



CLENZiderm M.D.™

A breakthrough solution to the three causes of acne.

Introduction to CLENZIderm M.D.

Acne and Its Treatment

Acne and Its Treatment

- Objectives:
 - Skin Histology and How It Pertains to Acne
 - Acne Pathogenesis
 - Forms of Acne
 - Treatment of Acne
 - CLENZIderm M.D. System

Skin Histology

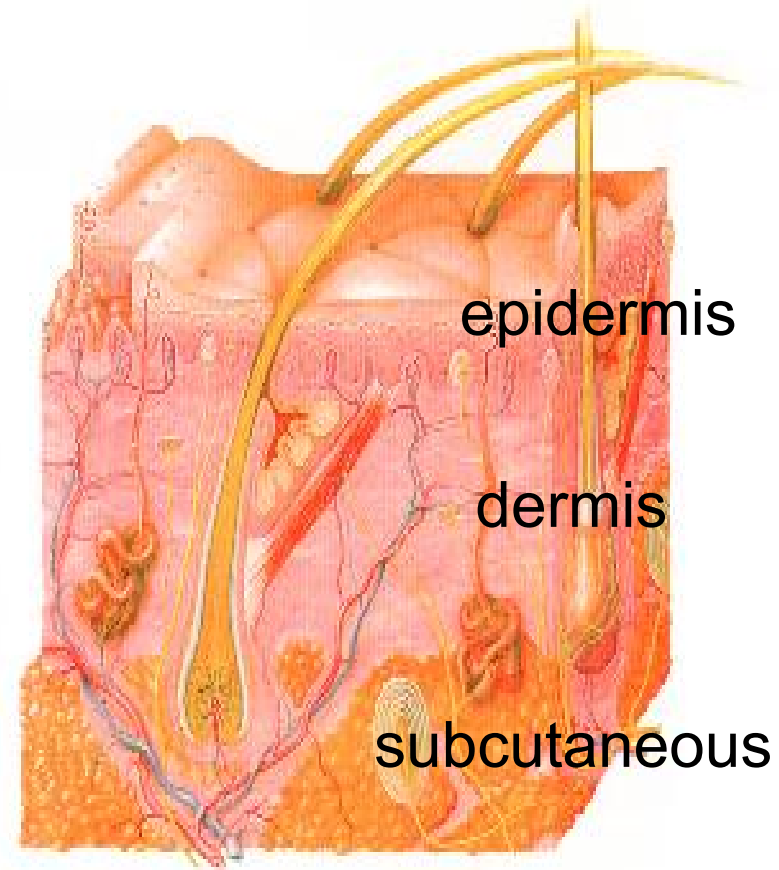
- Acne vulgaris is a common multifractional skin disorder of the pilosebaceous unit
 - Sebaceous glands and hair follicles together
- It predominately affects teenagers; however, many adults will continue to have acne through adulthood

Pilosebaceous unit



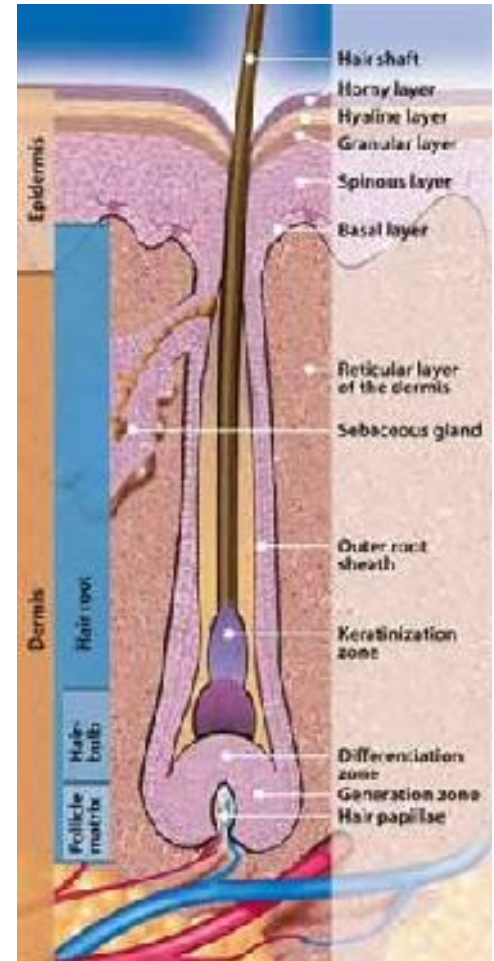
Skin Histology

- Acne has an effect on two of the three layers of the skin
 - Epidermis
 - Dermis
- The subcutaneous fat layer is not affected by acne



Epidermis - Keratinocytes

- Pilosebaceous unit of the skin penetrates well below the epidermis into the top part of the subcutaneous
 - It is lined with keratinocytes that will go through this exfoliation process
 - These keratinocytes must first progress up the hair-shaft, through the follicular opening
 - Finally when on the surface of the skin, exfoliation occurs



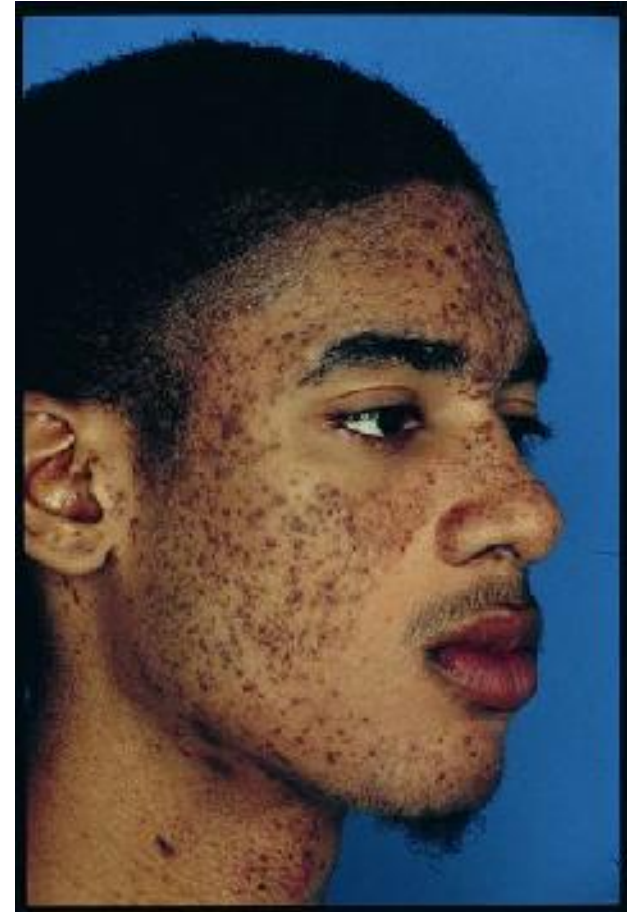
Epidermis - Keratinocytes

- When this process is disrupted
 - Blockage occurs within the unit
 - Giving rise to a microcomedo
 - These are the precursors to acne lesions
- When the pore is clogged
 - Sebum begins to build up
 - P. acne bacteria thrives and will feast on the sebum
 - By-products from the P. acnes cause redness and inflammation
 - At this point it is an acne lesion

Epidermis - Melanocytes

With acne patients:

- Melanocyte will respond to the injury caused by the acne lesion
- For patients with darker skin:
 - After the acne lesion is resolved
 - A brown spot may appear on the surface of the skin where the acne lesion was
 - This is known as PIH (post-inflammatory hyperpigmentation)



Dermis



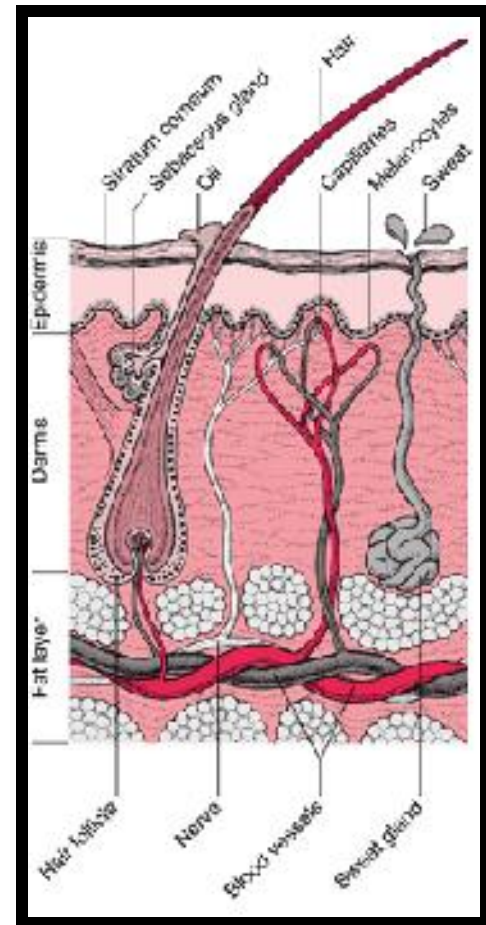
- For acne patients, this is where the acne scarring of the skin occurs
 - Increased levels of sebum
 - Continued inflammation of the sides of the hair follicle
 - Cohesion of the keratinocyte causes rupture
 - Bacteria and debris are released into the dermis
- When severe, scarring may occur
 - Scarring may also occur when patients pick and self-extract the acne lesion

Etiology of Acne

- Acne is common in areas of the skin with the greatest number of pilosebaceous units:
 - Face
 - Neck
 - Chest
 - Upper arms
 - Back

Etiology of Acne

- Principal factors involved in the pathogenesis of acne are:
 - Increased sebum production
 - Abnormal keratinization (cell production) of the follicular epithelium
 - Proliferation of *P. acnes*
 - Inflammation



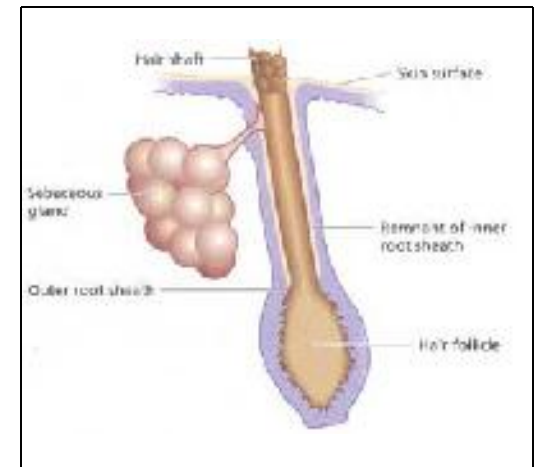
The Details

Acne forms when several chained events take place in the skin's sebaceous glands and hair follicles:

- Sebaceous glands become enlarged and produce excessive sebum
- Keratin cells produce hard clumps of epithelial cells that inhibit the normal cycle of skin exfoliation
- Hair follicles become obstructed by these clumps of keratinocytes and forms a microcomedo
- *P. acnes*, fatty acids, sebum and other skin particles become embedded within the hair follicle, causing inflammation
- Inflammation leads the microscopic lesion to grow into an acne lesion (called a comedo or comedone)
- It may then rupture, producing leakage into the dermis and possible scarring

Excessive Sebum and Acne

- Sebum is a key component of acne
- It is a nutrient source for *P. acnes*
- Excess production of sebum is caused by androgenic stimulation in puberty or adulthood
- Sebum can be a skin irritant
 - Free fatty acids generated by an enzyme that breaks down fats or lipoproteins
- When sebum decreases, so does *P. acnes* bacteria



Abnormal Keratinization and Acne

- The obstruction of the sebaceous follicle arising from an abnormal keratinization (hardened epithelial cells)
 - A process characterized by increased cohesiveness and turnover of follicular epithelial cells
- This blockage by sebum and keratinocytes, allows *P. acnes* to flourish deep within the skin

P. acnes and Acne

- It resides deep in the sebaceous glands and hair follicles
- P. acnes do not cause a bacterial infection
- Inflammation seen is the result of fatty acids of P. acnes
- Once the follicular wall has ruptured, the sebum leaking into the dermis along with other inflammatory material generated by P. acnes contributes to inflammation

Other Factors in Acne - Hormones

- Hormones can play an important role in acne
- Patients with severe acne may also have increased androgen levels



Other Factors in Acne

- Physical obstruction of the skin by clothing, sports gear or cosmetics
- A variety of medical conditions
 - Common medications, such as anabolic steroids or corticosteroids and even some vitamins
- Exposure to certain industrial chemicals

Forms of Acne

■ Acne lesions can be:

■ Open comedos = blackheads



■ Closed comedos = whiteheads



■ Lesions containing pus = pustules



■ Lesions that appear reddened/inflamed = papules



■ These lesions can be painful

■ More severe = nodules and cysts



■ Which can lead to scarring

Photographs courtesy of Dan W. Kern

Open/some closed



OBAGI

CLENZiderm M.D.™

A breakthrough solution to the three causes of acne.

CLOSED



|O|B|A|G|I|

CLENZiderm M.D.™

A breakthrough solution to the three causes of acne.

PAPULES/PUSUTLES



©2011 O/BAGI, Inc. All rights reserved. www.obagi.com

O|B|A|G|I

CLENZiderm M.D.™

A breakthrough solution to the three causes of acne.

Forms of Acne

- American Academy of Dermatology classifies acne as either:
 - Mild, moderate or severe
 - Based on the type and quantity of lesions
 - Other skin conditions, such as postinflammatory hyperpigmentation may appear as well



Classification of Acne by Severity

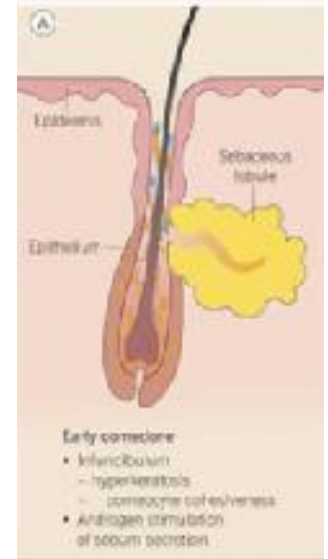
- *Mild*: a few open or closed comedos, papules or pustules; no nodules or cysts
- *Moderate*: many open or closed comedos, papules or pustules; some nodules or cysts
- *Severe*: many open or closed comedos, papules or pustules; many nodules or cysts and overall inflammation

Classification by Acne Lesion Type

There are 3 Acne Lesion Types:

Comedonal Acne or Non-Inflammatory Acne

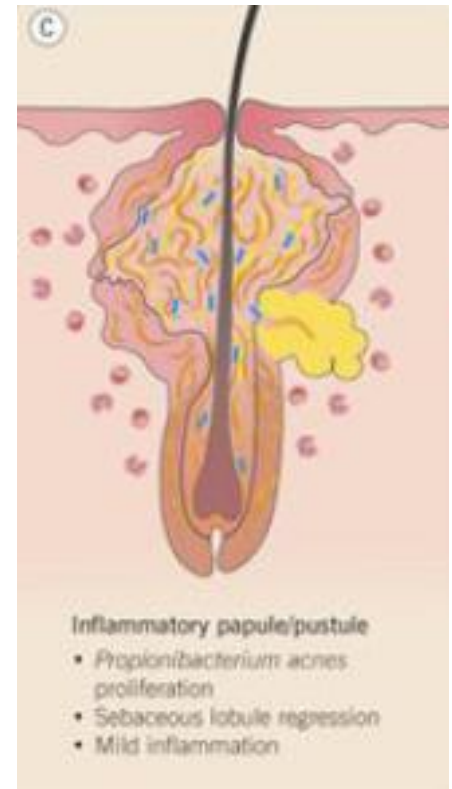
- Open and/or closed comedos
- Few signs of inflammatory acne
- Abnormal keratinization of the sebaceous follicle plays a large role
- Key factor is the adhesion of keratinized cells
- This adhesion allows for the formation of comedos
- The normal follicular duct becomes obstructed by excess sebum and cell buildup
- The first lesions, the microcomedones, become larger, non-inflammatory lesions
- Topical keratolytic treatments are often used because it reduces adhesiveness to follicular cells



Classification by Acne Lesion Type

Inflammatory Acne

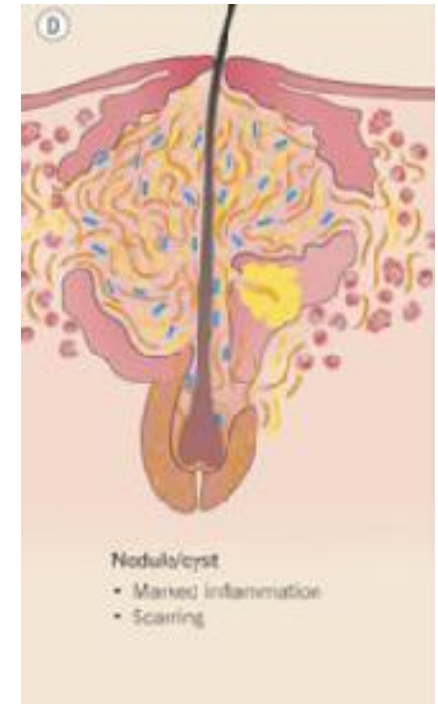
- Inflammatory lesions known as papules and pustules
- Along with comedonal lesions
- Papules are small, solid, pinkish/reddish lesions between 2 and 5 mm in diameter
- Pustules are small, inflamed pus-filled lesions on the skin's surface
- Inflammatory acne can often result in scarring
- Systemic antibiotics and topical treatments are often used in combination



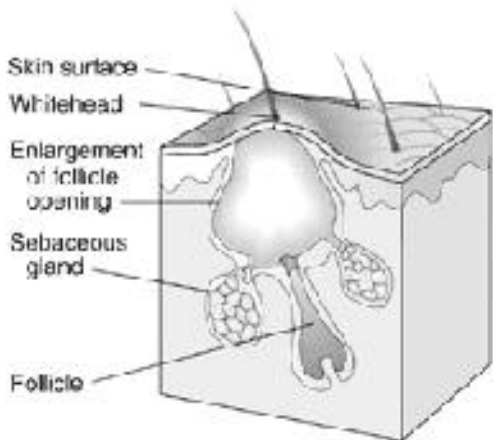
Classification by Acne Lesion Type

Nodular or Cystic Acne (also nodulocystic acne)

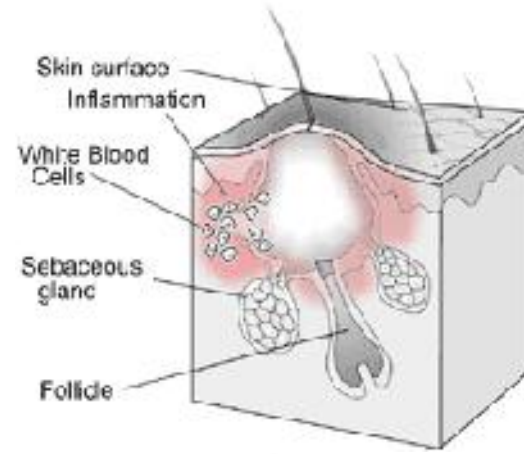
- More severe inflammatory acne is marked by:
 - Comedos, papules and pustules
 - Plus nodules and cysts
- Nodular acne includes raised, and solid inflammatory lesions that are larger than 5 mm in diameter
- Found deeper in the dermis than papules
- Nodular or cystic acne is often treated with systemic antibiotics and intralesional injections
- Topical treatments alone are generally not effective



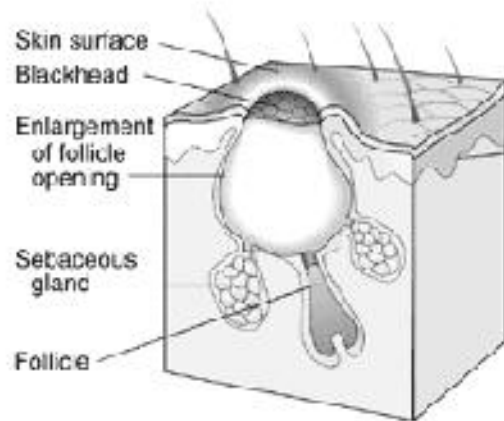
Review: Pathogenesis of Acne



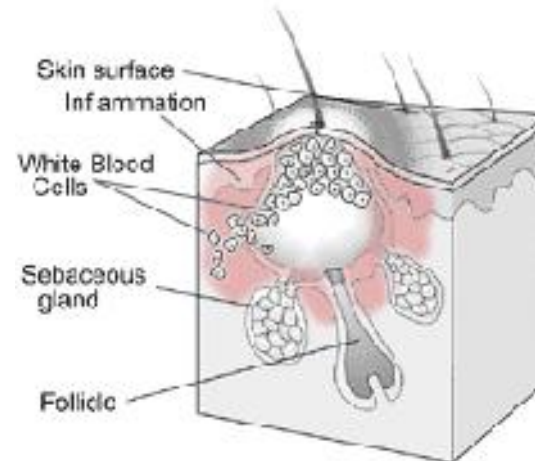
1. Whitehead
(non-inflammatory)



3. Papule
(inflammatory)



2. Blackhead
(non-inflammatory)



4. Pustule
(inflammatory)

Acne Treatment

- Acne treatment often involves a mix of therapies
- Treatment is dependent on several factors:
 - Lesion type
 - Severity of outbreak
 - Price of therapies
 - Potential side effects



Treatment Goals

There are 4 common goals of acne treatment:

- Decrease sebum
- Reduce skin cell buildup, thus removing the embedded material clogging the pores
- Reduce *P. acnes*
- Reduce inflammation
- Other medical issues related to acne should also be considered:
 - Scarring
 - Skin discomfort
 - Post-inflammatory hyperpigmentation

Treatment Goals

- Physician seeks to match the most effective form of treatment with the form of acne presented by the patient
- Other factors must also be considered including:
 - Age
 - Skin type
 - Lifestyle
 - Patient compliance
 - Treatment history

Acne Treatment by Type of Acne

- *Mild comedonal, non-inflammatory acne*
 - Benzoyl peroxide
 - Topical retinoid such as tretinoin
 - Topical antibiotics
 - Benzoyl peroxide/antibiotic combinations
 - Azelaic acid

Acne Treatment by Type of Acne

- *Mild to moderate inflammatory acne*
 - Topical benzoyl peroxide
 - Topical antibiotics
 - Benzoyl peroxide/antibiotic combinations
 - Azelaic acid + topical retinoid (tretinoin)
 - And oral antibiotic

Acne Treatment by Type of Acne

- *Moderate to severe inflammatory acne*
 - Oral antibiotics (tetracycline, minocycline, doxycycline)
 - Benzoyl peroxide
 - Benzoyl peroxide/antibiotic combination
 - Topical retinoid (tretinoin)

Acne Treatment by Type of Acne

- *Severe nodular or cystic inflammatory acne (Scarring Acne)*
 - *Generally requires systemic agents:*
 - *Oral isotretinoin*
 - *Oral corticosteroids*
 - *Hormonal therapy may also be used in conjunction for female patients*
 - *Surgical procedures:*
 - *Extractions*
 - *Intralesional injections*

Management of Acne

- Several key goals should be a factor in whatever form of treatment is prescribed:
 - Decrease sebaceous gland activity
 - Change the pattern of keratinization within the follicle
 - Reduce intrafollicular *P. acnes* or extracellular inflammatory agents
- The reduction in inflammation is also a factor which can be addressed by controlling the above three factors

Topical Treatments

- Best for non-inflammatory and inflammatory mild to moderate acne
- When the acne is non-responsive, topicals are combined with additional topical agents or systemic therapy



Topical Products Include:

Alpha-hydroxy acid (AHA)

- Goals: Reduces skin cell build up, thus removing the embedded material clogging the pores

Azelaic acid

- Goals: Reduces *P. acnes* (very minimal if any) & a normalization of keratinization

Antibiotics (Topical)

- Goals: Reduces *P. acnes*

Topical Products Include

Benzoyl peroxides

- Goals: Reduces *P. acnes*

Combination benzoyl peroxide/topical antibiotic agents

- Goals: Reduces *P. acnes*

Topical Products Include

Retinoids

- Tretinoin
- Tazorac (tazarotene), Differin (adapalene)
-Synthetic retinoids
 - Goals: Reduces skin cell build up and helps address inflammatory acne

Salicylic acid

- Goals: Removes the embedded material clogging the pores and anti-inflammatory benefit

Systemic Treatments

- Oral medications are administered for a specific period of time to help clear pustules and papules
- Prescribed for non-responsive moderate inflammatory acne and severe nodular/cystic acne
- Upon clearance, the patient is tapered off of the medication
- Topical treatments may be done in conjunction with most oral medications
- Topical agents are certainly recommended upon completion of the systemic medication to maintain results



Systemic Treatments

Oral antibiotics

- Goals: Reduces *P. acnes* and anti-inflammatory benefits

Hormonal Therapy/Oral Contraceptives

- Goals: Decreases sebum

Oral Retinoids - Isotretinoin

- Goals: Decreases sebum, reduces skin cell build up and reduces *P. acnes*

Physical Therapy

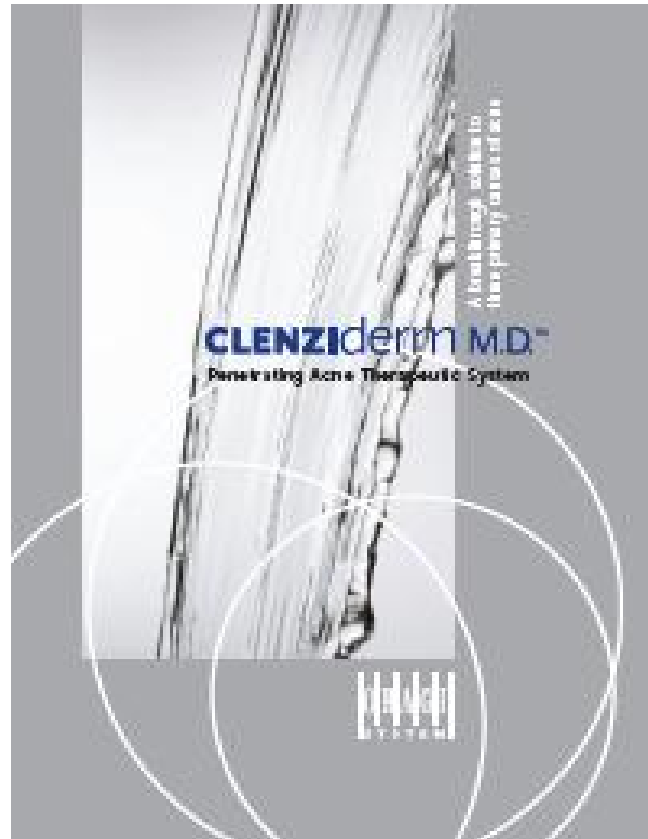
- Provide relief and enhance the appearance of the existing lesion
- Do not address the primary causes of acne



Physical Therapy

- These techniques can be used on all skin types and is often practiced by facial aestheticians as well as dermatologists
- Injections
 - Into the lesion itself with corticosteroids
- Manual extraction or drainage

Introducing CLENZIDERM M.D.



O|B|A|G|I

CLENZiderm M.D.™

A breakthrough solution to the three causes of acne.

CLENZIderm M.D.

- The only physician-dispensed acne System with a patent-pending form of 5% liquefied benzoyl peroxide
- Clinically proven to treat three main causes of acne
 - Excess sebum
 - Skin cell buildup
 - P. acnes bacteria



CLENZIderm M.D.

- Specially formulated to work together to provide optimal results:
 - Better pore penetration
 - Rapid *P. acnes* bacteria reduction
 - Fast acne reduction – visible reduction as early as 2 weeks

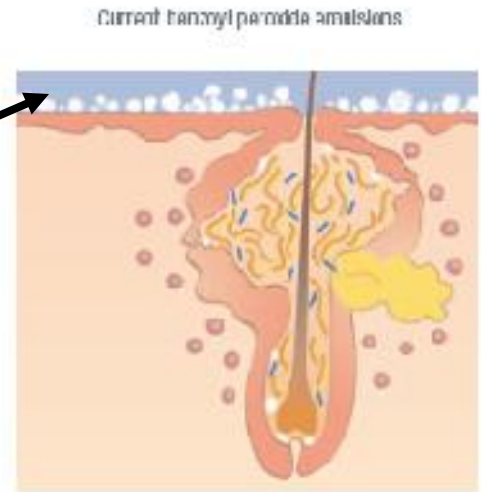


CLENZIderm M.D.™

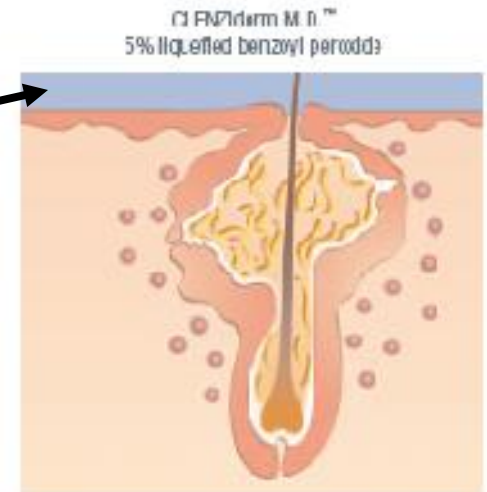
A breakthrough solution to the three causes of acne.

Targeting acne at the source

- Current BPO acne products are made up of macro-crystals which primarily sit on the surface of the skin
- CLENZiderm M.D. was shown to penetrate more deeply than the leading Rx acne product



Macro-crystals primarily remain on the surface of the skin



Liquefied benzoyl peroxide penetrates the skin

BPO Comparison Chart

COMPARISON CHART

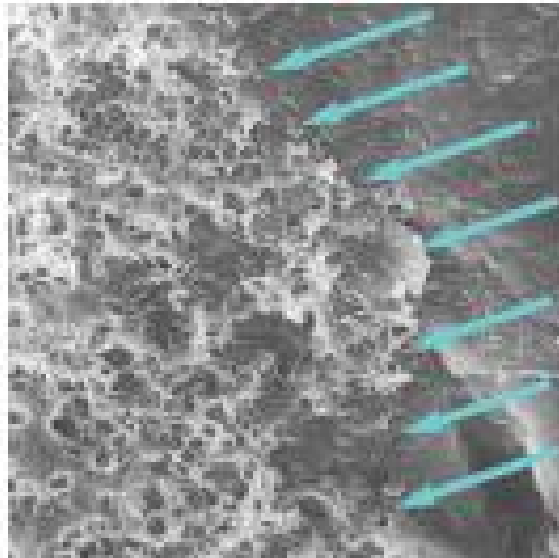
- Macro size benzoyl peroxide crystals (insoluble, irregular shapes and sizes) range from 0.01-0.1m
- Average follicle size is 0.05 m



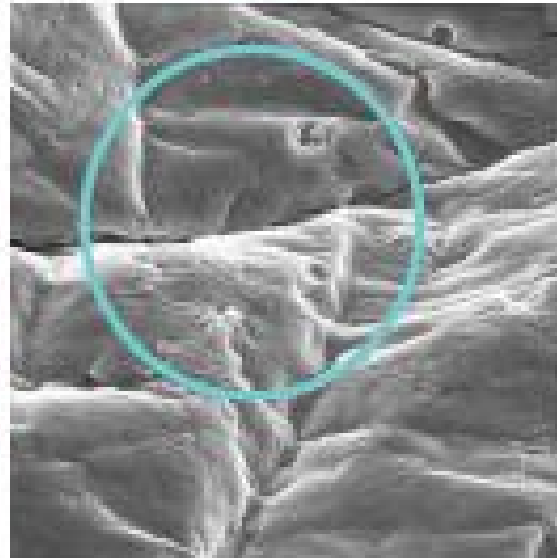
CLENZiderm M.D.™ benzoyl peroxide is 10⁻¹⁰ m

- Homogeneous solution for better follicular penetration

SEM Demonstrating Penetration



Prescription 5% BPO formulation
30 minutes post-treatment



CLENZiderm M.D. 5% BPO formulation 30
minutes post-treatment

CLENZiderm M.D. offers a new liquefied form of benzoyl peroxide that is 1/10,000 the size of any other benzoyl peroxide

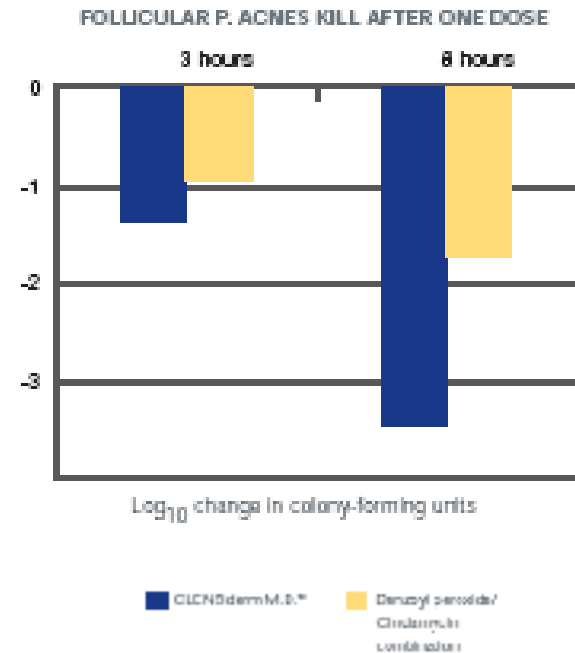


CLENZiderm M.D.™

A breakthrough solution to the three causes of acne.

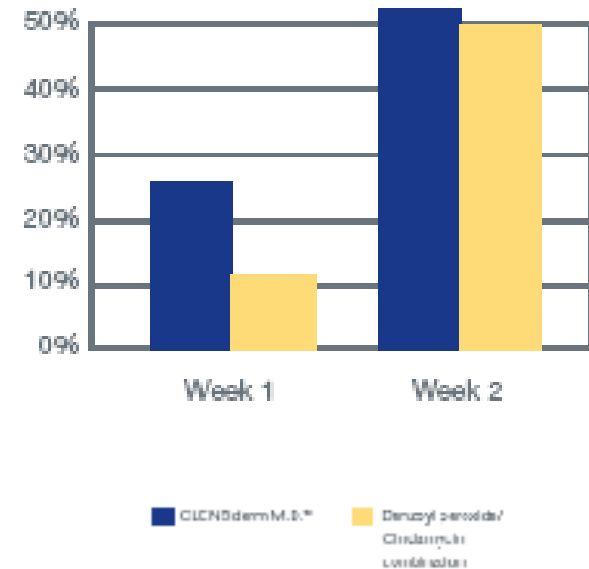
Rapid Onset of Results

- This graph demonstrates significant reduction in follicular *P. acnes* bacteria compared to a leading benzoyl peroxide/Clindamycin combination acne medication
- The study used follicular biopsies – 12 patients per cell
- In both hours, 3 and 8, you can see a significant change in colony forming units



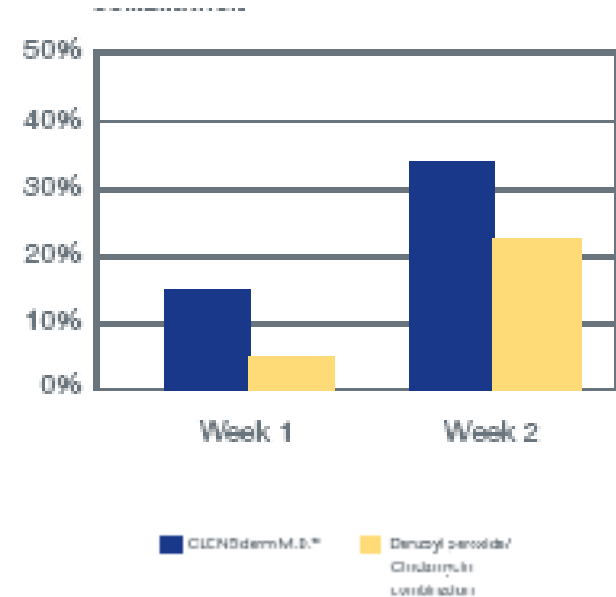
Rapid Onset of Results – Inflammatory Lesions

- This graph shows a 23% reduction in inflammatory lesions after 1 week
 - Twice the reduction compared to patients using a benzoyl peroxide/Clindamycin combination
- And then at 2 weeks, there is a 52% reduction in inflammatory lesions



Rapid Onset of Results – Non-inflammatory lesions

- In terms of non-inflammatory lesions, the clinical demonstrated a 13% reduction in non-inflammatory lesions after 1 week
 - Twice the reduction compared to patients using a benzoyl peroxide/Clindamycin combination
- And after two weeks, a 34% reduction in non-inflammatory lesions



CLENZIderm M.D.

Base Line

At 2 Weeks



CLENZIderm M.D.

Base Line

At 4 Weeks



3 Causes – One Solution – *One System*

- CLENZiderm M.D. consists of three synergistic products
- An easy to use, highly effective acne system



First – Daily Care Foaming Cleanser

- Product Description:
 - Removes dirt and excess oil leaving skin clean and refreshed
 - 2% salicylic acid based cleanser to help reduce sebum levels on the surface of the skin
 - Menthol cools and calms irritated skin
 - Goal: Reduce sebum levels on the surface of the skin



First – Daily Care Foaming Cleanser

- Product Usage:
 - Wet face with warm water
 - Dispense dime-size amount into palm of hand
 - Lather and gently massage over entire face for at least 20 to 30 seconds
 - Avoid getting close to eyes
 - Rinse skin thoroughly and pat dry
 - **Wait 10 to 15 minutes** to allow skin to dry before applying Pore Therapy



Second - Pore Therapy

- Product Description:
 - Unclogs pores and clears dead skin cells while preparing skin to deeply absorb a liquefied serum that targets acne at its root
 - 2% salicylic acid to help unclog pores
 - Menthol helps eliminate surface bacteria
 - Denatured alcohol helps kill acne-causing bacteria quickly
 - Goal: Unclog pores and removes dead skin cells



Second - Pore Therapy

- Product Usage:
 - Before applying make sure your skin has been cleansed and it is completely dry
 - Moisten a cotton ball or pad with Pore Therapy
 - Apply over entire face
 - Avoid getting near eyes or in nose or mouth
 - Do not rinse off
 - **Allow to dry before applying Serum Gel**



Third - Serum Gel

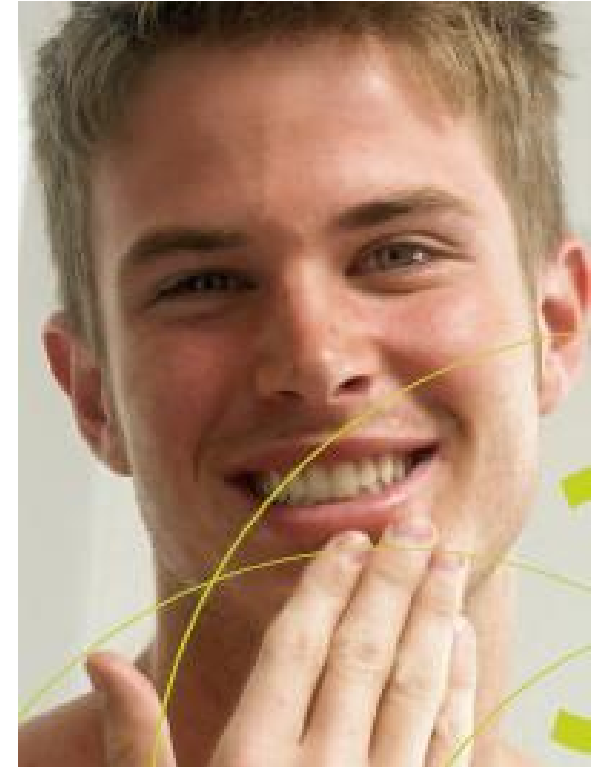
■ Product Description

- Potent gel turns to liquid serum on contact to skin
- Delivers 5% liquefied benzoyl peroxide deep within the pores where acne starts
- Quickly clears acne to prevent new breakouts
- Patented Soluzyl Technology delivers greater penetration and effective reduction in *P. acnes* bacteria
- Note: Due the nature of BPOs, in general and the Serum Gel's superior penetration, patients may feel a transient stinging or burning when using the System
- **Goal: Quickly reduces *P. acnes***



Third - Serum Gel

- Product Usage:
 - Pump Serum Gel 1 time onto a cotton pad
 - First apply Gel to areas of skin where the acne is more prevalent
 - Apply to areas with most pimples to areas of least pimples
 - Avoid eyes and in nose or mouth
 - Wash hand after applying but do not wash medication off face
 - A moisturizer may be used after Serum Gel. Sunscreen is advised if going outside
 - Note: Benzoyl peroxide can bleach fabric



Tolerability

- CLENZIderm M.D. System is recommended once a day
- It should be well tolerated by most patients
- For those patient with more sensitive skin there may be some *mild to moderate stinging and burning*
- If these side effects become a hindrance to treatment, you can minimize them by reducing the frequency of application



CLENZIderm M.D. and other treatment modalities

- CLENZIderm M.D. with Tretinoin
 - Use CLENZIderm M.D. System in the morning ONLY
 - Use tretinoin - 0.025%, 0.05% or 0.1% in the evening
 - Do not use Pore Therapy and/or Serum Gel in the evening unless recommended by the physician

CLENZIderm M.D. and other treatment modalities

- CLENZIderm M.D. with Topical Antibiotics
 - Use CLENZIderm M.D. System once a day
 - Following the package insert instruction for the topical antibiotic, apply after Serum Gel
 - Be sure to let Serum Gel dry before applying the topical antibiotic

CLENZIderm M.D. and other treatment modalities

- CLENZIderm M.D. and Oral Antibiotics
 - Oral antibiotics can be used simultaneously with System
 - Standard application of CLENZIderm M.D. System

CLENZIderm M.D. and other treatment modalities

■ **Clenziderm M.D. with Accutane:**

- It is not recommended to treat the patient with both Accutane® and Clenziderm M.D. at the same time
- If Accutane is the selected course of treatment, after the patient has completed their course of Accutane, the patient may begin Clenziderm M.D.
- Due to Accutane's ability to cause dry skin, Clenziderm M.D. products should be slowly introduced into the patient's daily regimen after Accutane treatment is completed

CLENZIderm M.D. and other treatment modalities

- **Clenziderm M.D. and Professional Extractions:**
- Extractions conducted at physicians' offices can be performed while the patient is on the Clenziderm M.D. System
- Please follow the below instructions:
 - Use the Clenziderm M.D. System as described
 - On evening of extraction, it is not recommended to use the Serum Gel
 - Topical antibiotics continued to be used as prescribed
 - Tretinoin should not be used on the evening of the extraction

CLENZIderm M.D. and other treatment modalities

- **Clenziderm M.D. with Hydroquinone to Address PIH:**
- Should you determine that the addition of hydroquinone into the skin care regimen is necessary, then follow the below instructions:
 - Use Clenziderm M.D. System in the morning
 - Use topical hydroquinone 4% or less in the evening
 - Physician may direct patient to use Cleanser in evening before applying the hydroquinone
 - Do not use the Clenziderm M.D. Serum Gel in the evening
- If the patient is using both tretinoin and hydroquinone, apply tretinoin first then hydroquinone

Benefit for Your Patient



- Most benzoyl peroxides are formulated with insoluble macro-crystals
- When applied to the skin, they remain primarily on the surface of the skin
- Acne starts below the surface of the skin; deep within the hair follicle
- CLENZIderm M.D. offers a new liquefied form of benzoyl peroxide that is 1/10,000 the size of any other benzoyl peroxide
- This powerful medication instantly penetrates the pores and begins healing acne below the skin's surface
- Providing a significant reduction in acne as early as two weeks

Benefits for Your Practice

- Provides control of your prescribed acne therapy
- There are no concerns regarding patients filling the script
- Physicians foregoes, the compliance challenge associated with patients getting different components of their acne regimen from various sources (ex. Rx's, OTC's, infomercials).



In Summary

- Value for your patients:
 - Superior penetration to the follicle
 - Allows for greater reduction in P. acnes
 - Providing rapid results
 - And increased patient satisfaction and compliance
- You provide them a highly effective, easy-to-follow, fully comprehensive skincare program
- And these satisfied patients will refer friends and family members

