

Acne & Melasma



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LEARNING OUTCOMES

- At the end of lecture, a student should be able to
 - Elaborate the pathophysiology of acne
 - Clinical features of acne
 - Treat acne according to type and severity
 - Identify melasma
 - Differentiate melasma from other differentials
 - Treat appropriately a case of melasma

ACNE

- Chronic inflammatory disease of the pilosebaceous follicles
- Comedones, papules, pustules, cysts, nodules, and often scars
- Face, neck, upper trunk, and upper arms where more pilosebaceous units are located

Etiology

- Exact cause of acne is unknown. Several factors may play a role.
- One important factor is an increase in androgens. These increase in both boys and girls during puberty and cause the sebaceous glands to enlarge and make more sebum.
- Patients with endocrine disorders associated with excess androgens, congenital adrenal hyperplasia and polycystic ovarian syndrome may also suffer with acne.



HORIZONTAL INTEGRATION

Propionibacterium acnes

- Anaerobic bacteria in hair follicle.
- These bacteria use the sebum as food and break the sebum down into irritating substances, which cause inflammation.
- The abnormal flaking of the cells inside the hair follicle and the irritating substances lead to a plug formation and then to follicle swelling and then rupturing and developing into the papule then to the pustule.

Comedone

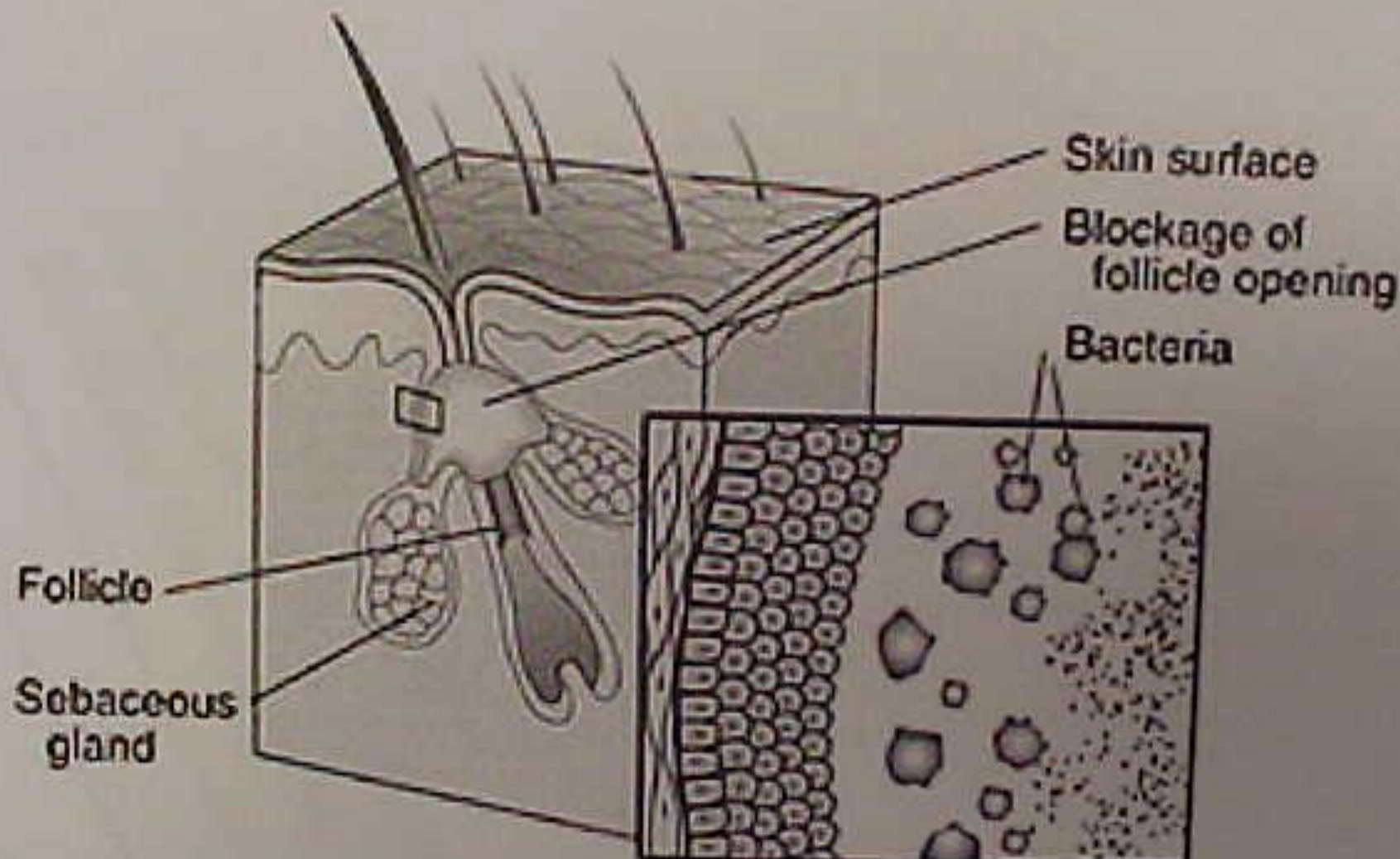
- Commonly known as the *blackhead* or whiteheads
- Basic lesion of acne
- Produced by hyperkeratosis of the lining of the follicles
- Retention of keratin and sebum



CORE CONCEPT

Comedone

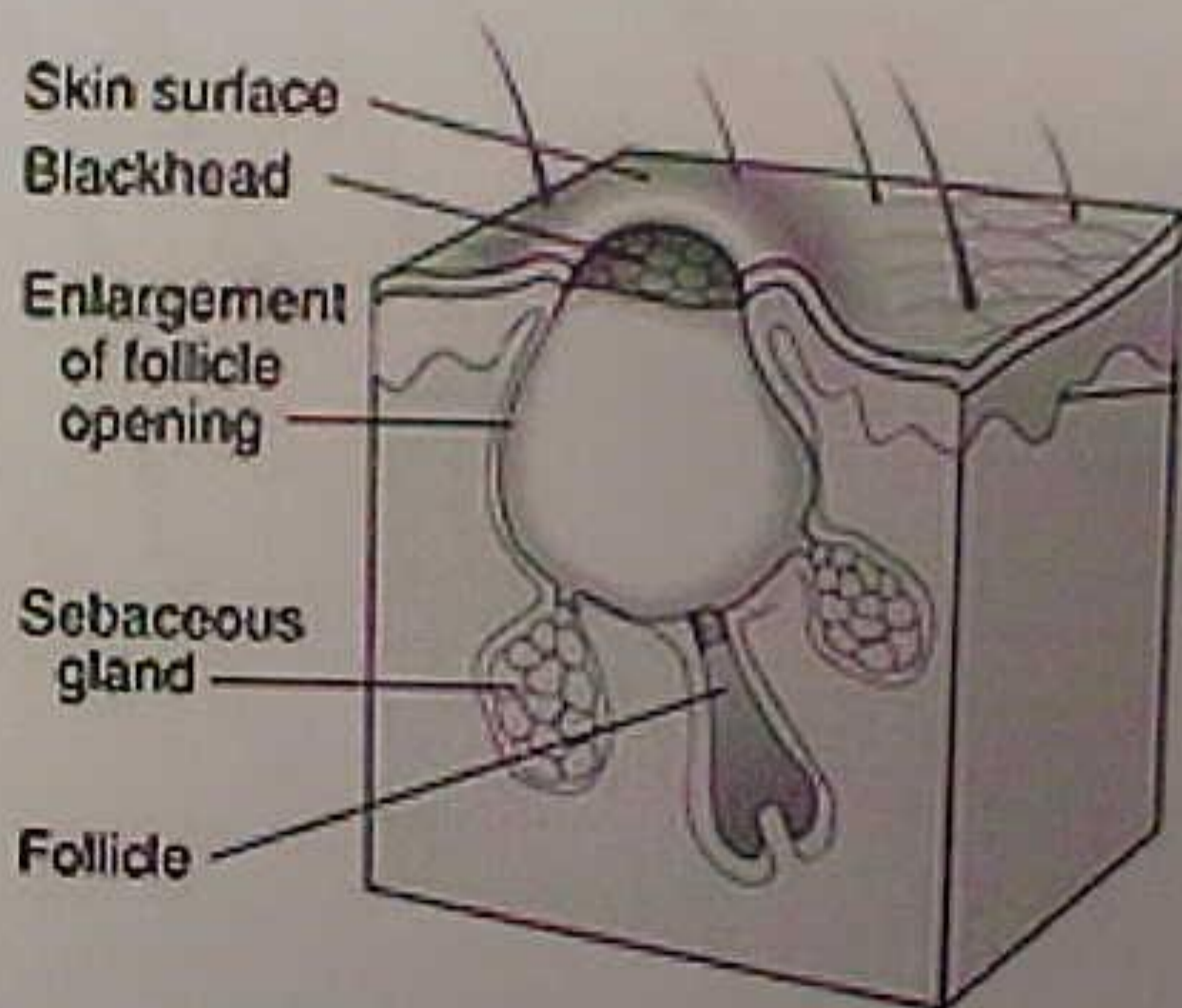
- If the comedone is open to the surface, it is called an open comedone or blackhead
- The black color is due to melanin
- If the comedone is closed, it is called whitehead.



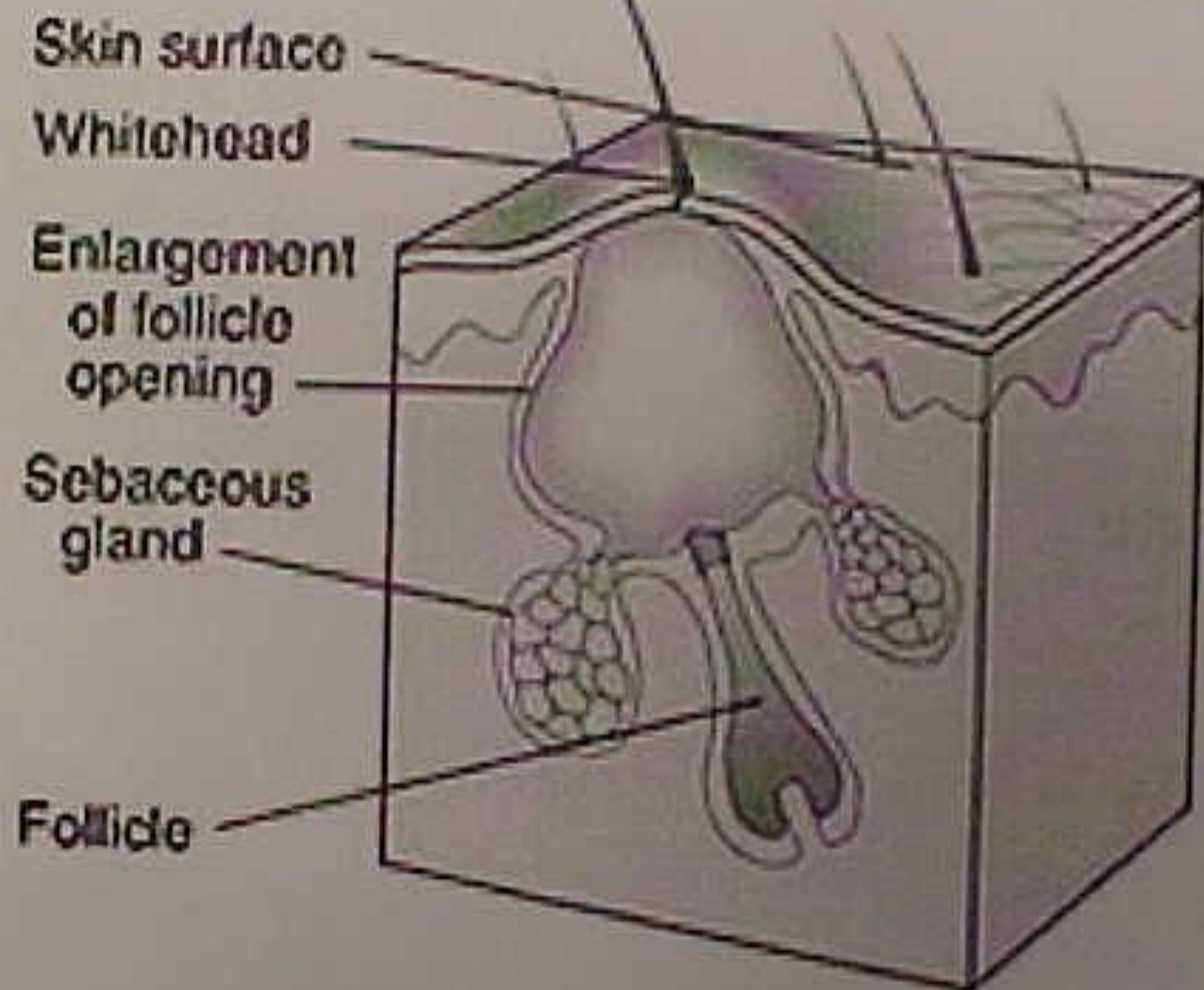
Microcomedo

Skin surface

Microcomedo



Open Comedo (Blackhead)



Closed Comedo (Whitehead)



VERTICAL INTEGRATION

Grades of acne



Global acne grading system

Table 3: The global acne grading system^[12]

Location	Factor
Forehead	2
Right cheek	2
Left cheek	2
Nose	1
Chin	1
Chest and upper back	3

Note: Each type of lesion is given a value depending on severity: no lesions = 0, comedones = 1, papules = 2, pustules = 3 and nodules = 4. The score for each area (Local score) is calculated using the formula: Local score = Factor × Grade (0-4). The global score is the sum of local scores, and acne severity was graded using the global score. A score of 1-18 is considered mild; 19-30, moderate; 31-38, severe; and >39, very severe

Topical Treatment

- Benzoyl peroxide
- Topical retinoids
- Topical antibacterials
- Salicyclic acid
- Azeleic acid

Oral Antibiotics

- Tetracycline
- Minocycline
- Doxycycline
- Erythromycin
- Azithromycin

Oral Contraceptives

- Estradiol suppresses the uptake of testosterone by the sebaceous glands
- Oral contraceptives containing androgenic progesterones may exacerbate acne
- EES and Norgestimate is approved for tx
- (Ortho Tri-cyclen, Estrostep, Yazmine)

Other Therapies

- Spironolactone 25mg to 300mg/d , antiandrogenic
- Steroids for severe inflammatory acne

Isotretinoin

- 0.5 to 1 mg/kg/day qd or bid for 15 to 20 weeks
- Leads to a remission that may last months to years
- teratogenic

Isotretinoin

- Affects sebum production, comedongenesis, P. acne and inflammation.
- Worsening of acne common in first month
- Monitor HCG, lipids, LFTs, blood counts

Approach to treatment

Severity; clinical findings	Treatment options	
	First line	Second line
Mild Comedonal	Topical retinoid	Alternative topical retinoid Salicylic acid washes
Papular/pustular	Topical retinoid Topical antimicrobial <ul style="list-style-type: none"> • benzoyl peroxide • clindamycin • erythromycin Combination products	Alternative topical retinoid plus alternative topical antimicrobial Salicylic acid washes
Moderate Papular/pustular	Oral antibiotics <ul style="list-style-type: none"> • tetracyclines • erythromycin • trimethoprim– sulfamethoxazole Topical retinoid ± benzoyl peroxide	Alternative oral antibiotic Alternative topical retinoid Benzoyl peroxide
Nodular	Oral antibiotic Topical retinoid ± benzoyl peroxide	Oral isotretinoin Alternative oral antibiotic Alternative topical retinoid Benzoyl peroxide
Severe	Oral isotretinoin	High-dose oral antibiotic Topical retinoid (also maintenance therapy) Benzoyl peroxide

Note: In women with acne, oral contraceptives or androgen receptor blockers (e.g., spironolactone) may be used in addition to the above treatment options.

PHYSICAL TREATMENTS

- Comedone extraction by light cautery
- Chemical peels
- Microdermabrasion
- Intralesion corticosteroid injection for acne cysts
- Narrowband blue light photodynamic therapy
- Injectable fillers
- Laser resurfacing for acne scarring.
- Corticosteroid injections are helpful for treating large inflammatory lesions.



Gram Negative Folliculitis

- Occurs in patients treated with antibiotics for acne over a long-term
- *Enterobactor, Klebsiella, Proteus*
- Anterior nares colonized
- Pustules around nose and chin
- Tx; stop current antibiotic, isotretinoin, Augmentin

Self directed learning

Mail - Zainab Tariq - Outlook x Guidelines of care for the manag x +

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FROM THE ACADEMY | VOLUME 74, ISSUE 5, P945-973.E33, MAY 2016

Guidelines of care for the management of acne vulgaris

Work Group: Andrea L. Zaenglein, MD • Arun L. Pathy, MD • Bethanee J. Schlosser, MD, PhD • ...
Mackenzie Stern • Kevin M. Boyer, MPH • Reva Bhushan, MA, PhD • Show all authors

Open Access • Published: February 17, 2016 • DOI: <https://doi.org/10.1016/j.jaad.2015.12.037>

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1st Line Treatment Mild Moderate

Benzoyl Peroxide (BP) or Topical Retinoid -or- Topical Combination Therapy** BP + Antibiotic or Retinoid + BP Antibiotic + BP Antibiotic + BP

PlumX Metrics

Key words

Disclaimer

Scope

Methods

Definition

Introduction

n

Systems

Acne is one of the most common disorders treated by dermatologists and other health care providers. While it most often affects adolescents, it is not uncommon in adults and can also be seen in children. This evidence-based guideline addresses important clinical questions that arise in its management. Issues from grading of acne to the topical and systemic management of the disease are reviewed. Suggestions on use are provided based on available evidence.

Key words

acne • acne management • acne vulgaris • amoxicillin • antiandrogens • azithromycin • benzoyl peroxide • clindamycin • contraceptive agents • diet and acne • doxycycline • erythromycin • grading and classification of acne • guidelines • hormonal therapy • isotretinoin • light therapies • microbiological and endocrine testing • oral corticosteroids • Propionibacterium acnes • retinoids • salicylic • spirocyclic • systemic therapies • tetracyclines • topical antibiotics • trimethoprim

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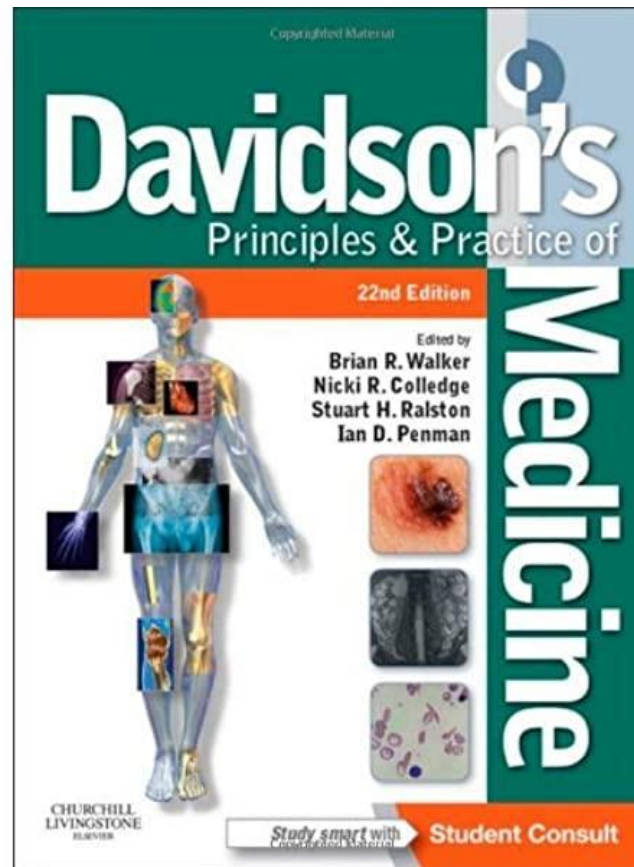
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Access Articles

global acne grading.png grades-of-acne.jpg

17°C Cloudy 10:23 AM 3/21/2023

SELF DIRECTED LEARNING



Faciamelanosis: Melasma (cholasma)

- Melasma is most common facial melanosis.
- Hyperpigmented macules on the face which become more pronounced after sun exposure
- **Epidemiology** occurs in
 1. Brunettes, pregnant females, females taking OCPs.
 2. Occur in 20 to 40 years
 3. F>M
 4. Light brown skin types Middle East and Asia

Faciamelanosis: Melasma (cholasma)

Predisposing factors:

- UV radiation
- Harmonal factors
 1. Oral contraceptive pills
 2. Pregnancy

More common in third trimester of pregnancy because of increased level of oestrogen, progesterone and MSH . It is normal physiological change along with darkening of nipples and lines nigra.

Faciamelanosis: Melasma (cholasma)

- **Pathology:**

Estrogen ,progesterone and MSH play role.

The no. of melanocyte is not increased but they become enlarged and increase in no. of dendrites which means it is hypermetabolic stage.

- **Genetics:** family history is common

- **Environmental factors** sunexposure, OCPs and hormonal treatment

Faciamelanosis: Melasma (cholasma)

■ Clinical features:

- Hypermelanosis affect mainly upper lip, the malar region, forehead and the chin
- brown in color
- bilateral
- symmetrical involvement

Faciamelanosis: Melasma (cholasma)

Epidermal appear light brown and show enhanced color contrast.

Dermal appear grey or bluish and show less color contrast.



Classification

Classification of Melasma			
Type	Normal light	Wood's light	Histology
Epidermal	Light brown	Enhancement of color contrast	Melanin deposition in the basal and suprabasal layers of epidermis
Dermal	Ashen/Bluish gray	No enhancement of color contrast	Melanin-laden macrophages in a perivascular location found in superficial and middermis
Mixed	Deep brown	Enhancement of color contrast in some areas, while not in others	Melanin deposition is found in the epidermis and dermis
Wood's light not apparent (in patients with dark skin—skin types V and VI)	Ashen gray or unrecognized	Not evident under Wood's light	Melanin deposition is found in the dermis

Management

First line

- • Sun protection/broad-spectrum sunscreen (SPF >50)
- • Change oral contraceptive to an alternative low-oestrogen preparation, or change to a different form of contraception
- • Avoidance of scented cosmetic products and phototoxic drugs
- • Triple therapy with topical hydroquinone 4%, tretinoin 0.05% and corticosteroid 0.01% compound cream....FDA approved

Management

Second line

- Chemical peels, alone or in combination with topical treatment
- Azelaic acid (15–20%) in monotherapy or combination of azelaic acid 20% and tretinoin 0.05%
- Topical glutathione
- Topical ascorbic acid
- Topical transamine or via mesotherapy
- Topical kojic acid

Laser treatment

- Q switch Nd YAG laser
- Pico laser

Self directed learning.....

The screenshot displays the National Library of Medicine (NIH) StatPearls website. The browser address bar shows the URL ncbi.nlm.nih.gov/books/NBK459271/. The page header includes the NIH logo and the text "National Library of Medicine National Center for Biotechnology Information". A "Log in" button is visible in the top right corner. Below the header, there is a "Bookshelf" section with a dropdown menu set to "Books" and a "Search" button. The main content area is titled "StatPearls [Internet]" and includes a "Show details" link and a "Search this book" input field. The article title "Melasma" is prominently displayed, followed by the authors "Hajira Basit; Kiran V. Godse; Ahmad M. Al Aboud." and the "Last Update: August 8, 2022." The article is categorized under "Continuing Education Activity". The main text begins with "Melasma is a common skin problem caused by brown to gray-brown patches on the face. Most people get it on their cheeks, chin, nose bridge, forehead, and above the upper lip. It is more common in women than men. Pregnancy is a common cause of melasma. It also affects woman taking oral contraceptives and hormones. This activity reviews the evaluation of melasma and highlights the role of the interprofessional team in managing patients with this condition." Below the text, there is a section titled "Objectives:" with a bulleted list of four points: "Identify the etiology of melasma.", "Describe the presentation of a patient with melasma.", "Outline the treatment and management options available for melasma.", and "Explain interprofessional team strategies to improve care coordination and communication to advance the diagnosis of melasma and improve outcomes." A link "Access free multiple choice questions on this topic." is provided. The "Introduction" section begins with "Melasma is a common skin problem caused by brown to gray-brown patches on the face. Most people get it on their cheeks, chin, nose bridge, forehead, and above the upper lip. It is more common in women than men. Pregnancy is a common cause of melasma. It also affects woman taking oral contraceptives and hormones. This activity reviews the evaluation of melasma and highlights the role of the interprofessional team in managing patients with this condition." On the right side of the page, there is a sidebar with social media links for Facebook and Twitter, a "Views" section with links for "PubReader", "Print View", and "Cite this Page", and an "In this Page" section with a list of topics: "Continuing Education Activity", "Introduction", "Etiology", "Epidemiology", "Pathophysiology", "Histopathology", "History and Physical", "Evaluation", "Treatment / Management", "Differential Diagnosis", "Prognosis", "Pearls and Other Issues", "Enhancing Healthcare Team Outcomes", "Review Questions", and "References". The bottom of the screen shows a Windows taskbar with various application icons and a system tray displaying the temperature as 18°C, the weather as Haze, and the date and time as 9:42 AM on 3/22/2023.

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Hajira Basit; Kiran V. Godse; Ahmad M. Al Aboud.
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- Outline the treatment and management options available for melasma.
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[Access free multiple choice questions on this topic.](#)

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Self directed learning

A review of treatments for melasma

onlineibrary.wiley.com/doi/10.1111/bjd.21725

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First published: 02 September 2022 | <https://doi.org/10.1111/bjd.21725>

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Abstract

Linked Article: [Pennitz et al. Br J Dermatol 2022; 187:309–317.](#)

Melasma is a fairly common skin condition in which brown or greyish patches of pigmentation (colour) develop usually on the face (e.g. central face, forehead, temple and cheeks), particularly in women. The cause is unknown but sunlight and hormones (oral contraceptives and pregnancy) are implicated. Melasma is most common in Asian and Latin women of reproductive age with certain skin types. Melasma can affect emotional wellbeing, self-esteem and overall quality of life.

Many topical (applied to the skin) products are available for treating melasma, but none are a complete cure. The aim of this study, conducted by researchers from France and Germany, was to try to find out what product works best.

By systematically searching the available medical literature, the authors found 36 studies that were eligible. These studies describe 47 different comparisons of topical products for

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