

ACNE



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ACNE

- a skin condition that occurs when your hair follicles become plugged with oil and dead skin cells.
- often causes:
 - whiteheads
 - blackheads or pimples, and
 - usually appears on the face, forehead, chest, upper back and shoulders

- Also called as acne vulgaris.
- most common among teenagers, though it affects people of all ages.



PREVALENCE

- As high as 95% with a 20 % to 35% prevalence of moderate to severe acne.
- Most prevalent in USA, UK, and Australia.
- Estimates reveal a 30 % increase in the number of people turning towards **homeopathy** for the treatment of their **Acne vulgaris and other skin problems** globally.

ACNE SIGNS AND SYMPTOMS

- vary depending on the severity of your condition:
 - Whiteheads (closed plugged pores)
 - Blackheads (open plugged pores)
 - Small red, tender bumps (papules)
 - Pimples (pustules), which are papules with pus at their tips
 - Large, solid, painful lumps beneath the surface of the skin (nodules)
 - Painful, pus-filled lumps beneath the surface of the skin (cystic lesions)

1. Whiteheads



2. Blackheads



3. Papules



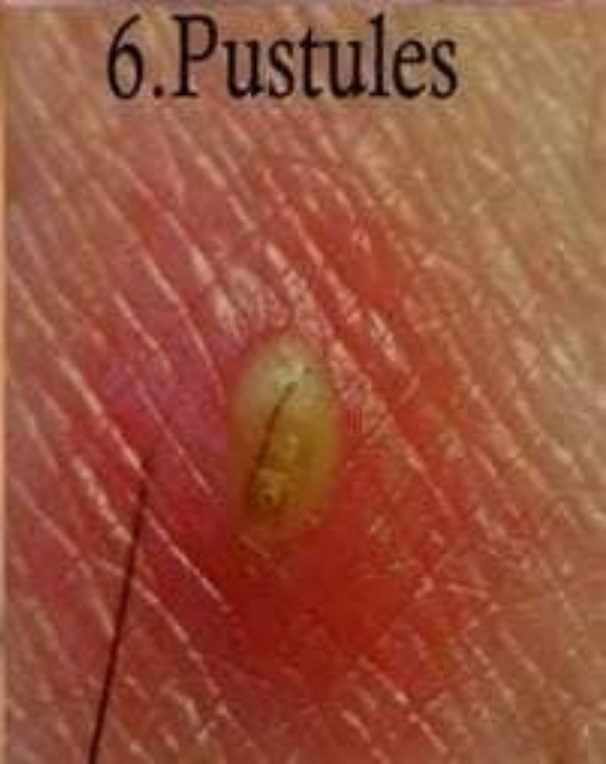
4. Cysts



5. Nodular



6. Pustules



CAUSES

- Excess oil production
- Hair follicles clogged by oil and dead skin cells
- Bacterial infection (*Propionibacterium acnes*)
- Excess activity of a type of hormone (androgens)

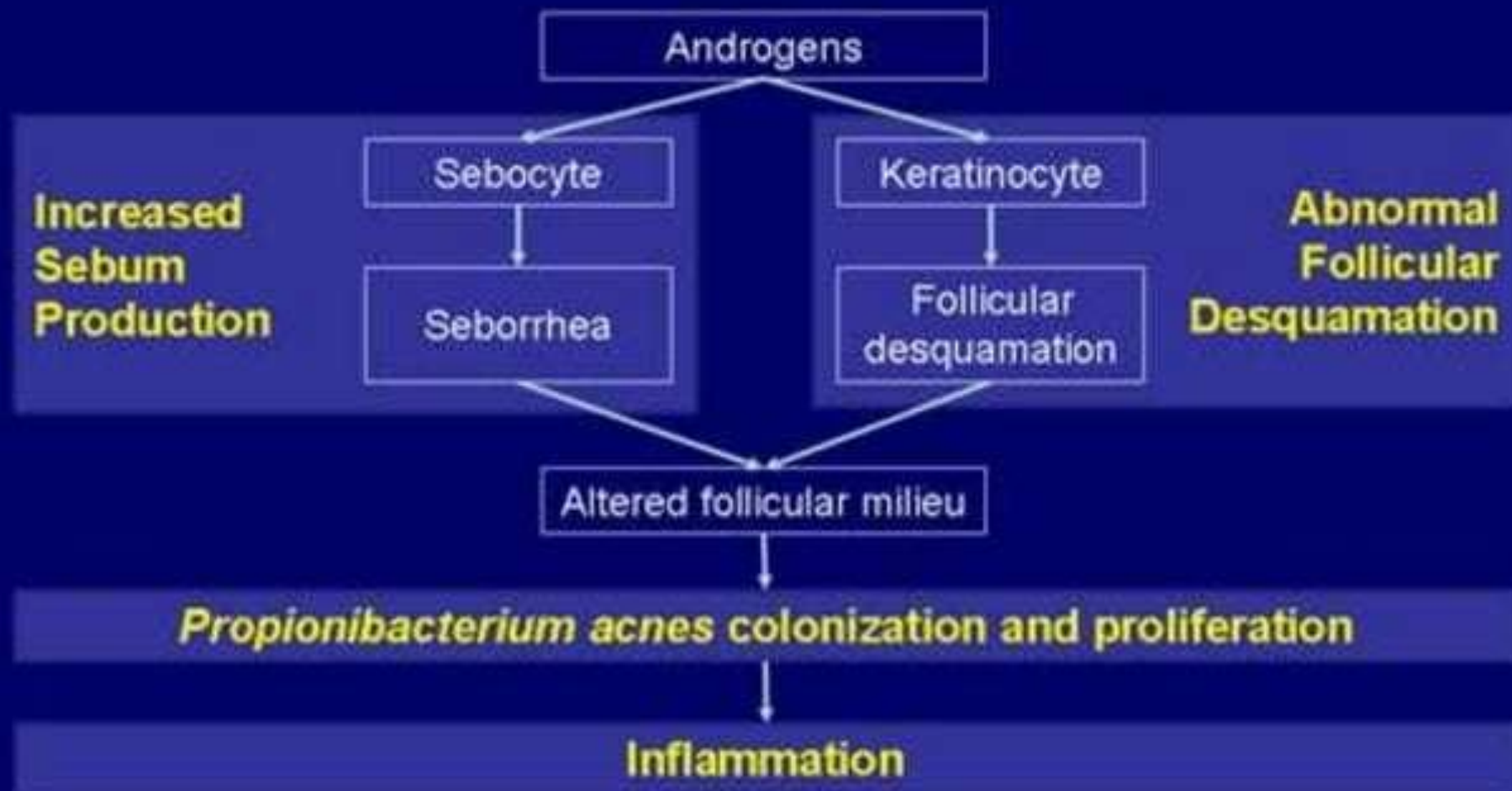
RISK FACTORS

- Genetic
- Obesity: hyperandrogenism
- A significant positive family history of acne has been demonstrated especially when acne is found in:
 - Twins
 - Mother
 - First degree relative
 - Multiple family members

AGGRAVATING FACTORS

- Smoking
- Stress
- Facial therapy or, salon facial massage
- High glycemic loads diet
- Milk and milk products
- Tight cloths/ head bands

Acne Pathogenesis Involves 4 Pathways



PATHOGENESIS OF ACNE

Extrusion of immunogenic keratin and sebum

Hyperkeratosis
↑ Corneocyte cohesiveness

Comedo expands

Rupture of comedo wall

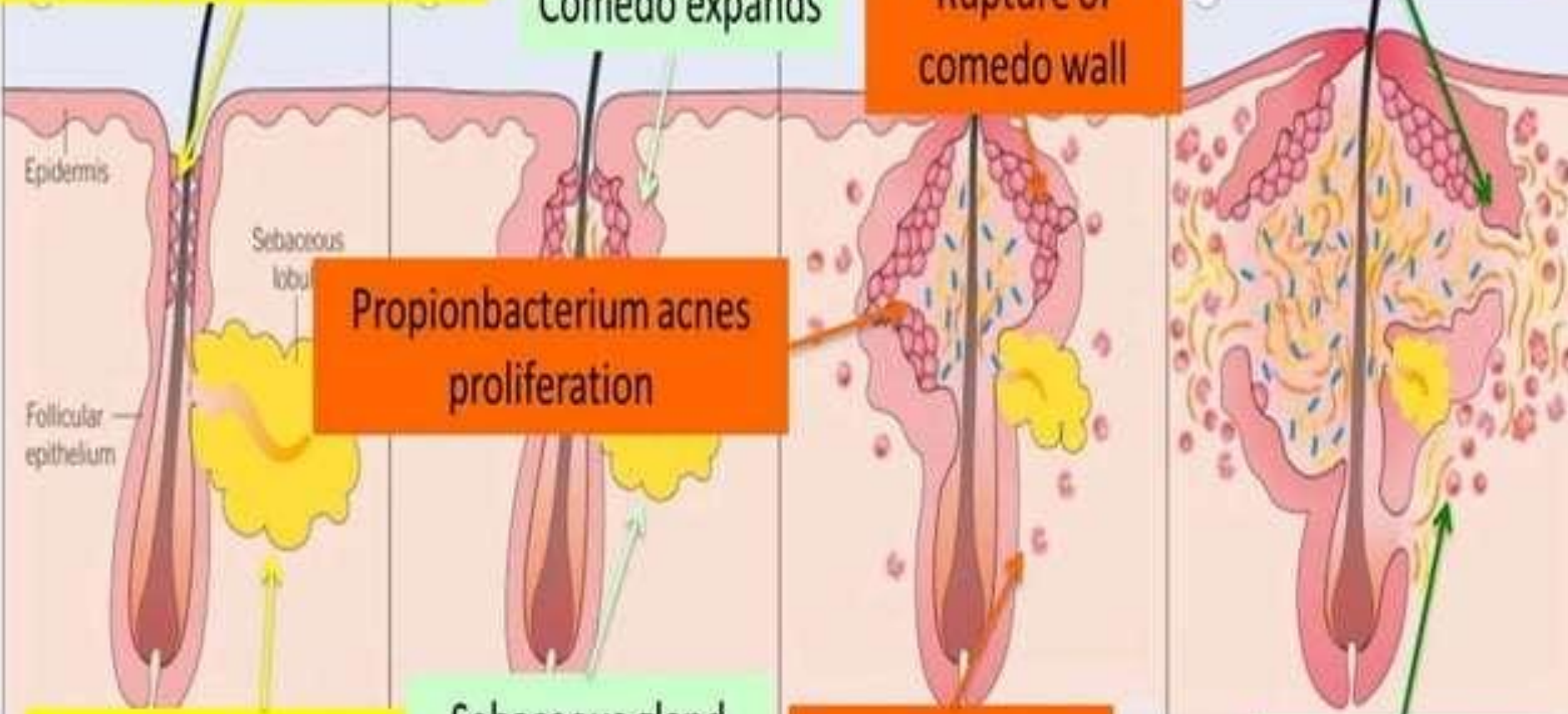
Propionibacterium acnes proliferation

Inflammation

Inflammation, scarring

Testosterone
Dihydrotestosterone

Sebaceous gland regresses



TYPES OF ACNE

- Acne conglobata
- Occupational acne
- Cosmetic acne
- Drug-induced acne
- Infantile acne
- Late onset acne
- Acne excoriee
- Acne fulminans
- Post-facial massage acne

Types of acne

1. Acne conglobata:

- Severe form
- intercommunicating abscesses, cysts and sinuses loaded with serosanguinous fluid or, pus.
- Comedines-multiparous
- Lesions take months to heal and on healing leave behind deep pitted or, hypertrophic scars, joined by keloidal bridges.
- Occlusion syndrome



Types of acne

2. Occupational acne:

- caused by exposure to industrial chemicals.
- Predominantly comedones
- Suspected in:
 - unusual sites of involvement
e.g. forearms
 - unusual age e.g. middle age males



Types of acne

3. Cosmetic acne:

- Eruption seen in women using cosmetics, especially oil based ones.
- Almost always comedones
- Lesion frequently on the chin



4. Drug –induced acne:

- steroids, androgens, anabolic steroids, OCPs, anti-TB drugs, iodides, bromides and anticonvulsant can cause acneiform eruption.
- lesions- monomorphic, consisting of papules and pustules.
- Trunk especially back and face may be involved.



Types of acne

5. Infantile acne:

- due to presence of maternal hormones in the child.
- higher in males.
- May present at birth and may last for upto 3 yrs.
- Lesions similar to those of adolescent acne.



6. Late onset acne:

- Acne with onset after 25 years old.
- Predominantly as deep seated, persistent lesions on lower half of face.
- Exclude underlying androgen secretion pathology, especially polycystic ovarian syndrome.



Types of acne

7. Acne excoriee:

- seen in young girls, who excessively pick their mild acne.
- results in discrete excoriations on the face, while comedones and papules are few and far in between.



8. Acne fulminans:

- acute onset
- Presents as crusted, ulcerated lesions.
- associated with fever, myalgia and arthralgia.



Types of acne

9. Post-facial massage acne:

- facial massage may be followed (3-6 wks later) by an acneiform eruption in about 30% patient.
- indolent deep seated nodules with very few (or no) comedones.
- heal with hyperpigmentation after several weeks.
- predominantly on cheeks, along the mandible.



DIAGNOSIS

- Complete history
- Pay attention to endocrine function
 - Rapid appearance with virilization/menstrual irregularity
- Complete medication list

- Physical exam:
 - Location
 - scarring
 - Lesion type
 - keloid
 - pigmentation

LABORATORY EXAMINATIONS

No laboratory examinations required. If there is suspicion of an endocrine disorder, free testosterone, follicle-stimulating hormone, luteinizing hormone, and DHEAS should be determined to exclude hyperandrogenism and polycystic ovary syndrome.

majority of acne patients, hormone levels are normal.

Laboratory examinations

transaminases(ALT, AST), triglycerides, and cholesterol levels may be required if systemic isotretinoin treatment is planned

DHEAS - Dehydroepiandrosterone

DIFFERENTIAL DIAGNOSIS

- Comedones are required for diagnosis of any type of acne. Comedones are not a feature of acne-like conditions and of the conditions listed below.
- **Face** - *S. aureus folliculitis*, *pseudofolliculitis barbae*, rosacea, perioral dermatitis.
- **Trunk** - *Malassezia folliculitis*, "hot-tub" *pseudomonas folliculitis*, *S. aureus folliculitis*, and

ASSESSMENT

ASSESSING SEVERITY OF ACNE

A new grading system named Comprehensive Acne Severity Scale – CASS (modification of an Investigator Global Assessment [IGA] of Acne Severity) is a validated tool which significantly correlates with the Leeds technique for face, chest and back. It is simpler to use in clinical practice.

Table 3: Comprehensive Acne Severity Scale (CASS)

| GRADE* | | DESCRIPTION |
|--------------|---|---|
| Clear | 0 | No lesions to barely noticeable ones. Very few scattered comedones and papules. |
| Almost clear | 1 | Hardly visible from 2.5 metre away. A few scattered comedones, few small papules and very few pustules. |
| Mild | 2 | Easily recognisable; less than half of the affected area is involved. Many comedones, papules and pustules. |
| Moderate | 3 | More than half of the affected area is involved. Numerous comedones, papules and pustules. |
| Severe | 4 | Entire area is involved. Covered with comedones, numerous pustules and papules, a few nodules and cyst. |
| Very severe | 5 | Highly inflammatory acne covering the affected area, with nodules and cyst present. |

Inspection is done at a distance of 2.5 meters away for acne on face, chest and back.

▪ **Chest area defined as:**

Anterior torso superiorly defined by suprasternal notch extending laterally to shoulders and inferiorly by a horizontal line defined by the xiphoid process.

▪ **Back area defined as:**

(Is demarcated by the) superior aspects of the shoulders extending to the neck and inferiorly by the costal margins.

| Grade | Value | Definition |
|--------------|-------|---|
| Clear | 0 | Normal, clear skin with no evidence of acne vulgaris |
| Almost clear | 1 | Rare non-inflammatory lesions present, with rare non-inflamed papules (papules must be resolving and may be hyperpigmented, though not pink-red) |
| Mild | 2 | Some non-inflammatory lesions are present, with few inflammatory lesions (papules/pustules only, no nodulocystic lesions) |
| Moderate | 3 | Non-inflammatory lesions predominate, with multiple inflammatory lesions evident; several to many comedones and papules/pustules; there may or may not be one small nodulocystic lesion |
| Severe | 4 | Inflammatory lesions are more apparent, many comedones and papules/pustules, there may or may not be a few nodulocystic lesions |
| Very severe | 5 | Highly inflammatory lesions predominate, variable number of comedones, many papules/pustules and many nodulocystic lesions |

PRINCIPLE MANAGEMENT

The aims of acne management are:

- ✓ To induce clearance of lesions
- ✓ To maintain remission and prevent relapse
- ✓ To prevent physical and psychological complications

TREATMENT

As acne is a chronic disease, **pharmacological treatment can be divided into two phases:**

1. Induction therapy

This phase of treatment aims to induce acne remission which can be achieved using topical or systemic agents

- 2. Maintenance therapy** Recurrence of acne lesions after successful treatment is common. Hence, maintenance therapy is an important modality as part of a comprehensive management of acne. The mainstay of maintenance treatment is topical therapy.

Non-pharmacological treatment includes **physical therapy** such as laser, phototherapy, chemical peels and comedone extraction. However, these are not the mainstay of acne treatment.

PHARMACOLOGICAL TREATMENT

- **Comedonal acne:**
 - 1st line treatment: Topical retinoid
 - Usually, initiated with the lowest strength retinoid to minimize **redness and dryness**.
 - Strength may be increased if needed.
 - Alternative therapies: Benzoyl peroxide, azelaic acid or, salicylic acid.

- **Papular/pustular Acne:**

- Mild disease:

- 1st line therapy: a topical retinoid + topical antibiotic, Benzoyl peroxide may be added.
 - Alternative therapy: Azaleic acid

- Moderate to severe disease:

- same 1st line therapy as mild disease.

- Severe disease:

- 1st line therapy: oral antibiotics+ a topical retinoid + Benzoyl peroxide gel or wash.
 - Alternative therapy: switching to another type of topical retinoid + another type of antibiotic + Benzoyl peroxide.

- **Nodular acne:**

- 1st line therapy:

- oral antibiotics + topical retinoid + Benzoyl peroxide

- If still persistent, may need a referral to use of oral Isotretinoin therapy.

Global Alliance Acne Treatment Algorithm

| Acne Severity | MILD → MODERATE → SEVERE | | | | |
|--------------------------------|--|--|--|---|--|
| | Comedonal | Mixed and Papular/pustular | Mixed and Papular/pustular | Nodular ⁽²⁾ | Nodular/Conglobate |
| 1 st Choice | Topical Retinoid | Topical Retinoid + Topical Antimicrobial | Oral Antibiotic + Topical Retinoid +/- BPO | Oral Antibiotic + Topical Retinoid + BPO | Oral Isotretinoin ⁽³⁾ |
| Alternatives (1) | Alt. Topical Retinoid or Azelaic acid ⁴ or Salicylic acid | Alt. Topical Retinoid Antimicrobial Agent + Alt. Topical Retinoid or Azelaic Acid ⁴ | Alt. Oral Antibiotic + Alt. Topical Retinoid +/- BPO | Oral Isotretinoin or Alt. Oral Antibiotic + Alt. Topical Retinoid +/- BPO/Azelaic Acid ⁴ | High Dose Oral Antibiotic + Topical Retinoid + BPO |
| Alternatives for Females (1,4) | See 1st Choice | See 1st Choice | Oral Antiandrogen ⁽⁵⁾ + Topical Retinoid/ Azelaic Acid ⁴ +/- Topical Antimicrobial | Oral Antiandrogen ⁽⁵⁾ + Topical Retinoid +/- Oral Antibiotic +/- Alt. Antimicrobial | High Dose Oral Antiandrogen ⁽⁵⁾ + Topical Retinoid +/- Alt. Topical Antimicrobial |
| Maintenance Therapy | Topical Retinoid | | Topical Retinoid +/- BPO | | |

1. Consider physical removal of comedones. 2. With small nodules (<0.5 cm). 3. Second course in case of relapse. 4. For pregnancy, options are limited. 5. For full discussion, see Gollnick H, et al. JAAD. 2003;49 (Suppl):1-37.

Fig 1. Acne treatment algorithm. BPO, benzoyl peroxide. Reprinted from Gollnick, et al¹ with

TABLE 1 Topical therapies for acne

| Therapeutic class | Possible combinations |
|---|---|
| ▶ Topical retinoids | |
| <ul style="list-style-type: none">• Tretinoin<ul style="list-style-type: none">• Creams (0.025%, 0.05%, 0.1%)• Gels (0.01%, 0.025%)• Micro gels (0.04%, 0.1%)• Adapalene<ul style="list-style-type: none">• Cream (0.1%)• Gels (0.1%, 0.3%) | <p>Clindamycin–tretinoin; erythromycin–tretinoin</p> <p>Adapalene–BPO</p> |
| ▶ Topical antibiotics | |
| <ul style="list-style-type: none">• Clindamycin• Erythromycin• Dapsone• Sodium sulfacetamide | <p>Clindamycin–BPO; clindamycin–tretinoin</p> <p>Erythromycin–BPO; erythromycin–tretinoin</p> |

Abbreviation: BPO, benzoyl peroxide.

ORAL ANTIBIOTICS

- Oral antibiotics and typical doses for Acne:
 - Doxycycline : 50-100 mg BID
 - Erythromycin : 250-500mg BID
 - Minocycline: 50-100mg BID
 - Tetracycline: 250-500mg BID

SIMPLE TIPS TO FIGHT ACNE

Use these quick tips as a complement to acne treatments provided by your doctor

Cleanse your Face

Did you know that face has more oil-producing glands than any other part of the body?



Get your ZZZs

If you leave yourself sleep deprived, you'll find yourself more prone to stress, and stress may worsen acne.

The sweet connection



Sugary foods make your blood sugar levels soar, and your body responds by secreting a burst of the hormone insulin. Insulin reduces your blood sugar levels, but also seems to elevate sebum production.



Say 'yes' to sunscreen

Any amount of skin exposure to sun without protection raises your risk of acne.



Embrace Fruits and Veggies



Choose fruits and veggies that are high in vitamin A. Retinoic acid, the active ingredient in prescription creams for the treatment of acne, is actually a derivative of Vitamin A.

IF YOU HAVE ACNE

DIET TO IMPROVE SKIN CONDITION



NUTS AND LEAFY GREENS



Vitamin E-
protects against acne
carring

MELON, ORANGES, TOMATOES



Vitamin C-
protects against
acne scarring scarring
and helps to heal
damaged or irritated skin

CARROTS, SWEET POTATOES



**Vitamin A and
beta carotene-**
Enhances the
benefits of Selenium

SPINACH, GREEN TEA, BERRIES



Antioxidants-
Attack free radicals
known to cause skin
damage

ONION, GARLIC, CORN



Selenium-
a powerful antioxidant
which helps to reduce
inflammation and
preserve elasticity

SALMON AND WALNUTS



Omega-3 acids-
Helps reduce
inflammation and
fights against blemishes

FIGS, BROWN RICE, ARTICHOKE



Magnesium-
Balances out the
acne-inducing
hormones

TREATMENT PLAN

- Don't pick - this could cause scarring
- Don't over wash - this will aggravate your spots
- Choose oil - free cosmetics
- Diet and Exercise

WATER



Cleans the skin.
Keeps your body and
skin hydrated

THANK YOU

