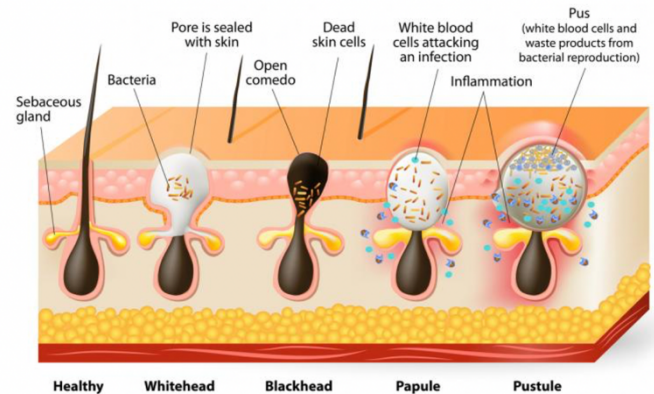


Acne is a chronic inflammatory disease of the pilosebaceous unit. Acne commonly occurs in adolescence and in young adulthood. Typically, significant acne will spontaneously regress in early adulthood; however, a number of people will experience persistent acne or new-onset acne in adulthood.

The American Academy of Dermatology (AAD) defines acne as a “chronic inflammatory dermatosis notable for open or closed comedones (blackheads and whiteheads) and inflammatory lesions, including papules, pustules, or nodules.” Papules typically present as variably erythematous lesions of less than 5 mm. Pustules are discrete white fluid-filled papules of 5 mm or less. Larger lesions (5 mm or more), also with variable erythema, are termed “nodules.” The deeper structures, such as pustules, nodules, and cysts, can form tunnels or sinus tracts and often result in severe scarring especially when they form close to one another.



Although the exact cause of acne is not fully established, it is generally accepted that multiple factors are involved. Presently, research points toward four main processes that contribute to the development of acne. Keys to the pathogenesis of acne are *Propionibacterium acnes* (*P. acnes*), keratinocyte hyperproliferation in the follicle, androgen-mediated increase in sebum production, and, most importantly, inflammation. These factors cause the cutaneous microenvironment to change and leads to inflammatory reactions of the host that foster acne lesion progression.

### Propionibacterium Acnes

*P. acnes* is one in a group of normal gram-positive bacterial flora found in the follicular unit. The exact contribution to the skin made by this bacterium is not clear. Some studies show increased bacterial load in those with clinically evident acne, but this is not universally confirmed.<sup>1</sup> There is a significant increase in *P. acnes* colonization at puberty, the time during which acne commonly develops, and teenagers with acne can have as many as 100-fold more *P. acnes* bacteria present on their skin than healthy, age-matched counterparts.<sup>1</sup>

It is believed that the bacterium can stimulate tumor necrosis factor-alpha and the interleukins. Specifically, IL-1 $\beta$ , IL-8, and IL-12 seem to be stimulated by *P. acnes*.<sup>1</sup> A 2016 study showed that when *P. acnes* is trapped in an airless environment such as alongside hair and skin cells, it turns the sebum into fatty acids that active inflammation in nearby skin cells.<sup>2</sup> Usually, this inflammation is switched off by histone deacetylases, but the fatty acids deactivate these enzymes so that the inflammation can continue unchecked.

In healthy skin, *P. acnes* plays a role in the protective immune response by contributing to the formation of short-chain fatty acids and in maintaining a more acidic skin pH. A lower skin pH promotes keratinocyte growth and is less hospitable for bacterial growth. In healthy skin, as opposed to acne skin, structural differences have been seen along with variances in immune modulation carried out by various *P. acnes* strains.

### Gram-Negative Folliculitis

Gram-negative folliculitis is an infection caused by gram-negative organisms. This type of infection can occur as a complication in patients with acne vulgaris and typically develop in patients who have received systemic antibiotics for prolonged periods.<sup>4</sup> In acne patients treated with oral antibiotics, the number of gram-positive bacteria decreases but the number of gram-negative bacteria such as enterobacterial organisms increases by more than double.<sup>4</sup> The bacteria populate existing acne lesions and cause superficial pustules with relatively few papules and comedones. Because the cell wall structure of gram-negative bacterium contains a thin peptidoglycan layer, traditional treatments

with antibiotics which target peptidoglycan synthesis are not as effective. This makes gram-negative folliculitis difficult to treat with common western medicine prescriptions or creams.

### Androgen-Mediated Increase in Sebum Production

Sebaceous glands secrete oil or sebum. Sebum works to protect the skin against friction, reduces moisture penetration through the outer skin layers, and acts as part of the healing process.<sup>1</sup> Disrupted follicular keratinization, a component of pore blockage, can occur with changes in sebum. Changes in sebum—production, increase, composition, and oxidant-to-antioxidant ratios—are all seen with acne formation.<sup>1</sup> If these changes in sebum interferes with the process of follicular keratinization in the pilosebaceous unit, pore blockage may occur, contributing to lesion formation and acne.

Increased sebum production is stimulated by an increased androgen activity in the pilosebaceous unit. The increased androgen activity is related to an excess in androgen hormones or an increase in sebaceous gland sensitivity to normal androgen levels or increased activity of 5 $\alpha$ -dihydrotestosterone (5 $\alpha$ -DHT) in the skin. 5 $\alpha$ -DHT is considered the major proponent of increased sebaceous gland activity as the glands contain the necessary enzymes involved in the conversion of testosterone to 5 $\alpha$ -DHT. An increase in testosterone causes an increase in sebum production because testosterone is one of the major androgens that interact with the androgen receptors on sebaceous glands.

In females, menstruation can cause an increase in sebum production due to changes in hormone levels. Just before menstruation, estrogen and progesterone levels decrease. This triggers the sebaceous glands to secrete more sebum. When the female hormones drop, testosterone stays level throughout the whole month. This also triggers sebaceous gland activity and the resulting clogged pores when testosterone levels are higher than both the female hormones. These fluctuations in hormones can also trigger skin inflammation which can increase the production of acne-causing bacteria.

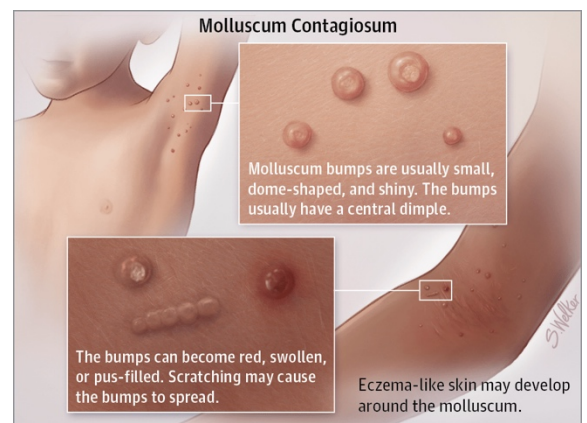
In both males and females, liver health can play an important role in chronic acne. Since the liver is involved in the regulation of hormones, a liver deficiency can also lead to an increase in sebum production. The liver metabolizes estrogen which increases sex hormone-binding globulin (SHBG). SHBG binds to free testosterone in the blood stream to inhibit testosterone's effects. If the liver is not metabolizing estrogen at the proper rate, there can be an increase in the free testosterone in the blood which contributes to the acne development.

### Viral Infections

Poxvirus is a type of virus that results in the formation of lesions, skin nodules, or rashes. Infection in humans usually occurs due to contact with contaminated animals, people, or materials. While some poxviruses, such as smallpox (variola virus), no longer exist in nature, other poxviruses can still cause disease. These include monkeypox virus, orf virus, molluscum contagiosum, and others.

Molluscum contagiosum is an infection caused by a poxvirus that results in mild skin disease characterized by lesions that may appear anywhere on the body. Within 6-12 months, Molluscum contagiosum typically resolves without scarring but may take as long as 4 years.

The lesions, known as Mollusca, are small, raised, and usually white, pink, or flesh-colored with a dimple or pit in the center. They often have a pearly appearance. They're usually smooth and firm. In most people, the lesions range from about the size of a pinhead to as large as a pencil eraser (2 to 5 millimeters in diameter). They may become itchy, sore, red, and/or swollen. Mollusca may occur anywhere on the body including the face, neck, arms, legs, abdomen, and genital area, alone or in groups.



Although not limited to children, it is most common in ages 1-10 years of age. Children and adults are most at risk who suffer from a weakened immune system, those with atopic dermatitis, and those who live in a warm and humid climate. Atopic dermatitis can increase the risk of getting Molluscum contagiosum due to frequent breaks in the skin.

## **Wellness Recommendation**

### Inflammatory Acne

The wellness recommendation for inflammatory acne caused by P. acnes includes Acne Cream. This all-natural formula is a topically applied cream that helps to remove Heat on the skin. Acne Cream works to clear inflammation and infection on the skin to resolve acne. The herbal ingredients in Acne Cream have been shown to reduce inflammation through inhibiting tumor necrosis factor-alpha as well as subsides swelling and discharge of pus, nourishes the skin, restrain bacteria, and promote skin metabolism.<sup>3</sup> Patients can experience symptom improvement in 1-3 days and 1 week of usage is recommended for significant improvement. If patients have excessive Heat and inflammation, Bitter may also be needed to clear Heat in the blood. The herbal ingredients in Bitter help to reduce high levels of pro-inflammatory cytokines in the blood.

Usage – Apply a layer of the cream to the affected area and wash off after 1-2 hours. Use once daily.

If patients suffer from acne as well as gram-negative folliculitis, Dermaticin B is recommended when patient's improvement plateaus or the patient is not responding to the treatment with Acne Cream. Dermaticin B is an externally applied cream that helps to clear damp heat and gram-negative infections from the skin. Herbal ingredients in Dermaticin B have been shown to have strong antibacterial effects on gram-negative bacteria.<sup>5</sup> Patients can experience symptom improvement in the first 1-3 days and 4-6 weeks of the product is recommended or significant improvement.

Usage – Apply a layer of the cream to the affected area and massage into skin while blowing warm air using a hair dryer. May need to apply additional cream 3-5 times. Wash off after 20 min. Use once daily.

### Hormonal Acne

For acne caused by an increase in sebum production due to menstruation, Sissy in combination with the Acne Cream is recommended. Sissy helps clear uterine heat and removes blood stagnation. Sissy help clear uterine inflammation and infections. Through decreasing the inflammatory state that occurs in PMS, Sissy can help to lower the production of acne causing bacteria. Patients can experience symptom improvement with 3 days of treatment before menses; and have sustained results with 4 weeks of treatment. If improvement plateaus with the use of Sissy, Brown and LC Balancer is recommended to improve the liver health to help balance the hormonal levels.

For acne caused by an increase in sebum production due to a liver deficiency, the wellness recommendation includes Brown and LC Balancer in combination with the Acne Cream. Brown helps improve liver Yin. Through improving liver health and repairing liver damage, Brown helps to enhance liver function and balance the hormonal levels. When the liver is function properly, it can metabolize the proper amount of estrogen, and therefore, increase SHGB production. This helps to lower the amount of free testosterone in the blood to decrease sebum production and the resulting acne. LC Balancer helps improve systemic microcirculation and improves kidney Yin. The increased circulation will help filter the excess testosterone out of the bloodstream. Patients can experience symptom improvement in the first 1-3 days and 4-6 weeks of the product is recommended or significant improvement.

### Virus-Induced Acne

The wellness recommendation for patients who suffer from virus-induced acne, such as Molluscum contagiosum, includes a two-step process. First, the patient should begin with Bitter, Brown, Qi Booster, LC Balancer, Woad and Woad-R in combination with the Acne Cream which helps to clear the virus in the extracellular space. Woad helps enhance the humoral immunity that includes antibodies, complement proteins, and certain antimicrobial peptides in the extracellular fluids to kill the virion that is circulating in the blood or in the extracellular space and prevent the virus from entering into the host cell. It also helps clear Heat and toxins resulting from the viral infections. Infections

from pathogens such as viruses can cause severe stress to the body and can cause reduced blood flow from the hepatic artery to the liver. The liver has a strong innate immunity and reduced blood flow can substantially weaken the liver's innate immune function. This compromises enrichment of innate immune cells such as macrophages and natural killer T cells. Brown, LC Balancer, Qi Booster, and Bitter helps to enhance the liver's innate immune function and improve the immune system's ability to clear acute infections as well as reduce pro-inflammatory cytokines in the blood. Patients can notice improvement in the skin condition within 1 week. 2-4 weeks of treatment may be required for significant improvement.

The second step includes Saponin and Jade-R. Saponin helps clear chronic skin viral infections while Jade-R enhances the immunity of the skin to clear the chronic viral infection. These products help to specifically target the virus-infected cells. Patients can notice improvement in the skin condition within 1 week. 8-12 weeks of treatment may be required for significant improvement.

## **Selected Case Study**

### Case 1: Successful Resolution of Hormone-Related Acne

*Michael Akerson, DC/CSCS, Arizona*

A 30-year-old female patient was suffering from hormone-related acne. She stopped taking birth control pills 6 months ago and ever since, her acne developed. The patient knew it was hormonally related and has seen a Dermatologist. She bought everything you can think of and spent so much money on the newest thing without any improvement.

Dr. Akerson recommended that she try the Acne Cream from Wei Lab. The results were amazing! The patient saw herself totally different before finishing one bottle of the product and had only been using it at nighttime. She is extremely happy and has referred her sister who has the same problem.

### Case 2: Improvement in Chronic Cystic Acne After One Month

*Dr. Elana Omari, AP, FL*

A 28-year-old female patient was suffering from chronic cystic acne for her entire adult life. The patient had tried many different acne remedies with no success.

Dr. Omari recommended the patient use Acne Cream, Brown, and Sissy from Wei Laboratories. Acne Cream is applied externally to help address her inflammation on the skin. Brown and Sissy help to balance out her hormone levels.

The patient took progress pictures two weeks after beginning the protocol (April 29<sup>th</sup>) and four weeks after (May 4<sup>th</sup>). The results have been amazing so far and the patient is thrilled with the progress that has been made so far.

The patient is continuing on with the full protocol for another two months to continue to see the improvements.



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