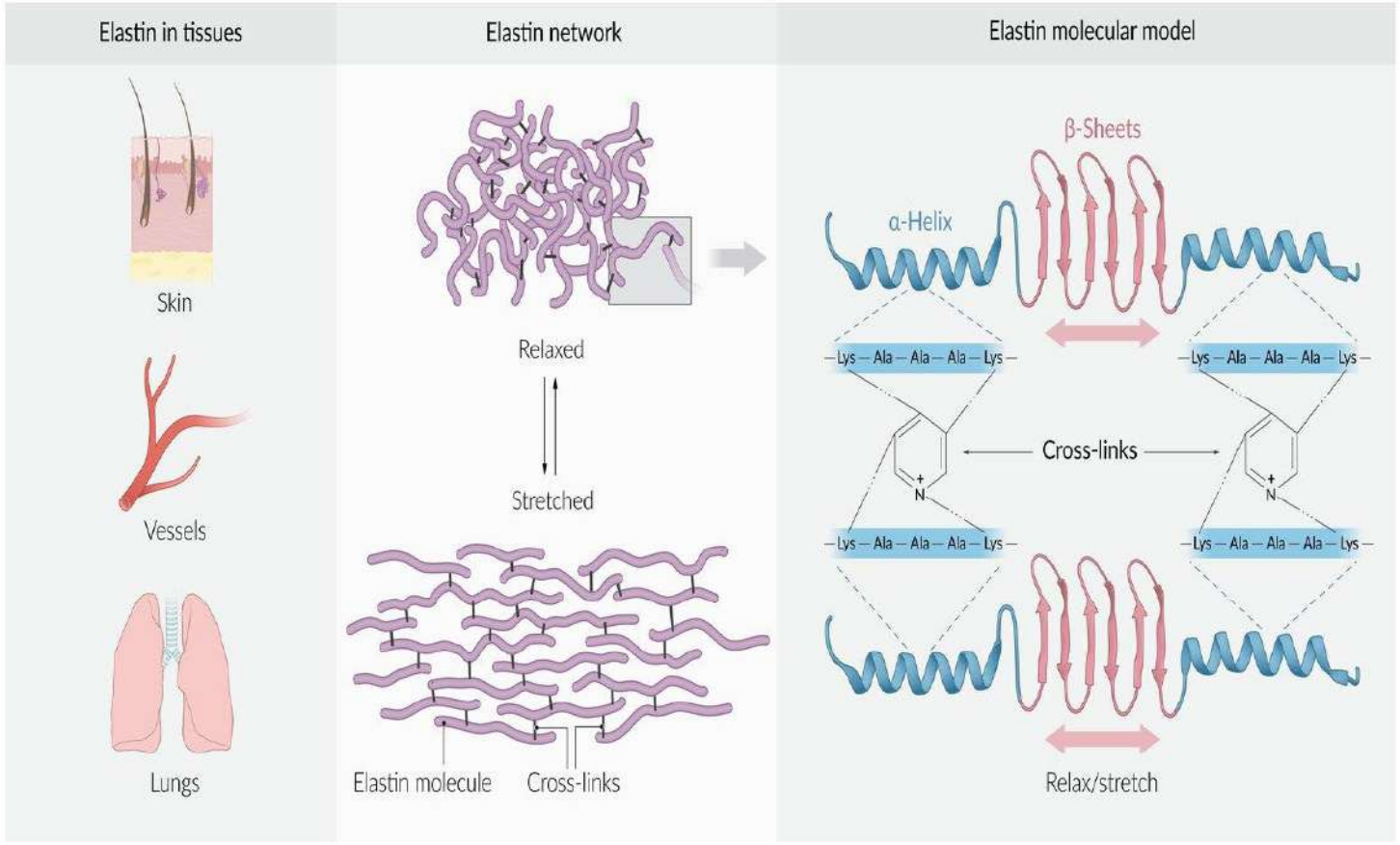


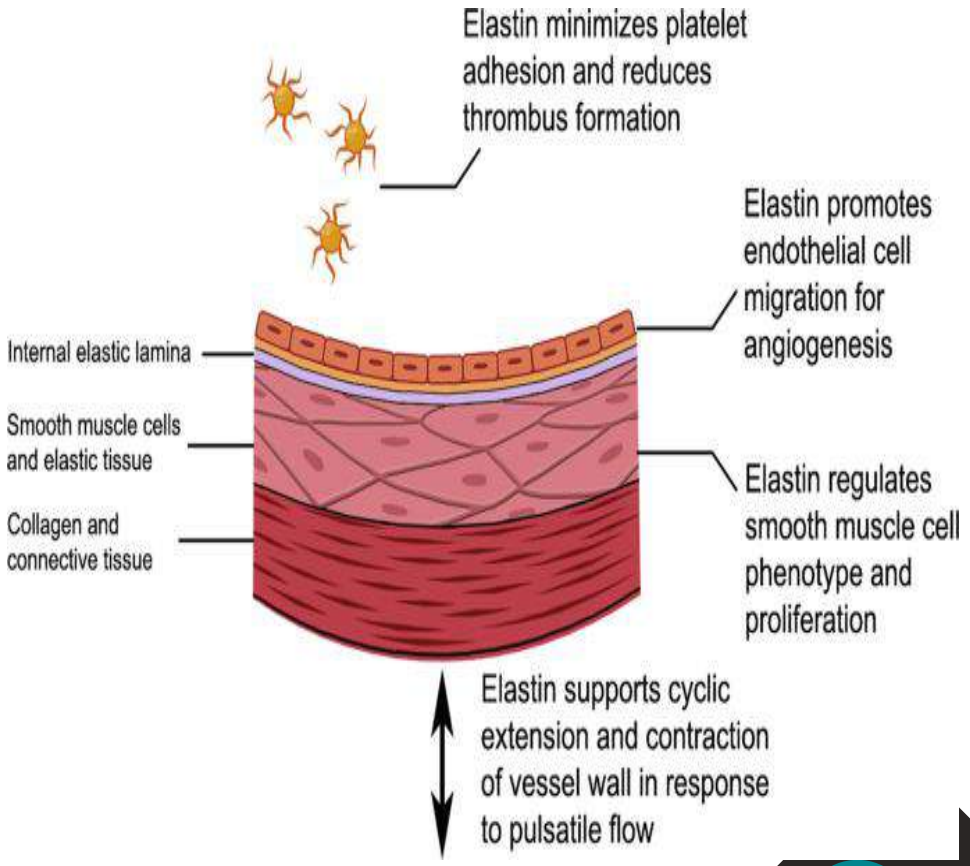




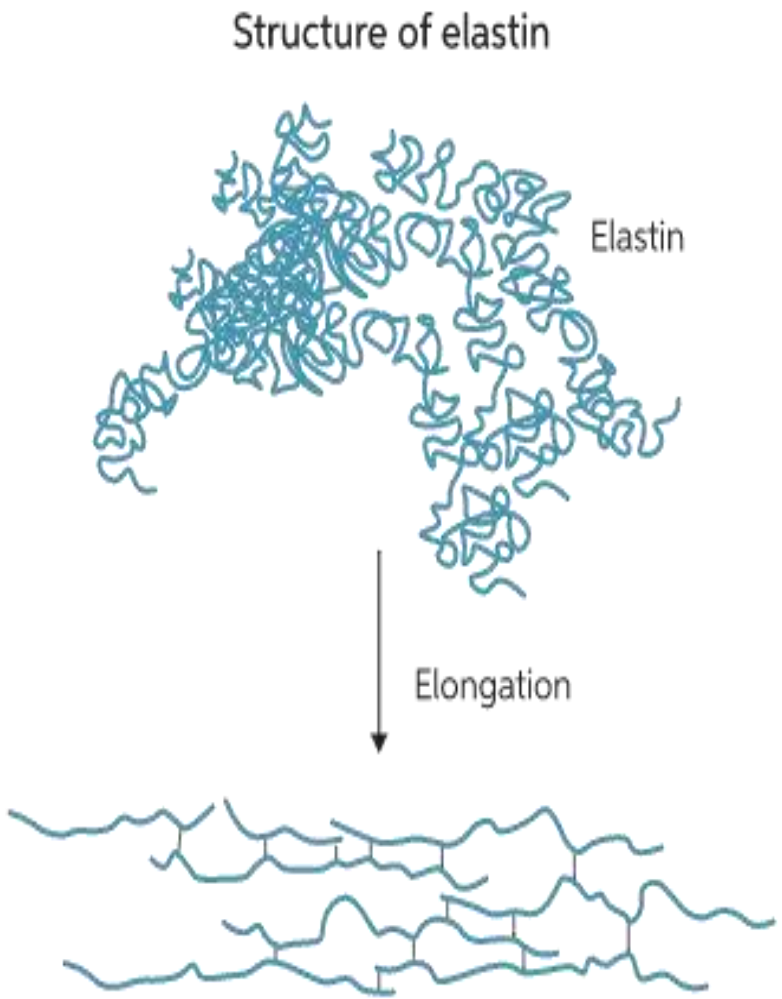
FUNGSI BIOLOGI KULIT

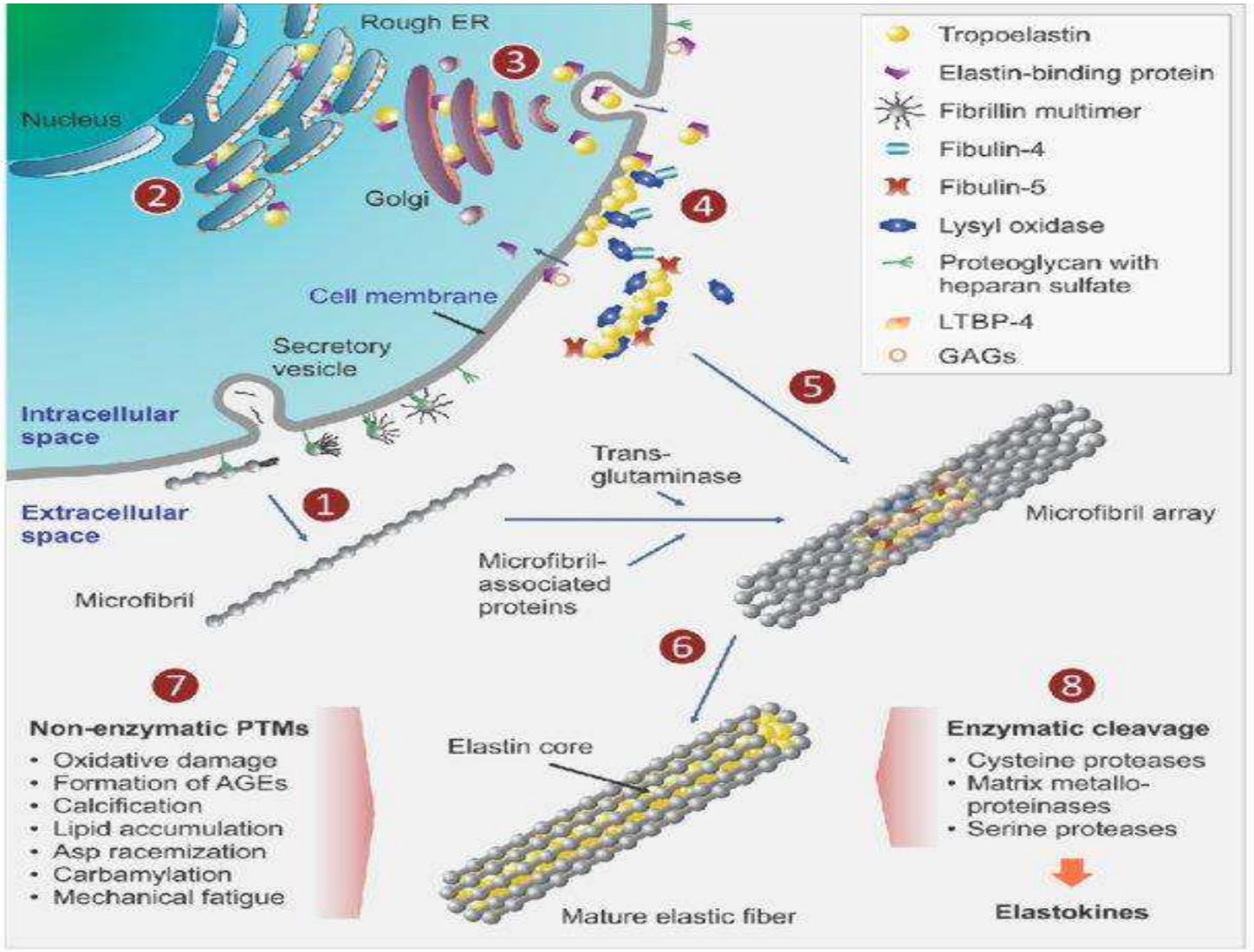
Elastin is an extracellular matrix (ECM) protein responsible for the extensibility and elastic recoil of many vertebrate tissues, such as large arteries, heart valves, pulmonary tissues, skin, and certain ligaments and cartilages





FUNGSI BIOLOGI KULIT

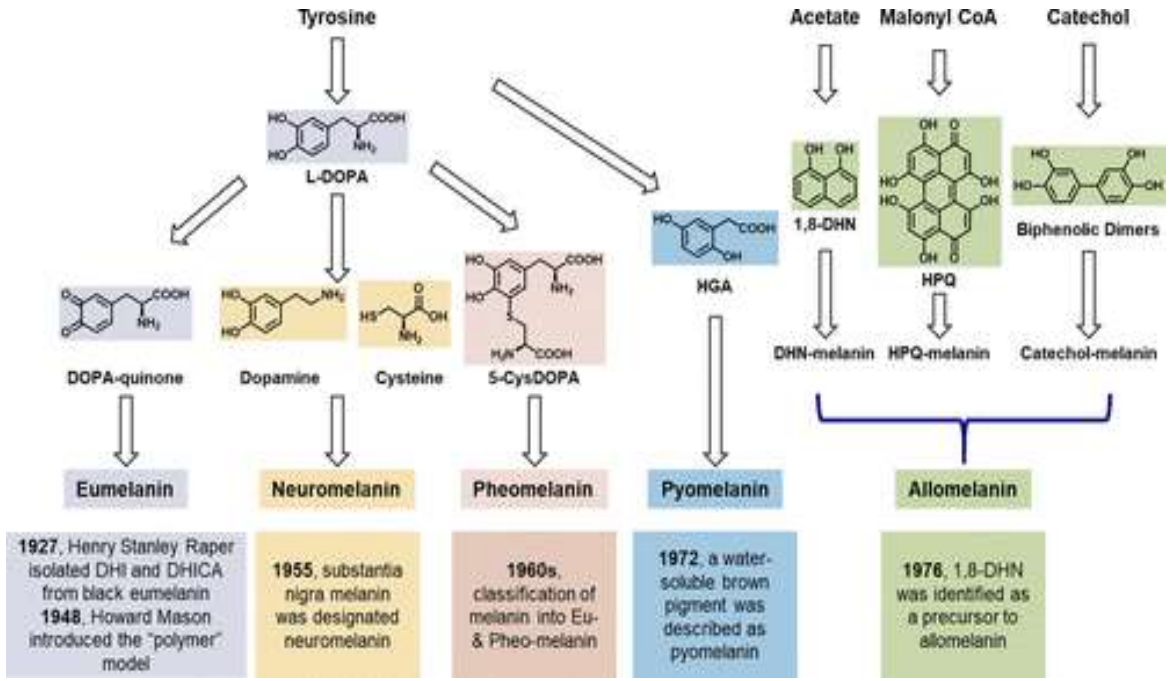


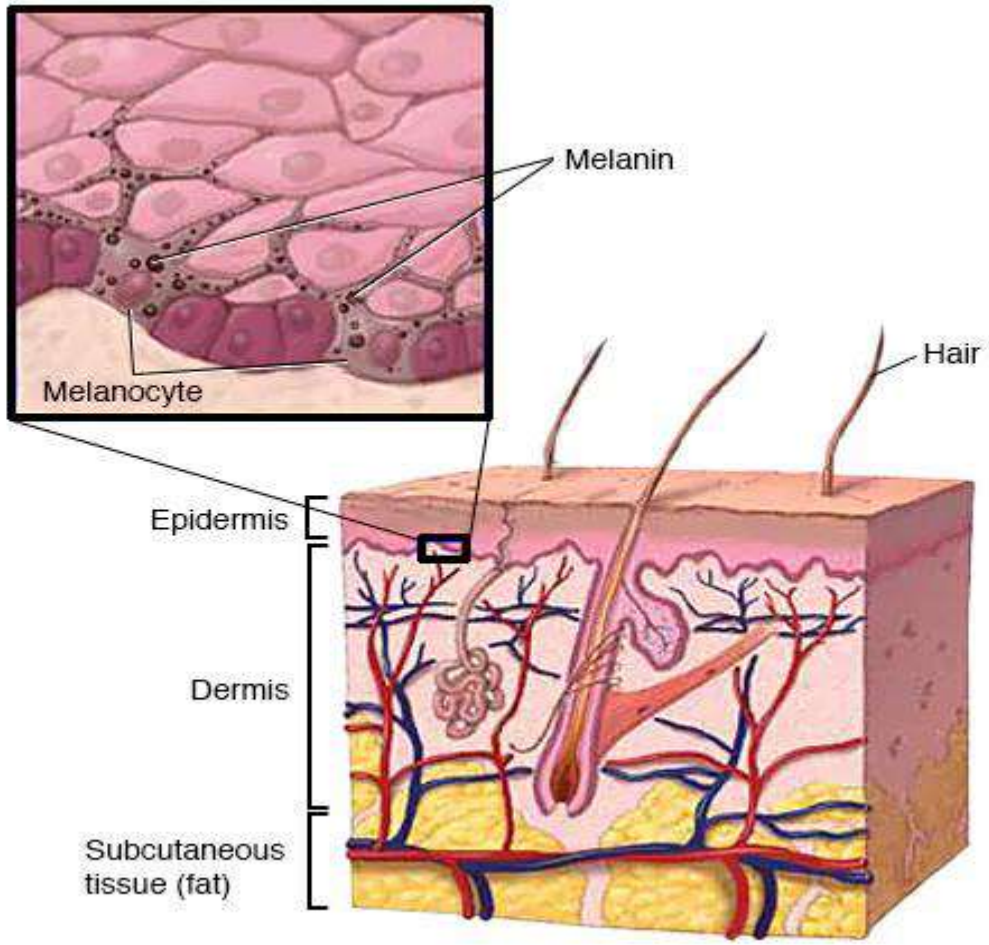


FUNGSI BIOLOGI KULIT

Melanin is a term used to describe a large group of related molecules responsible for many biological functions, including pigmentation of skin and hair and photoprotection of skin and eye

In humans, melanin exists as three forms: **eumelanin (which is subdivided further into black and brown forms), pheomelanin, and neuromelanin**





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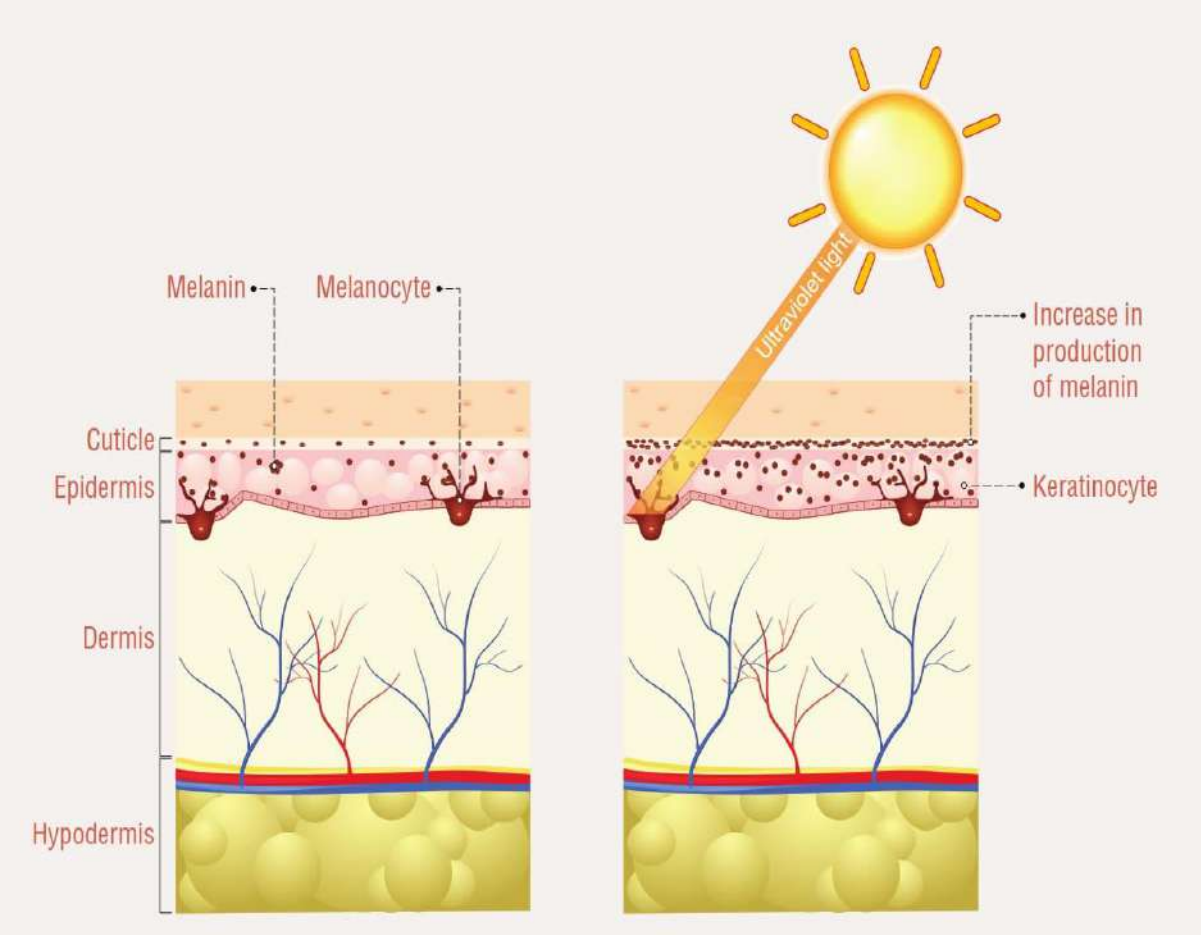
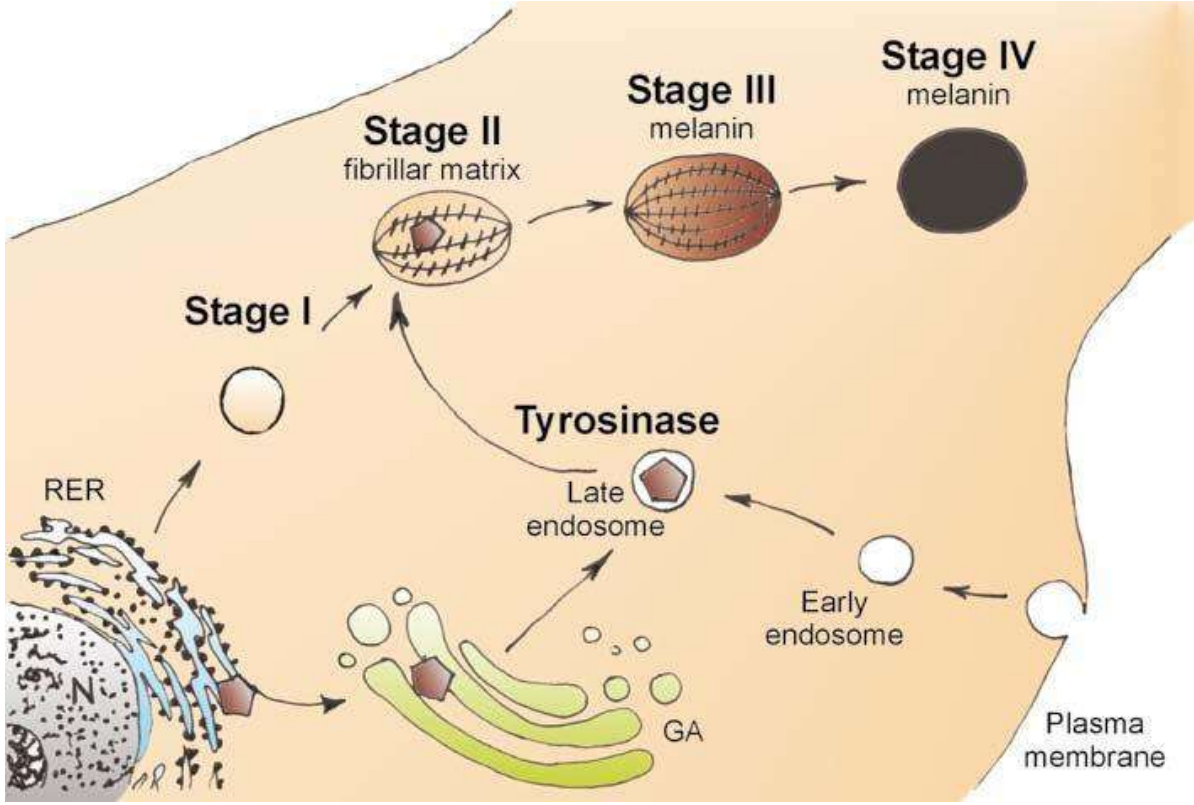
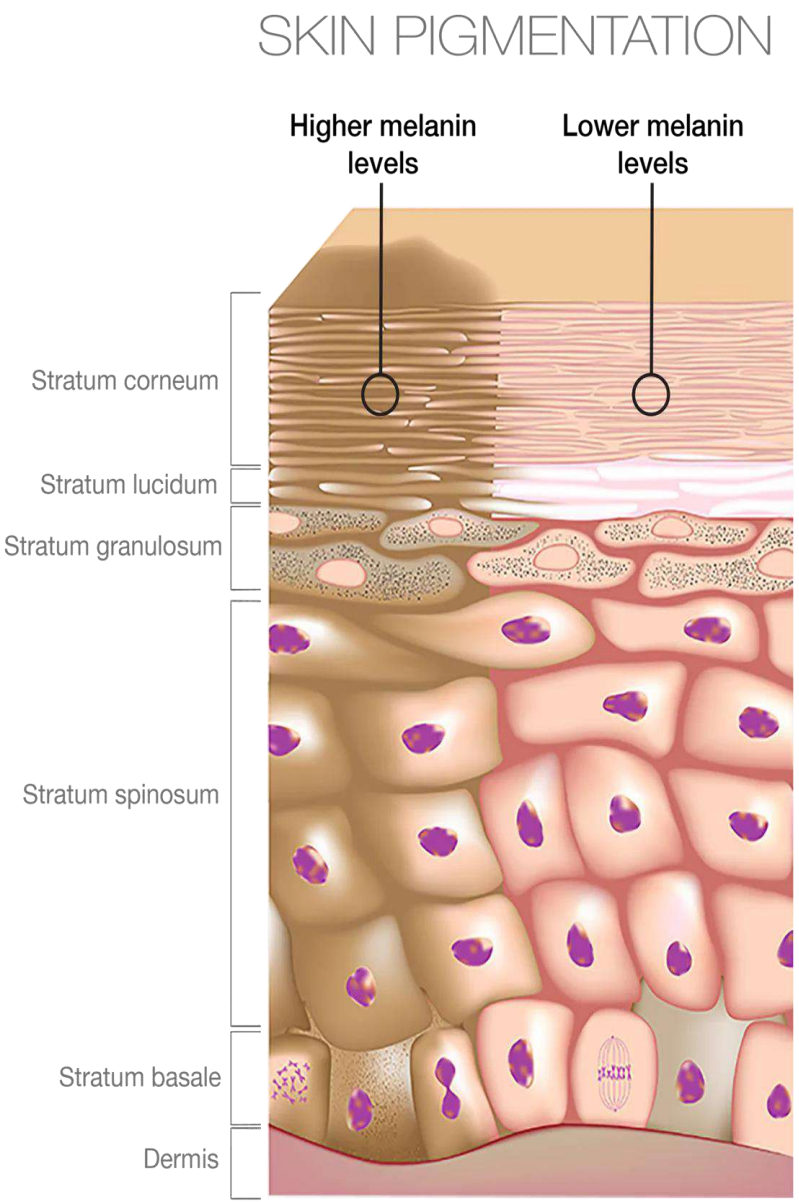
FUNGSI BIOLOGI KULIT



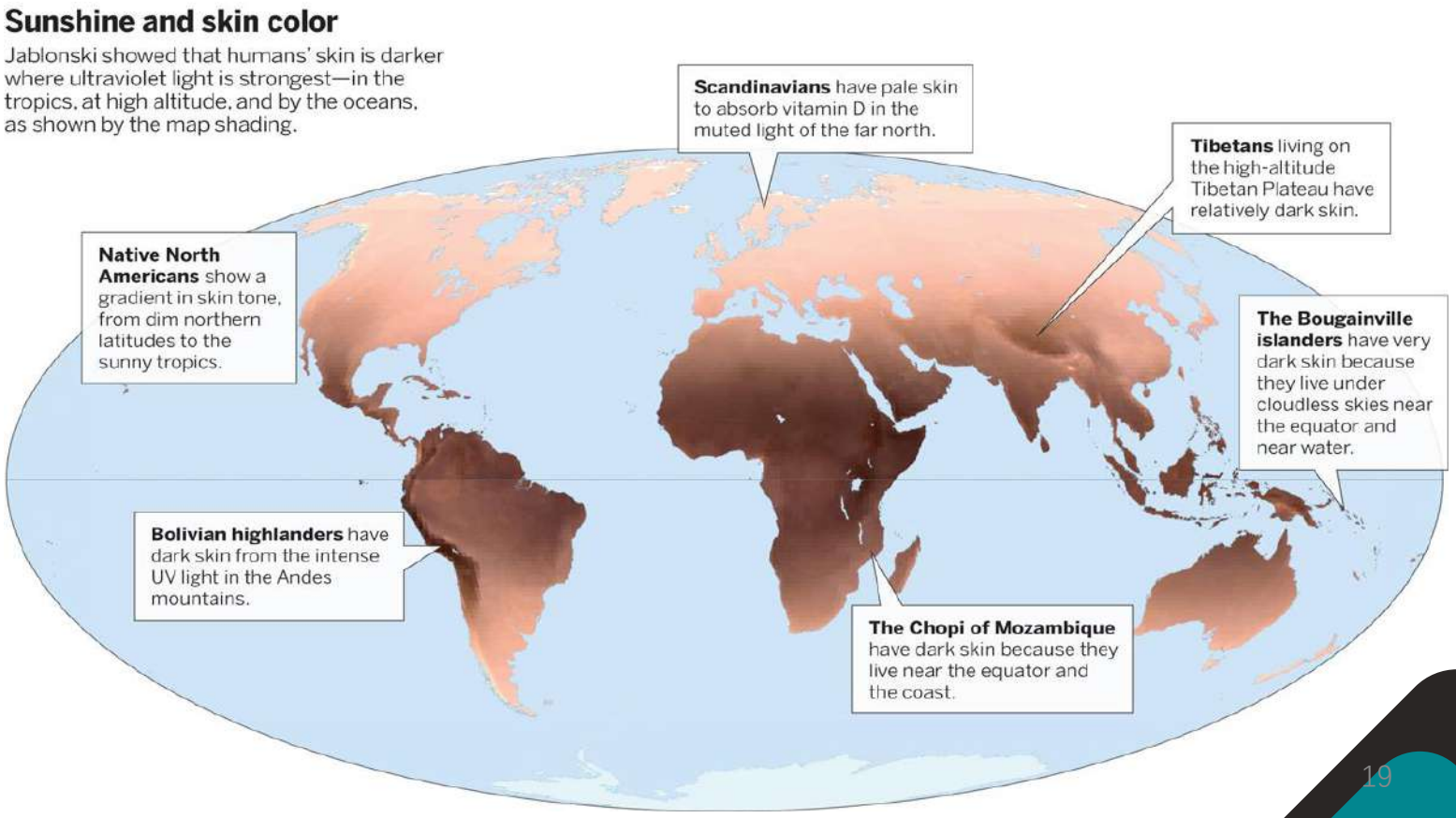


The melanosome formation and maturation during the melanin production by a melanocyte

FUNGSI BIOLOGI KULIT



The more melanin you produce, the darker your eyes, hair and skin will be. The amount of melanin in your body depends on a few different factors, including **genetics** and how much **sun exposure** your ancestral population had.



WARNA KULIT

Perbedaan antar ras jelas dan terutama tergantung pada konten, ukuran, dan distribusi melanosom

Warna kulit gelap terutama terkait dengan migrasi khusus melanosom yang menyerang semua lapisan epidermis dan mencapai lapisan tanduk tanpa mengalami degradasi, suatu proses yang sama sekali berbeda dari apa yang terjadi pada kulit Kaukasia.

Perbedaan ras dalam pigmentasi konstitutif juga berhubungan langsung dengan kejadian gangguan pigmentasi

Kulit gelap lebih peka terhadap perubahan pigmentasi, diikuti oleh kulit putih yang sensitif terhadap bintik-bintik hiperpigmentasi, kemudian pada tingkat yang lebih rendah kulit Hispanik dan Asia.

Putih (Kaukasia), Dusky (India), Oranye (Melayu), Kuning (Mongoloid), Merah (Karibia dan Amerika), Hitam (Negroid)

WARNA KULIT

TABLE 1 Fitzpatrick Classification of Skin Types I through VI

Type I	Type II	Type III
White skin. Always burns, never tans.	Fair skin. Always burns, tans with difficulty.	Average skin color. Sometimes mild burn, tan about average.

Type IV	Type V	Type VI
Light-brown skin. Rarely burns. Tans easily.	Brown skin. Never burns. Tans very easily.	Black skin. Heavily pigmented. Never burns, tans very easily.

WARNA KULIT

	Phenotype	UV sensitivity		Skin cancer risk
Type I 	Very fair, pale white, light coloured or red hair, often freckled	++++	Skin burns very easily, and never, or hardly ever, develops a tan	Greatest risk of skin cancer
Type II 	Fair, white skin, light hair, and blue or brown eyes. Some may have dark hair	+++	Skin burns easily, and tans slowly	High risk of skin cancer
Type III 	Light brown, light olive skin with dark hair and brown or green eyes	++	Skin does not burn easily, and develops a tan	High risk of skin cancer
Type IV 	Moderate brown, brown eyes and dark hair	+	Skin hardly ever burns, and develops a tan easily (Mediterranean skin type)	At risk of skin cancer
Type V 	Dark brown, brown eyes and dark hair	+/_	Skin never burns, naturally darker skin (Asian skin types)	Skin cancers are relatively rare, but those that occur are often detected at later, more dangerous stage.
Type VI 	Deeply pigmented dark brown to black, dark brown eyes and black hair	–	Skin never burns, naturally dark-coloured skin (Negroid skin types)	Skin cancers are relatively rare, but those that occur are often detected at later, more dangerous stage.

TIPE KULIT

Kulit Normal

1. Tidak terlalu kering dan tidak terlalu berminyak karena Produksi sebum yang seimbang
2. Tidak ada sensitivitas yang parah
3. Pori-pori yang nyaris tidak terlihat
4. Kulit bercahaya, Kulit yang jernih dan merah muda karena mikrosirkulasi jaringannya berfungsi normal
5. Daerah dermis tebal → kulit terasa kencang dan padat

Kulit Kering

1. Terasa kering, kusam dan kulit kasar.
2. Pori – pori hamper tidak terlihat
3. Hilangnya kekenyalan dan elastisitas kulit, ditandai dengan penampilan kasar yang sering dikaitkan dengan deskuamasi
4. Kulit bisa pecah-pecah, mengelupas, atau menjadi gatal, iritasi, atau meradang

Kulit Berminyak

1. Aktivitas kelenjar sebaceous yang berlebihan, yang menyebabkan produksi sebum yang berlebihan pada kulit, memberikan penampilan berminyak dan berkilau yang khas.
2. Pori-pori membesar, ada komedo, jerawat
3. Perubahan laju produksinya tergantung pada faktor genetik, endokrin, dan lingkungan

Kulit Campuran

1. Kulit bisa kering atau normal di beberapa area dan berminyak di area lain, seperti T-zone (hidung, dahi, dan dagu).
2. Pori-pori yang terlihat lebih besar dari biasanya karena lebih terbuka
3. Ada komedo dan Kulit mengkilap

Kulit Sensitif

1. Kemerahan
2. Gatal
3. Terbakar
4. Kekeringan
5. Jika kulit sensitif, coba cari tahu apa pemicunya agar bisa menghindarinya. Ada banyak kemungkinan alasan, tetapi sering kali karena produk perawatan kulit tertentu.

TIPE KULIT


Combination Skin
normal to
oily T-zone
dry cheeks
Type 1
oily T-zone
normal to
dry cheeks
Type 2

PERMASALAHAN YANG MUNCUL PADA KULIT

Kulit kering

Pigmentasi

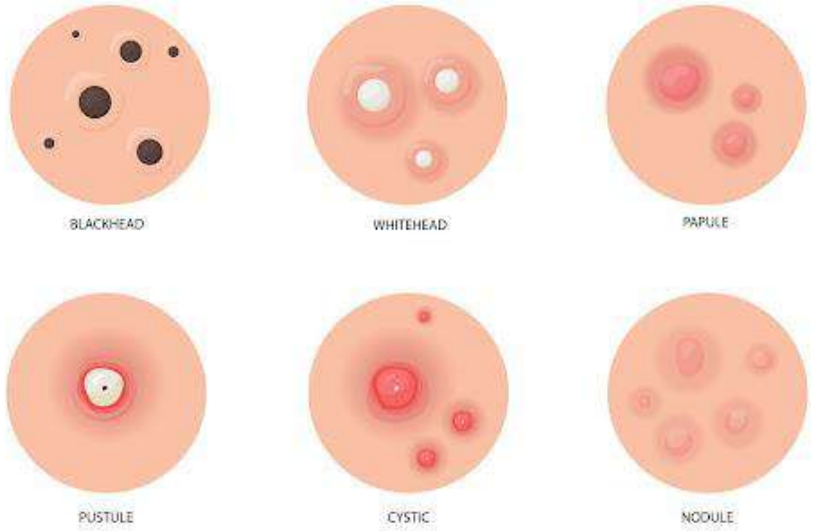
1. Terpapar sinar matahari terlalu lama sehingga menyebabkan *sunburn*,
2. Kondisi lain : hiperpigmentasi (contohnya melasma) atau hipopigmentasi (Vitiligo)

Biang keringat

ruam panas yang ditandai dengan bintik-bintik merah gatal yang berkembang di dada, di bawah ketiak dan di antara paha di negara-negara panas. Pada dasarnya disebabkan oleh kelenjar keringat yang tersumbat.

Jerawat

Jerawat adalah kondisi peradangan kulit yang terjadi ketika minyak dan sel-sel kulit mati menghalangi pembukaan pori-pori, menyebabkan sebum (minyak) menumpuk di dalam pori-pori,



PERMASALAHAN YANG MUNCUL PADA KULIT

Keriput / kerutan

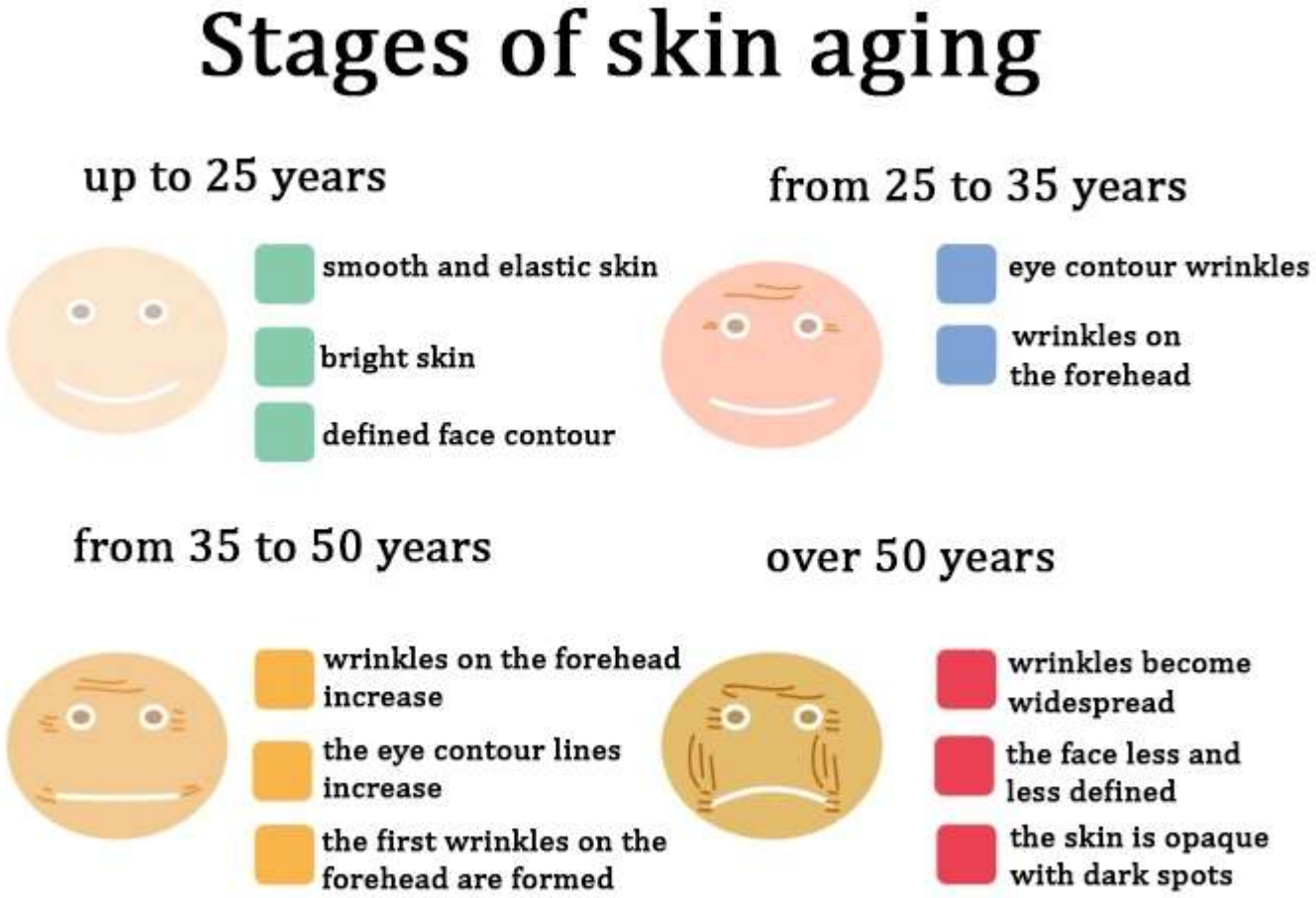
1. Kerutan adalah garis dan lipatan yang terbentuk di kulit
2. Beberapa kerutan bisa menjadi celah atau kerutan yang dalam dan mungkin terlihat terutama di sekitar mata, mulut, dan leher
3. Penyebab : umur, penurunan produksi minyak alami, paparan sinar UV, merokok, ekspresi wajah

PERMASALAHAN YANG MUNCUL PADA KULIT

Penuaan adalah proses yang terjadi secara bertahap dari tingkat seluler dan pasti terjadi pada setiap makhluk hidup (proses biologis alami).

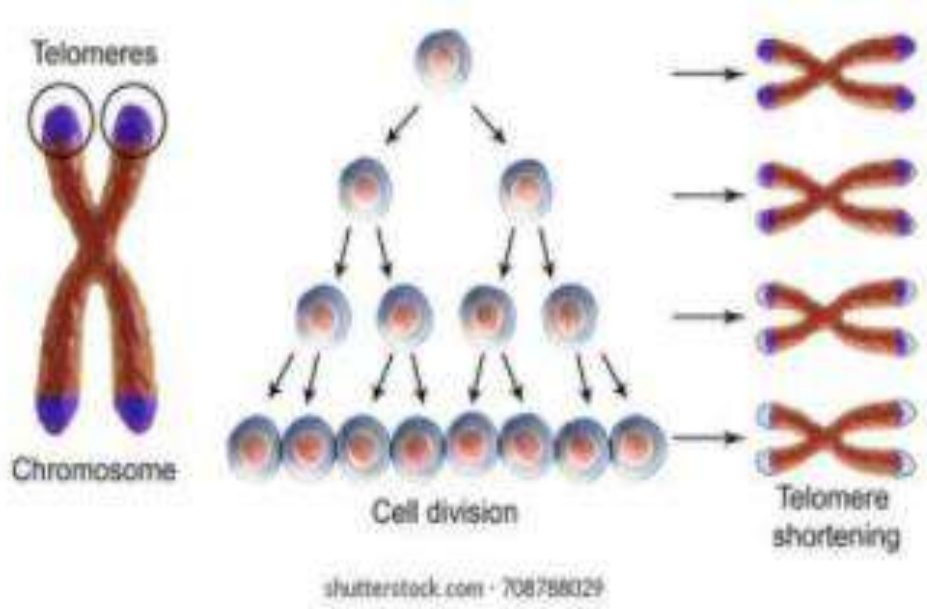
Proses ini tidak dapat dihindari dan merupakan proses yang tidak dapat dikembalikan seperti sedia kala secara fisiologis (irreversible).

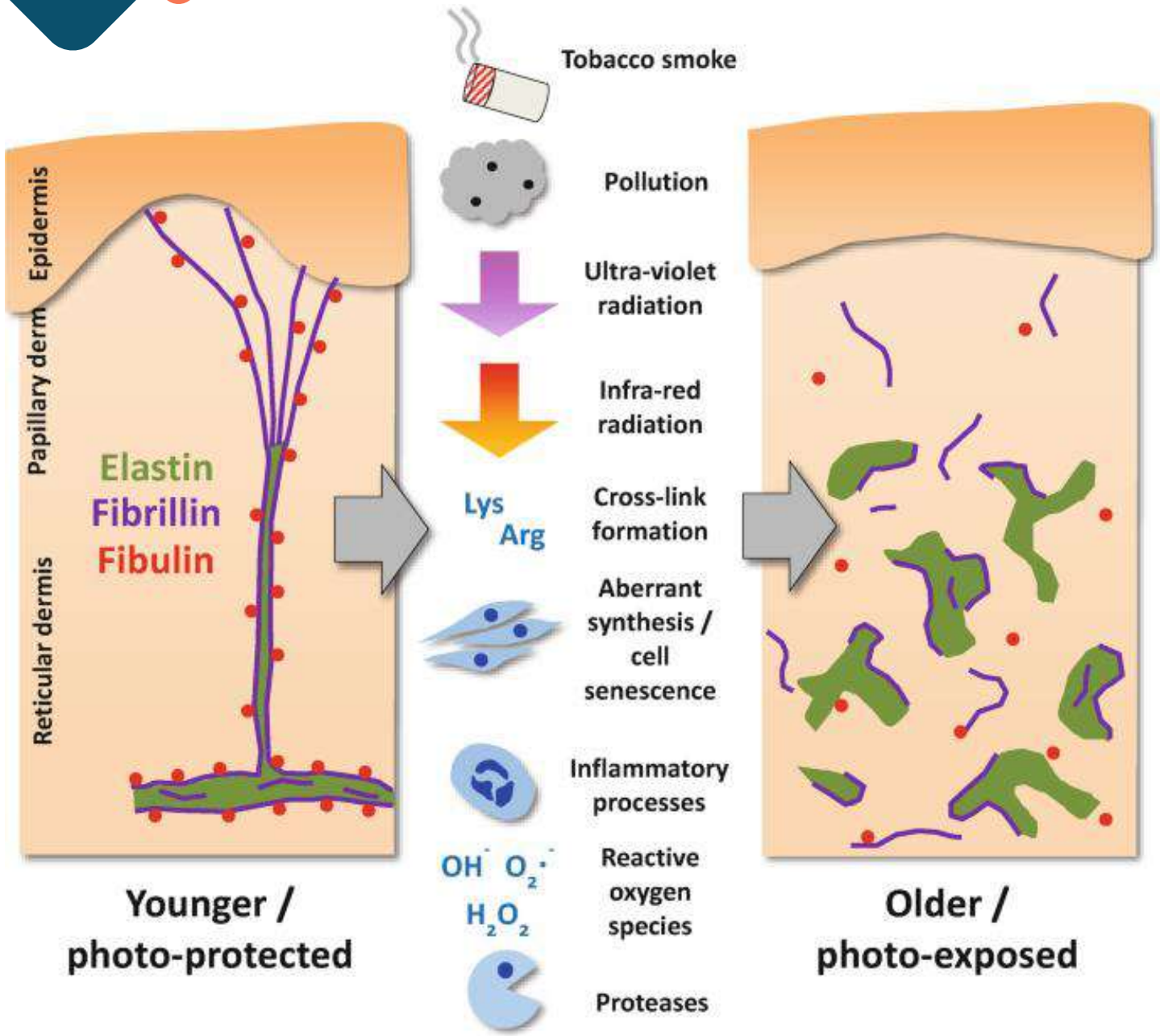
Parameter penuaan paling umum adalah rasa mudah lelah dan kurang berenergi atau kurang bersemangat



PERMASALAHAN YANG MUNCUL PADA KULIT

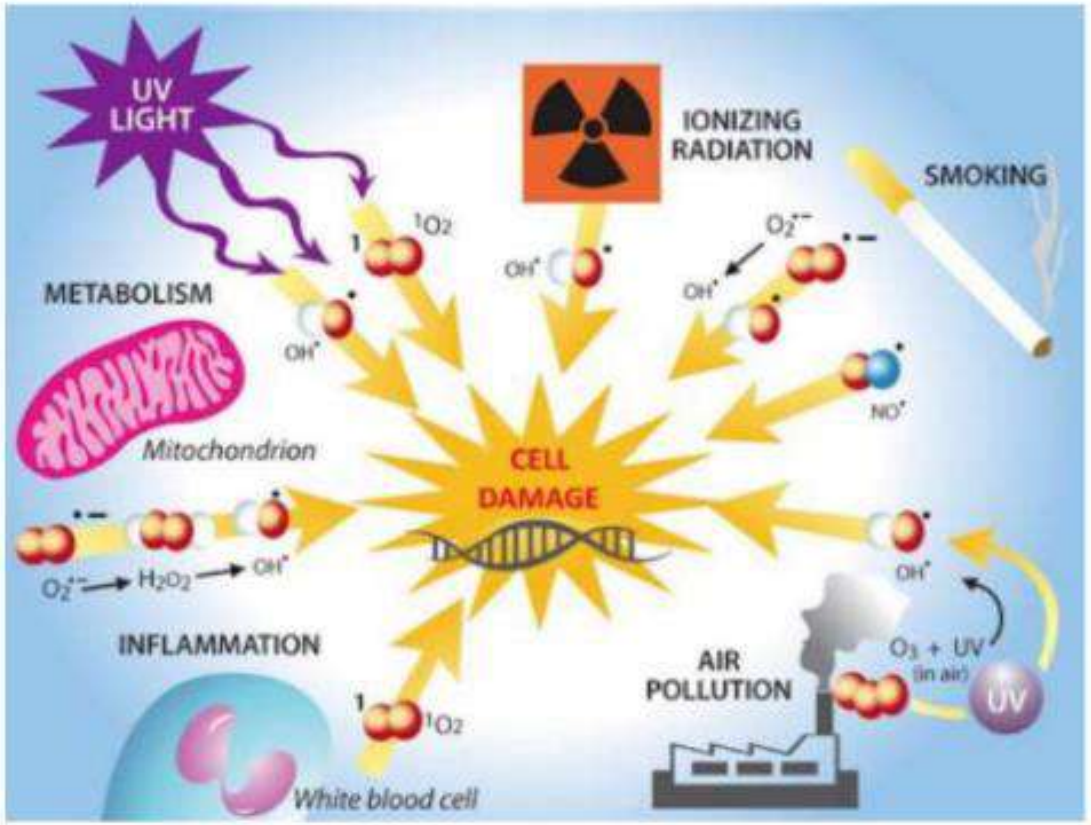
1. Penyebab penuaan secara alami adalah pemendekan kromosom pada ujung telomer, kerusakan pada mitokondria sehingga pembentukan energi menurun, dan ada senyawa radikal bebas (superoxide anion dan hydroxide radical).
2. Tubuh mempunyai sistem alami untuk mengatasi kerusakan DNA yiatu sistem jaringan p53. DNA yang rusak akan dihentikan proses pembelahannya sehingga tidak berkembang lebih jauh menjadi kanker.





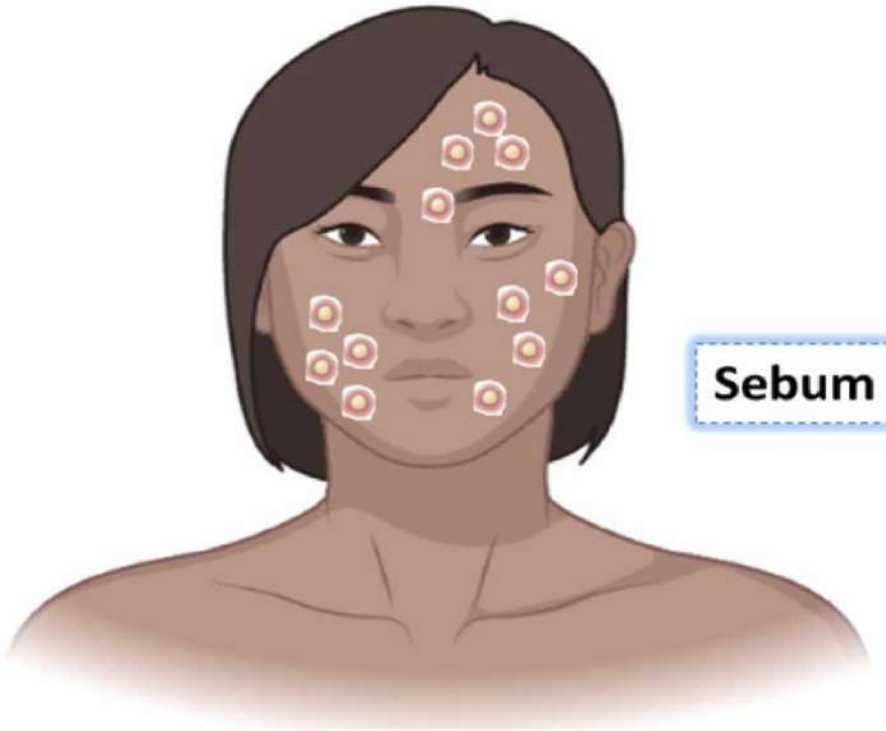
PERMASALAHAN YANG MUNCUL PADA KULIT

PERMASALAHAN YANG MUNCUL PADA KULIT



Paparan radikal bebas bisa dari lingkungan seperti polusi, sinar matahari, asap rokok, radiasi, bisa memicu kadar radikal bebas dalam tubuh meningkat dan menyebabkan kerusakan DNA

PERMASALAHAN YANG MUNCUL PADA KULIT



Acne

Sebum oxidation

Air pollution, UV rays, Overuse of cosmetics and soaps

Hormones

Polycystic ovary syndrome

Stress

Insulin resistance

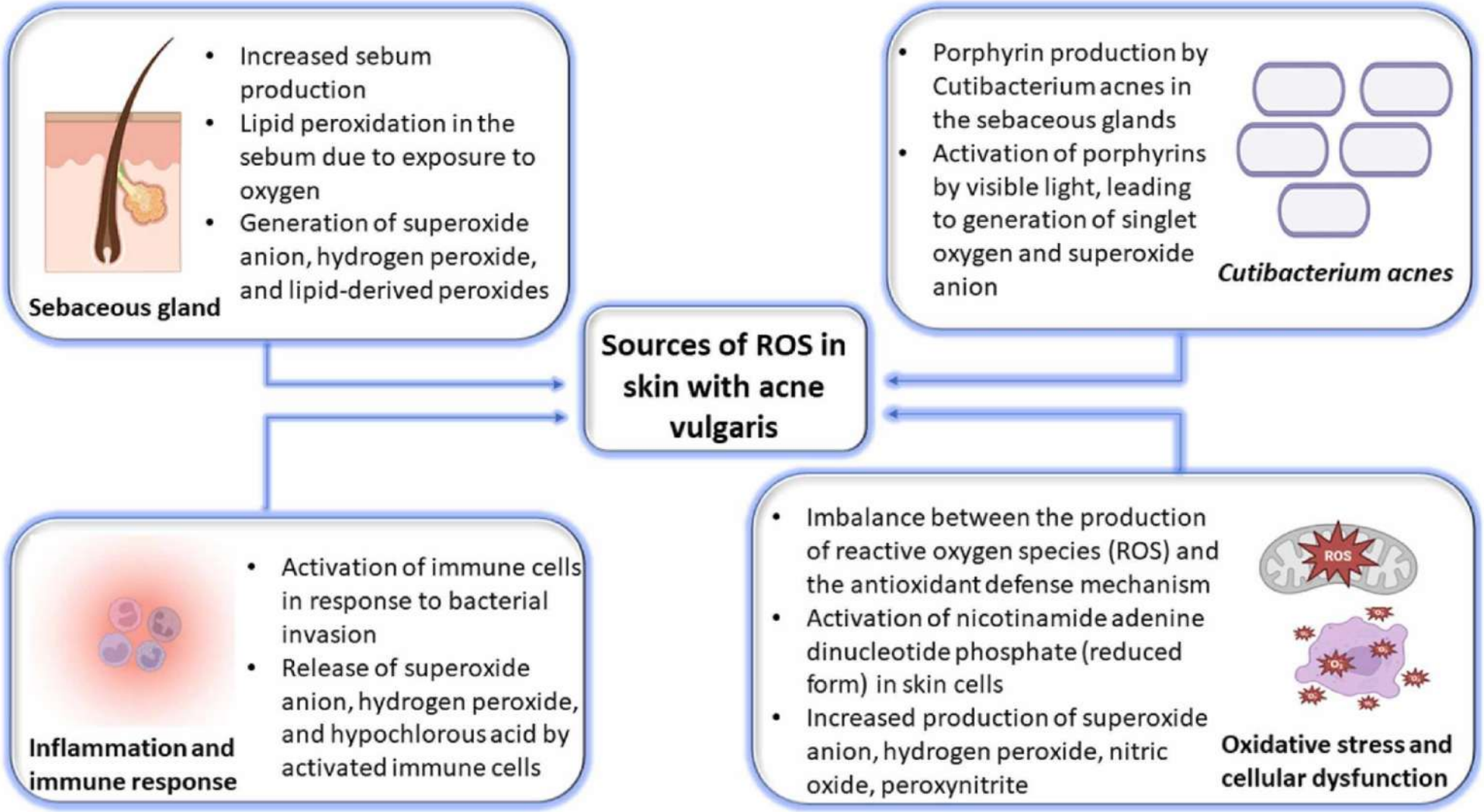
Inflammation

Intestinal disorders

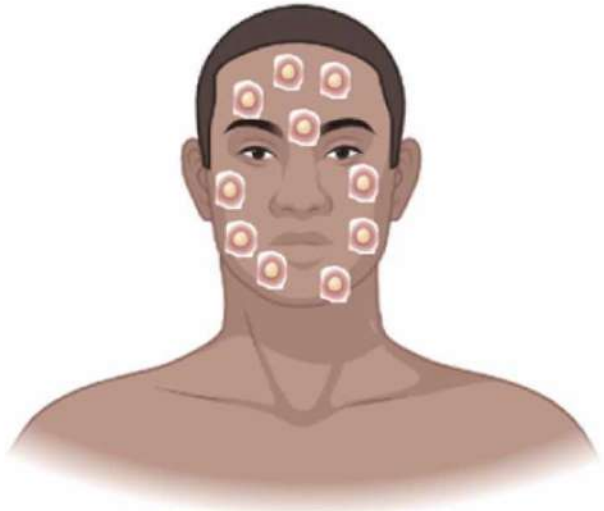
Stress

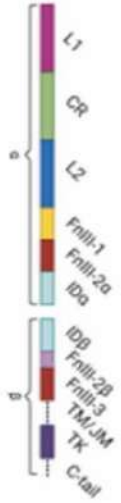
Diet

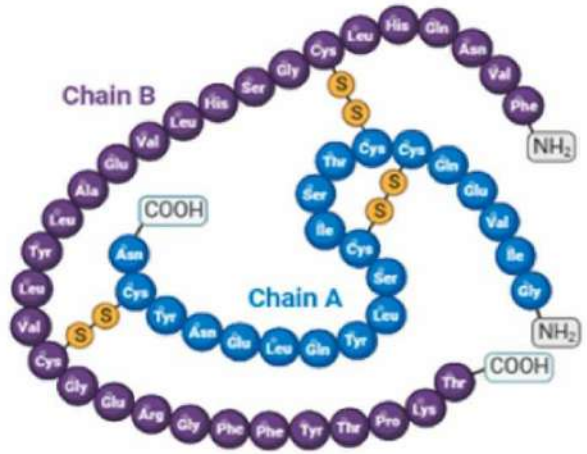
PERMASALAHAN YANG MUNCUL PADA KULIT



PERMASALAHAN YANG MUNCUL PADA KULIT







Acne ← **Insulin alterations**

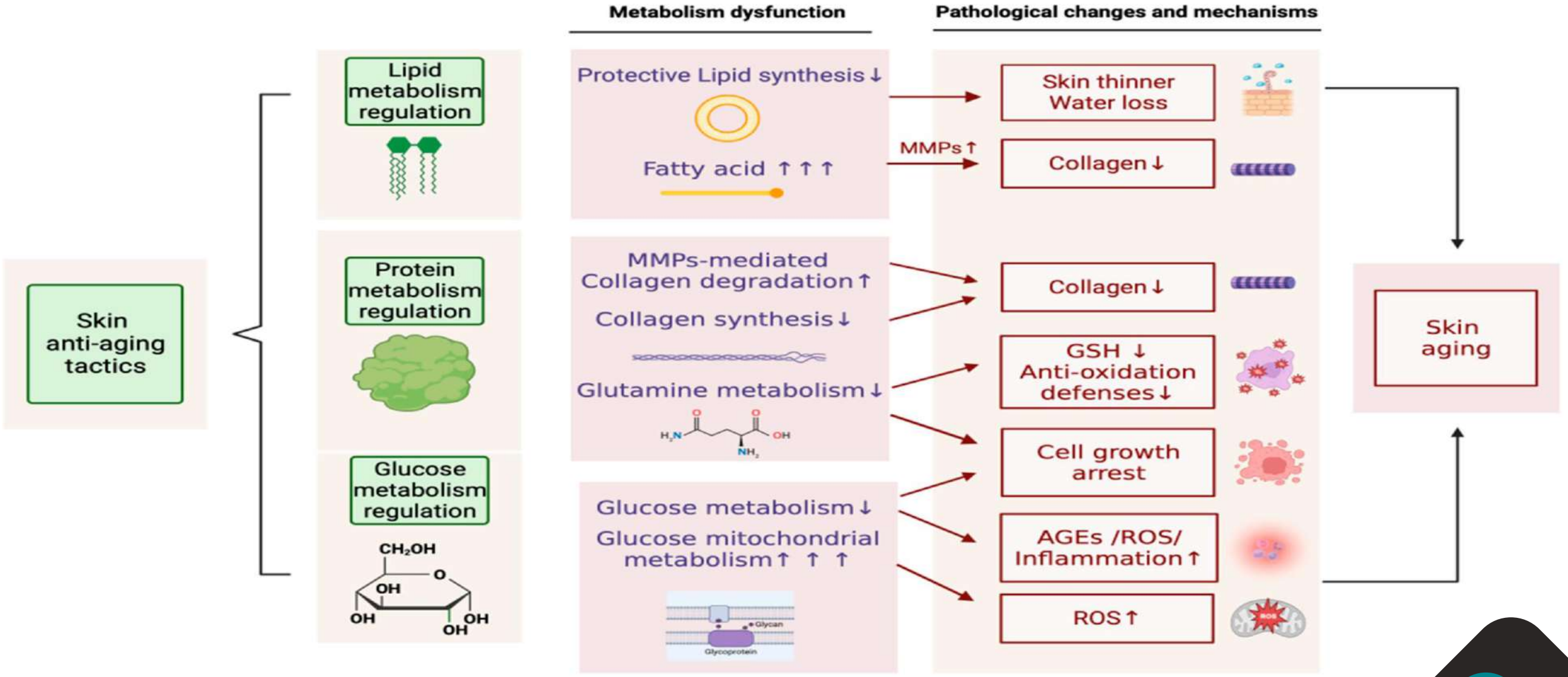
Acne

- Infundibular keratinisation through IGF1 activation
- Increased androgen production
- Generation of dihydrotestosterone
- Production of proinflammatory cytokines

Insulin alterations

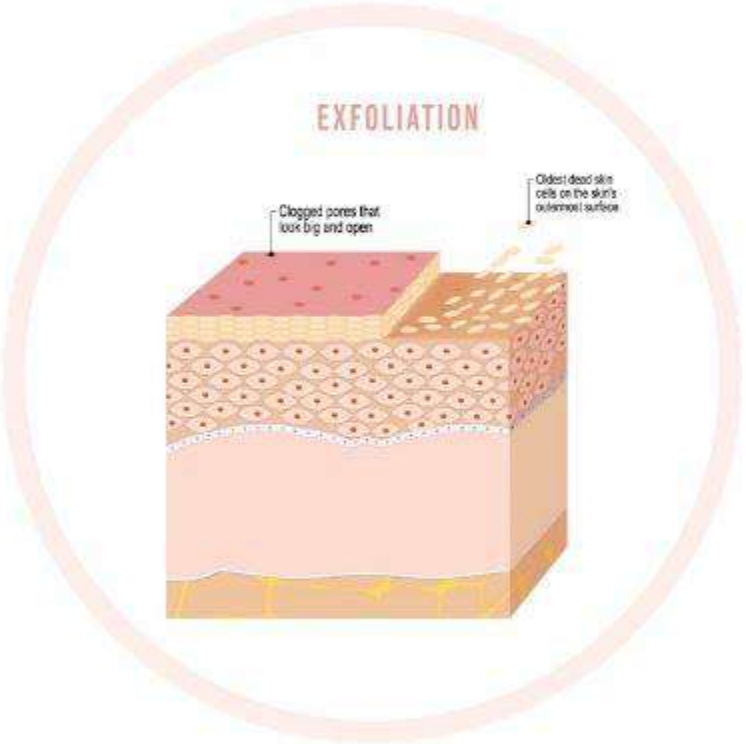
- Dairy products intake
- High glycemic foods
- Dysfunctions in the number and activity of insulin receptors
- Puberty
- Sedentarism

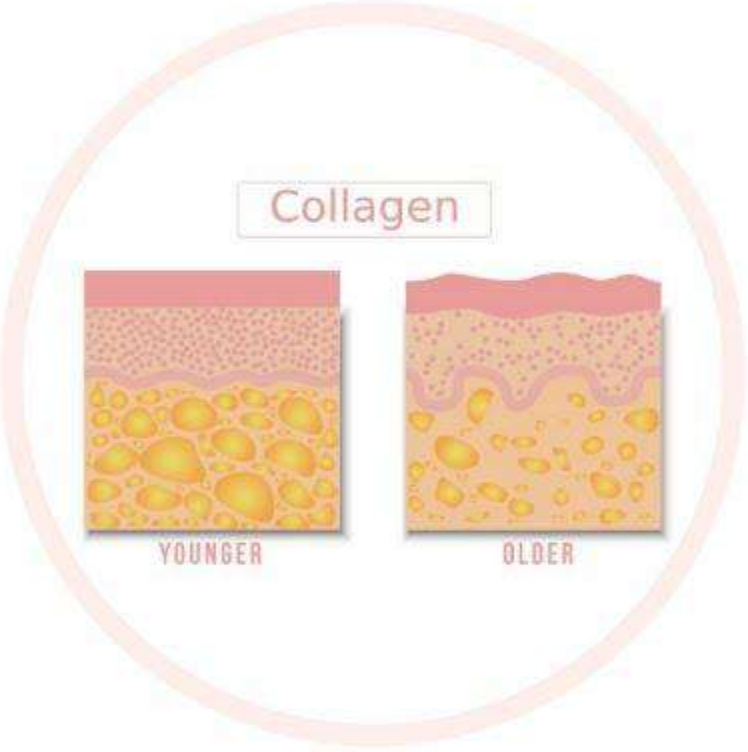
PERMASALAHAN YANG MUNCUL PADA KULIT



MMPS = matrix metalloproteinases

AGING SKIN: THE PROCESS + PREVENTION



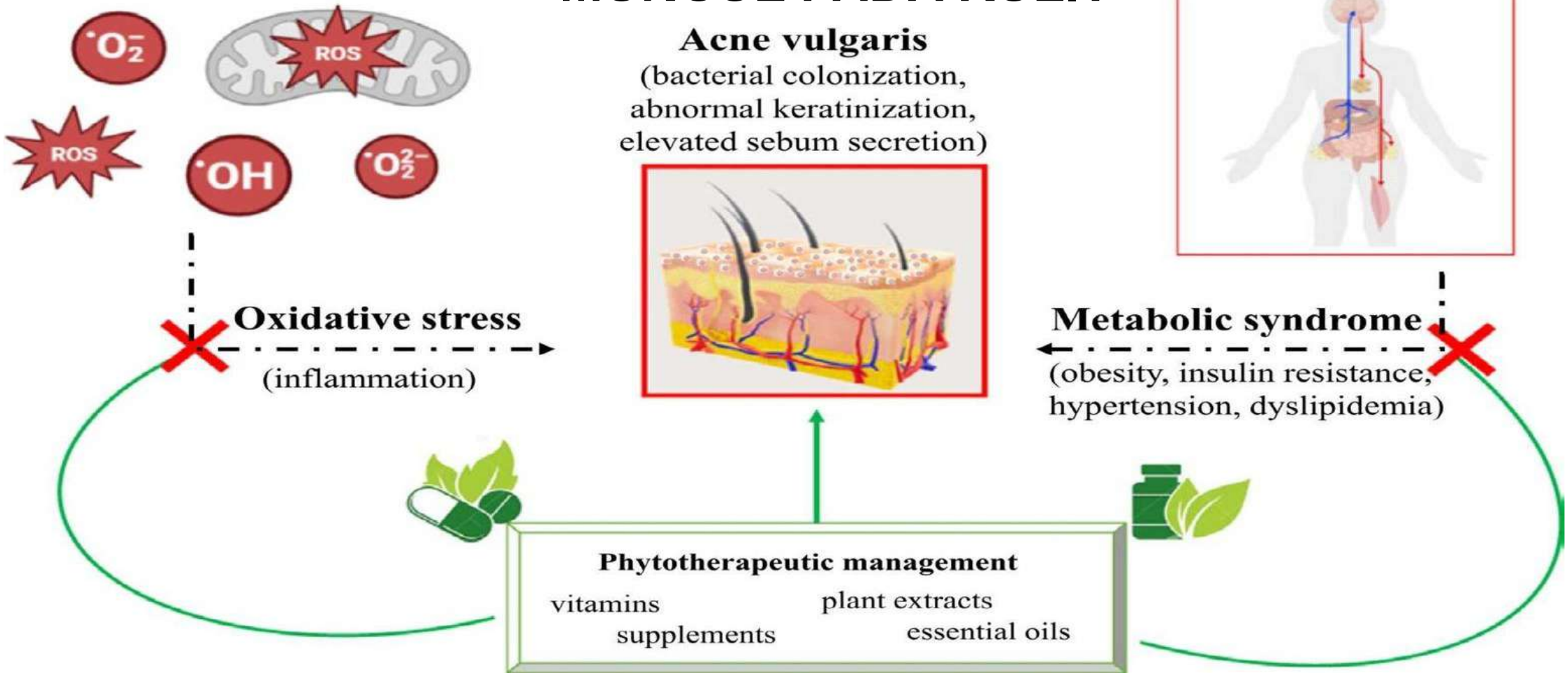


Increase Cellular Turnover

Stimulate Collagen Production

Protect From Environment & Sun

PENGATASAN PERMASALAHAN YANG MUNCUL PADA KULIT



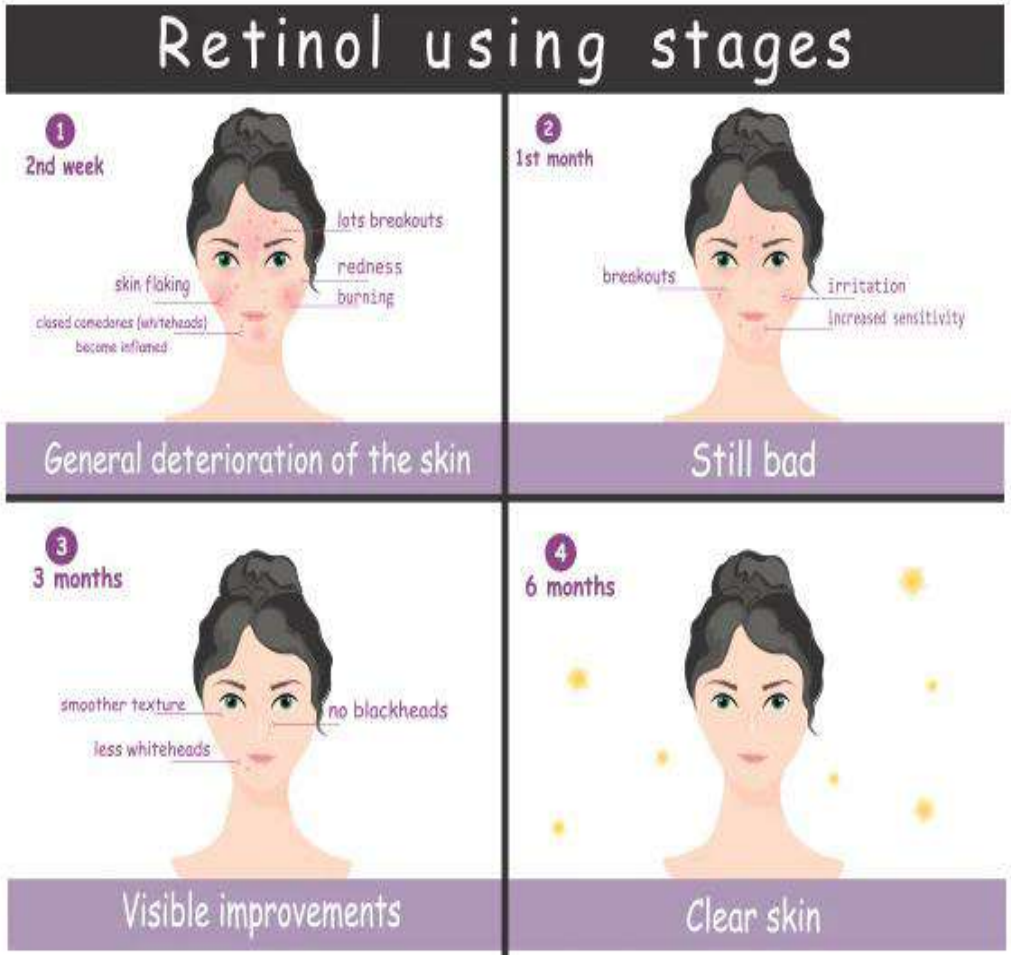
- antibacterial and antioxidant activities
- Vitamin A, C, & E

PENGATASAN PERMASALAHAN YANG MUNCUL PADA KULIT

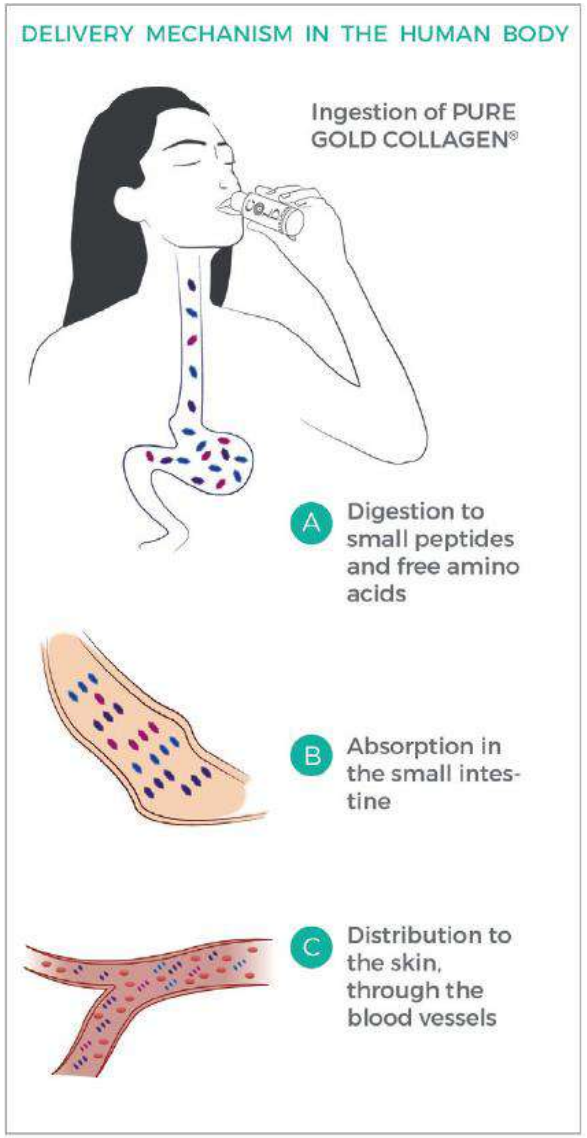
Retinol, also called vitamin A_1, is a fat-soluble vitamin.

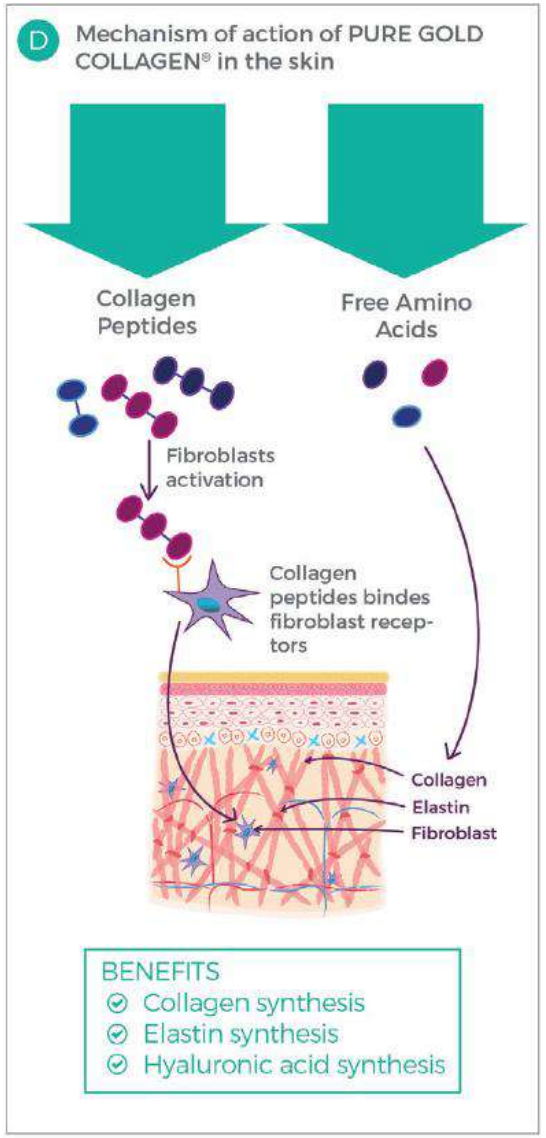
Retinol is known to be a molecule which improves the skin texture, dyspigmentation, dryness, and fine lines, **significantly improves fine wrinkles**

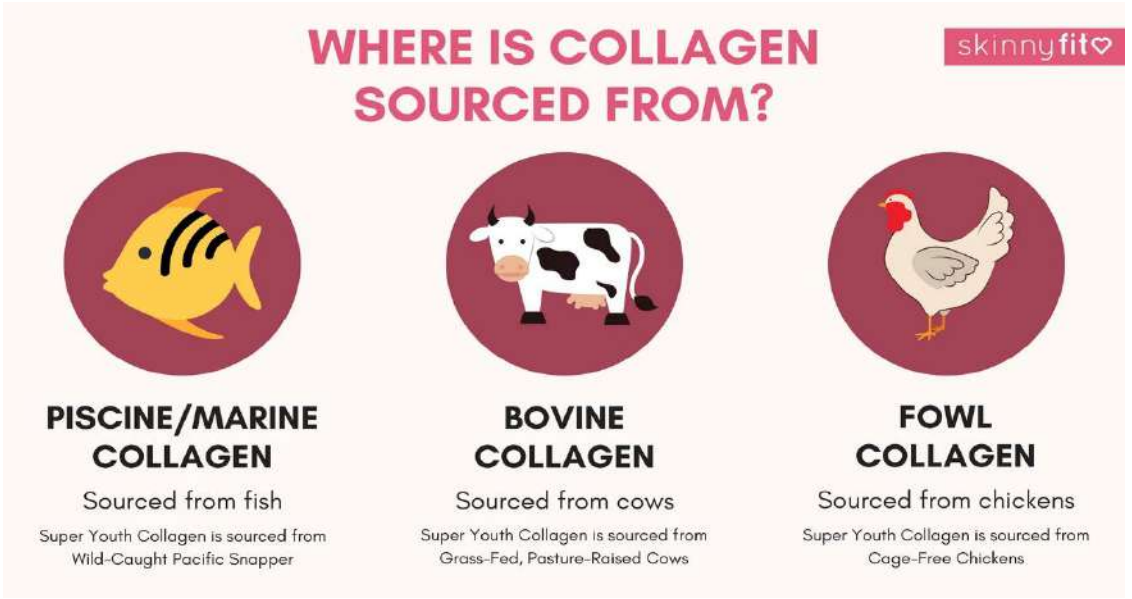
The optimal concentration to balance the skin irritation against effectiveness has not been determined. Retinol concentration in the cosmetic product is between 0.0015% and 0.3%



Stimulasi Produksi Kolagen







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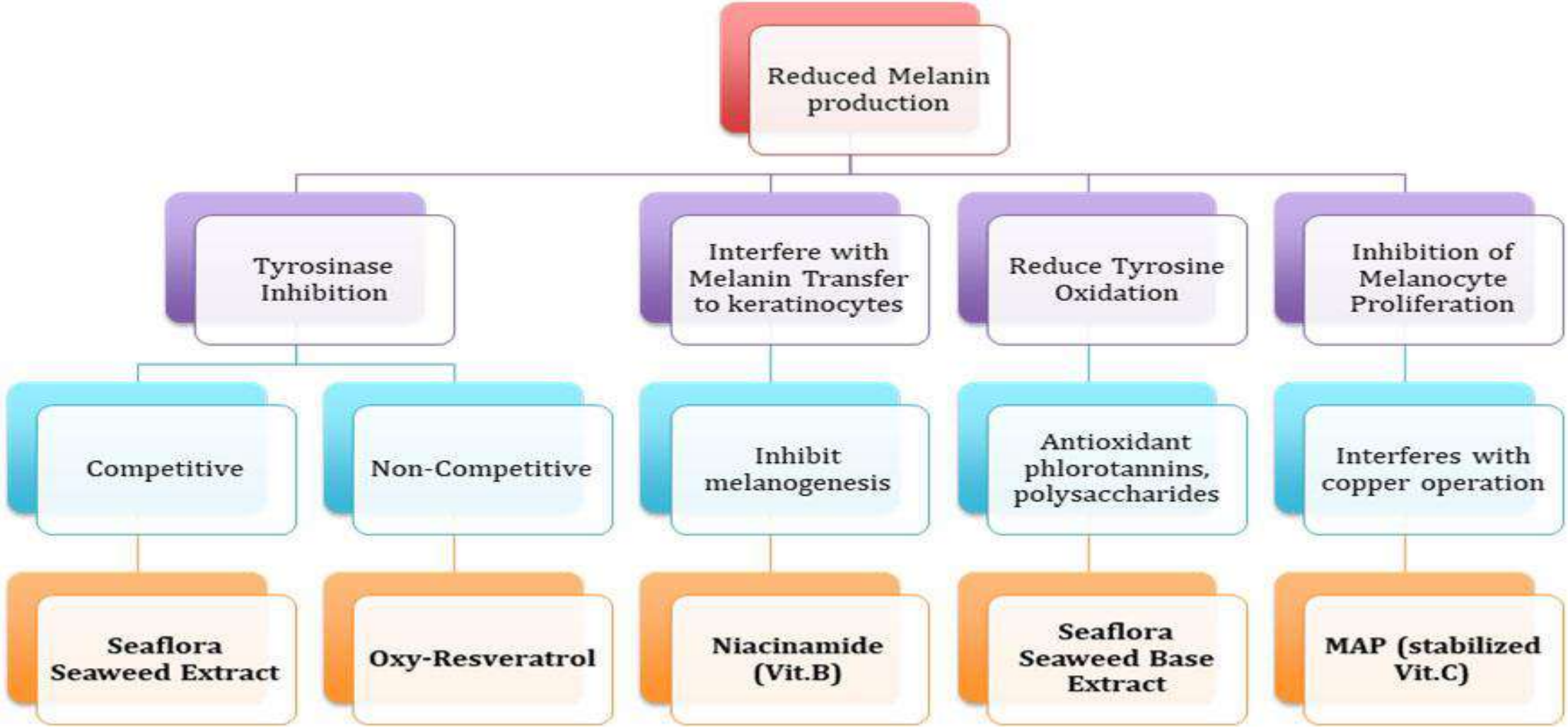
Perlindungan Kulit



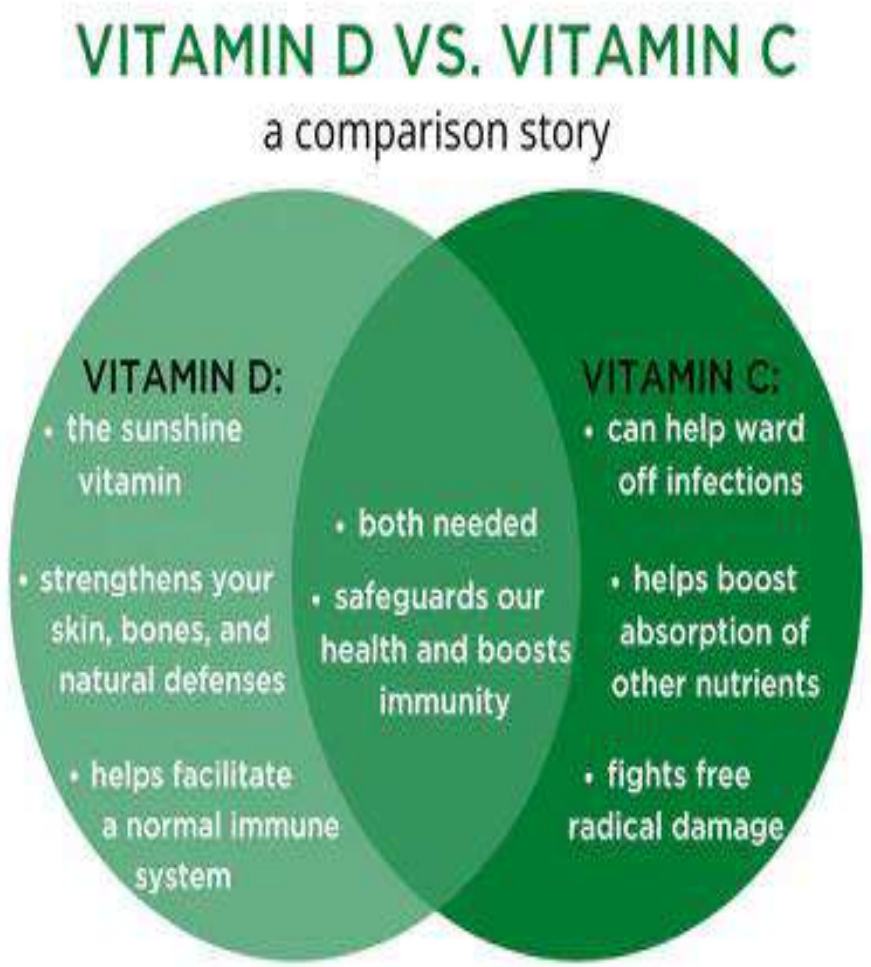
*Magnesium ascorbyl phosphate

Perlindungan Kulit

Vitamin C is a naturally occurring substance and an essential nutrient. It has various biological and pharmaceutical functions. It inhibits melanin synthesis through downregulation of tyrosinase enzyme activity.

Vitamin D is known to enhance the rate of melanin synthesis

Foods like tomatoes, milk, eggs, cheese, carrots, yogurt, chia seeds, oatmeal, ginger, watermelon, kiwi, papaya, dry fruits, and lots of green leafy vegetables reduce melanin



https://ods.od.nih.gov/factsheets/VitaminD-Consumer/

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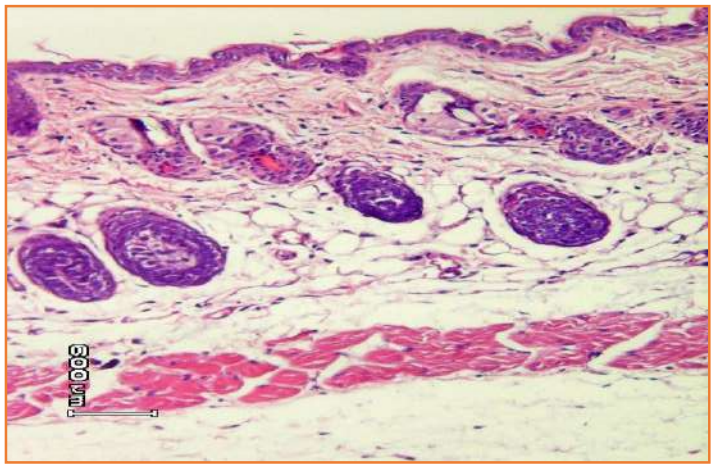
THANK YOU

Histopatologi kulit punggung mencit (perbesaran 200x)



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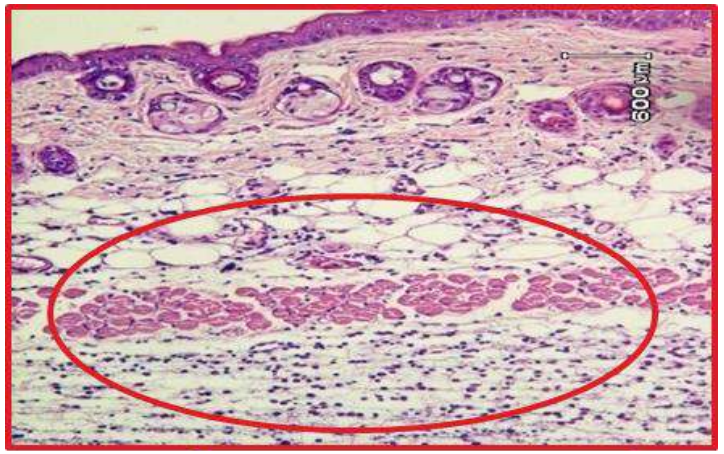

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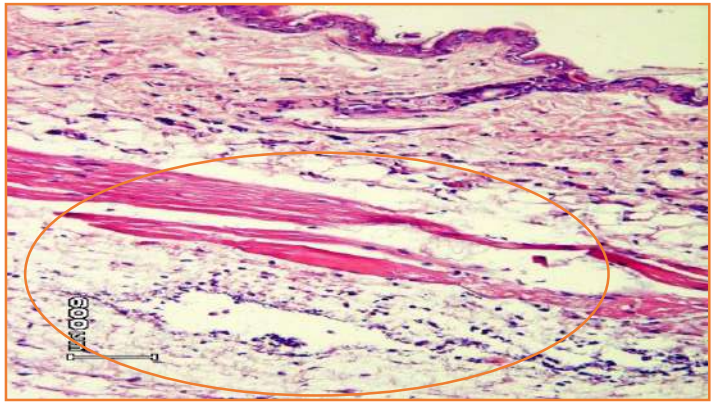
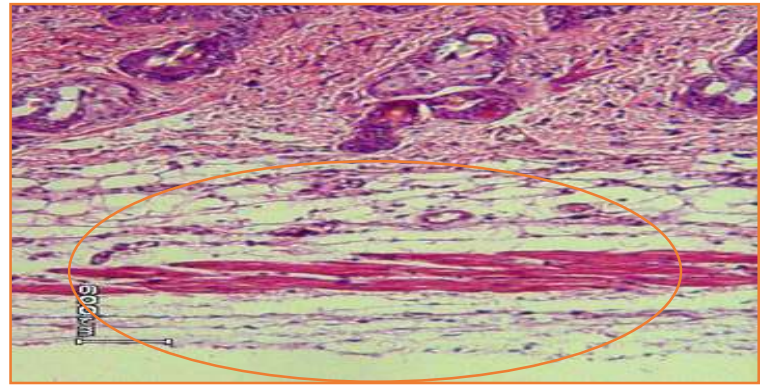
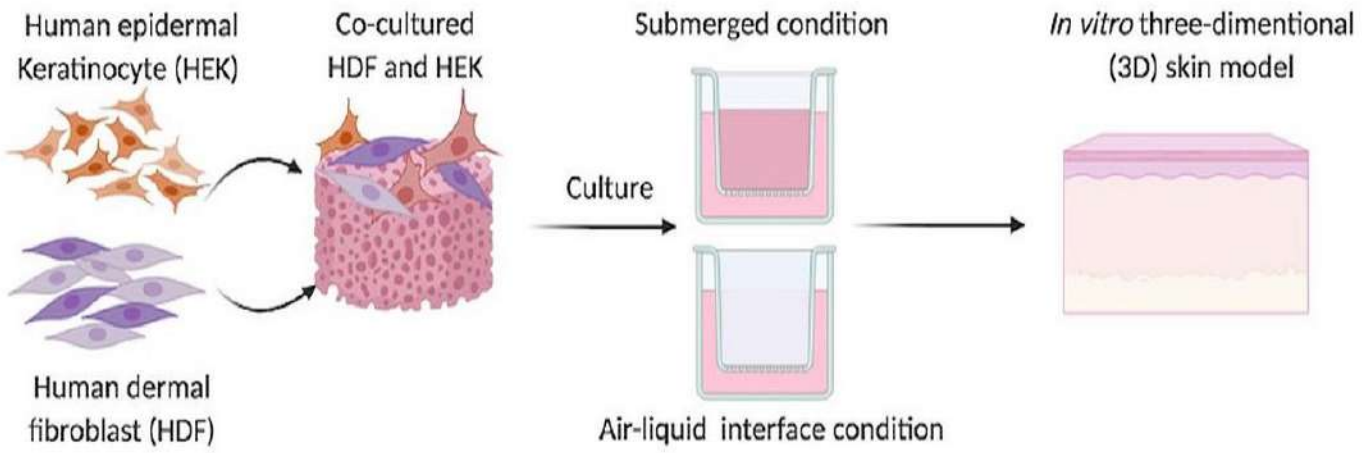


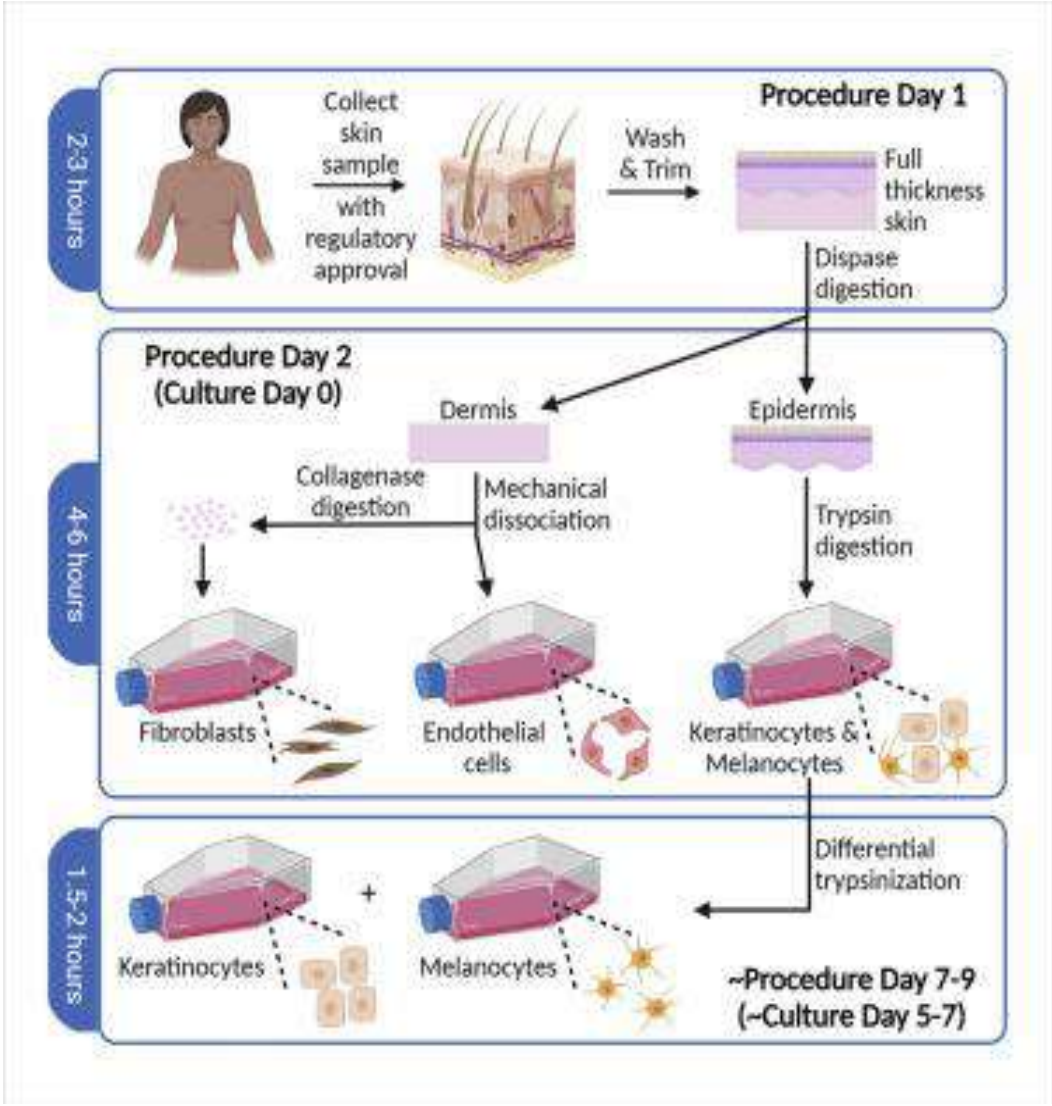
Kulit perlakuan Calacort® *cream*



Kulit perlakuan EEUBU 3,75%

Penggunaan Kulit Dalam Penelitian





FORMULASI DAN TEKNOLOGI SEDIAAN
KOSMETIK

PERTEMUAN 4

apt. Trifonia Rosa Kurniasih, M.Biotech

STIKES NOTOKUSUMO YOGYAKARTA

KOSMETIK PEMBERSIH

01. PENGERTIAN
KOSMETIK PEMBERSIH

02. KATEGORI
KOSMETIK PEMBERSIH

03. CONTOH SEDIAAN
KOSMETIK PEMBERSIH

01. PENGERTIAN

CLEANSING PRODUCT

To keep skin healthy, it is essential to **keep the hygiene** of the skin by **daily removing dirt, extra sebum**, and **oils** from the skin surface.

The general purpose for skin cleansing is to **reduce sebum** and **exogenous contaminants** and to control **odors and the skin microbiome,** without removing protective SC surface proteins and lipids, affecting skin microbiota or altering pH

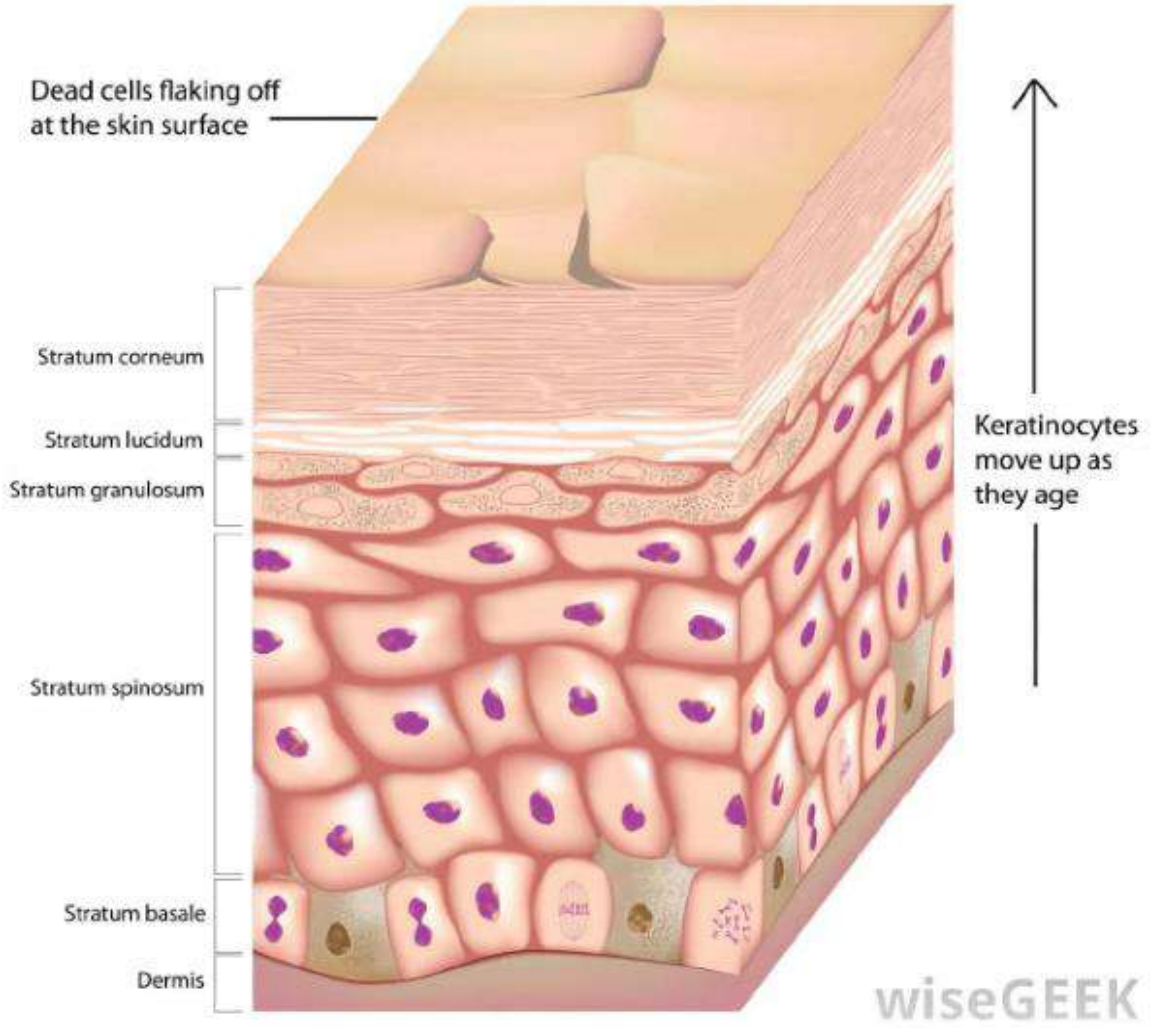


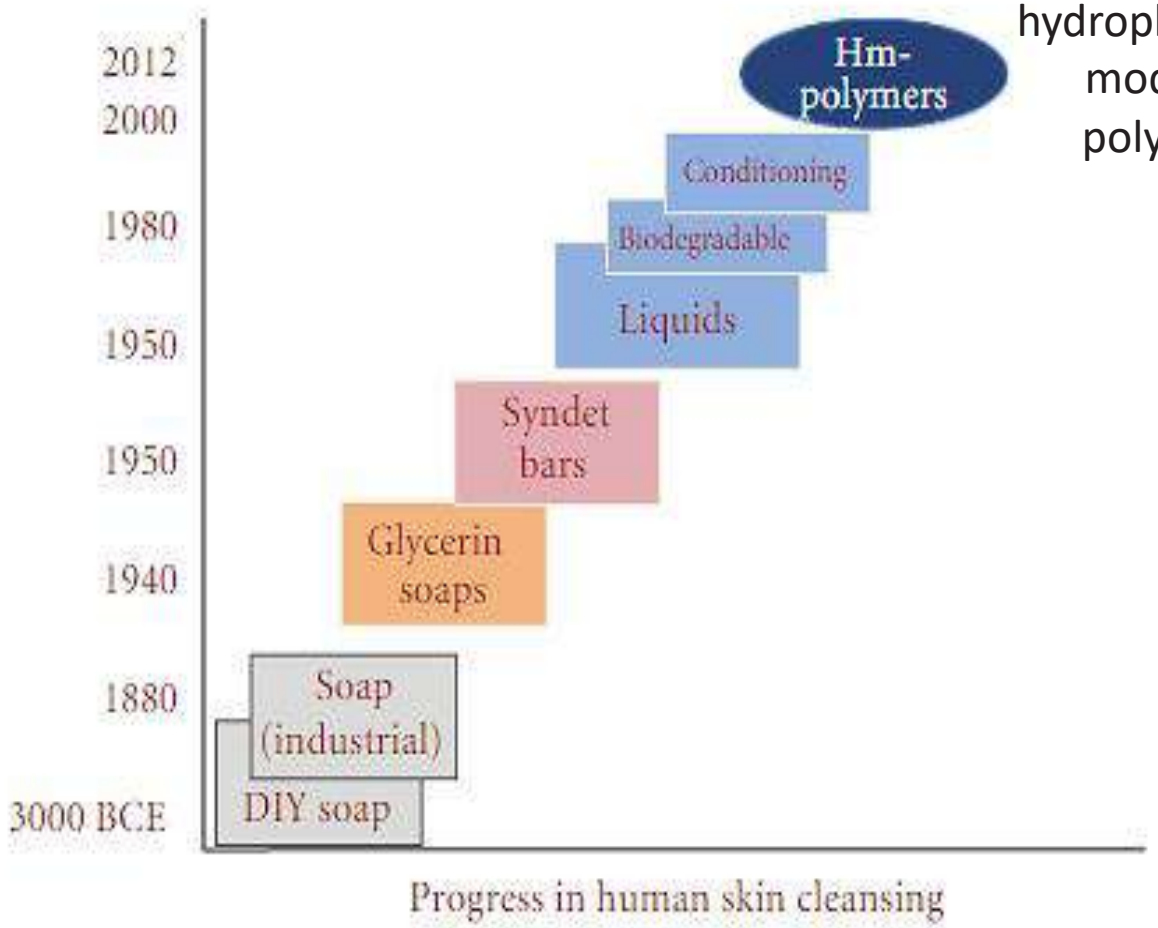
Figure 1. The skin is composed of three main layers: the epidermis, dermis and the hypodermis [15].

01. PENGERTIAN

CLEANSER

Generally, the progress in cleansing technology has been marked by the creation of cleansing systems that better respect the skin barrier

Since several decades ago, **soap** has been one of the most **popular cleansing products** thanks to its high foaming ability and strong cleansing power, but there also have been reports of **soap-induced skin irritations such as dry and tight skin**



hydrophobically modified polymers

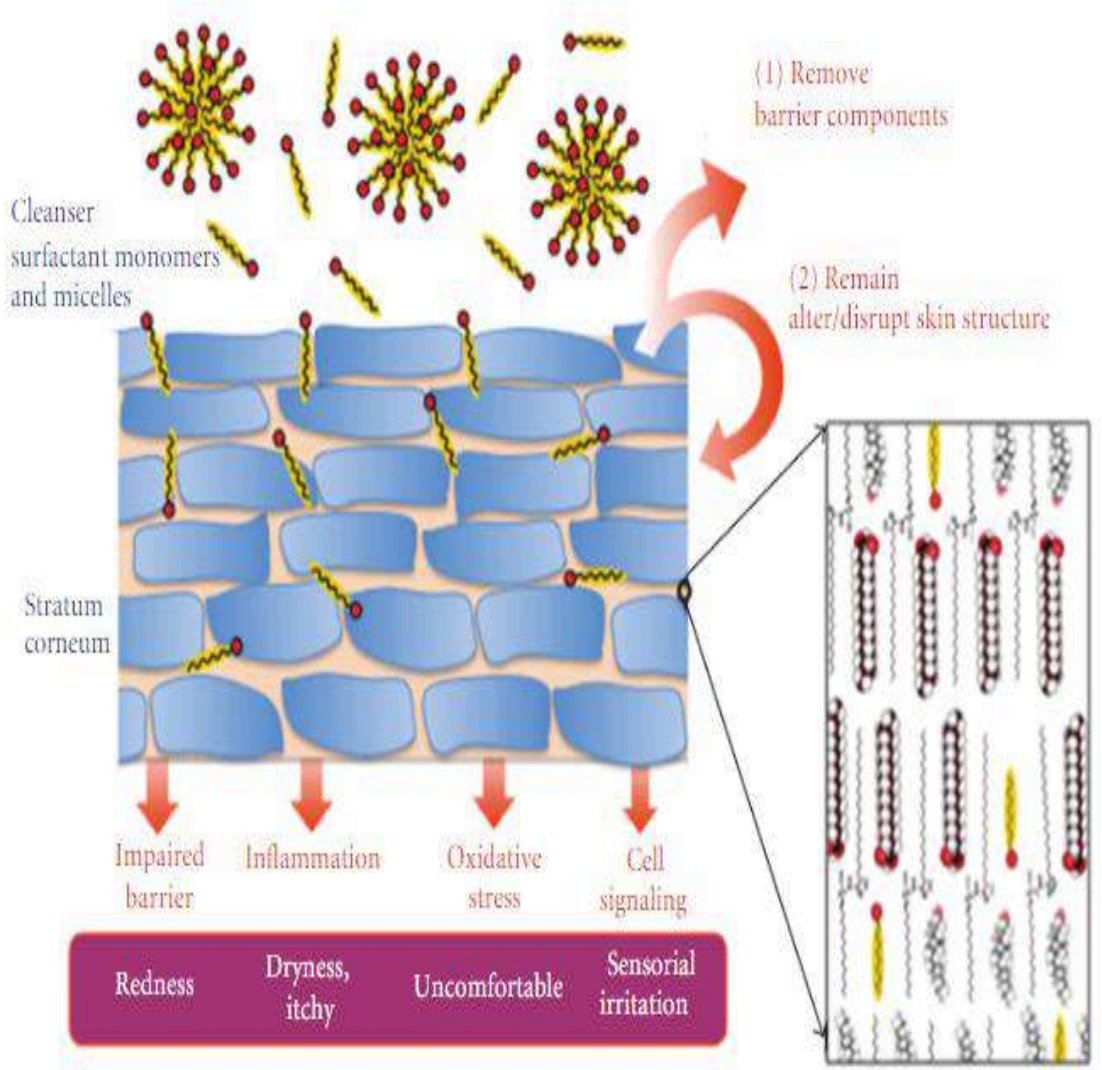
FIGURE 2: Progress of technology and skin compatibility of human skin cleansing over time. Adapted from Walters 2009.

01. PENGERTIAN

CLEANSER

Cleansers are usually formulated with **surfactant** at concentration much higher than its critical micelle concentration (CMC). At such concentration, the majority of the surfactant molecules self-assemble into micelles

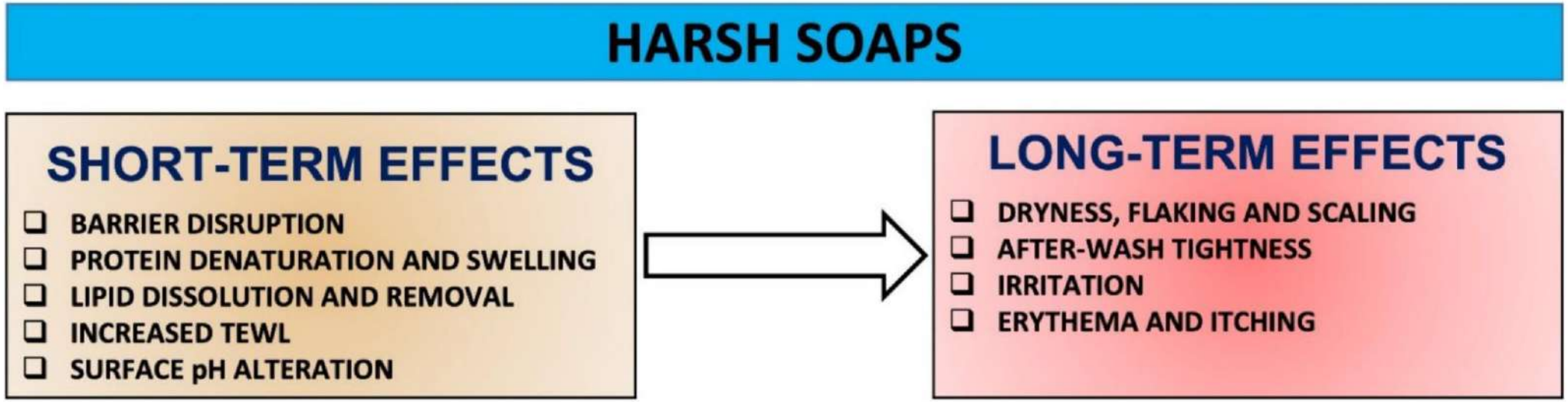
The function herein is to lower the interfacial tension at the dirt/water and skin/water interfaces, there-by detaching the dirt from the skin surface. The dirt can also be removed in an emulsified form



02. KATEGORI

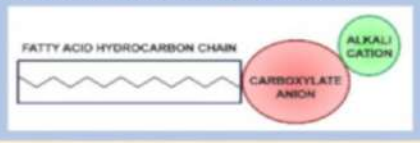
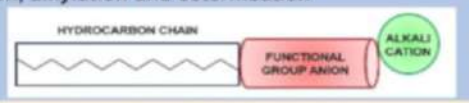
Soap is a salt of fatty acid obtained through saponification (literally ‘conversion into soap’) of animal fat such as tallow and lard-pork fat (which contains fatty acids such as saturated palmitic and stearic acids and an unsaturated fatty acid such as oleic acid) or vegetable fat such as olive oil, palm oil and coconut oil with a strong base such as sodium hydroxide (caustic soda/lye), potassium hydroxide (potash) and magnesium hydroxide.

- **Hard Soap:** Hard soap is made using sodium hydroxide (NaOH) or lye. Hard soaps are especially good cleansers in hard water that contains magnesium, chloride, and calcium ions. They contain free alkali and are used for washing purposes.
- **Soft Soap**: Soft soap is made using potassium hydroxide (KOH) rather than sodium hydroxide. produce more lather and are used as toilet soaps, shaving creams and shampoos



02. KATEGORI

"Synthetic Detergent" and are better known in Spain as soap-free soaps. They are **cleansers designed to maximize cleanliness and minimize skin irritation**. They are less irritating than traditional vegetable soaps as they are not processed by saponification

KEY POINTS OF DIFFERENCE	SOAP	SYNDET
HISTORICAL PERSPECTIVE OF DISCOVERY AND USE	A very ancient substance that has been in use since 3000 BC From basic to widely-used, branded personal hygiene and laundry products	A century-old substance that has been in use since the early 1900s Sophisticated and environmentally friendly personal hygiene and laundry products
CHEMISTRY	Salt of a fatty acid obtained through saponification of animal or vegetable fat with a strong base/alkali 	Chemically synthesised from fats, petroleum/petrochemicals and oil-based products (oleochemicals), and alkali using a combination of chemical processes such as sulfonation, ethoxylation, alkylation and esterification 
INGREDIENT COMPOSITION AND GENERAL FORMULATION	A combination of surfactants and specialty ingredients that is usually incompatible with healthy, sensitive and compromised skin due to its drying and irritancy potential Soaps contain natural surfactants since most oils and fats used for their production can be found in nature	A 'crafted blend' (pH-balanced, free from fragrance and colour) of surfactants and specialty ingredients that is beneficial to the skin's structural and functional integrity Syndets contain synthetic surfactants
pH	Strongly alkaline (8.5–11.0) Since soaps are strong alkali, surfactants' properties are generally lost at neutral or acidic pH	Neutral to slightly acidic (5.5–7.0) Synthetic surfactants chemical structure and pH adjustability keeps them surface active throughout the entire pH range
SURFACTANT CHARACTERISTICS, CLEANSING CAPACITY AND ANTIMICROBIAL ACTIVITY	Amphipathic molecules containing a hydrophobic tail (a long fatty acid hydrocarbon chain) and hydrophilic head There is a variation in the fatty acid hydrocarbon chain length (usually C12–C14), origin and saturation, and the charge and composition of hydrophilic head Predominantly anionic Prototypical surfactant: sodium laurate, sodium oleate Cleansing capacity and antimicrobial activity depend on a combination of surfactants used; e.g., cationic surfactant – strong antimicrobial activity, anionic surfactant – highest cleansing capacity	Amphipathic molecules containing a hydrophobic tail (a long hydrocarbon chain) and hydrophilic head There is a variation in the hydrocarbon chain length, origin and saturation, and the size, charge and composition of hydrophilic head. Four primary types: non-ionic, anionic (most common), cationic and amphoteric/zwitterionic Prototypical surfactant: Sodium alkyl isethionate Cleansing capacity and antimicrobial activity depend on a combination of surfactants used; e.g., cationic surfactant – strong antimicrobial activity, anionic surfactant – highest cleansing capacity
MILDNESS	Harsh Depending on the following factors: formulation, pH, type of surfactants, rinsability factor	Mild Depending on the following factors: formulation, pH, type of surfactants, rinsability factor
INTERACTION WITH THE SKIN: BENEFITS AND NEGATIVE EFFECTS	Considerable Benefits < Negative Effects	Considerable Benefits > Negative Effects
SUSTAINABLE SOURCING OF SURFACTANTS AND THEIR ENVIRONMENTAL IMPACT	Many soaps still use animal fat (e.g., tallow) ALTERNATIVELY: A sporadic use of biosurfactants of plant and microbial origin and amino acid-based surfactants with high eco-friendly and biodegradability profile, production from renewable sources, low risk of toxicity, functionality under extreme pH and temperature conditions, and long-term physicochemical stability	Syndets are chemically synthesised ALTERNATIVELY: A regular use of biosurfactants of plant and microbial origin and amino acid-based surfactants with high eco-friendly and biodegradability profile, production from renewable sources, low risk of toxicity, functionality under extreme pH and temperature conditions, and long-term physicochemical stability

02. KATEGORI

NEWBORN-CHILDHOOD
- Barrier not fully formed
- Continuous morphological and functional changes
- Thinner skin layers
- Reduced sebum levels
- Readily prone to damage
- Higher hydration, TEWL and lower NMF

ADOLESCENT
- Dramatic hormonal changes
- Increased sebum production
- Increased amount of surface lipids
- Acne breakouts
- Increased presence of bacteria

MATURE-AGED
- Reduced ability to retain water, resulting in dryness
- Reduced levels of sebum, lipids and NMF
- Thinner epidermis and slower turnover of the SC
- Decline in the barrier function and integrity
- Reduced flexibility and elasticity

HALLMARKS OF SKIN IN DIFFERENT AGES

DRY SKIN CONDITIONS (e.g., eczema, psoriasis)
- Impaired barrier structure, function and integrity (e.g., increased TEWL, penetration of allergens and microbes)
- Redness and inflammation
- Dry, thickened, rough, scaly, cracked and itchy skin
- Loss of elasticity
- Flare-ups

SENSITIVE SKIN
- Impaired barrier (e.g., increased TEWL)
- Thinner and more sensitive SC
- Increased sensorineural impulse
- Stinging, burning and itching sensation

HALLMARKS OF DERMATOLOGIC CONDITIONS

SKIN CLEANSING

MILD SYNDETS

BENEFITS
- EFFECTIVE CLEANSING
- ANTIMICROBIAL ACTIVITY
- (RE)HYDRATION
- BARRIER PRESERVATION
- SURFACE pH MAINTENANCE
- GOOD RINSABILITY
- SKIN COMPATIBILITY
- NEW GENERATION: BIODEGRADABLE AND ECO-FRIENDLY

NEGATIVE EFFECTS
- IRRITANCY POTENTIAL
- ITCHING POTENTIAL
- SENSITISING POTENTIAL

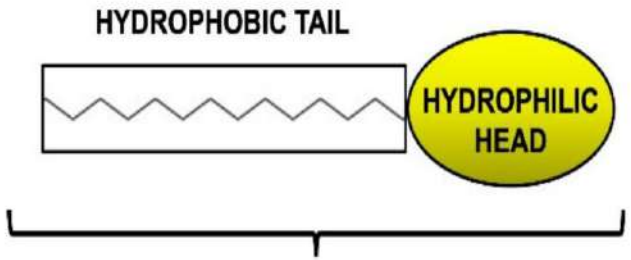
HARSH SOAPS

BENEFITS
- EFFECTIVE CLEANSING
- ANTIMICROBIAL ACTIVITY
- NATURAL SURFACTANTS
- PLEASANT SMELL AND FEEL
- NEW GENERATION: BIODEGRADABLE AND ECO-FRIENDLY

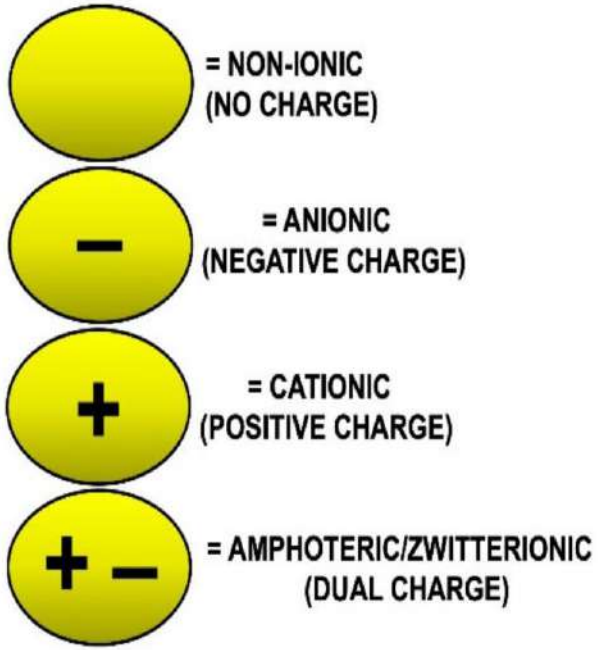
NEGATIVE EFFECTS
- SURFACE pH ALTERATION
- DELIPIDATION AND PROTEIN DAMAGE
- DEHYDRATION
- BARRIER DISRUPTION
- DISRUPTION OF MICROFLORA
- SKIN IRRITATION
- SENSITISING POTENTIAL
- DRYNESS AND ITCH
- POOR RINSABILITY

02. KATEGORI

Surfactants are the principal constituents of most soap and syndet formulations given that they are responsible for its cleansing action and antimicrobial activity



SURFACTANT 'GENERIC ANATOMY'



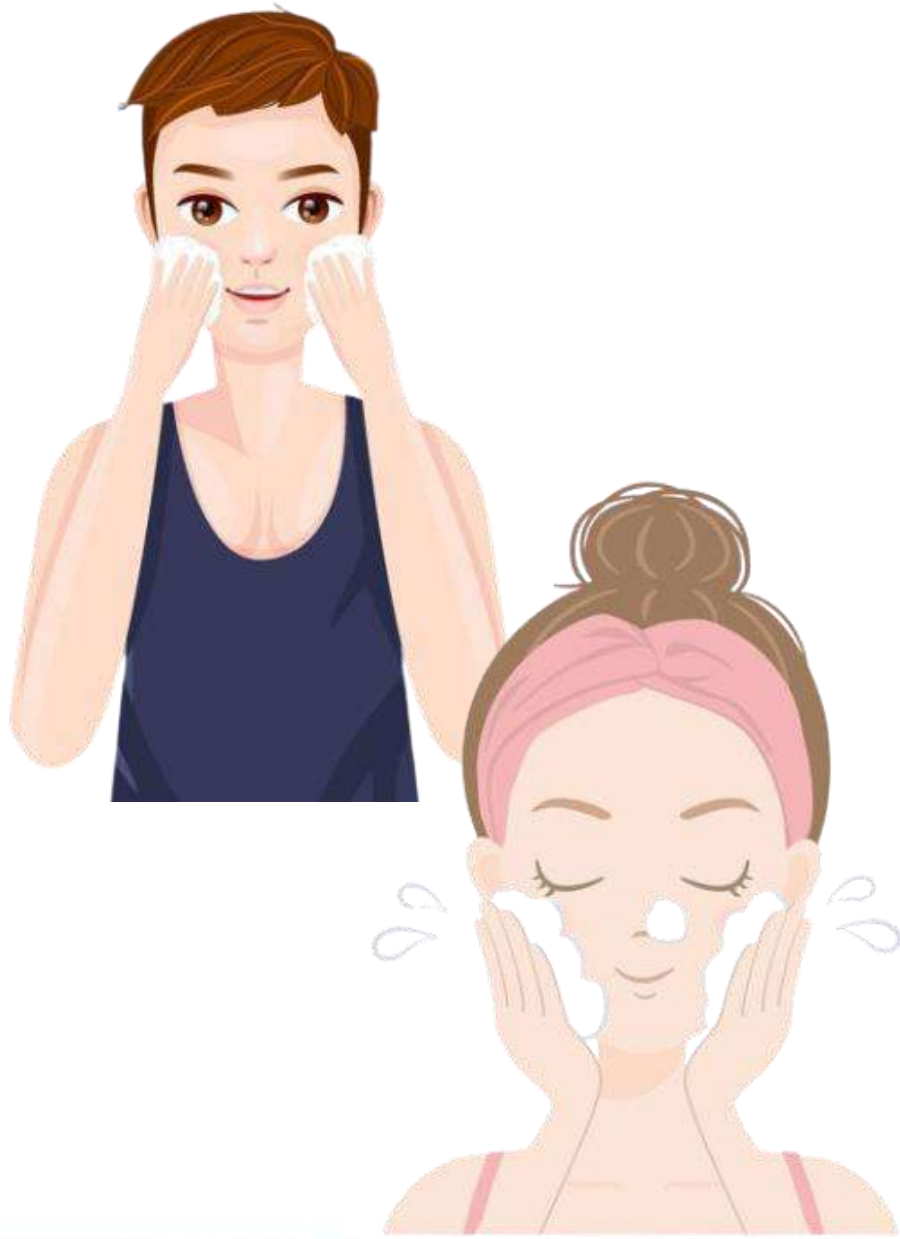
SURFACTANT TYPE	CLEANSING CAPACITY	ANTIMICROBIAL ACTIVITY
NON-IONIC	Gentle	Minimal
ANIONIC	Very High	Moderate
CATIONIC	Mild	Strong
AMPHOTERIC	Good	Moderate

- CLEANSING CAPACITY: *ANIONIC > CATIONIC > AMPHOTERIC > NON-IONIC*
- ANTIMICROBIAL ACTIVITY: *CATIONIC > ANIONIC = AMPHOTERIC > NON-IONIC*

02. KATEGORI

In addition to surfactants, soaps and syndets also commonly contain a combination of some or most of the following ingredients:

- water (or a suitable organic solvent)
- barrier-maintaining and barrier-enhancing moisturisers to maintain and (re)hydrate the skin barrier
- binders and plasticizers to stabilize the formulation;
- fillers to harden the formulation if required;
- lather/foam enhancers or boosters;
- preservatives to prevent the growth of microorganisms
- fragrance and colour, which are usually only present in soaps.



02. KATEGORI

WATER – BASED SKIN CLEANSER

- **Cleansers in which the first ingredient is water and added alcohol**
- remove H_2O-based impurities such as dirt and sweat

01

OIL-BASED SKIN CLEANSER

Oil cleansing works because the oil bonds to the oils and dirt on your skin. The oil also acts as a barrier to protect your skin, and keeps it soft and moisturized

02

Oil based skincare products contain no water and are made of oils

03

SOLID CLEANSER

- **It is in the form of a solid powder that can absorb dirt**
- For example : cream or solution containing volatile solids and liquids, so that the solids are able to stick to the skin. Is a form of cleansing mask (cleansing mask, beaty mask)

04

MECHANIC CLEANING

Aim to remove dead skin cells on the stratum corneum of the skin so they don't accumulate

The power to remove cells in cosmetics is due to the presence of coarse grains called abrasives or scrubs. Can be a scrub cream or scrub soap.

03. CONTOH SEDIAAN

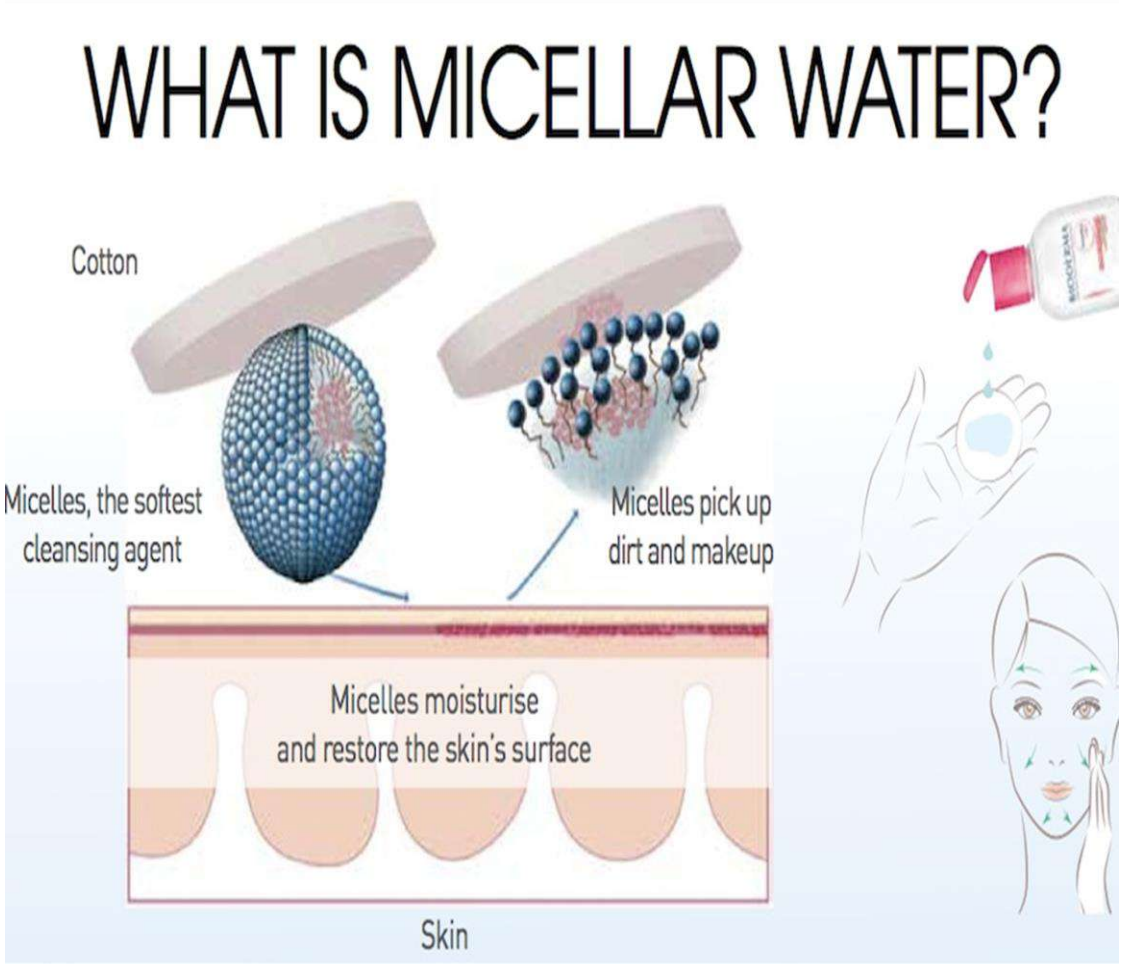
LA ROCHE POSAY LABORATOIRE DERMATOLOGIQUE | OFFICIAL SHOP

N°1 DERMATOLOGICAL SKINCARE BRAND WORLDWIDE

SYNDET SOAP BASES

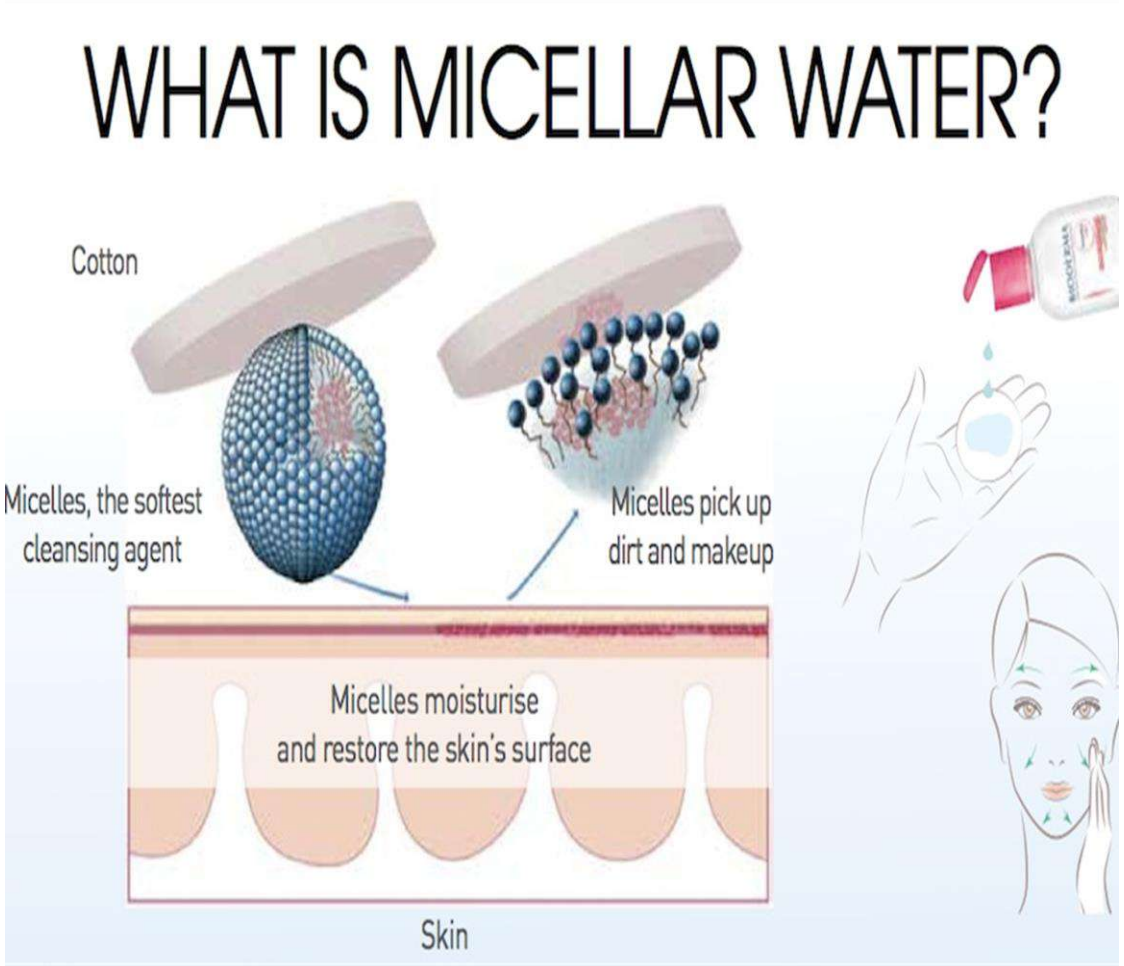
- Sodium cocoyl isethionate (the most widely used)
- Sulfosuccinates.
- Alpha olefin sulfonates.
- Alkyl glyceryl ether sulfonate.
- Sodium cocoyl monoglyceride sulfate.
- Betaines

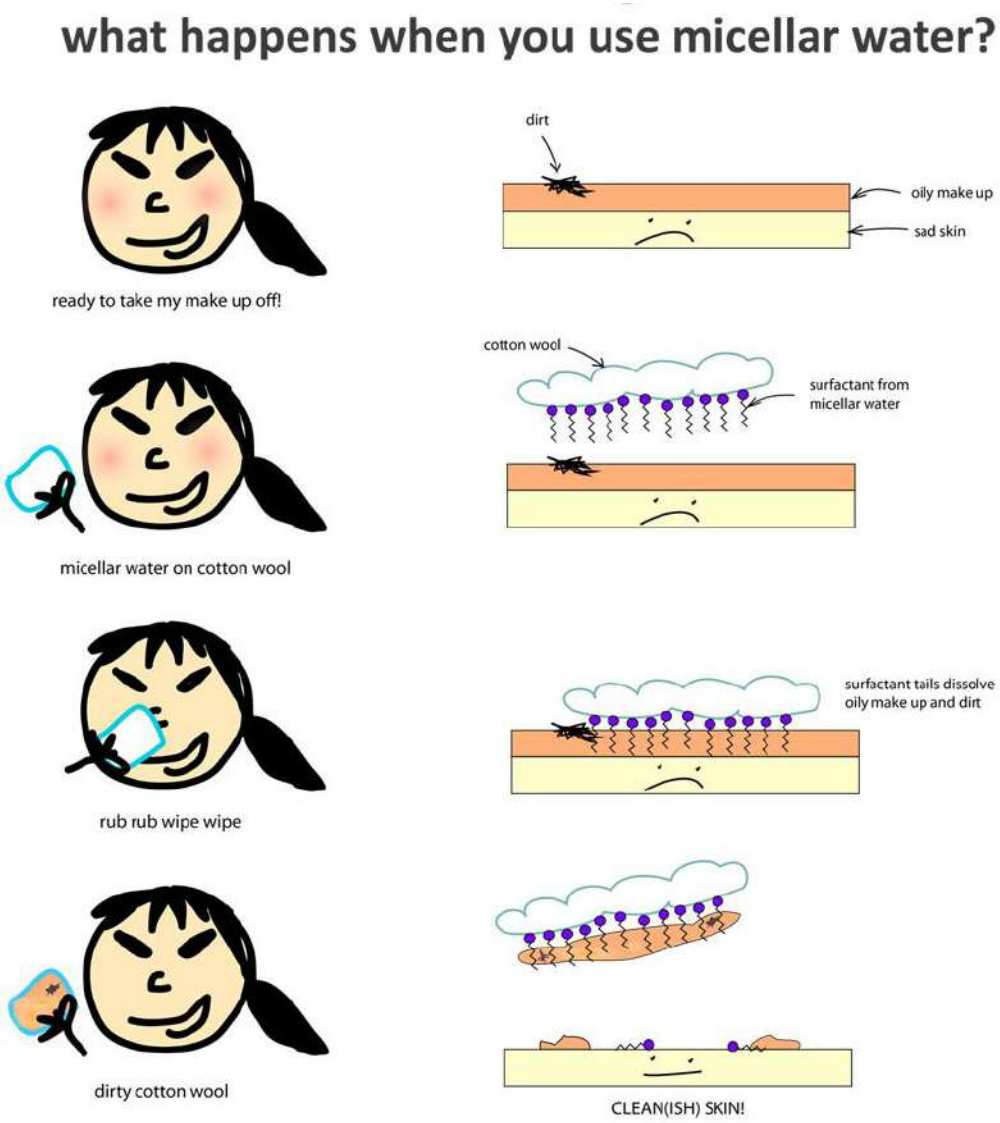
03. CONTOH SEDIAAN



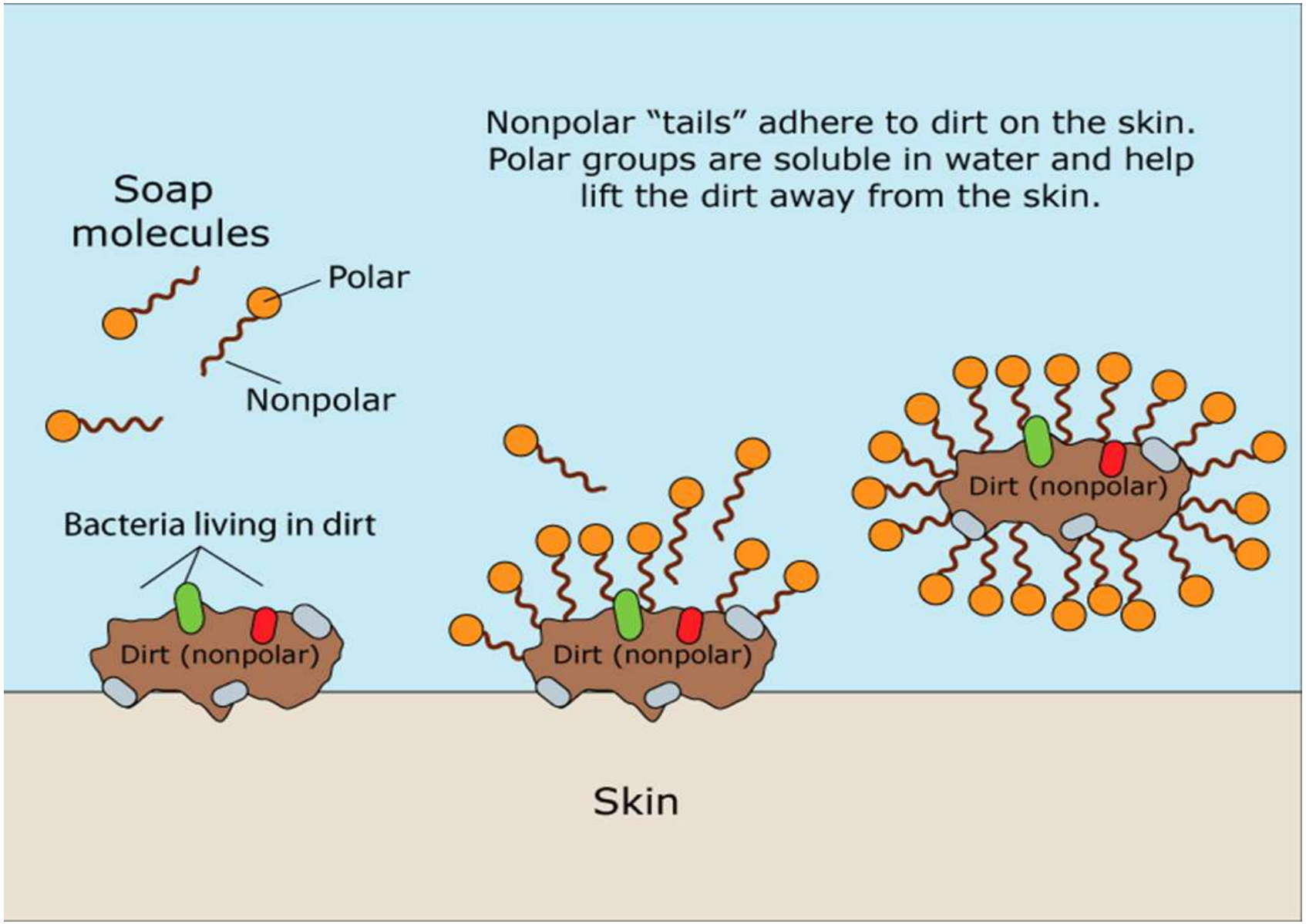
Komposisi	fungsi
Aqua	base
PEG-6 Caprylic/Capric Glycerides, Hexylene Glycol, PEG 7/ Gliseril cocoate	surfaktan
Niacinamide, Cucumis Sativus Fruit Extract Actinidia Polygama Fruit Extract. Biosaccharide Gum-2,	Zat aktif
Olive Glycerides,	emolien
Glycerin, Propanediol, Mannitol, Propylene Glycol, Xylitol	Humektan
Panthenol, Butylene Glycol	moisturizer
Disodium EDTA,	Chelating agent
Phenoxyethanol, Ethylhexylglycerin	preservative
Fragrance,	

03. CONTOH SEDIAAN





03. CONTOH SEDIAAN



03. CONTOH SEDIAAN

Peel-off masks are applied as an even layer to the face and removed in continuous, peelable film after the given amount of time

This suspension formulation is a blend of mostly solid powder ingredients. The dry blended powders are mixed 10:24 with water just before application onto the skin.[2] The association between vegetal thickeners and absorbing porous silica is evident in this formula. Magnesium oxide and calcium sulfate form a compact mask after drying, maintaining facial contours

Polyvinyl Alcohol	15.00% w/w
Sodium Carboxymethyl Cellulose	5.00
Glycerin	5.00
Ethyl Alcohol	10.00
Fragrance (*parfum*)	qs
Preservative	qs
Alumina-based fine ceramics	0.20
Water (*aqua*)	qs to 100.00

03. CONTOH SEDIAAN

Wash-off Masks is texture, designed by Engelhard (now BASF) to remove excess sebum. In this formula, the thickening properties are provided by a combination of magnesium aluminum silicate and xanthan gum. Absorption of sebum is provided by kaolin, and the other ingredients somewhat resemble a standard face cream for greasy skin—except for the amount of beeswax, which provides some occlusion and helps skin moisturization. Refined milk lipids and oat flour also contribute to skin conditioning

A.	Water (*aqua*)	qs to 100.00% w/w
	Magnesium Aluminum Silicate (Veegum RT, Vanderbilt)	3.50
	Xanthan Gum (Keltrol T, CP Kelco)	1.50
	Glycerin	5.00
B.	Kaolin (Coslin C-100, BASF—*formerly Engelhard*)	4.00
C.	Isostearyl Palmitate	3.00
	Sorbitan Stearate (Arlacel 60, Croda)	1.60
	Beeswax	2.00
	Refined Milk Lipids (Monalac ML, Croda)	1.00
	Avena Sativa (Oat) Flour	1.00
D.	Preservatives	qs
	Pearls	qs
	Fragrance (*parfum*)	qs

Procedure: Combine A in order and mix with propeller agitator at RT until free of lumps. Heat to 75°C while mixing. Add B and homogenize for 15 min. Premix C and heat to 75°C with mixing. Add C to AB and mix until uniform. Cool to 45°C and add D. At 35°C, discharge.

03. CONTOH SEDIAAN

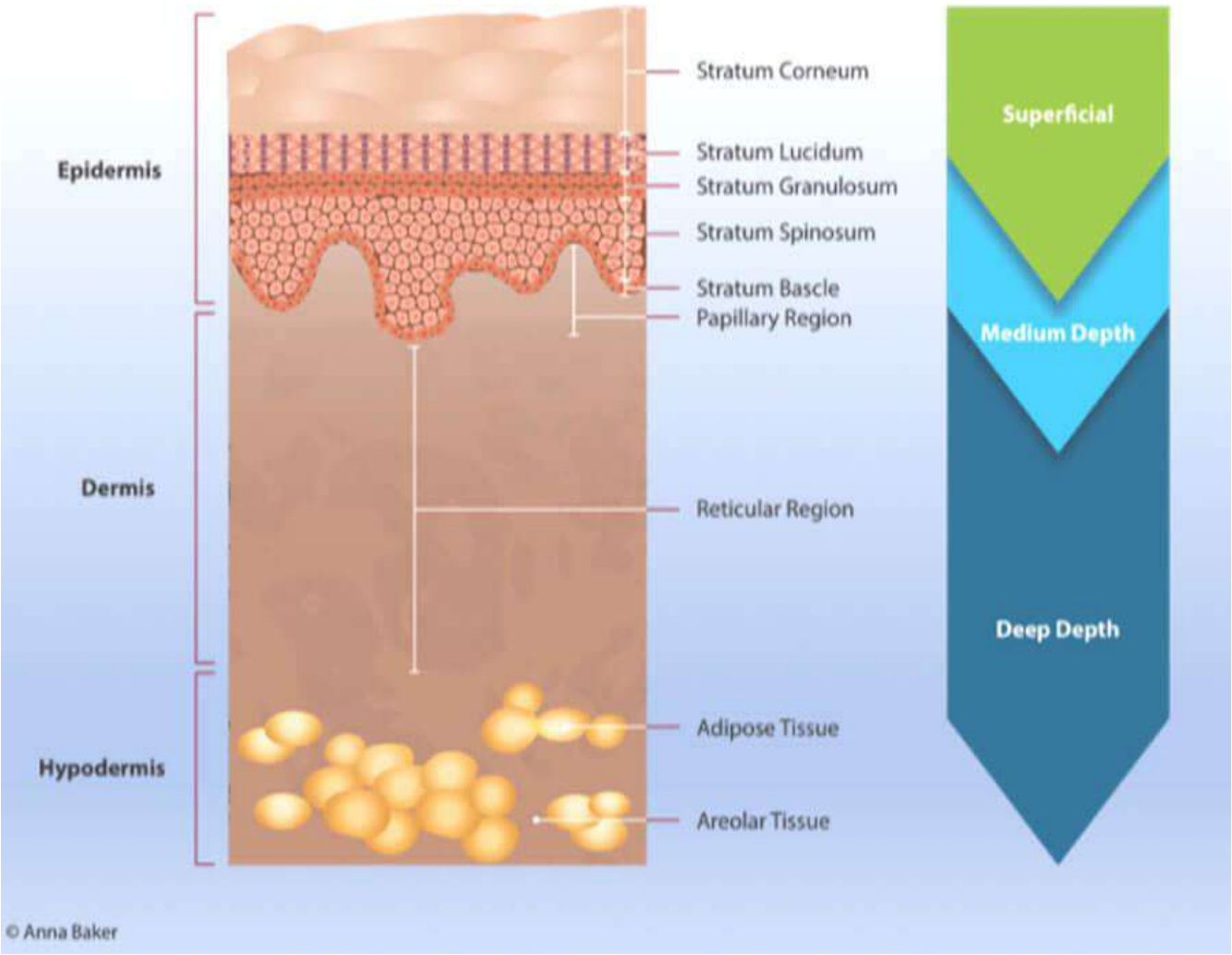
Pengelupas secara kimia : menambah exfoliant

- contoh : Asam salisilat, sulfur

Pengelupas secara mekanik : menambah granul yang abrasive

- Contoh : alumina, $CaCO_3$, $Ca(PO_4)_2$, $DaSO_4$, Mg Trisilikat

03. CONTOH SEDIAAN



Superficial Peels

Only mild dryness for 2 – 3 days. Used for treating fine lines, dull skin, acne, pigmentation and rough skin

Medium Peels

Skin flaking for 3 – 6 days. Treats wrinkles, acne scars, pigmentation, sunspots and for skin tightening.

Deep Peels

Severe peeling and crusting for 7 – 10 days. Used in fair skin patients with severe acne scarring or deep wrinkles and sun lesions. Strict medical monitoring needed.

03. CONTOH SEDIAAN

TABLE 2. Classification of chemical peeling agents based on depth of tissue injury

TYPE		DEPTH OF PENETRATION	POTENTIAL SIDE EFFECTS
Superficial	• AHAs such as glycolic (30–50%), lactic (10–30% or mandelic (40%) • BHAs such as salicylic acid (30%) • AKAs such as pyruvic acid (50%)	Intraepidermal and DE junction disruption possible	Post-inflammatory pigmentary alterations, erythema, pruritus, burning, superficial desquamation/epidermolysis
Medium	• Salicylic acid (>30%, multilayer application) • Glycolic acid (70%, with or without pretreatment primer such as Jessner's solution) • TCA (30–50%, monolayer application, with or without pretreatment primer such as Jessner's solution[a])	Full thickness epidermis into papillary dermis	Post-inflammatory pigmentary alterations, superficial bacterial or fungal infection, reactivation of HSV, scarring, milia, acneiform eruption, greater thickness desquamation/epidermolysis
Deep	• TCA (>50%, monolayer application, with pretreatment primer such as Jessner's solution) • Baker-Gordon phenol peel (detergent, croton oil as an epidermolytic agent, phenol, and water for dilution to 50–55% phenol)	Full thickness epidermis, papillary dermis and mid-reticular dermis	Post-inflammatory pigmentary alterations, secondary bacterial or fungal infection, reactivation of HSV, scarring, milia, acneiform eruption, cardiotoxicity/arrhythmia (due to systemic absorption of phenol, seen in 34–50% of patients), hepatotoxicity, nephrotoxicity

AHA: alpha hydroxy acid; BHA: beta hydroxyl acid; AKA: alpha keto acid; TCA: trichloroacetic acid; DE: dermoepidermal; HSV: herpes simplex virus

[a]Jessner's solution: salicylic acid, 14g; resorcinol 14g; lactic acid (85%), 14g; and ethanol to 100mL; used as a primer to optimize medium-depth peels by disrupting cornified layer

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Thank YOU