

Acne, Inflammatory and Non-Inflammatory Lesions Causes and Solutions

by

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Sheila Malmanis is a licensed aesthetician, and a former L.P.N., where she was licensed in the state of Tennessee. A Former Vice President prior to starting her own skincare line. Her love for skincare, new technology and technical ingredients, encouraged her to pursue her passion for skincare . President and founder of MS Skintechncial, Inc. (Dermamd®), founded in 2001, she offers 30+ years of experience in skincare industry.



Sheila has lectured with Age Management, agemed.org and aaeg.org. These conferences are for both physicians and other professionals, in which they obtain CME credits. She also lectures at multiple aesthetic conferences throughout the United States, and internationally. She has been published in the UK Medical Cosmetic Journal and Healthy Aging Magazine, and is on the faculty of the AAEG. Member of National Association of Professional Women, eWomen Network™, and United Aesthetics Organization.

PREVALENCE

Affects more than 17 million Americans

85% Adolescents ~ 8% of 25-35 years

3% of 35-44 years

Ethnic Skin Types Prone: Asian, Latin American
African American

Most common cutaneous disorder in US



WHAT IS ACNE VULGARIS

Abnormalities in sebum production,
follicular desquamation, bacterial
proliferation & inflammation

Occurs when pores become clogged

- Whitehead
- Blackhead
- Swollen, Red Bumps

➤ Bacteria

- Propionibacterium acnes



PREDISPOSITION TO ACNE

- ▶ HORMONAL IMBALANCE
- ▶ FOLLICULAR HYPERKERATINISATION
- ▶ BACTERIAL INFECTION
- ▶ GENETIC FACTORS
- ▶ ENVIRONMENTAL FACTORS
- ▶ NUTRITION
- ▶ SMOKING



ACNE LESIONS: TWO TYPES INFLAMMATORY & NON-INFLAMMATORY

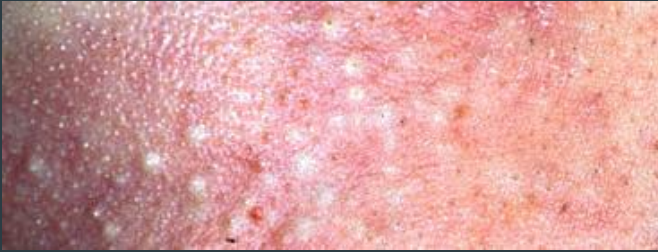
Non-Inflammatory: nodular acne, comedones, papules, blackheads & whiteheads...not infected with bacteria

Inflammatory: clogged pores that have become infected with bacteria.
Inflammatory nodules erupt below surface
can cause severe scarring

CLASSIFICATIONS OF ACNE



- ▶ **TYPE 1** : Mainly comedones with an occasional inflamed papule or pustule



- ▶ **TYPE 2**: Comedones, numerous papules and pustules
some mild scarring



- ▶ **TYPE 3**: Numerous comedones, papules, & pustules, spreading to back, chest, & shoulders with an occasional cyst or nodules, and some moderate scarring



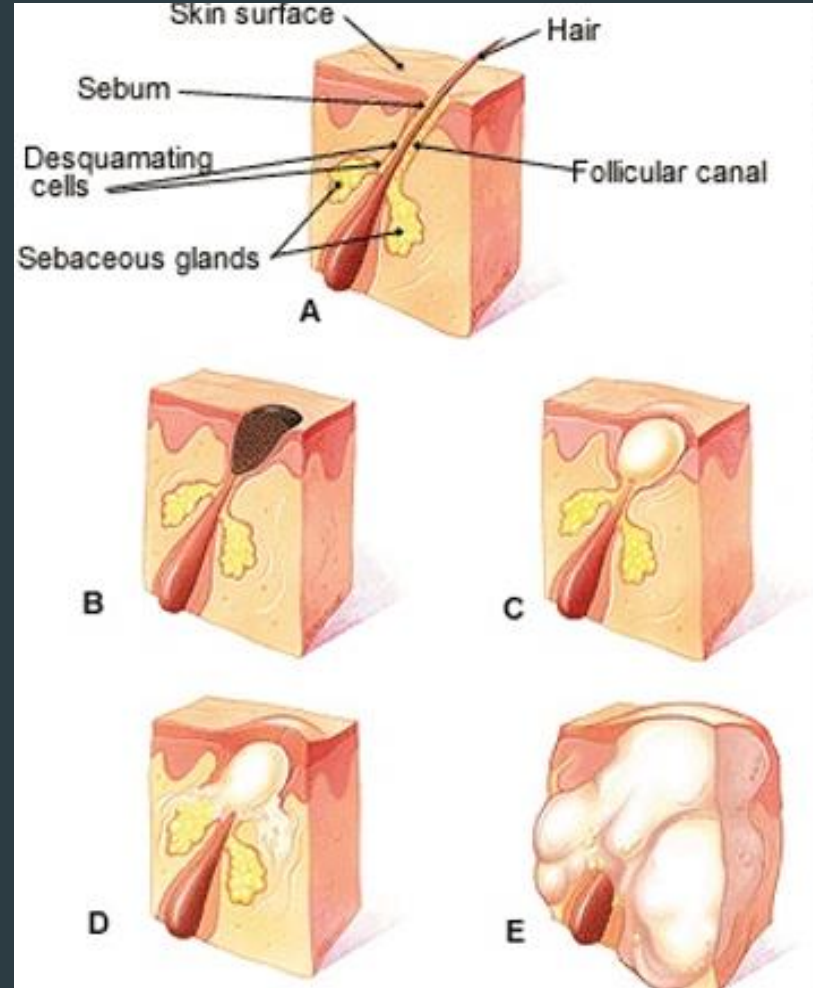
- ▶ **TYPE 4**: Numerous large cysts on face/back & severe scarring

MANIFESTATIONS of ACNE

- **CLOSED COMEDONE (whitehead)** ~ A clogged follicle
Whiteheads usually appear on the skin as small, round, white bumps
- **OPEN COMEDONE (blackhead)** ~ A plugged follicle that opens and turns dark at surface of skin. Blackheads do not indicate the presence of dirt.
- **PAPULES** ~ Inflamed lesions that appear as small, slightly pink bumps
- **CYSTS & NODULES** ~ Large, inflamed, pus filled lesions deep under the skin which can cause pain & sometime scarring

PATHOGENESIS OF ACNE

- Plugging of hair follicle
With abnormal keratinized cells
- Androgen-induced sebaceous
Gland hyperactivity
- Proliferation of bacteria
Propionibacterium acnes
- Inflammation



PSEUDOFOLLICULITIS barbae/FOLLICULITIS

- Inflammatory response to shaving
- Cause: short hairs get “trapped”
- Bacteria infects hair follicles
- More common in men
- Not to be confused with Acne



OVER THE COUNTER INGREDIENTS FOR ACNE

Salicylic Acid

Retinoid~Retinol

Niacinamide
(vitamin B3)

Hyaluronic Acid

Wasabi Japonica
Root Extract

Benzoyl
Peroxide

Vitamin C



Lightening
agents (post
inflammatory)

PRESCRIBED TOPICALS~ANTIBIOTICS

- **Tetracycline:** Severe cases
- **Erythromycin:** Recommended for patients who can't use tetracyclines
- **Subantimicrobial~dose Doxycycline:** Treatment of moderate acne
- **Accutane:** Recommended more with patients having severe pustulocystic acne
- **Retin A~Retinoids (topical):** Aids in elimination of keratinous plugs (1st line of therapy)

The American Academy of Dermatology also recommends topical retinoids as first line therapy for acne followed by oral doxycycline or minocycline if needed. Erythromycin is recommended for patients who can't use tetracyclines, but with a warning about possible bacterial resistance.

JFP References 1. Amin K, Riddle CC, Aires DJ, et al. Common and alternate oral antibiotic therapies for acne vulgaris: a review. *J Drugs Dermatol.* 2007;6:873-880. 2. Skidmore R, Kovach R, Walker C, et al. Effects of subantimicrobial-dose doxycycline in the treatment of moderate acne. *Arch Dermatol.* 2003;139:459-464. 3. Smith K, Leyden JJ. Safety of doxycycline and minocycline: a systematic review. *ClinTher.* 2005;27:1329-1342. 4. Garner SE, Eady EA, Popescu C, et al. Minocycline for acne vulgaris: efficacy and safety. *Cochrane Database Syst Rev.* 2003;(1):CD002086. 5. Gammon WR, Meyer C, Lantis S, et al. Comparative efficacy of oral erythromycin versus oral tetracycline in the treatment of acne vulgaris. A double-blind study. *J Am Acad Dermatol.* 1986;14:183-186. 6. Rafiei R, Yaghoobi R. Azithromycin versus tetracycline in the treatment of acne vulgaris. *J Dermatol Treat.* 2006;17:217-221. 7. Hurwitz S. Acne vulgaris: pathogenesis and management. *Pediatr Rev.* 1994;15:47-52. 8. Zaenglein AL, Thiboutot DM. Expert committee recommendations for acne management. *Pediatrics.* 2006;118:1188-1199. 9. Strauss JS, Krowchuk DP, Leyden JJ, et al. Guidelines of care for acne vulgaris management. *J Am AcadDerm*

DIFFERENT TREATMENT APPLICATIONS

- Antibiotics
- Micro-needling
- Blue Light Therapy
- Intense Pulse Light
- Microdermabrasion
- Chemical Peels
- Topicals ~ over the counter & prescribed
- Oral contraceptives

CHEMICAL PEEL TARGET AREAS

clogged pores



sebum production



acne



fine lines



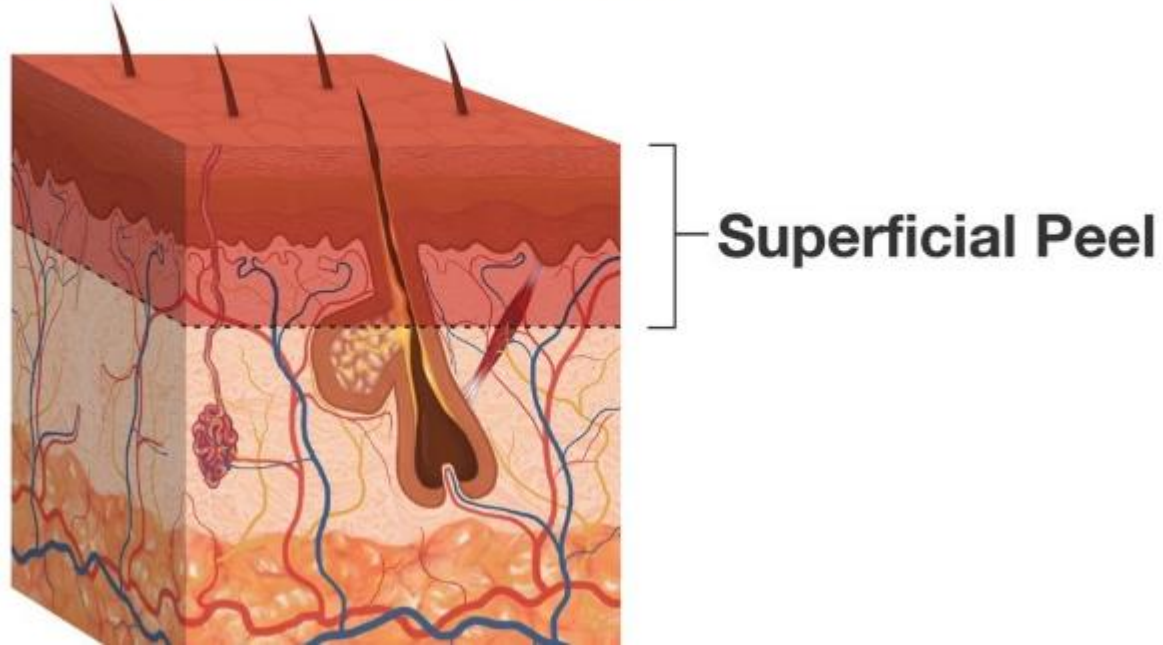
acne scars



blackheads



Superficial Peels: Treat Acne



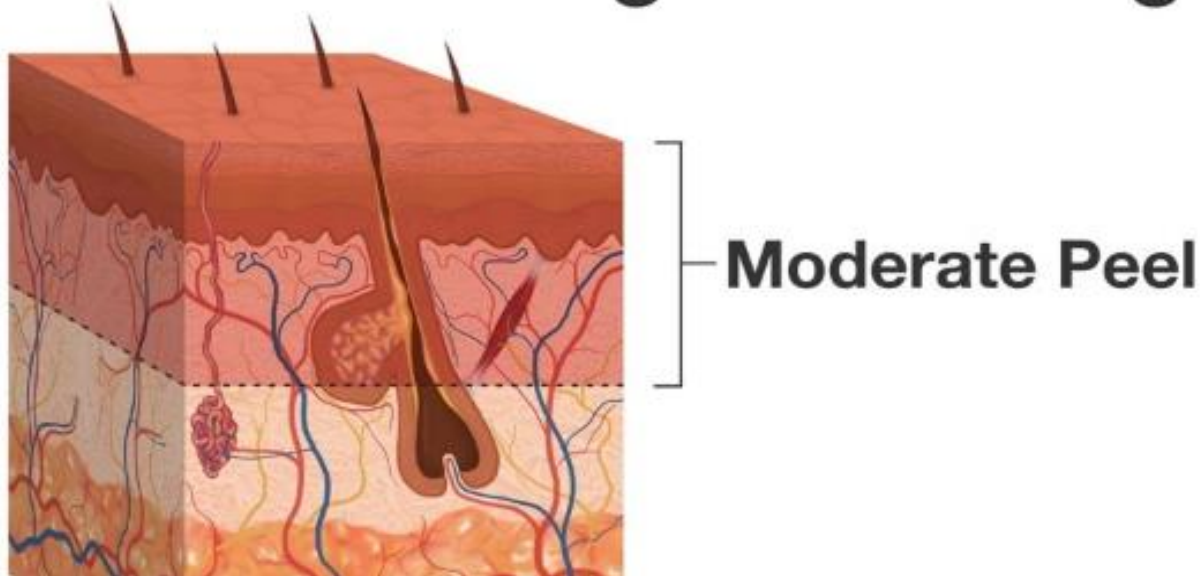
BENEFITS

- Superficial peels penetrate only the surface layer of skin
- Have anti-inflammatory properties
- Temporarily reduce skin oil secretions.
- Most common are glycolic acid (AHA) and salicylic acid (BHA)

REFERENCES:

1. Dreno, B. et al. Expert opinion: efficacy of superficial chemical peels in active acne management--what can we learn from the literature today? Evidence-based recommendations. *J. Eur. Acad. Dermatol. Venereol.* **25**, 695–704 (2011).
2. Kornhauser, A., Coelho, S. G. & Hearing, V. J. Applications of hydroxy acids: classification, mechanisms, and photoactivity. *Clin. Cosmet. Investig. Dermatol.* **3**, 135–142 (2010).
3. Kempiak, S. J. & Uebelhoer, N. Superficial chemical peels and microdermabrasion for acne vulgaris. *Semin. Cutan. Med. Surg.* **27**, 212–220 (2008).
4. Bae, B. G. et al. Salicylic acid peels versus Jessner's solution for acne vulgaris: a comparative study. *Dermatol. Surg.* **39**, 248–253 (2013).
5. Ilknur, T., Demirtasoglu, M., Bicak, M. U. & Ozkan, S. Glycolic acid peels versus amino fruit acid peels for acne. *J. Cosmet. Laser. Ther.* **12**, 242–245 (2010).

Moderate Peels: Treat Acne and Light Scarring



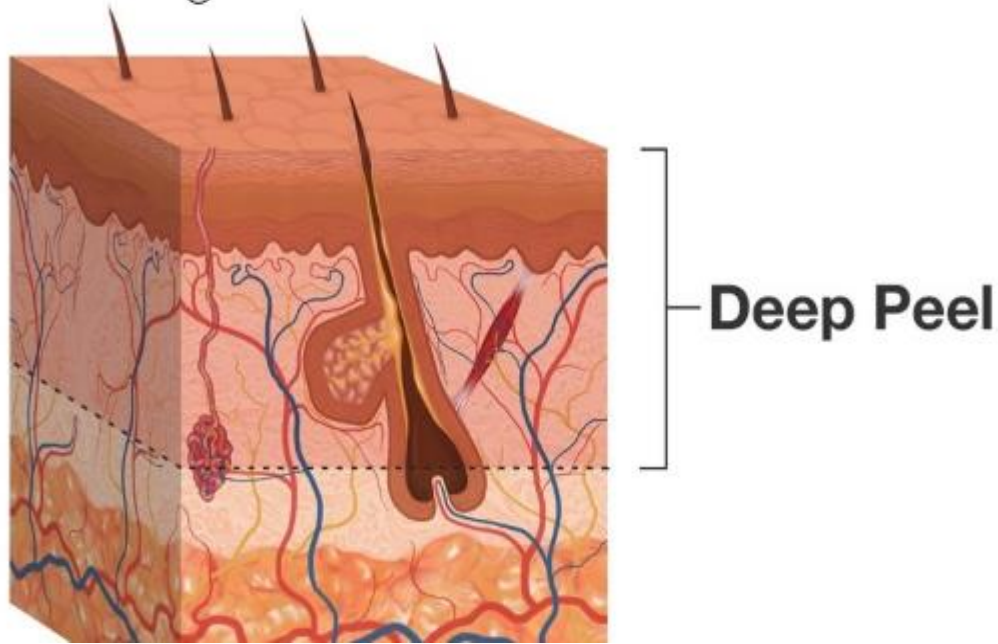
BENEFITS

- Moderately penetrating chemical peels normally use trichloroacetic acid (TCA) in 35-50% strength, which penetrates more deeply into the skin than superficial peels such as salicylic.
- TCA causes peeling of deeper layers of the skin
- Increases production of collagen, elastin, and other proteins which give skin its elasticity.

REFERENCES

1. Herbig, K., Trussler, A. P., Khosla, R. K. & Rohrich, R. J. Combination Jessner's solution and trichloroacetic acid chemical peel: technique and outcomes. *Plast. Reconstr. Surg.* **124**, 955–964 (2009).
2. Abdel Meguid, A. M., Elaziz Ahmed Attallah, D. A. & Omar, H. Trichloroacetic Acid Versus Salicylic Acid in the Treatment of Acne Vulgaris in Dark-Skinned Patients. *Dermatol. Surg.* **41**, 1398–1404 (2015).
3. Puri, N. Efficacy of Modified Jessner's Peel and 20% TCA Versus 20% TCA Peel Alone for the Treatment of Acne Scars. *J. Cutan. Aesthet. Surg.* **8**, 42–45 (2015).

Deep Peels: Treat Scarring



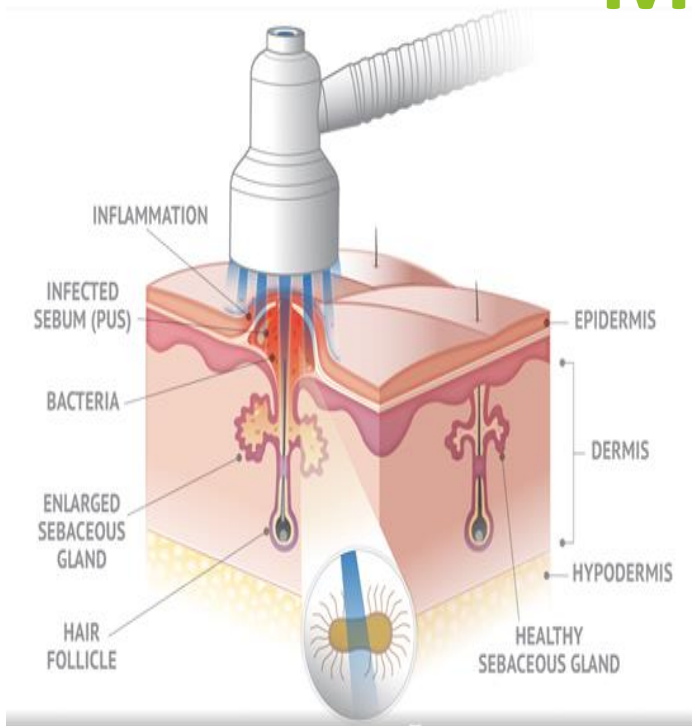
BENEFITS

- Deep peels penetrate deeply into the skin and used to treat acne scars.
- The procedure is akin to plastic surgery and must be administered by a skilled and highly trained dermatologist.
- Deep peels use phenol at a concentration of 88%. In some cases, phenol is combined with croton oil.
- Deep peels work by breaking down proteins in skin and stimulating production of collagen in the regenerated skin.

References

1. Leheta, T. M., Abdel Hay, R. M. & El Garem, Y. F. Deep peeling using phenol versus percutaneous collagen induction combined with trichloroacetic acid 20% in atrophic post-acne scars; a randomized controlled trial. *J. Dermatolog. Treat.* **25**, 130–136 (2014).
2. Park, J. H., Choi, Y. D., Kim, S. W., Kim, Y. C. & Park, S. W. Effectiveness of modified phenol peel (Exoderm) on facial wrinkles, acne scars and other skin problems of Asian patients. *J. Dermatol.* **34**, 17–24 (2007).

BLUE LIGHT THERAPY MILD TO MODERATE ACNE



- Blue light kill the bacteria
- Bacteria, *Propionibacterium acnes*, clogs pores and causes inflammation.
- Blue LED light causes the *p. acnes* to self-destruct, used in treatment

REFERENCES:

Morton CA, Scholefield RD, Whitehurst C, Birch J. An open study to determine the efficacy of blue light in the treatment of mild to moderate acne. J Dermatolog Treat. 2005;16(4):219-23. PubMed PMID: 6249142.

WHO BENEFITS FROM BLUE LIGHT THERAPY

Red pimples from inflammatory acne

But...If patient has cystic acne, it won't work!



WHO SHOULD AVOID BLUE LIGHT THERAPY

Topicals ~Retinol ~ St Johns Wort...any topical that makes skin sensitive to light

Lupus ~ Pregnant~ Epilepsy

Accutane ~ discuss with physician first

INTENSE PULSE LIGHT TREATING ACNE

- IPL technology allows to treat your acne with specific wavelengths of light
- Light targets the bacteria in the skin, as well as inflamed sebaceous glands that contribute to break-outs.
- Controlled pulsing prevents thermal damage to your skin and minimizes discomfort
- Common 4-6 weeks of treatment
- Not suitable with active viral or fungal skin conditions or skin cancer.



Treatment on right side with normal fluence of the first sitting, fourth sitting, and last follow-up

REFERENCE: EFFICACY OF INTENSE PULSE LIGHT IN TREATMENT OF FACIAL ACNE VULGARIS: Comparison Using of Two Different Fluences

Indian J Dermatol. 2016 Sep-Oct;61(5):545-9. doi: 10.4103/0019-5154.190115

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COMPARISON

Specification

Wavelength: 400~1200 nm

Area Spot Size: 35 x 15 mm² , 15 x 8 mm², 6mm

IPL HOME DEVICE



Specification

Wavelength: 510~1200nm

Area Spot Size: 4.5cm²

PROFESSIONAL



MICRONEEDLING WITH PRP SHOWN TO IMPROVE APPEARANCE WITH ACNEIC SCARRING



35 YEAR OLD FEMALE TWO WEEKS AFTER FOUR SESSIONS
Photos Provided By: Mara Weinstein Velez, M.D.



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