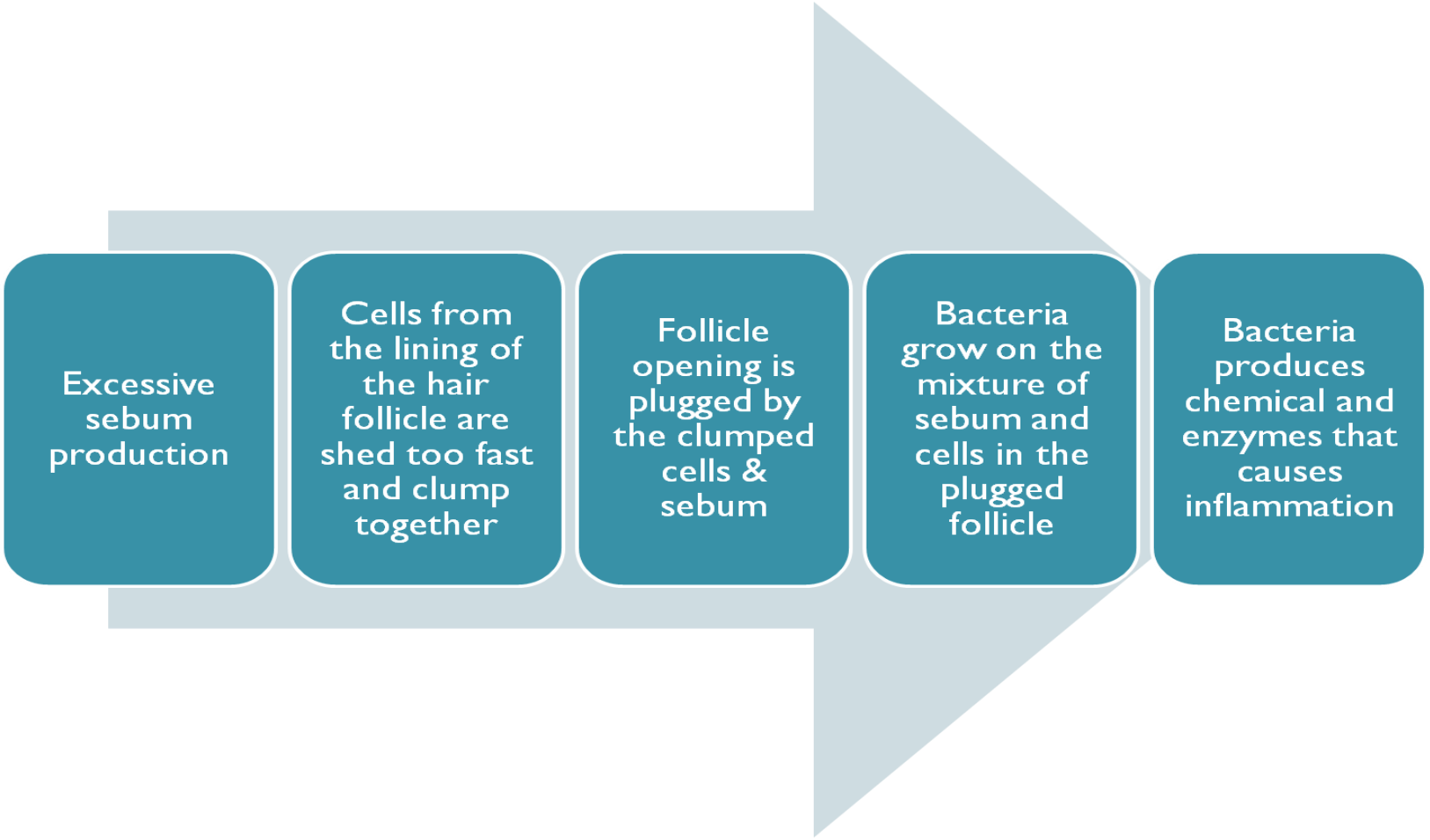
Guidelines of skin care for Acne

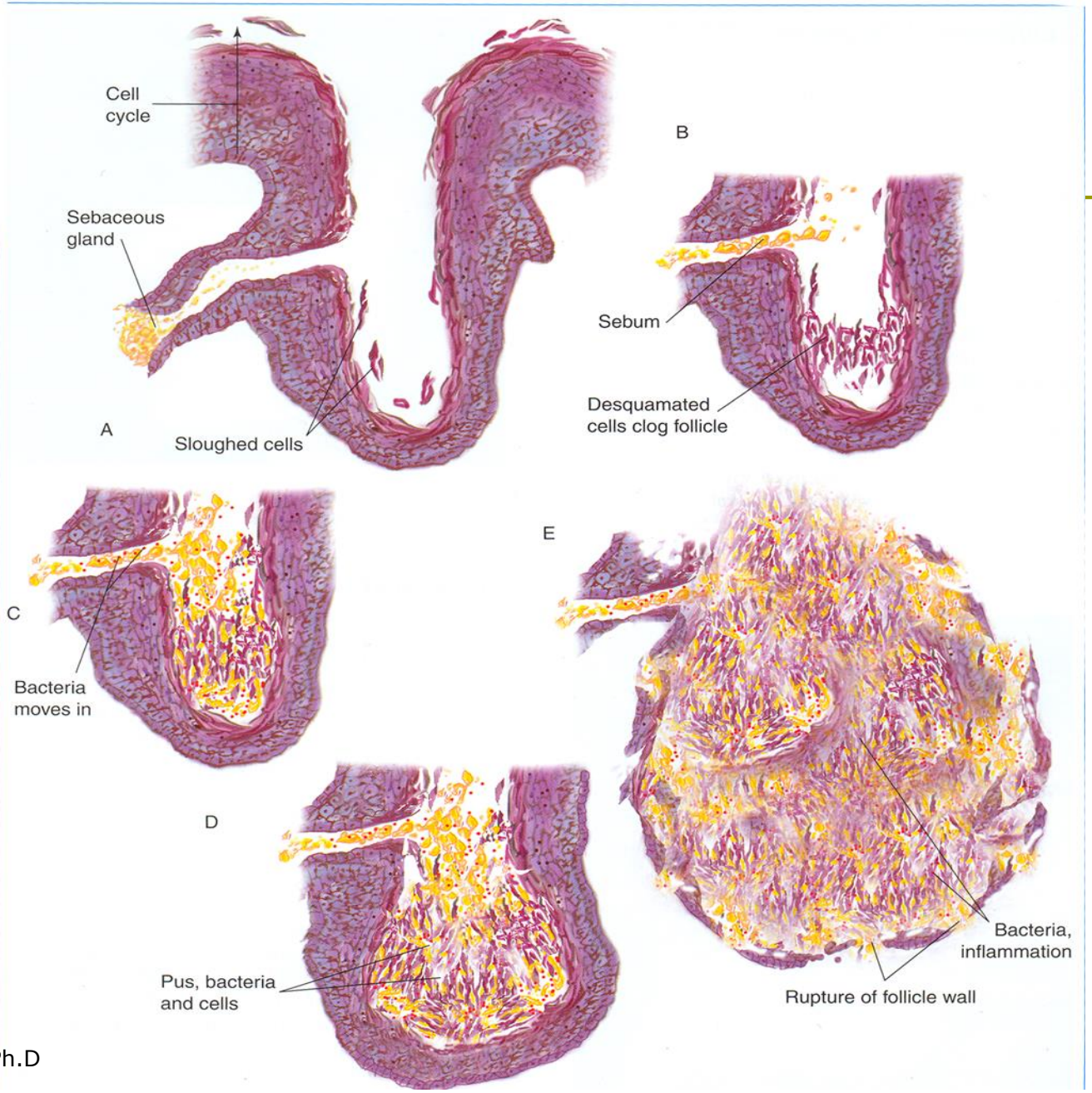
Saja Hamed, Ph.D
Associate Professor of
Skin Pharmaceutics
Hashemite University

Introduction

- Acne is an inflammatory disease of the pilosebaceous follicle
- It starts in adolescence and may persist into young adulthood or longer especially in females
- Acne is one of the most common chronic skin disorders
- Although acne is not physically disabling, its psychological impact can be striking, contributing to low self-esteem, depression, and anxiety

Pathophysiology




Cell cycle
Sebaceous gland
A
Sloughed cells
B
Sebum
Desquamated cells clog follicle
C
Bacteria moves in
D
Pus, bacteria and cells
E
Bacteria, inflammation
Rupture of follicle wall

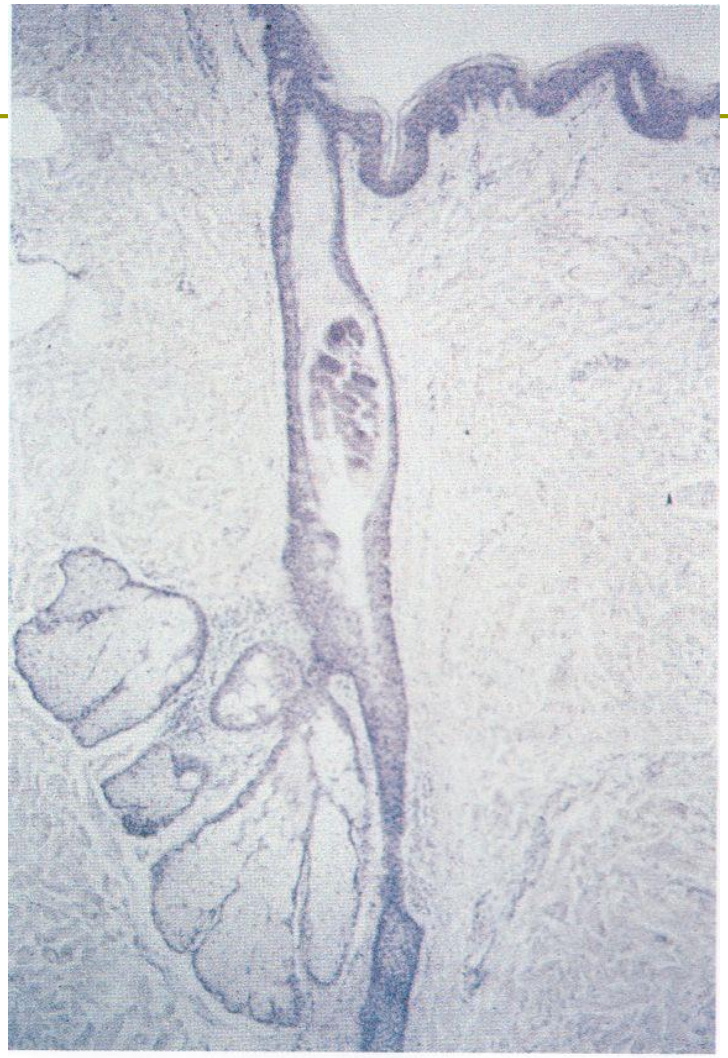
Pathophysiology:
A. Sebaceous gland Hyperactivity

- Sebaceous glands are largest and most numerous in the face, back, chest, and shoulders
- Controlled by hormones
- Sebaceous glands become more active during puberty because of the increase in androgens (particularly testosterone)
- Imbalance between sebum production and the secretion

Pathophysiology:
B. Changes in Follicular Keratinization

- In acne patients the exfoliated mature keratinocytes have a tendency to stick together
- The clumped keratinocytes block the pore/follicle creating:
- A blackhead (open comedone)
- Or a whitehead (closed comedone)
- The clogged pore is a great nutritional source for bacteria
- The immune system recognizes the presence of bacteria and mounts an immune response resulting in redness, pus, inflammation

Acne: The follicle becomes impacted with shed skin cells. The follicle may be blocked leading to comedone formation



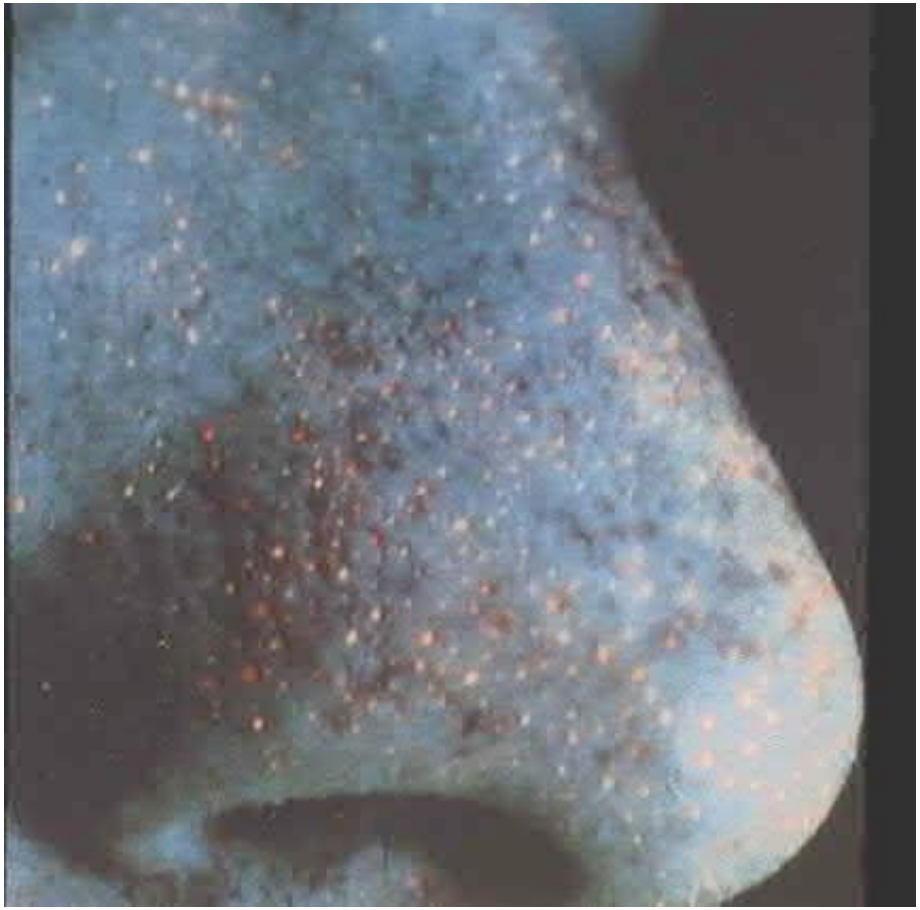
Pathophysiology:
C. The Influence Of Bacteria

- The exact role of bacteria is unclear:

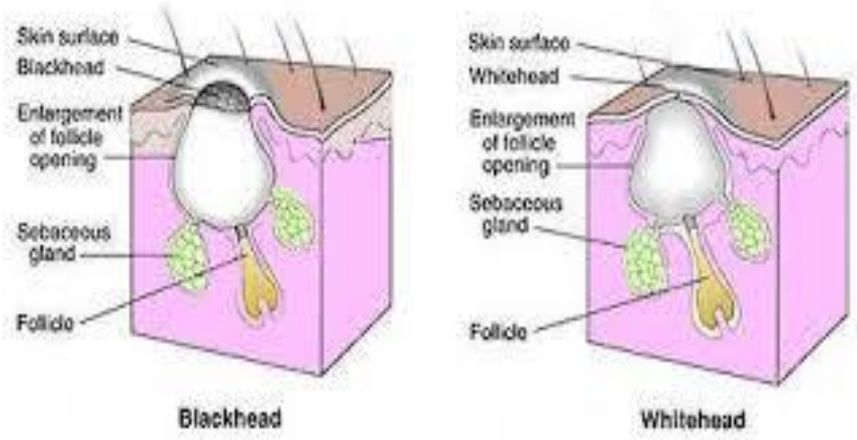
- It is known that sebum accumulation caused by excess lipid secretion and hyperkeratosis leads to an increase in *P.acnes* around the hair follicles

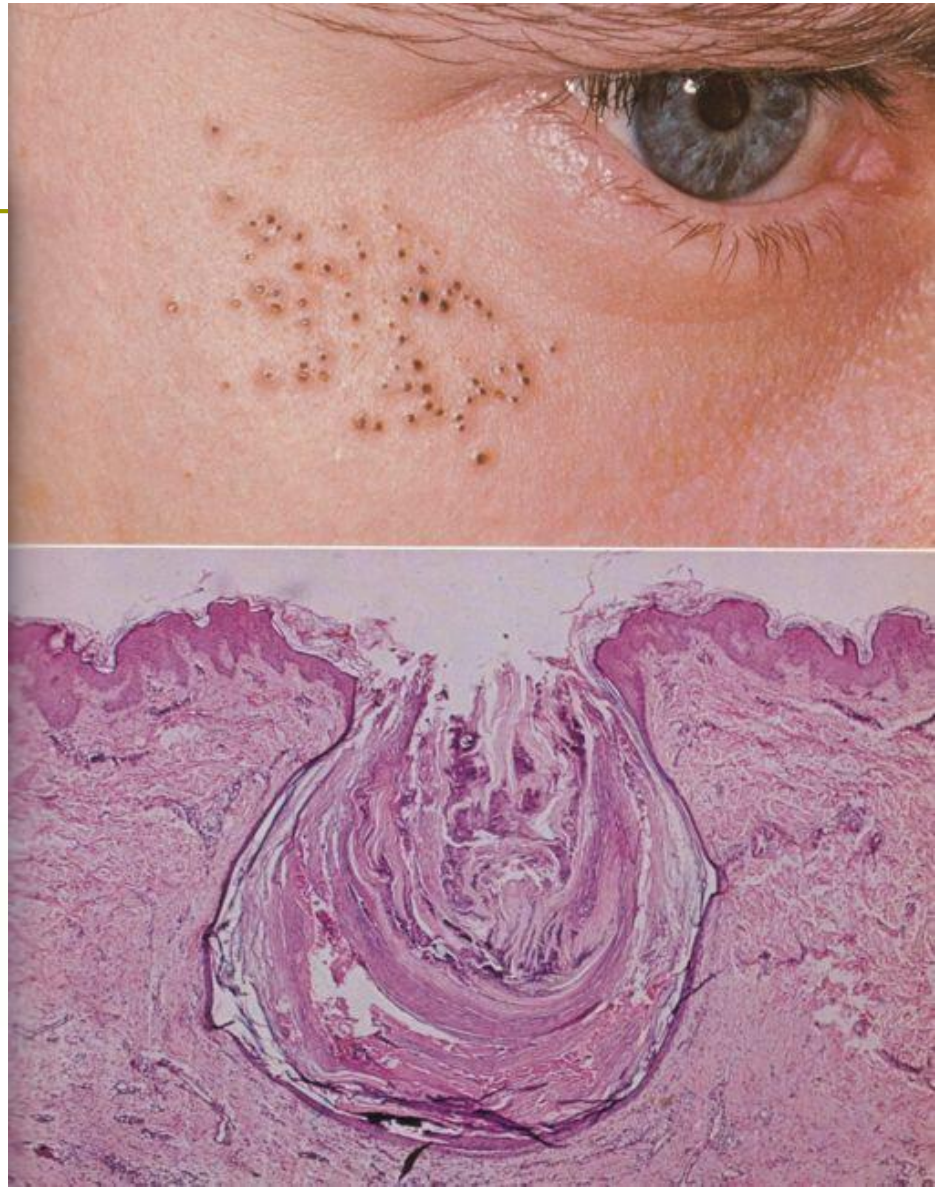
- The inflammation seen in acne may be caused by free fatty acids that result from the breakdown of triglycerides in the sebum because of bacterial lipases

Acne bacteria produce fluorescent pigments



Open Comedones with histology

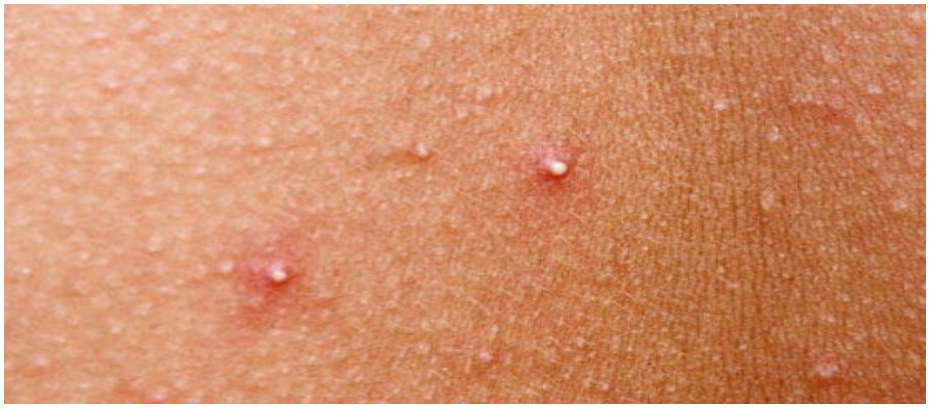


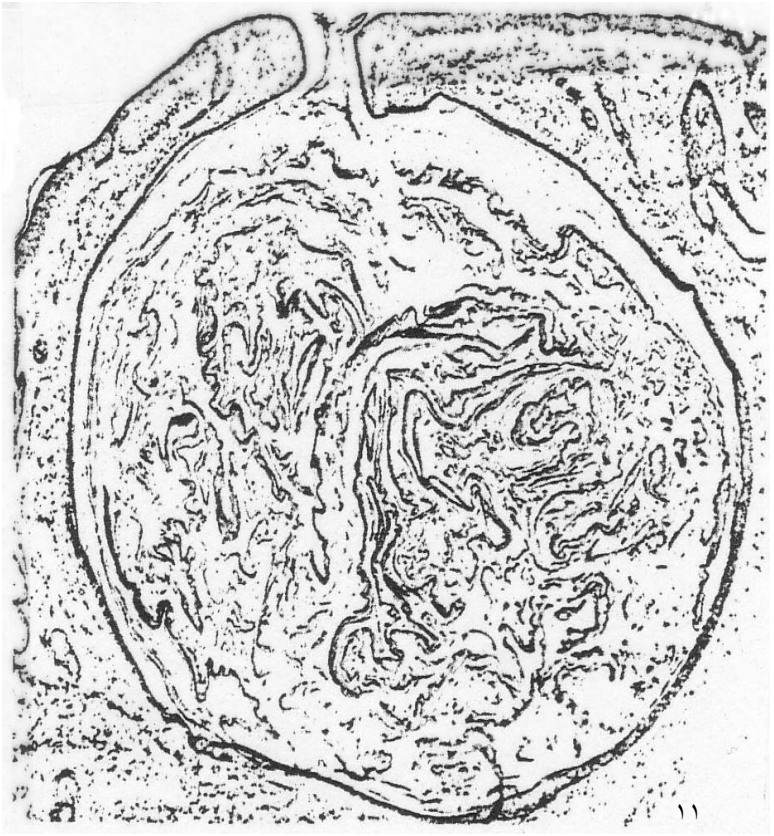


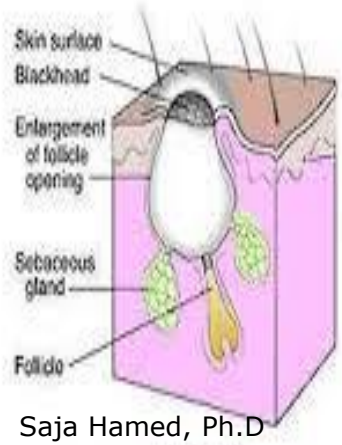
A blackhead (open comedone)

Closed comedones are likely to progress to inflammatory lesions

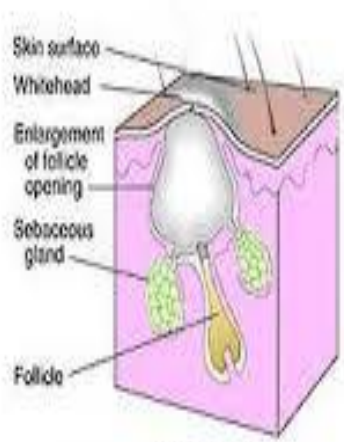
whitehead (closed comedone)





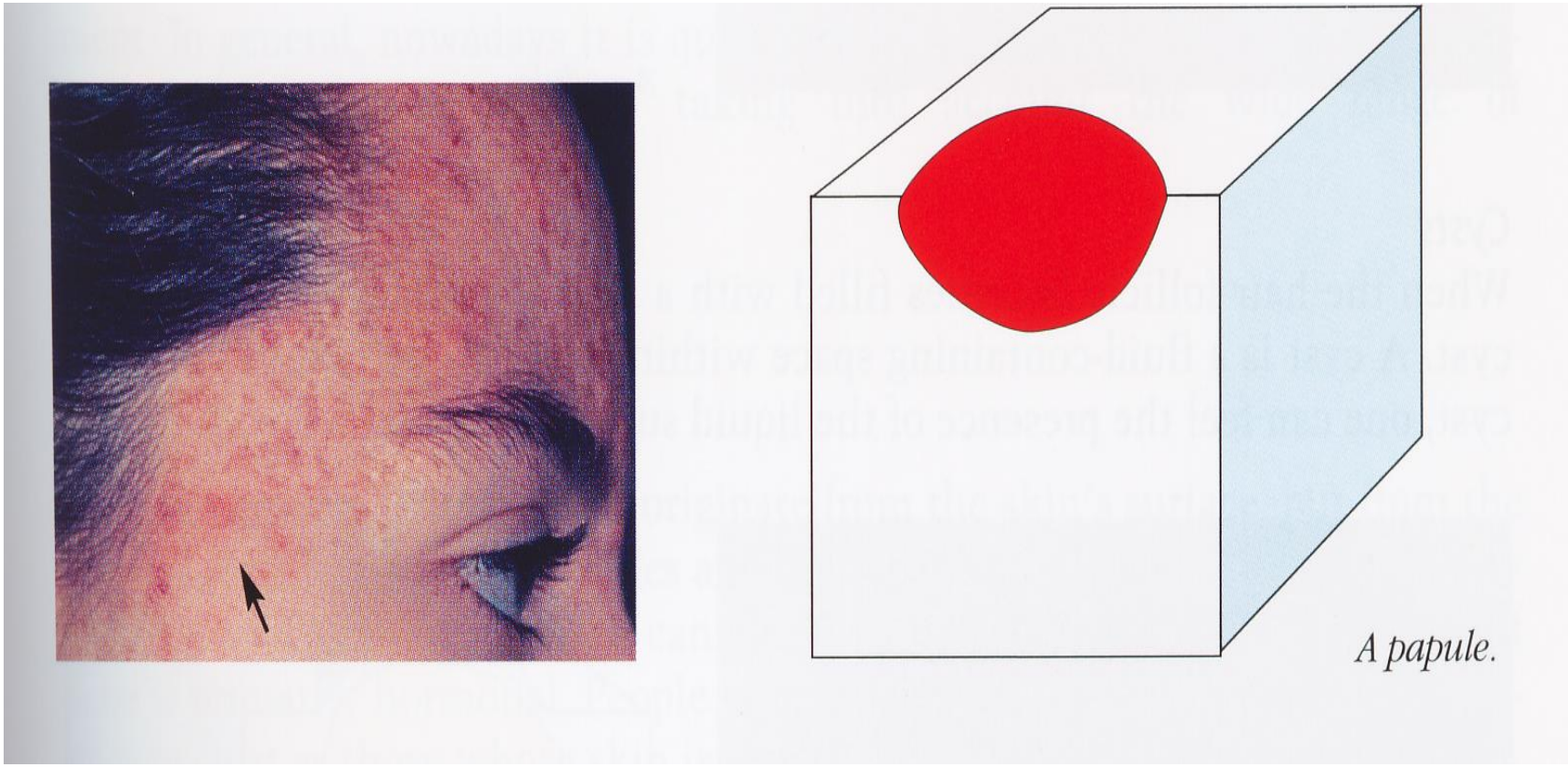


Blackhead



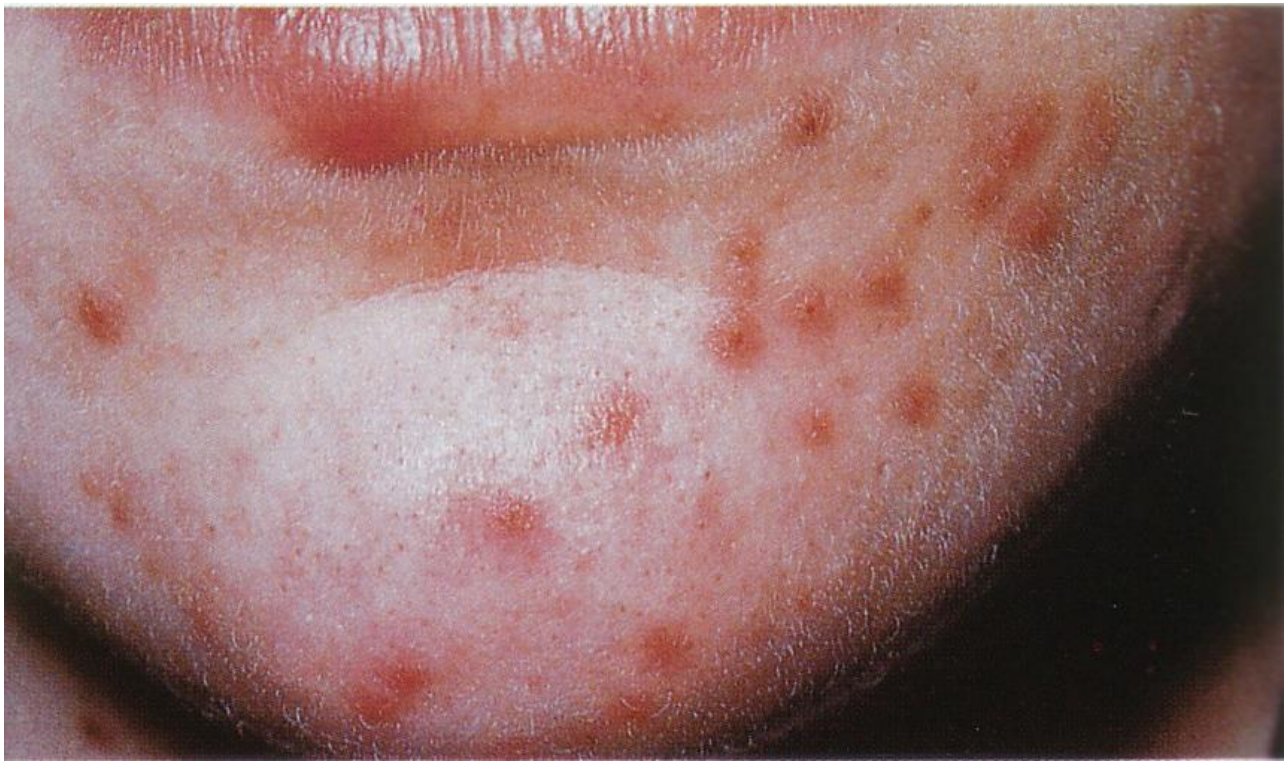
Whitehead

Acne lesions: papules

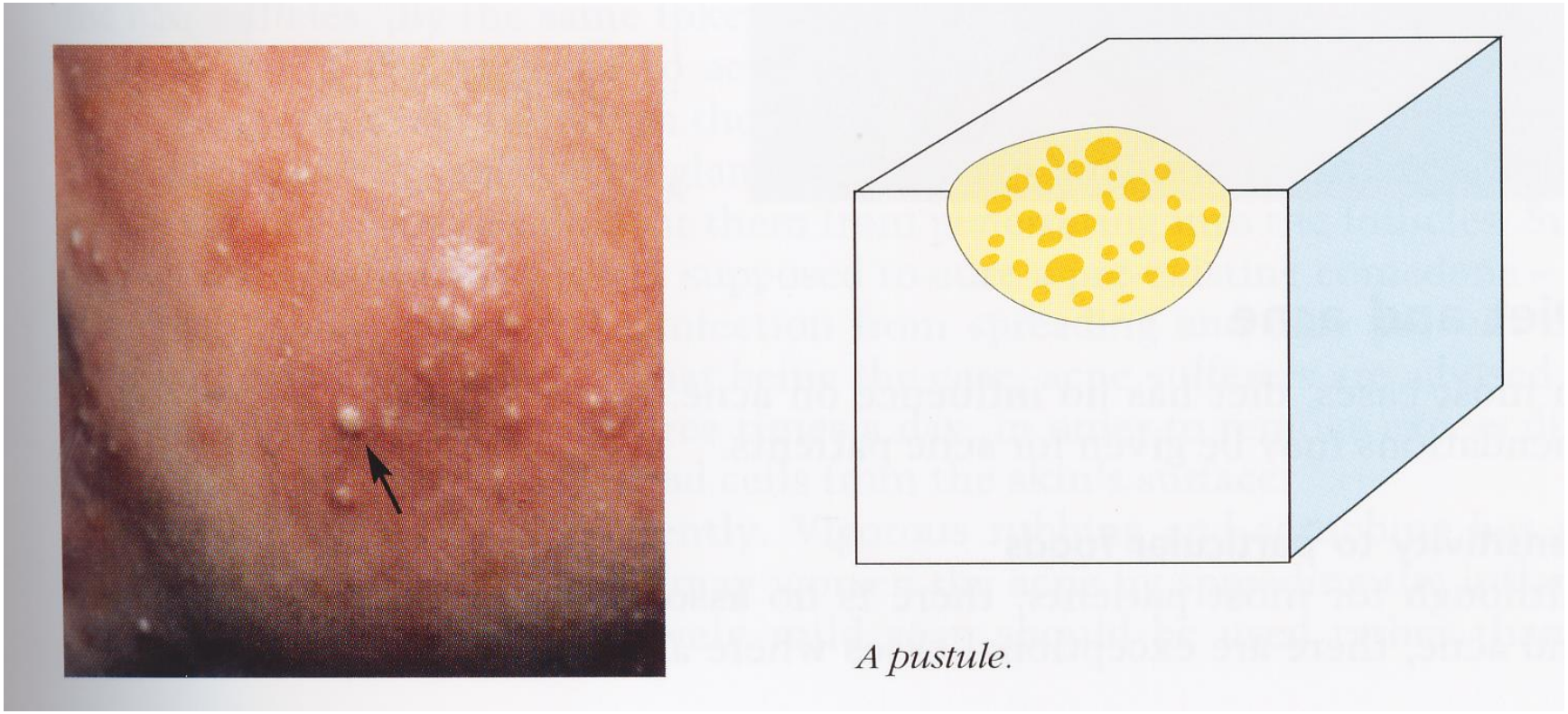


- Small, raised lesions, up to 0.5 cm in diameter, usually pink/red in colour

Inflamed papules

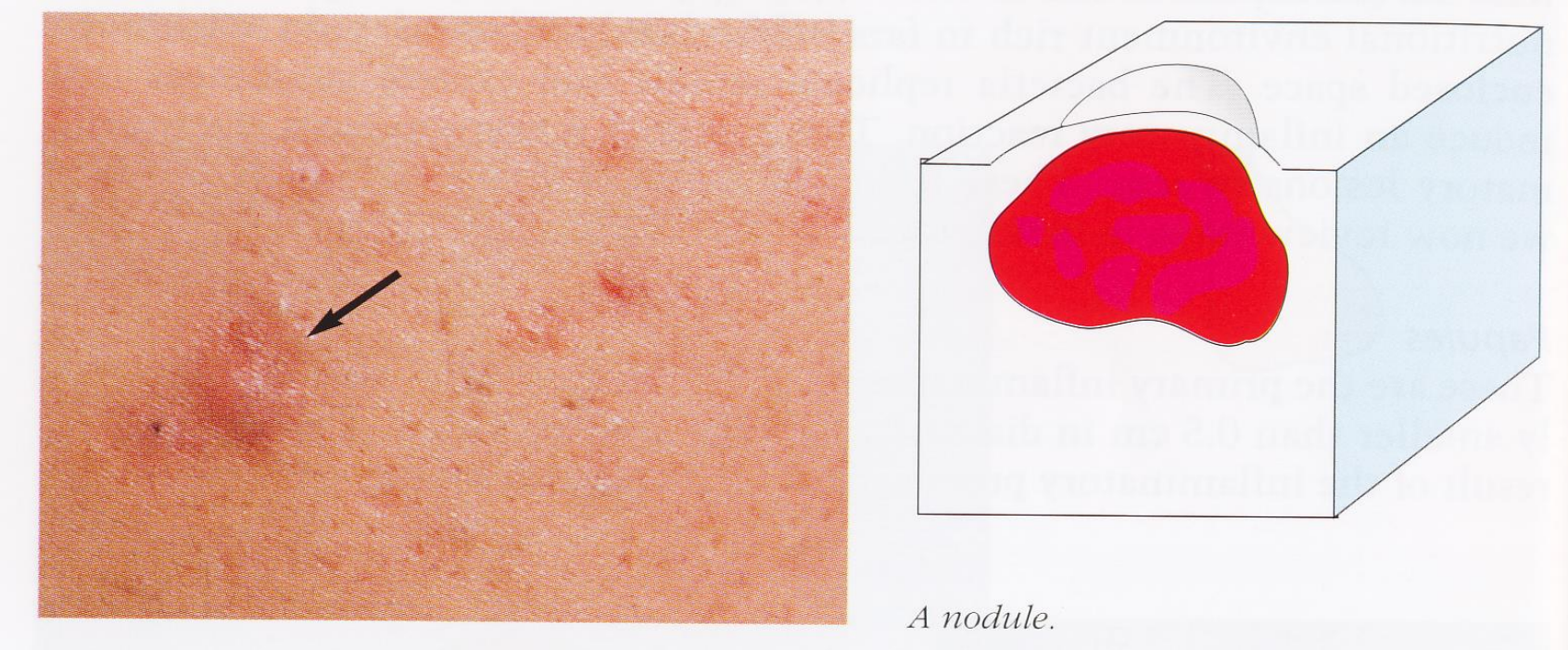


Acne lesions: Pustules



- Pustule: Elevated lesion with exudates (pus)

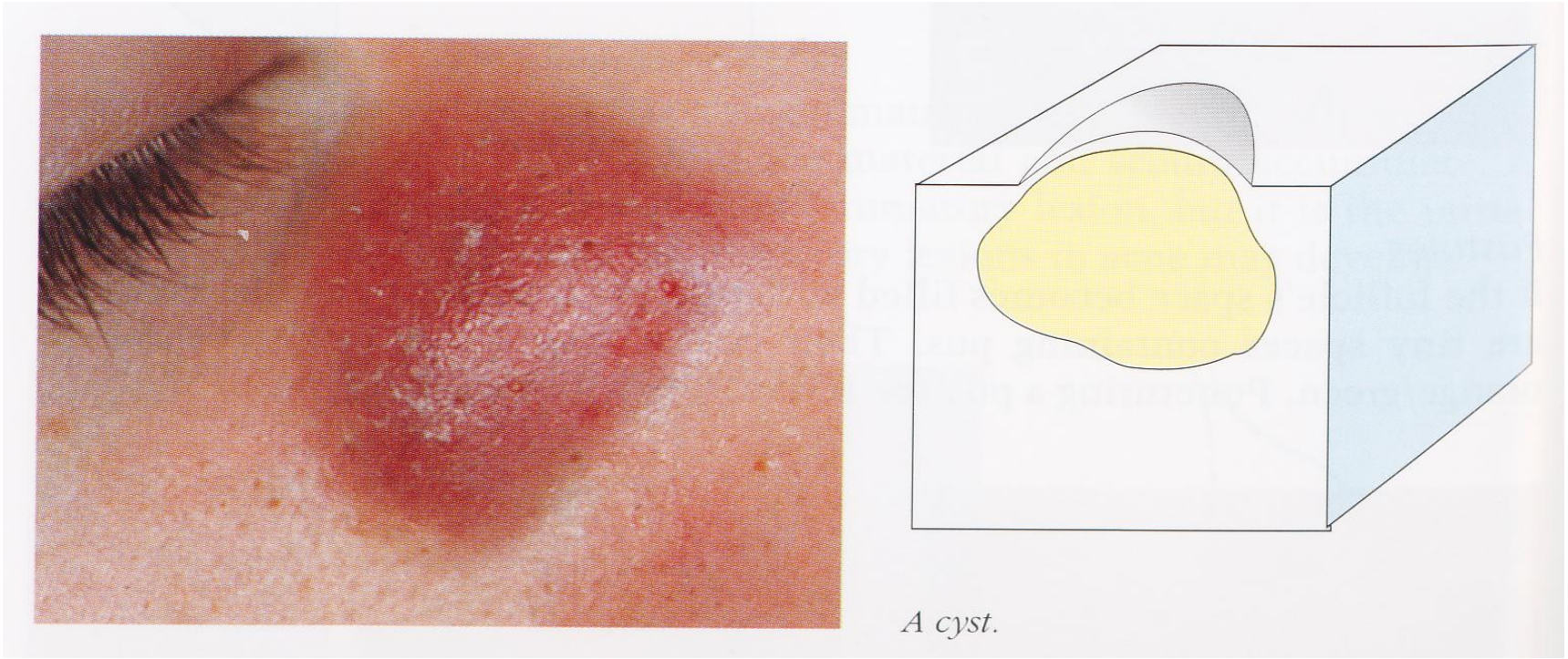
Acne lesions: Nodules



- Are inflammatory swellings that, in comparison to papules, are located deeper under the skin

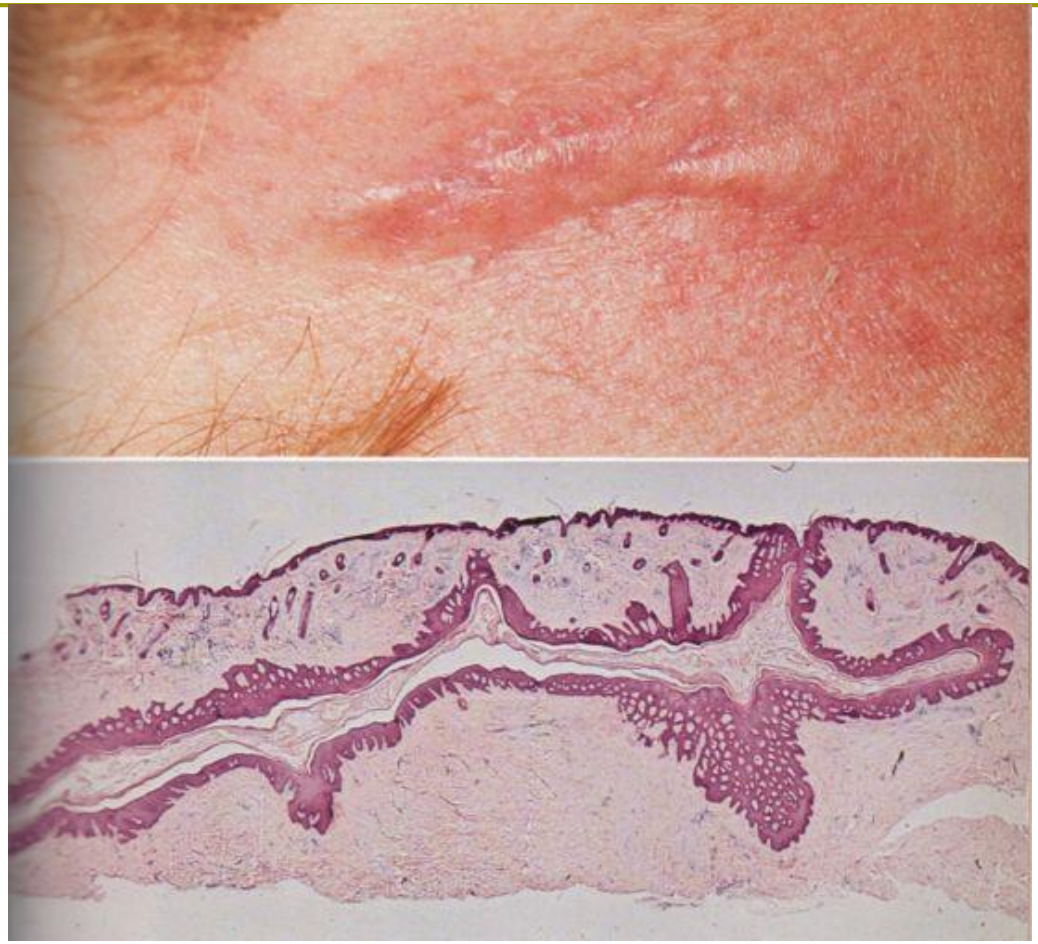
Nodule: Raised solid lesion more than 1 cm in diameter

Acne lesions: Cysts

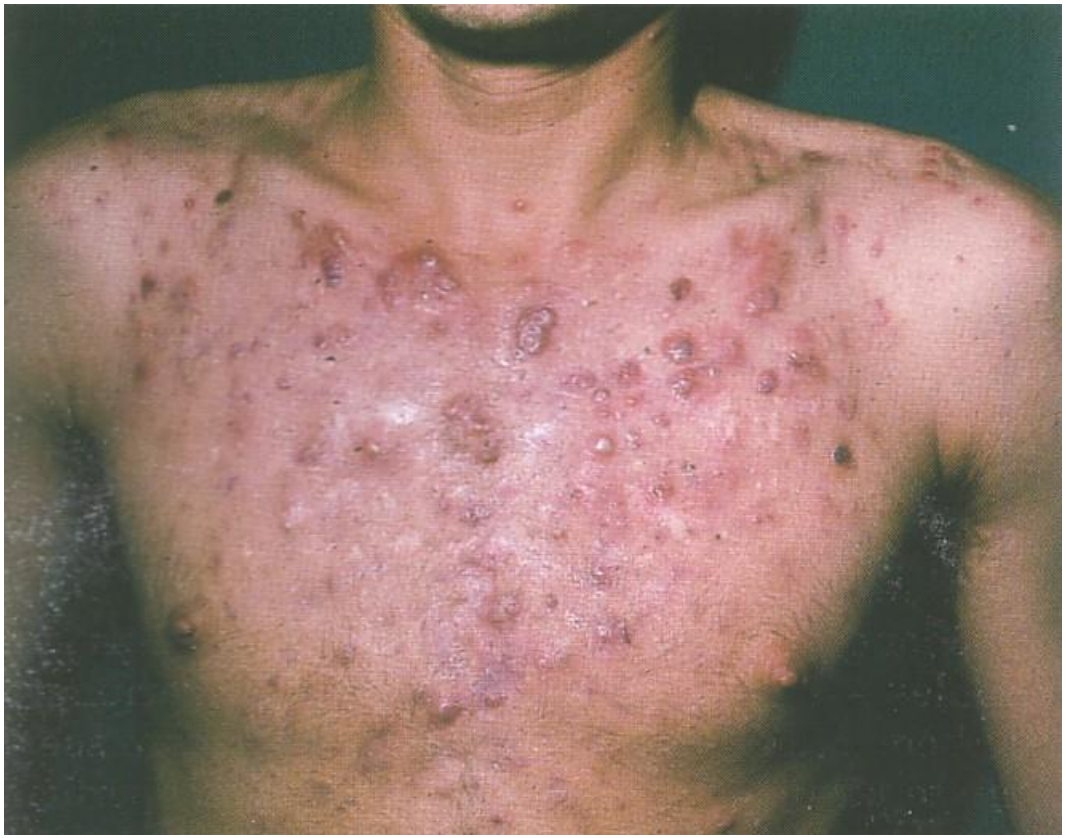


- Even deeper, inflamed, pustular painful lesions that can cause scarring
- Closed spaces under the skin's surface, containing liquid or semisolid material

Follicles may rupture leading to inflammatory lesions and in severe cases they may join into tracts.



Severe acne on the chest



Infant Acne

- Sebaceous glands are active in the neonate
- Moderate acne may occur for up to 3 months
- Clears spontaneously

Infant acne

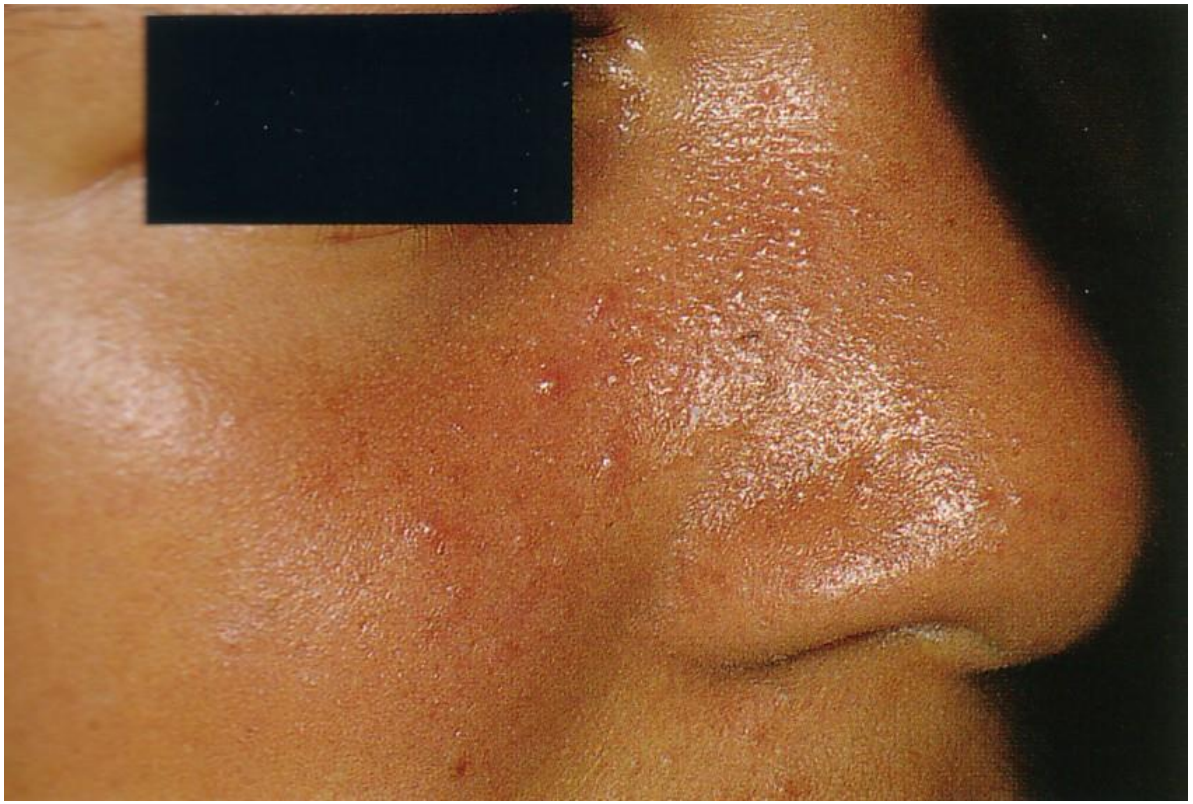
Cosmetics and acne:

- Acne Cosmetica: Acne as a result of cosmetics usage
- Some cosmetic preparations may lead to acne which appears after using the cosmetic for several months (Comedogenic preparations)
- Some cosmetic preparations may cause acne in the form of pustules within one to two weeks of using the preparation (Acnegenic preparations)

Factors that may exacerbate Acne

- Emotional Stress
- Premenstrual Stress
- Mechanical Trauma
- Occlusive Clothing
- High humidity
- Harsh scrubbing of the skin
- Some cosmetic oils
- Various medications, especially steroids

Acne may be initiated by heat and humidity



Acne and Diet

- A matter of intense debate
- Dairy products mainly milk
- Foods with glycemic loads (breads and spaghetti)
- Some diet can aggravate Acne

- Read the following article:

Experimental Dermatology - 2009 - Melnik - Role of insulin insulin-like growth factor-1 hyperglycaemic food and milk.pdf

Randomized Controlled Trial > J Acad Nutr Diet. 2018 Oct;118(10):1874-1885.
doi: 10.1016/j.jand.2018.02.009. Epub 2018 Apr 22.

A Low Glycemic Index and Glycemic Load Diet Decreases Insulin-like Growth Factor-1 among Adults with Moderate and Severe Acne: A Short-Duration, 2-Week Randomized Controlled Trial

Jennifer Burris, James M Shikany, William Rietkerk, Kathleen Woolf

PMID: 29691143 DOI: 10.1016/j.jand.2018.02.009

Abstract

Background: A high glycemic index (GI) and glycemic load (GL) diet may stimulate acne proliferative pathways by influencing biochemical factors associated with acne. However, few randomized controlled trials have examined this relationship, and this process is not completely understood.

Objective: This study examined changes in biochemical factors associated with acne among adults with moderate to severe acne after following a low GI and GL diet or usual eating plan for 2 weeks.

Design: This study utilized a parallel randomized controlled design to compare the effect of a low GI and GL diet to usual diet on biochemical factors associated with acne (glucose, insulin, insulin-like growth factor [IGF]-1, and insulin-like growth factor binding protein [IGFBP]-3) and insulin resistance after 2 weeks.

Participants: Sixty-six participants were randomly allocated to the low GI and GL diet (n=34) or usual eating plan (n=32) and included in the analyses.

Main outcome measures: The primary outcomes were biochemical factors of acne and insulin resistance with dietary intake as a secondary outcome.

Statistical analyses: Independent sample t tests assessed changes in biochemical factors associated with acne, dietary intake, and body composition pre- and postintervention, comparing the two dietary interventions.

Results: IGF-1 concentrations decreased significantly among participants randomized to a low GI and GL diet between pre- and postintervention time points (preintervention=267.3±85.6 mg/mL, postintervention=244.5±78.7 ng/mL) (P=0.049). There were no differences in changes in glucose, insulin, or IGFBP-3 concentrations or insulin resistance between treatment groups after 2 weeks. Carbohydrate (P=0.019), available carbohydrate (P<0.001), percent energy from carbohydrate

Acne and Diet

- The Tenuous Relationship Between Dairy and Acne - Acne.org

www.acne.org

Acne and Diet

- Avoid/minimize triggering food for 2 weeks, and see if you notice a difference.
- Realize that acne is much more complex than a food trigger, its everything else you do- from stress levels, through make up, sunscreen, moisturizer and cleanser.

- Acne is one of the hardest chronic medical conditions to understand.

body builder acne

- doping—the use of performance-enhancing drugs (anabolic-androgenic steroids e.g. testosterone enantate, metandienona)
- Whey protein supplements

Classification

- Classification is important as it is used as a basis for selecting the treatment
- Mild:

- limited to the face
- Presence of non-inflammatory closed and open comedones with few inflammatory lesions

- Moderate:

- Increased number of inflammatory papules and pustules on the face
- Often affects other body parts

- Sever:

- Nodules and cycts are present
- Widespread to other body parts

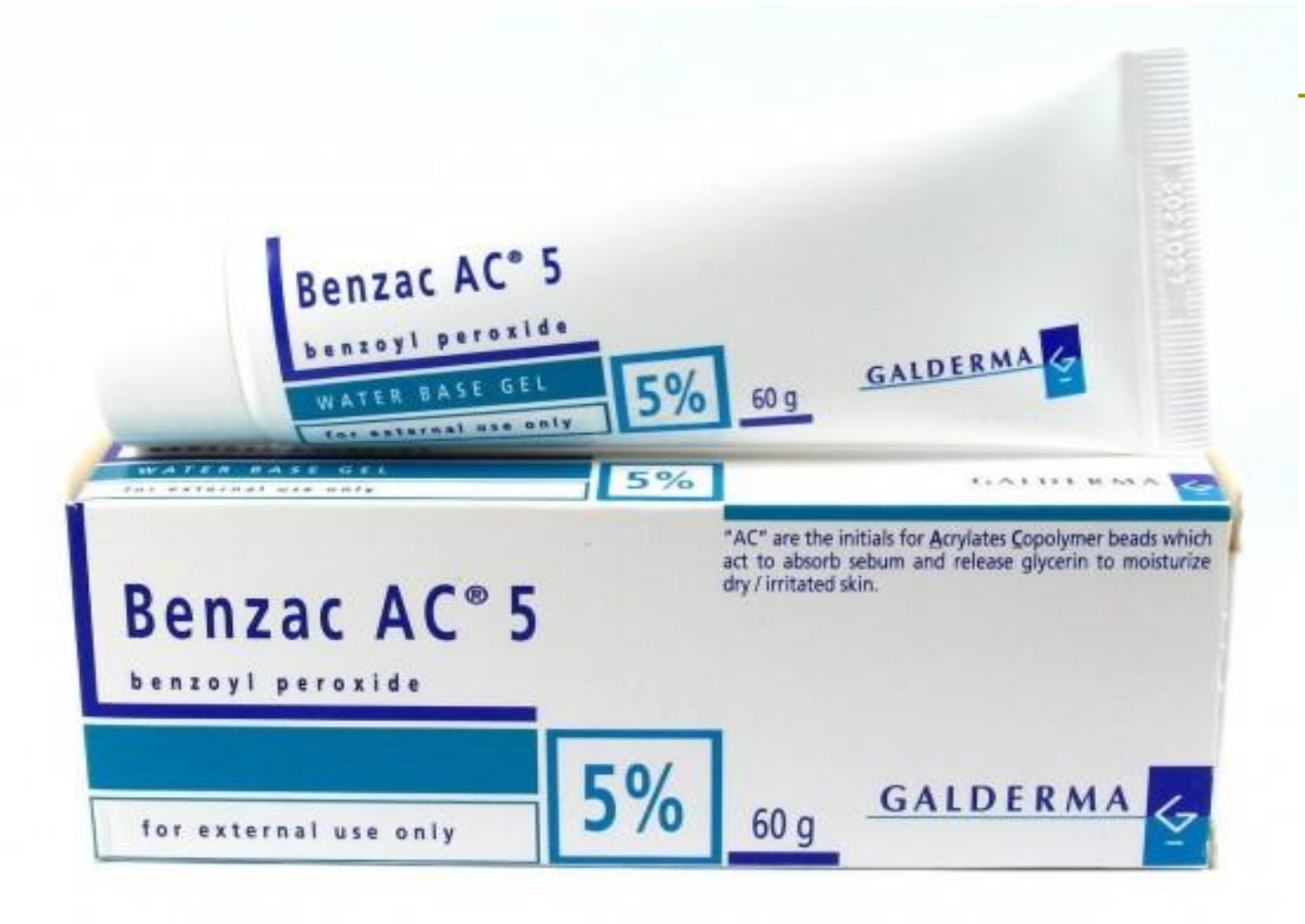
- Milder cases are best managed with OTC and prescription topical regimens
- Systemic prescription drugs are indicated in sever cases
- Adjunctive and/or emerging approaches include chemical peels, optical treatments

Remmeber

- Despite the claims, acne treatment does not work overnight
- With most treatments, one may see the first signs of improvement in 4-8 weeks
- The skin may often get worse before it gets better due to the side effects of commonly used medications
- Maintenance therapy is usually necessary for many acne patients

Topical treatment options: benzoyl peroxide

- Nonantibiotic antimicrobial agent
- Kill bacteria by producing ROS
- It is reported to increase cell turn over, cleans pore, desquamate the skin, and has anti-inflammatory properties
- Mainstay treatment of mild-to-moderate Acne often combined with antibiotics and/or retinoids
- Available in OTC topical products in conc of 2.5-10%
- Side effects: peeling, dryness, burning, redness
- Irritation resolves with continued use during the first month of treatment
- Warn patient the BPO may bleach clothing, bedding, and hair


Benzac AC® 5
benzoyl peroxide
WATER BASE GEL
for external use only
5%
60 g
GALDERMA
"AC" are the initials for Acrylates Copolymer beads which act to absorb sebum and release glycerin to moisturize dry / irritated skin.
Benzac AC® 5
benzoyl peroxide
for external use only
5%
60 g
GALDERMA

Topical treatment options: benzoyl peroxide

Comparing 2.5%, 5%, and 10% Benzoyl Peroxide on Inflammatory Acne Vulgaris

Otto H. Mills Jr. Ph.D., Albert M. Kligman M.D., Ph.D., Peter Pochi M.D., Harriet Comite M.D.

First published: December 1986 | https://doi.org/10.1111/j.1365-4362.1986.tb04534.x | Citations: 78

PDF TOOLS SHARE

Abstract

ABSTRACT: A 2.5% formulation of benzoyl peroxide was compared with its vehicle, and with a 5% and a 10% proprietary benzoyl peroxide gel preparation in three double-blind studies involving 153 patients with mild to moderately severe acne vulgaris. The 2.5% benzoyl peroxide formulation was more effective than its vehicle and equivalent to the 5% and 10% concentrations in reducing the number of inflammatory lesions (papules and pustules). Desquamation, erythema, and symptoms.of burning with the 2.5% gel were less frequent than with the 10% preparation but equivalent to the 5% gel. The 2.5% formulation also significantly reduced Propionibacterium acnes and the percentage of free fatty acids in the surface lipids after 2 weeks of topical application.

Topical treatment options: benzoyl peroxide

Original Article

A comparative study of tea-tree oil versus benzoylperoxide in the treatment of acne

Ingrid B Bassett MB BS, Ross St C Barnetson MD, FRACP, FACD, Debra L Pannowitz MSc (Biotech)

First published: 01 October 1990 | https://doi.org/10.5694/j.1326-5377.1990.tb126150.x | Citations: 73

Reprints: Professor R St C Barnetson.

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Abstract

Tea-tree oil (an essential oil of the Australian native tree *Melaleuca alter- nifolia)* has long been regarded as a useful topical antiseptic agent in Australia and has been shown to have a variety of antimicrobial activities; however, only anecdotal evidence exists for its efficacy in the treatment of various skin conditions. We have performed a single-blind, randomised clinical trial on 124 patients to evaluate the efficacy and skin tolerance of 5% tea-tree oil gel in the treatment of mild to moderate acne when compared with 5% benzoyl peroxide lotion. The results of this study showed that both 5% tea-tree oil and 5% benzoyl peroxide had a significant effect in ameliorating the patients' acne by reducing the number of inflamed and non-inflamed lesions (open and closed comedones), although the onset of action in the case of tea-tree oil was slower. Encouragingly, fewer side effects were experienced by patients treated with tea-tree oil.

Topical treatment options: Salicylic acid

- An option for patient who cannot tolerate a topical retinoid due to skin irritation
- As OTC: 0.5-2%
- Side effects: skin dryness, scaling, itching→ dissipate in a few weeks

Topical treatment options: Topical Retinoids (Rx only)

- Normalize the abnormal desquamation pattern in sebaceous follicles
- Decrease the coherence of follicular keratinocytes
- Prevent the formation of new microcomedones
- Some have anti-inflammatory
- Recommended for all cases of acne (except when oral retinoids are used)
- Mild noninflammaory comedonal acne may be treated with retinoid monotherapy

Topical treatment options: Topical Retinoids (Rx only)

- When inflammatory lesions are present: retinoids are combined with antimicrobial therapy or BPO
- Topical retinoids can be used for maintenance therapy
- Tretinoin, adapalene, tazarotene
- Maximum benefits can be expected after 3-4 months of treatment
- Liposomally encapsulated tretinoin is much better tolerated than gel
- Tazarotene foam's tolerability is better than that of a gel


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For topical use only
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TAZAROTENE
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Jamjoom Pharma
Acretin™ 0.05%
Tretinoin 0.05% w/w
For ACNE Treatment
Cream
30 g


Differin®
adapalene
GEL
0.1%
15 g
GALDERMA
for external use only
15g

Topical retinoids

- Conc??
- How to use?
- Effect of vehicle

Topical treatment options: Topical antibiotics (Rx only)

- They are used for mild-to-moderate acne when inflammatory lesions are present
- Commonly used antibiotics: Clindamycin, erythromycin
- Antibiotics have bacteriostatic and anti-inflammatory properties
- Antibiotic resistance is an important issue, therefore, antibiotic monotherapy and maintenance therapy alone are not recommended, nor the combination of oral and topical antibiotics
- Current guidelines recommend combining antibiotics with retinoids and/or BPO
- BPO can minimize bacterial resistance, while retinoids can provide synergistic comedolytic and anti-inflammatory properties


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30 gram
Clindamycin
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AVOCIN
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TREATMENT OF ACNE
Clindamycin Phosphate
Equivalent to 1% Clindamycin
30 ml
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AVOCIN
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TREATMENT OF ACNE
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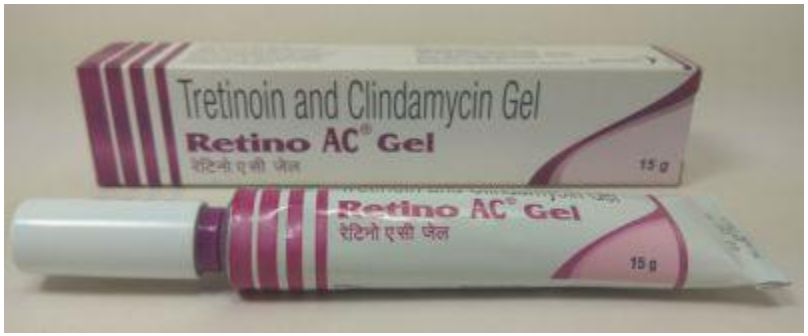
Tretinoin and Clindamycin Gel
Retino AC® Gel
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Retino AC® Gel
रेटिनो एसी जेल
15 g


Oasis-Stad.com
Eryacne®
erythromycin
GEL
4%
30 g
GALDERMA
Eryacne®
erythromycin
GEL
4%
30 g
GALDERMA

Topical treatment options:

Azelaic acid

- An alternative to retinoids
- Has comedolytic, antimicrobial, and anti-inflammatory properties
- Not approved by the FDA in the USA

Systemic treatment

- Recommended for patients with moderate-to-sever acne
- Useful also in patients with larger surfaces affected (neck, chest, and back)
- Systemic agents include: antibiotics, hormones, oral retinoids

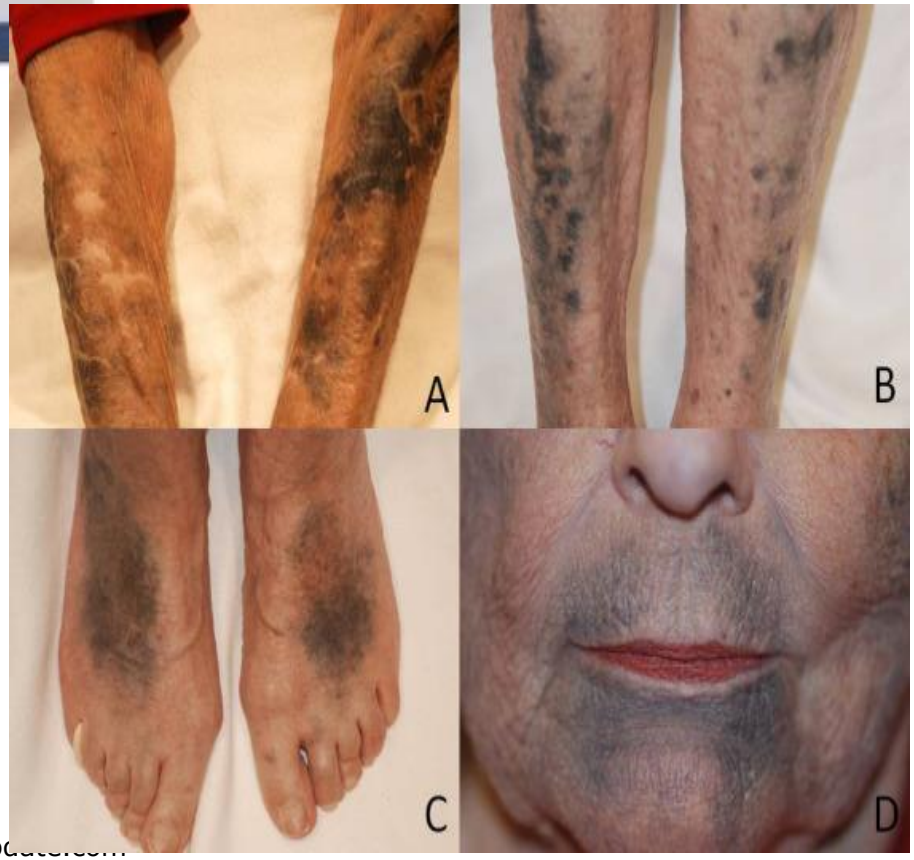
Systemic treatment
Oral antibiotics (Rx Only)

- Management of moderate to sever acne
- Most commonly: doxycycline, minocycline, tetracycline, erythromycin
- Selection is driven by their side effects and patterns of P.acne resistance
- A major problem affecting antibiotic therapy of acne is bacterial resistance
- As with topical antibiotics, oral antibiotics should be combined with other agents to minimize the development of bacterial resistance and improve treatment efficacy

Systemic treatment
Oral antibiotics (Rx Only)

- Oral antibiotics should be used with topical retinoids or BPO

- Dermatologists usually recommend tapering off these medications (decreasing their doses) as soon as the symptoms begin to improve or as soon as it becomes clear that the drugs do not help
- Side effects: upset stomach, dizziness, skin discoloration
- Doxycycline can increase sun sensitivity
- Tetratcyclines can cause teeth discoloration
- Minocycline can lead to skin hyperpigmentation
- Prolong antibacterial therapy has resulted in the transfer of resistance to potentially pathogenic bacteria such as strains of staphylococcus or streptococcus species
- Combine BPO to minimize development of resistance



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uptodate.com

Systemic treatment
Hormonal Therapy(Rx Only)

- Useful adjunct therapy in women with moderate-to-sever acne
- Beneficial for those who desire oral contraception or in whom traditional therapy has failed
- Hormonal therapy may help reduce or prevent outbreaks, it is not effective for existing lesions therefore it is used as adjunct rather than a stand alone therapy
- S.E: Headache, breast tenderness, nausea, depression, risk of heart disease , high blood pressure, blood clots

Systemic treatment
Isotretinoin (Rx Only)

- Sever acne and moderate acne that does not respond to other treatments
- Normalizes follicular desquamation, decreases sebum secretion, inhibits the growth of P.acnes, and exerts anti-inflammatory effects
- Side effects: dryness of the skin, eye, mouth, lips, and nose, itching, nosebleeds, muscle aches, sun sensitivity, poor night vision
- May increase level of TGs and cholesterol
- May increase liver enzyme levels
- Increased risk of depression and suicide
- Teratogenic: recommendation to use two forms of birth control one month before starting treatment, during the treatment, and one month after the treatment


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زيراكتان®
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Xeractan®
Isotretinoin
السعر
هللة
ريال
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رقم التسجيل: ١٤٣/٣٣٤/١١
Ne pas dépasser la dose prescrite
A utiliser sous prescription médicale
To be dispensed on medical prescription
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30 Capsules de gélatine molle


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United
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Isotretinoin
20 mg
30 capsules
20 mg
Xeractan
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Additional treatments

- Chemical peels: AHA and Salicylic acid peelings
- Comedone and extraction:

Two ways to release the contents of comedones:

- Squeezing with fingertips
- A comedo exractor

There is limited evidence that comedo removal for acne treatment is effective but it can improve patient appearance (enhance compliance with the treatment program)

Additional treatments

- Optical therapies:
- Broad spectrum continuous-wave visible light (blue and red)
- Intense pulsed light
- Pulsed dye lasers
- Potassium titanyl phosphate lasers
- Photodynamic therapy (PDT)
- Pulsed diode laser

Although optical therapy may improve acne initially, a standarized treatment protocol, longer-term outcomes, comparisons with conventional acne therapies, and wide spread clinical experience are lacking

Not included among first-line treatments

Additional treatments

- Herbal and alternative therapies:

Aloe vera

Fruit derived acids

Tea tree oil

Very limited data

Treatment: Follicular hyperproliferation and abnormal desquamation

- Topical retinoids
- Oral retinoids
- Azelaic acid
- Salicylic acid
- Hormonal therapies

Treatment: Increased sebum production

- Oral isotretinoin
- Hormonal therapies

Treatment: *Propionibacterium* acnes proliferation

- Topical and oral antibiotics
- Benzoyl peroxide
- Azelaic acid

Treatment:

Inflammation

- Oral isotretinoin
- Topical retinoids
- Oral tetracyclines
- Azelaic acid
- Salicylic Acid

Acne treatment algorithm

	Mild		Moderate		Severe
	Comedonal	Mixed and papular/pustular	Mixed and papular/pustular	Nodular*	Nodular/ conglobate
1st choice	Topical retinoid	Topical retinoid + Topical antimicrobial•	Oral antibiotic + Topical retinoid +/- BPO•	Oral antibiotic + Topical retinoid + BPO	Oral isotretinoinΔ
Alternatives◇	Alternative topical retinoid or Azelaic acid§ or Salicylic acid	Alternative topical antimicrobial• + Alternative topical retinoid or Azelaic acid§	Alternative oral antibiotic + Alternative topical retinoid +/- BPO•	Oral isotretinoin versus Alternative oral antibiotic + Alternative topical retinoid +/- BPO•/Azelaic acid§	High-dose oral antibiotic + Topical retinoid + BPO
Alternatives for females◇¥	See 1st choice	See 1st choice	Hormonal therapy + Topical retinoid/ Azelaic acid§ +/- Topical antimicrobial•	Hormonal therapy + Topical retinoid +/- Topical or oral antimicrobials•	Hormonal therapy + Topical retinoid +/- Topical or oral antimicrobials•
Maintenance therapy:	Topical retinoid		Topical retinoid +/- BPO		

The following concepts guide the selection of therapy

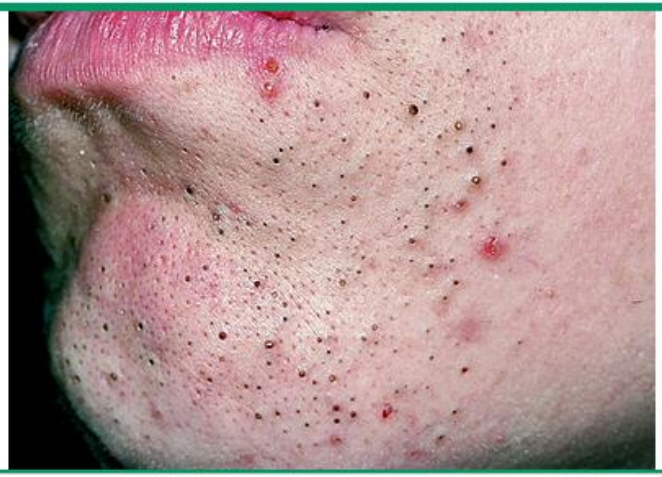
- Topical retinoids are beneficial for both comedonal (noninflammatory) and inflammatory acne

- Topical retinoids can be used as monotherapy in individuals with exclusively comedonal acne.

Comedonal (noninflammatory) acne

- Topical retinoid
- alternatives include azelaic acid and salicylic acid

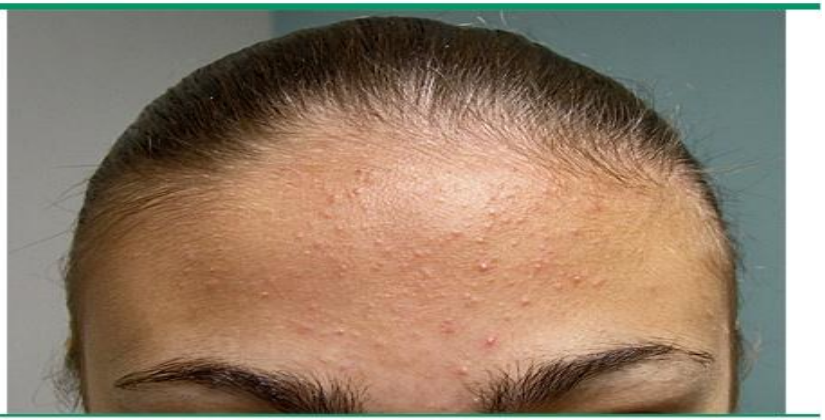
Noninflammatory acne



Numerous open comedones are present on the chin.

Reproduced with permission: Goodheart HP. Goodheart's Photoguide of Common Skin Disorders, 2nd ed, Lippincott Williams & Wilkins, Philadelphia 2003. Copyright © 2003 Lippincott Williams & Wilkins.

Mild acne



This 14-year-old girl has multiple closed comedones and scattered small inflammatory papules and pustules on the forehead.

Courtesy of Douglas Hoffman, MD, Dermatlas; http://www.dermatlas.org.

Graphic 62816 Version 5.0

Acne treatment algorithm

	Mild		Moderate		Severe
	Comedonal	Mixed and papular/pustular	Mixed and papular/pustular	Nodular*	Nodular/ conglobate
1st choice	Topical retinoid	Topical retinoid + Topical antimicrobial•	Oral antibiotic + Topical retinoid +/- BPO•	Oral antibiotic + Topical retinoid + BPO	Oral isotretinoinΔ
Alternatives◇	Alternative topical retinoid or Azelaic acid§ or Salicylic acid	Alternative topical antimicrobial• + Alternative topical retinoid or Azelaic acid§	Alternative oral antibiotic + Alternative topical retinoid +/- BPO•	Oral isotretinoin versus Alternative oral antibiotic + Alternative topical retinoid +/- BPO•/Azelaic acid§	High-dose oral antibiotic + Topical retinoid + BPO
Alternatives for females◇¥	See 1st choice	See 1st choice	Hormonal therapy + Topical retinoid/ Azelaic acid§ +/- Topical antimicrobial•	Hormonal therapy + Topical retinoid +/- Topical or oral antimicrobials•	Hormonal therapy + Topical retinoid +/- Topical or oral antimicrobials•
Maintenance therapy:	Topical retinoid		Topical retinoid +/- BPO		

The following concepts guide the selection of therapy

- Patients with an inflammatory component often benefit from antimicrobial therapies (eg, benzoyl peroxide or topical antibiotics).

- Antimicrobial agents reduce the number of proinflammatory *P. acnes* colonizing the skin.

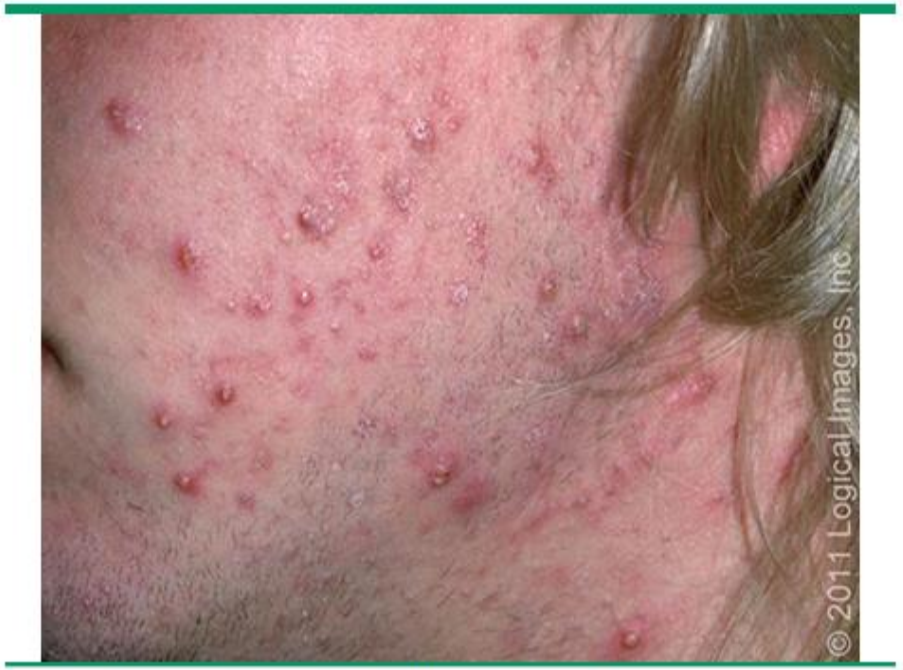
The following concepts guide the selection of therapy

- Patients with moderate to severe inflammatory acne often warrant more aggressive treatment with oral antibiotics.
- Antibiotics in the tetracycline class are most frequently used
- Therefore, use of benzoyl peroxide is recommended in patients receiving antibiotic therapy

Mild papulopustular and mixed (comedonal and papulopustular) acne

- Topical retinoid AND
- Topical antimicrobial (eg, benzoyl peroxide alone or benzoyl peroxide +/- topical antibiotic)

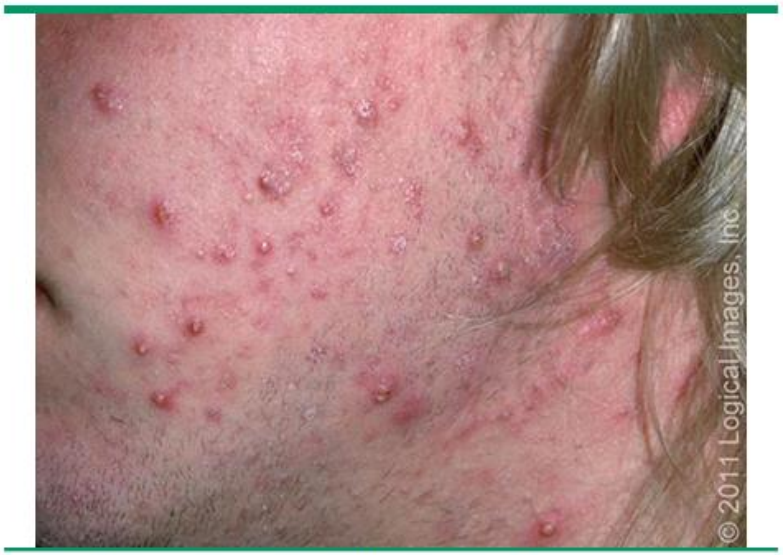
Inflammatory acne



Erythematous papules and pustules are present.

Moderate papulopustular and mixed acne

- Topical retinoid AND
- Oral antibiotic AND
- Topical benzoyl peroxide



Erythematous papules and pustules are present.

Reproduced with permission from: www.visualdx.com. Copyright Logical Images, Inc.

Acne treatment algorithm

	Mild		Moderate		Severe
	Comedonal	Mixed and papular/pustular	Mixed and papular/pustular	Nodular*	Nodular/ conglobate
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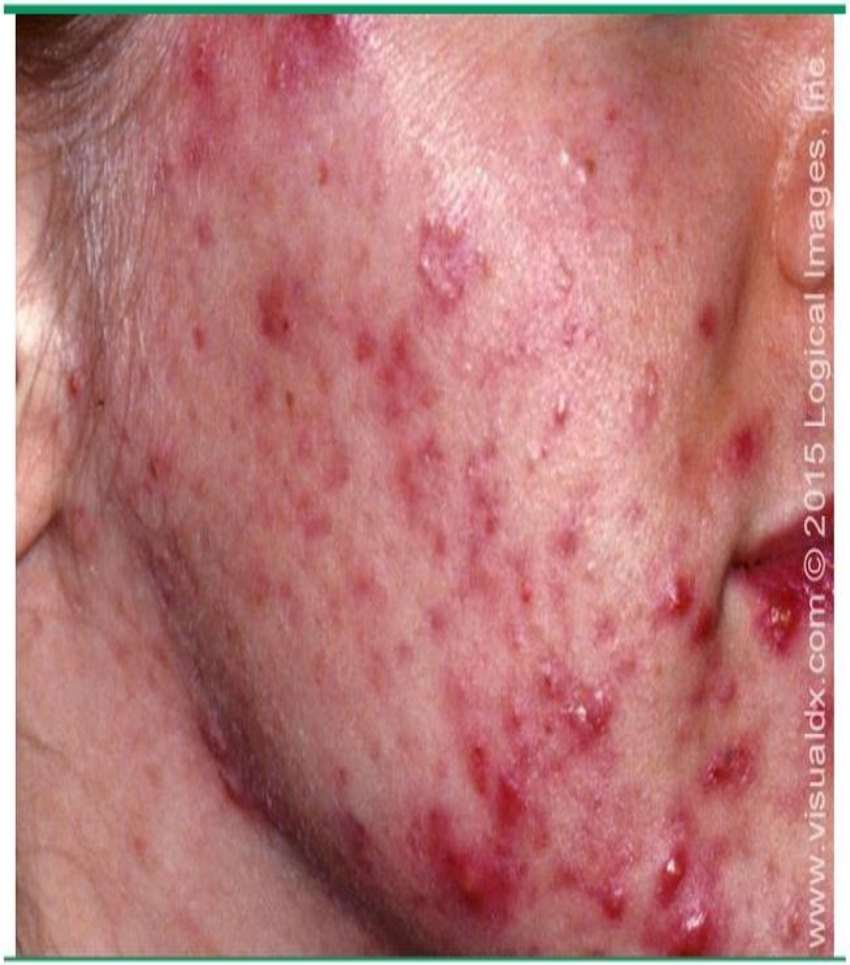
Maintenance therapy:	Topical retinoid		Topical retinoid +/- BPO		

Moderate nodular acne (small nodules 0.5 to 1 cm)

- Topical retinoid AND
- Oral antibiotic AND
- Topical benzoyl peroxide

Inflammatory acne vulgaris

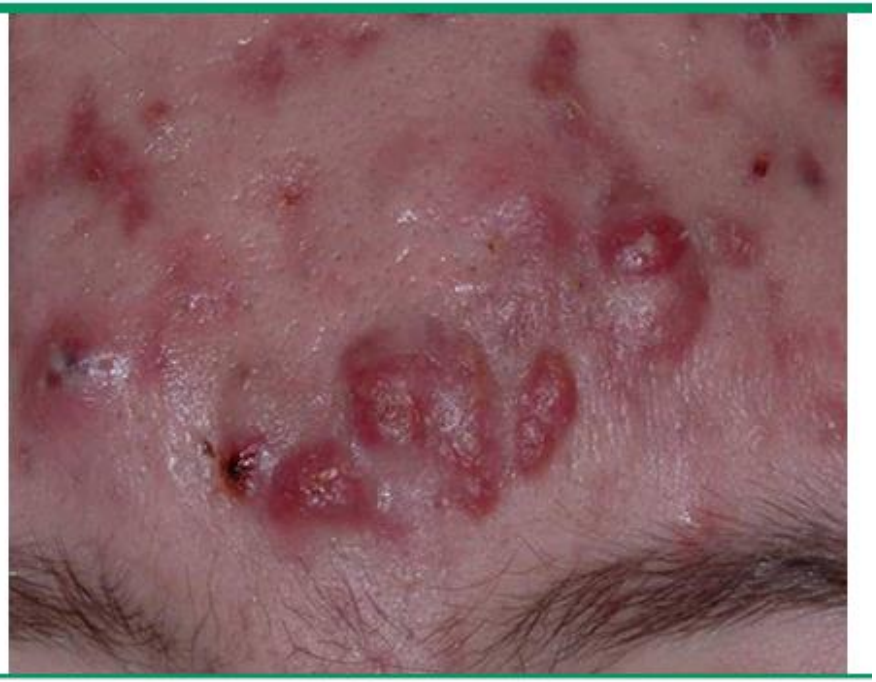


Inflamed papules, pustules, and small nodules on the face. Postinflammatory macular erythema is also present.

Severe nodular/conglobate acne

- Oral isotertinoin

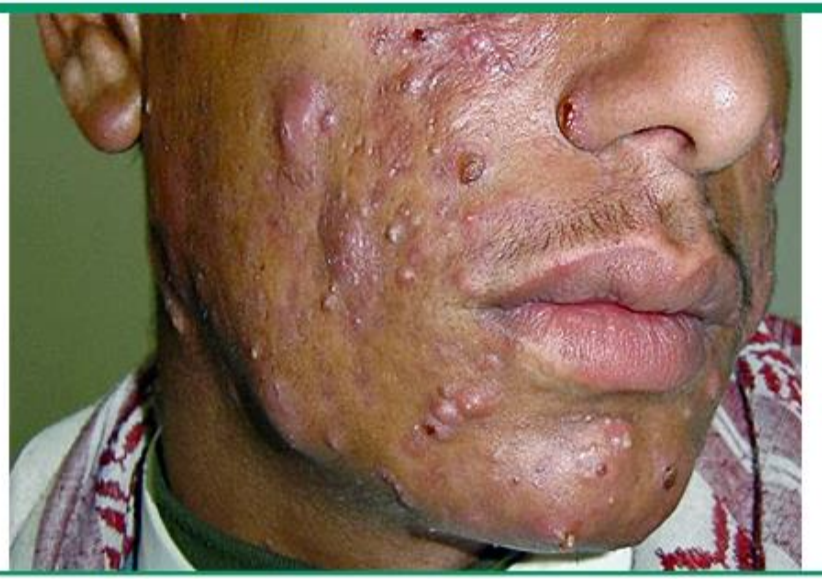
Acne nodules



Severe nodular acne on the forehead.

Graphic 57925 Version 1.0

Cystic acne conglobata



This 22-year-old man with a two-year history of severe nodulocystic acne was treated with oral 13-cis retinoic acid.

Acne treatment algorithm

	Mild		Moderate		Severe
	Comedonal	Mixed and papular/pustular	Mixed and papular/pustular	Nodular*	Nodular/ conglobate
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Maintenance therapy:	Topical retinoid		Topical retinoid +/- BPO		

A sample regimen for a patient with mild inflammatory facial acne who is using a topical retinoid, topical benzoyl peroxide, and topical clindamycin

- **Morning:** Wash face with a gentle facial cleanser. Apply a thin layer of a fixed-dose combination benzoyl peroxide/clindamycin gel to the entire face?.
- **Night:** Wash face with a gentle facial cleanser. Moisturize?.. Apply a thin layer of the topical retinoid to the entire face.

A sample regimen for a patient with mild inflammatory facial acne who is using a topical retinoid, topical benzoyl peroxide, and topical clindamycin

- Tretinoin and benzoyl peroxide should not be applied simultaneously to the skin due to the oxidizing effect of benzoyl peroxide on tretinoin.
- If both agents are prescribed, benzoyl peroxide should be applied in the morning and tretinoin in the evening
- Adaplene, the microsphere formulation of tretinoin, and tazarotene are stable in the presence of benzoyl peroxide.


Epiduo
0.1% / 2.5% gel
adapalene / benzoyl peroxide
GEL
45 g
GALDERMA
Epiduo 0.1% / 2.5% gel
adapalene / benzoyl peroxide
GEL
GALDERMA

Topical Retinoids Considerations

- Gels have a drying effect; they may be preferred by patients with oily skin.
- Creams and lotions tend to be moisturizing.
- Solutions are drying but they cover large areas more easily than other preparations, and foams are easy to apply to hair-bearing areas.

Topical Retinoids Considerations

- Patients should be directed to apply a thin layer of a pea-sized amount of medication to cover the face.
- The medication should be applied to the entire affected area, not as spot treatment of individual lesions.
- Skin should be dry at the time of application

Topical Retinoids Considerations

- Topical retinoids cause irritation, dryness, and flaking of the skin, an effect most notable during the first month of therapy.
- To minimize irritation, patients should avoid the concomitant use of over-the-counter irritating products, such as harsh soaps, toners, astringents, and alpha hydroxy acid or salicylic acid products.

Topical Retinoids Considerations

- A gentle non-soap cleanser should be recommended.
- Delaying application of the retinoid for at least 20 minutes after washing and drying the face may also be helpful
- If irritation is a problem, a decrease in the frequency of application to every other or every third night can be considered, and the frequency of application can be increased as tolerance improves.

Topical Retinoids Considerations

- Tazarotene has been considered the most effective, but also most irritating topical retinoid, when compared with adaplene and tretinoin.

- A short-contact regimen with tazarotene: Patients apply tazarotene for up to five minutes daily, then wash off the medication

Topical Retinoids Considerations

- The fine skin flaking that is often seen can be gently exfoliated with a washcloth.
- A noncomedogenic facial moisturizer can be applied if needed.
- Micronized tretinoin 0.05% gel contains soluble fish proteins. The drug should be used with **caution in patients with a known allergy to fish**

TOPICAL ANTIMICROBIALS

- **Benzoyl peroxide:** Concentrations of benzoyl peroxide that are higher than 2.5% may not contribute to increased benefit.
- Increased concentrations of benzoyl peroxide can lead to increased skin irritation.
- Irritation may appear as erythema, scaling, xerosis, or stinging, tightening, or burning sensations

TOPICAL ANTIMICROBIALS

- Patients should also be advised that benzoyl peroxide can cause bleaching of the hair and clothing.

- Antibiotics may promote the appearance of resistant strains of *P. acnes* when used alone. Resistance is diminished by combination use with benzoyl peroxide

Acne treatment algorithm

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Maintenance therapy:	Topical retinoid		Topical retinoid +/- BPO		

Topical antibiotics

- Topical erythromycin and clindamycin should not be used as monotherapy for acne
- Evidence shows better treatment efficacy when these drugs are combined with retinoids and benzoyl peroxide.
- In addition, the use of benzoyl peroxide with antibiotics decreases the occurrence of bacterial resistance

Topical antibiotics

- Combination gels containing benzoyl peroxide combined with an antibiotic are available

AZELAIC ACID

- Azelaic acid: antimicrobial, comedolytic, and mild anti-inflammatory properties.
- Azelaic acid also has an inhibitory effect on tyrosinase and can improve acne-induced postinflammatory hyperpigmentation.
- The product is available in a 15% gel and 20% cream.

Acne treatment algorithm

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Maintenance therapy:	Topical retinoid		Topical retinoid +/- BPO		

ORAL ANTIBIOTICS

- Utilization of these drugs is primarily indicated for patients with moderate to severe inflammatory acne.

- Oral antibiotics may also be used for patients who have milder truncal acne, for whom the application of topical antibiotics is difficult.

ORAL ANTIBIOTICS

- The use of erythromycin is now recommended only for patients in whom tetracycline derivatives are contraindicated .
- It has less anti-inflammatory activity than the tetracyclines.
- In addition, *P. acnes* often develops resistance to this drug, resulting in treatment failure.
- Many patients experience intolerable gastrointestinal side effects.

ORAL ANTIBIOTICS

- studies have found an increased rate of upper respiratory infections in acne patients treated with oral antibiotic therapy
- greater risk for upper respiratory infection among acne patients treated with either topical or oral antibiotics

The following practices may reduce the incidence of resistance

- Only prescribe antibiotics when necessary
- The duration of treatment should be limited; an oral antibiotic should be discontinued when there is no additional clinical improvement or clinical improvement is absent
- limit treatment courses to a maximum of 12 to 16 weeks when feasible.

The following practices may reduce the incidence of resistance

- In order to avoid changing oral antibiotics prematurely, six to eight weeks of therapy should be allowed prior to evaluating treatment efficacy.
- After six to eight weeks, a change in the type of antibiotic can be considered if there is no response.
- In cases in which a partial response is seen, therapy should be continued and response reassessed after another six to eight weeks.

The following practices may reduce the incidence of resistance

- Do not simultaneously treat with a topical antibiotic and an oral antibiotic
- Avoid use of antibiotics (topical or oral) as monotherapy or as maintenance therapy

ORAL ISOTRETINOIN

- effective for the treatment of severe, recalcitrant nodular acne.
- In clinical practice, it is also used for milder acne that is resistant to other treatments or associated with significant scarring.
- Oral isotretinoin is used as monotherapy; a typical treatment course is 120 to 150 mg/kg, which usually translates to a 20-week course for most patients.

Acne treatment algorithm

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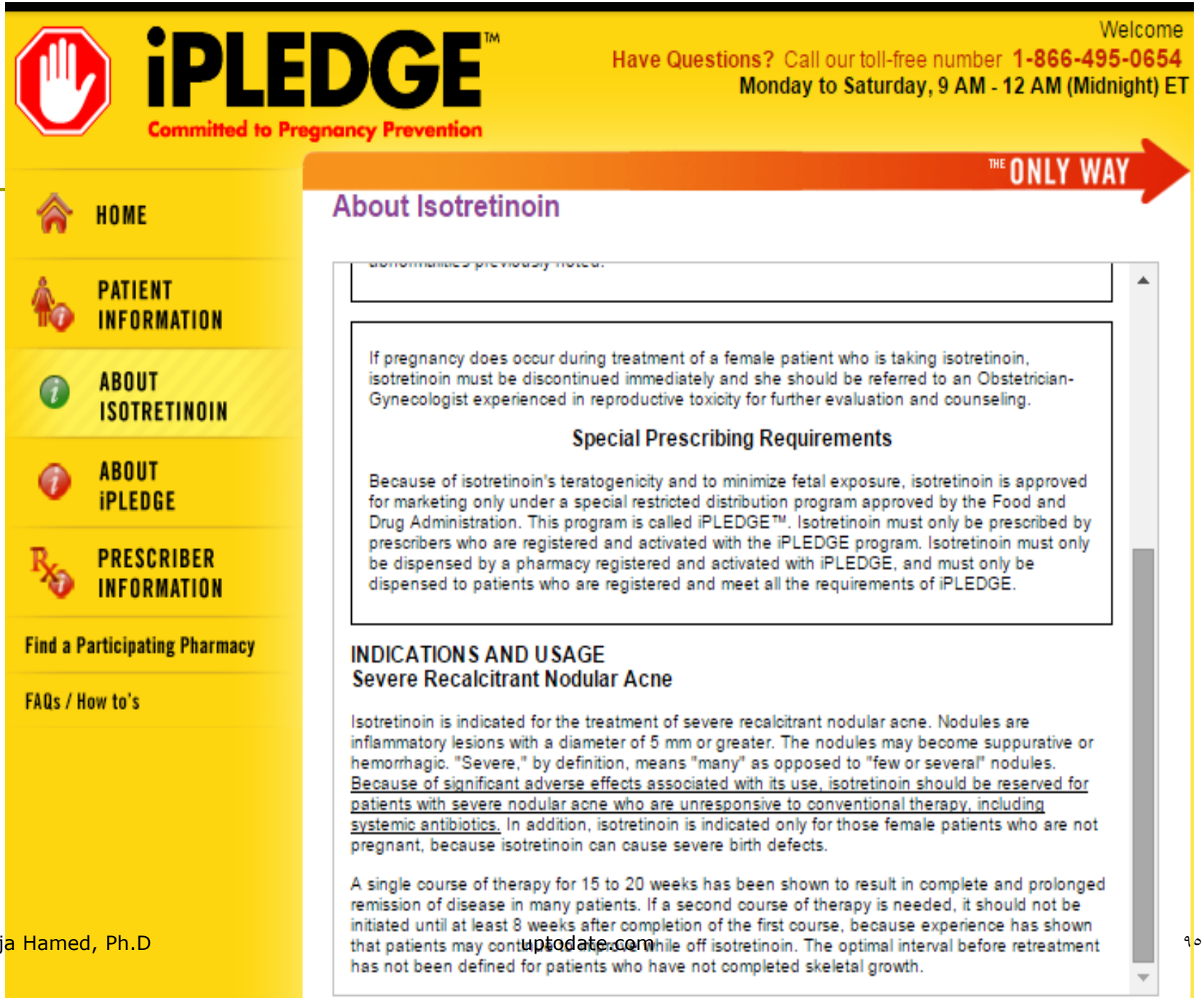

iPLEDGE™
Committed to Pregnancy Prevention
Welcome
Have Questions? Call our toll-free number 1-866-495-0654
Monday to Saturday, 9 AM - 12 AM (Midnight) ET
THE ONLY WAY
HOME
PATIENT INFORMATION
ABOUT ISOTRETINOIN
ABOUT iPLEDGE
PRESCRIBER INFORMATION
Find a Participating Pharmacy
FAQs / How to's
About Isotretinoin
If pregnancy does occur during treatment of a female patient who is taking isotretinoin, isotretinoin must be discontinued immediately and she should be referred to an Obstetrician-Gynecologist experienced in reproductive toxicity for further evaluation and counseling.
Special Prescribing Requirements
Because of isotretinoin's teratogenicity and to minimize fetal exposure, isotretinoin is approved for marketing only under a special restricted distribution program approved by the Food and Drug Administration. This program is called iPLEDGE™. Isotretinoin must only be prescribed by prescribers who are registered and activated with the iPLEDGE program. Isotretinoin must only be dispensed by a pharmacy registered and activated with iPLEDGE, and must only be dispensed to patients who are registered and meet all the requirements of iPLEDGE.
INDICATIONS AND USAGE
Severe Recalcitrant Nodular Acne
Isotretinoin is indicated for the treatment of severe recalcitrant nodular acne. Nodules are inflammatory lesions with a diameter of 5 mm or greater. The nodules may become suppurative or hemorrhagic. "Severe," by definition, means "many" as opposed to "few or several" nodules. Because of significant adverse effects associated with its use, isotretinoin should be reserved for patients with severe nodular acne who are unresponsive to conventional therapy, including systemic antibiotics. In addition, isotretinoin is indicated only for those female patients who are not pregnant, because isotretinoin can cause severe birth defects.
A single course of therapy for 15 to 20 weeks has been shown to result in complete and prolonged remission of disease in many patients. If a second course of therapy is needed, it should not be initiated until at least 8 weeks after completion of the first course, because experience has shown that patients may continue to improve while off isotretinoin. The optimal interval before retreatment has not been defined for patients who have not completed skeletal growth.

- https://www.drugs.com/dosage/isotretinoin.html

Usual Adult Dose for Acne

Maintenance dose: 0.25 to 0.5 mg/kg orally 2 times a day
Maximum dose: Up to 2 mg/kg/day
Duration of therapy: Up to 20 weeks

Comments:
-Patients should take some formulations of this drug with food.
-Prior to increasing the dose, patients should be asked about their compliance with treatment (e.g., taking this drug with food).
-Patients with very severe acne, scarring, or primary manifestations on the trunk may require 2 mg/kg/day dosing.
-Any patient requesting refills requires a new prescription and a new authorization from the iPLEDGE program.
-The safety and efficacy of once a day dosing has not been established; thus, once a day dosing is not recommended.

Use: Treatment of severe recalcitrant nodular acne in patients who are unresponsive to conventional therapy, including systemic antibiotics

https://www.drugs.com/dosage/isotretinoin.html

Administration advice:

-Female patients of reproductive potential should be tested for pregnancy before receiving the first prescription, within the first 5 days of the menstrual period (patients with regular menstrual periods) OR immediately preceding the beginning of treatment (patients with amenorrhea/irregular cycles/using a contraceptive method that precludes withdrawal bleeding), AND during each month of treatment. Some experts recommend obtaining an additional test 5 weeks after the discontinuation of treatment.

-Capsules should be swallowed with a full glass of liquid.

General:

-Due to high teratogenicity and to minimize fetal exposure, this drug is available only through a special restricted distribution program called iPLEDGE (TM). Prescribers, pharmacies, and wholesalers must be registered and activated with the iPLEDGE program in order to prescribe, dispense, or distribute this drug. This drug must only be dispensed to patients who are registered and meet all the requirements of iPLEDGE. This registration process ensures that prescribers, pharmacists, and patients agree to assume specific responsibilities to ensure that patients do not become pregnant while taking this drug and do not get prescribed the medicine if they are pregnant. Further details on iPLEDGE are available at www.ipledgeprogram.com or by calling 1-866-495-0654.

https://www.drugs.com/dosage/isotretinoin.html

Monitoring:

-Embryofetal: Pregnancy tests in female patients of reproductive potential

-Hepatic: Liver function tests at baseline and then at weekly to biweekly intervals until the response is established.

-Metabolic: Fasting lipid and blood glucose levels at baseline and then at weekly to biweekly intervals until the response is established.

Patient advice:

-Inform patients that this drug may decrease night vision, and they should use caution when driving or operating machinery.

-Patients should be told to avoid donating blood during and up to 1 month after discontinuation of treatment.

-Patients should be instructed to report new/unusual changes in vision, hearing, headaches, mood or depression, abdominal pain or diarrhea.

-Patients should be advised to avoid sharing this drug with anyone, even those with similar conditions.

-Female patients of reproductive potential should be instructed regarding pregnancy testing (per local protocol), and should be told to use at least 2 forms of birth control during and at least 1 month after treatment. Female patients of reproductive potential who have unprotected intercourse any time 1 month before, during, or 1 month after treatment should contact their healthcare provider immediately.

https://www.medscape.com/answers/1069804-90352/what-is-the-dosing-schedule-for-isotretinoin-in-the-treatment-of-acne-vulgaris

What is the dosing schedule for isotretinoin in the treatment of acne vulgaris?

Updated: Oct 23, 2019 | Author: Jaggi Rao, MD, FRCPC; Chief Editor: William D James, MD more...

References

Isotretinoin therapy should be initiated at a dose of 0.5 mg/kg/d for 4 weeks and increased as tolerated until a cumulative dose of 120-150 mg/kg is achieved. [33] Coadministration with steroids at the onset of therapy may be useful in severe cases to prevent initial worsening. [33] Some patients may respond to doses lower than the standard recommendation dosages. A lower dose (0.25-0.4 mg/kg/d) may be as effective in clearing acne as the higher dose given for the same period and with greater patient satisfaction. However, the benefit of prolonged remission is not as great with such therapy as with standard doses. [58] Lower intermittent dosing schedules (1 wk/mo) are not as effective. [58]

Some patients only require one course of oral isotretinoin for complete acne remission, while others require additional courses of isotretinoin therapy. A study found 38% of the patients had no acne during 3-year follow up, and, among the remaining patients, 17% were controlled with further topical therapy, 25% with topical and oral antibiotics, and 20% with second course of isotretinoin

- Isotretinoin | DermNet NZ
- **Isotretinoin**

HOME SKIN CARE RECOMMENDATIONS

- Patients should apply a gentle synthetic detergent cleanser (i.e, syndet) with their fingers, and rinse with warm (not hot) water twice daily.

- Synthetic detergent bar uses exhibited less skin peeling, dryness, and irritation than soap.

Moisturization and acne

- Swinyer et al. identified skin dryness as an important factor in exacerbating the pathogenic cycle of acne, thus hampering its treatment
- Jackson (1999) found that an emollient facial wash to outperform pure soap and a benzoyl peroxide wash in decreasing open comedones and papules
- Hydrate while cleanse
- Use an emollient facial cleanser

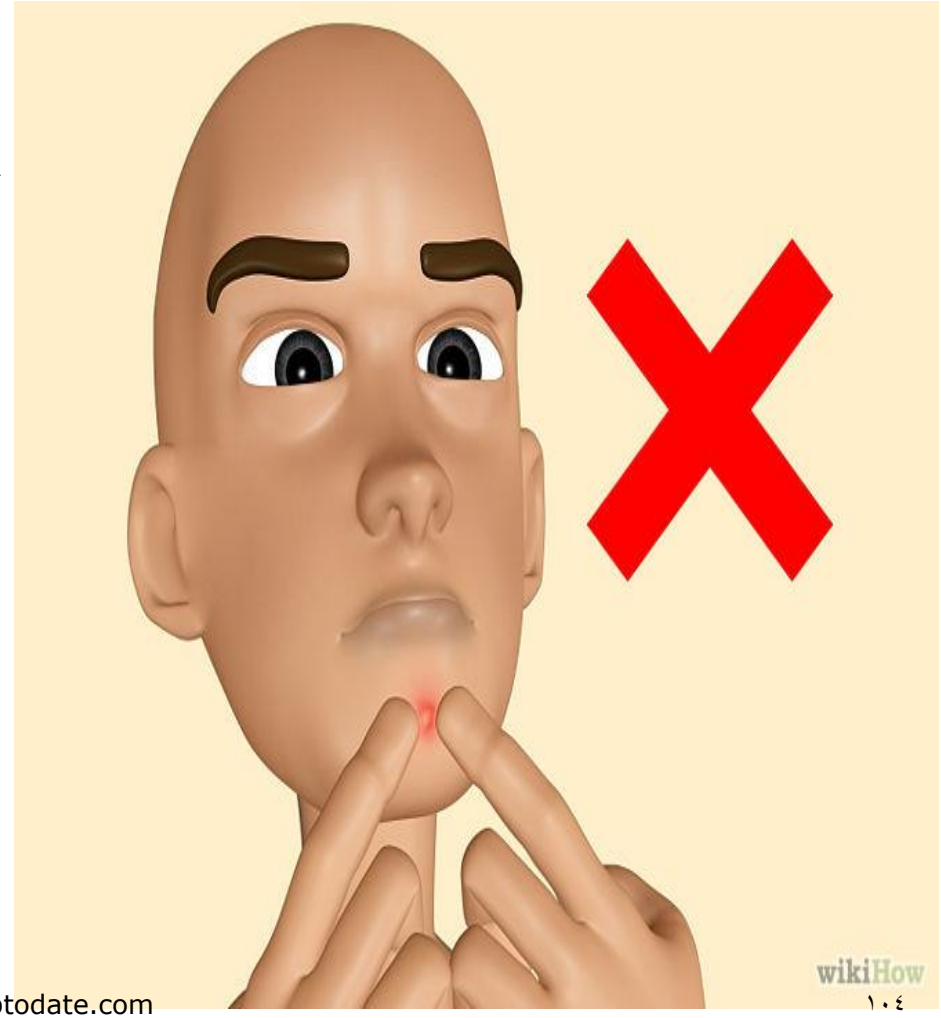
HOME SKIN CARE RECOMMENDATIONS

- Water-based lotions, cosmetics, and hair products are less comedogenic than oil-based products.

- Patients should be encouraged to seek out noncomedogenic skin care and cosmetic products.

HOME SKIN CARE RECOMMENDATIONS

- Patients should be advised not to pick their acne lesions, as this may exacerbate scarring



HOME SKIN CARE RECOMMENDATIONS

- Patients should be given realistic expectations regarding timelines for improvement.

- At least two to three months of consistent adherence to a therapeutic regimen is often necessary prior to concluding that treatment is ineffective.

PREGNANCY AND ACNE THERAPY

- If acne therapy is desired, reasonable options include oral or topical erythromycin, topical clindamycin, and topical azelaic acid, which are pregnancy class B drugs
- Benzoyl peroxide is categorized as pregnancy class C


82% 8:21 AM
Drug Details
Acticare 1.2%,0.025% Gel
شركة الحياة للصناعات الدوائية
Barcode: -
Price: 6.73 JD - last update Dec 2020
Package: 30 gm
Manufacturer: شركة الحياة للصناعات الدوائية
Manufacturer: Jordan
Active Drug Components:
Tretinoin 0.025 %
Clindamycin Phosphate 1.2 %
100% ONLINE TRADING
CFI
CREDIT FINANCIER INVEST
Ingredient 1
Ingredient 2
Simialr Rx
Brand
tretinoin
System
immunomodulators and antineoplastics
Class
other immunostimulants
SubClass
other antineoplastic drugs
Generic Names
tretinoin caps 10 mg (vesanoid*)

Tips for Skin care:

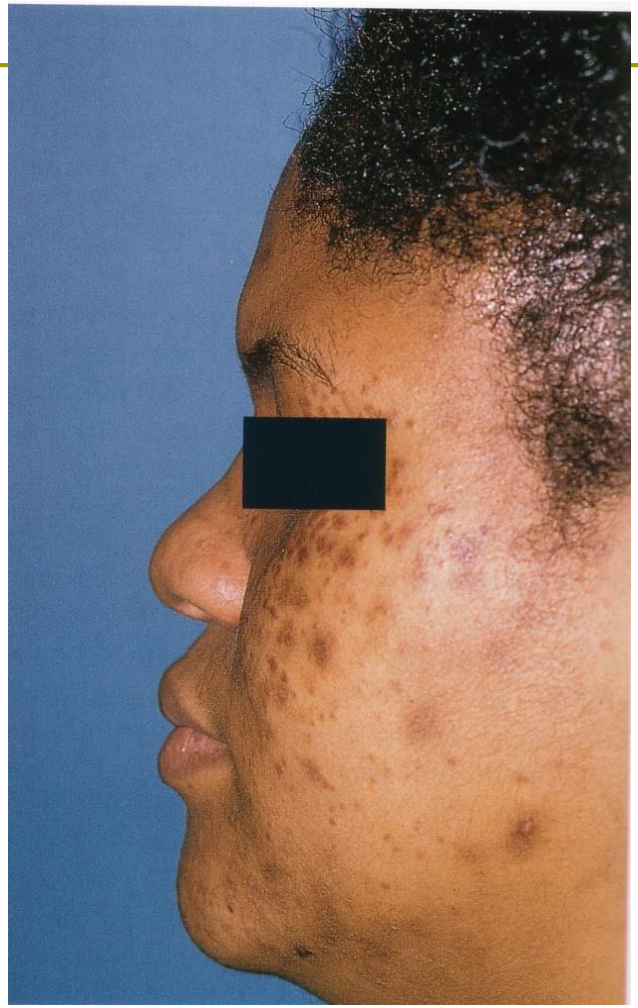
- Facial Cleansing should be done gently
- Vigorous rubbing and scrubbing may worsen the acne
- Use an emollient facial cleanser or a mild soap
- If the skin becomes red, irritated or scaly while using a certain soap another more gentle type should be tried

Tips for Skin care:

- The skin should not be touched very often
- People who squeeze or pinch their blemishes may develop scar
- Men who have acne should find out whether an electric razor or blade razor is more comfortable
- If you are using a wet-shaving technique, be sure to adequately soften the beard with warm water and shaving cream for at least a minute or two before you start to shave and allow enough time to shave lightly and carefully

Shaving and Acne

- No one method of shaving is best for patients with acne
- Some men find blade shaving more comfortable, while others prefer electric shavers
- Sometimes it’s more comfortable to rotate between the two
- A few individuals most stop shaving at least temporarily
- Try to avoid daily shaving



- Post-inflammatory hyperpigmentation after acne is a particular problem for Asian patients

Tips for Skin care:

- Choose cosmetics carefully. All cosmetics, such as foundation, blush, eye shadow, and moisturizer should be oil-free or non-comedogenic
- Lip products that contain moisturizers may cause small open and closed comedones

https://www.aad.org/member/clinical-quality/guidelines/acne

Topical therapies

Recommendations

- Benzoyl peroxide alone or in combination with topical antibiotics for mild acne
- Benzoyl peroxide in combination with topical retinoids or systemic antibiotic therapy for moderate to severe acne
- Retinoids as monotherapy in primarily comedonal acne or in combination with topical or oral antimicrobials in mixed/primarily inflammatory acne
- Topical dapsone 5% gel for inflammatory acne, particularly in adult females
- Azelaic acid for post-inflammatory dyspigmentation

https://www.aad.org/member/clinical-quality/guidelines/acne

Other points of note

- Benzoyl peroxide does not confer bacterial resistance
- Topical antibiotics are NOT recommended as monotherapy due to risk of bacterial resistance
- Combination therapy should be used in the majority of acne patients to target different aspects of acne pathogenesis
- Patients should be counseled on pregnancy risks when starting a retinoid or if a female patient desires pregnancy
- The topical therapy of acne in children under the age of 12 years with FDA-approved products has expanded
    - Benzoyl peroxide 2.5%/adapalene 1% gel – ages 9 and up
    - Tretinoin 0.05% micronized gel – ages 10 and up
- The use of topical maintenance regimens after oral antibiotic therapy cannot be overemphasized
- Topical therapies can accomplish continued efficacy months after discontinuation of systemic antibiotics

- **The rational use of systemic isotretinoin in acne: A call for moderation**

- http://www.samj.org.za/index.php/samj/article/view/5310/4048

How dermatologist treat acne

- https://www.instagram.com/reel/CiAYclMgttO/?utm_source=ig_web_copy_link
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THANK YOU