



Is Acne Making You An Emotional Wreck?

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General Overview

Acne vulgaris, is considered the most common skin disease in the US affecting almost 85% of the people between the ages of 12 and 24.

While the disorder is often associated with teenagers, it can affect people of all ages. In fact, many adult women experience mild to moderate acne due to hormonal changes associated with pregnancy, their menstrual cycles, or starting or stopping birth control pills.

Acne is rarely a serious medical condition, but it often causes emotional distress and can lead to scarring of the skin.

Common Location of Acne

Acne typically appears on your face, neck, chest, back, shoulders and scalp and can take the following forms:

- **Whiteheads.** These are created when the openings of hair follicles become clogged and blocked with oil secretions and dead skin.
- **Blackheads.** These are similar to whiteheads, but are open to the skin surface and darken.
- **Pimples.** These are raised, reddish spots that signal inflammation or infection in the hair follicles.
- **Cysts.** These are thick lumps beneath the surface of the skin, which are formed by the buildup of secretions deep within hair follicles.

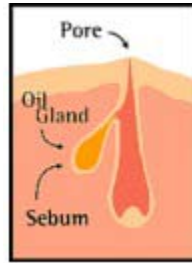
Three Factors that Contribute to the Formation of Acne:

- Overproduction of oil (sebum)
- Irregular shedding of dead skin cells resulting in irritation of the hair follicles of your skin.
- Buildup of bacteria

Cause and Mechanism of Acne

Acne occurs when the hair follicles become plugged with oil and dead skin cells. Each follicle is connected to sebaceous glands. Each person has approximately 5,000 sebaceous follicles.

Sebaceous glands are located throughout the body except for the palms of the hands, soles and dorsa of the feet, and the lower lip. These glands are the largest and most numerous on the face, back, chest, and upper outer arms.



Sebaceous glands secrete an oily substance known as **sebum** to lubricate your hair and skin. Sebum normally travels up along the hair shafts and then out through the opening of the hair follicle onto the surface of your skin.

When your body produces an excess amount of sebum and dead skin cells, the two can build up in the hair follicle and harden as a soft plug. This plug may cause the follicle wall to protrude and produce a whitehead. The plug may also darken, causing a blackhead.

Pimples are raised red spots with a white center that develop when blocked hair follicles become inflamed or infected.

Blockages and inflammation that develop deep inside hair follicles produce lumps beneath the surface of your skin called **cysts**.

Testosterone and Acne

It has been found that the hormonal mechanism by which sebum levels are increased occurs as testosterone is converted to dihydrotestosterone in the skin, which acts directly on the sebaceous gland to increase its size.

Do Greasy Foods Cause Acne?

Contrary to what some people have thought, neither chocolate nor greasy foods like french fries are likely to cause or aggravate acne. Acne also isn't caused by dirt. In fact, excessive washing of the skin to remove dirt may actually interfere with some treatment programs.

What Should You Know About Drying Agents For Acne?

People often try to treat acne by "de-oiling" and "drying" the skin with products that include harsh soaps, strong scrubs and mass-market medicated (drying) cosmetics. This approach to acne can cause intense drying of the skin, and provides only short-term benefits. While drying out blemishes can make skin appear satisfactory for a few weeks, over-drying can cause oil glands to compensate by working harder, resulting in clogged pores and more "breakouts" 3 to 4 weeks later. This often causes the user to resort back to drying products, which are causing the problem.

Sign and Symptoms

Acne is a skin condition characterized by pimples, which may be closed (sometimes called pustules or “whiteheads”) or open (blackheads), on the face, neck, chest, back, and shoulders. Most acne is mild, although some people experience inflammation with larger cysts, which may result in scarring.

Functional Medicine

Consider the following as potential underlying causes or contributors of acne.

- Low levels of **SHBG** are often found in cases of acne vulgaris.
- **Polycystic Ovary Syndrome (PCOS):** Among women with resistant acne (acne not responding to conventional treatments), PCOS is very common.
- Bowel toxins from poor digestion, dysbiosis or GI bacterial infection may contribute to acne. Request a Comprehensive Stool Test
- Poor functioning of Phase 1 and Phase 2 Detoxification. Request a Detoxification Profile

Treatment Options

- Topical treatments. Include benzoyl peroxide, sulfur, resorcinol, salicylic acid or lactic acid, Tretinoin (Retin-A, Renova) and adapalene (Differin) are topical prescription products derived from vitamin A.
- Antibiotics. For moderate to severe acne, prescription oral antibiotics may be needed to reduce bacteria and fight inflammation. You may need to take these antibiotics for months, and you may need to use them in combination with topical products.
- Isotretinoin. For deep cysts, Isotretinoin (Accutane) is a powerful medication available for scarring cystic acne or acne that doesn't respond to other treatments. This medicine is reserved for the most severe forms of acne. It's very effective, but people who take it need close monitoring by a dermatologist because of the possibility of severe side effects.
- Finally, in patients with acne scars, dermabrasion, collagen injection, and other corrective procedures may be considered.

Self Care Recommendations

- Wash problem areas with a gentle cleanser. Products such as facial scrubs, astringents and masks generally aren't recommended because they tend to irritate skin, which can aggravate acne. Excessive washing and scrubbing also can irritate skin. If you tend to develop acne around your hairline, shampoo your hair frequently.
- Avoid irritants. You may want to avoid oily or greasy cosmetics, sunscreens, hair-styling products or acne concealers. Use products labeled "water-based" or "noncomedogenic." If the sun worsens your acne, protect yourself from sunlight

- which is a good idea in general. If stress causes outbreaks, work on reducing your stress level.
- Watch what touches your face. Keep your hair clean and off your face. Also avoid resting your hands or objects such as telephone receivers on your face. Tight clothing or hats also can pose a problem, especially if you'll be sweating. Sweat, dirt and oils can contribute to acne.
 - Don't pick or squeeze blemishes. Picking or squeezing can cause infection or scarring. Most acne will clear up without this kind of intervention. If you need aggressive treatment, see your doctor or dermatologist.
 - Friction or pressure on your skin caused by items such as telephones or cellphones, helmets, tight collars and backpacks.

Nutritional Medicine

- **Zinc**
It has been reported that people with acne have lower serum zinc levels compared to healthy controls and individuals with severe acne have lower serum zinc levels than individuals with milder cases of acne.

In a double-blind trial, patients with inflammatory acne who were treated with 200 mg/day of zinc gluconate, corresponding to 30 mg of elemental zinc, experienced a significantly greater reduction in inflammation compared to placebo controls.

It often takes 12 weeks before any improvement is seen. Long-term zinc supplementation requires 1–2 mg of copper per day to prevent copper deficiency. Zinc is important in the treatment of acne. It is involved in local hormone activation, retinol binding protein formation, wound healing, immune system activity, and tissue regeneration.

- **Glycolic Acid (Alpha Hydroxy Acid)**

Many over-the-counter products contain high levels of glycolic acid, which is a member of the alpha-hydroxy acid family. Glycolic acid used topically can effectively promote skin cells to shed more quickly and has been proven to be very effective in the treatment of acne.

Glycolic acid is the simplest and most effective member of the chemical family referred to as Alpha Hydroxy Acids (AHA). Put simply, Glycolic Acid speeds up the skin renewal process.

It is the only AHA which is able to penetrate through the cell walls by virtue of its small molecular size. Once inside the cell, it stimulates the skin to make new, healthier collagen and elastin fibers in the deeper dermis, improving sun damage and wrinkling. Glycolic Acid also weakens the "glue" holding dead cells on the

skin's surface. When these cells dissolve, smoother, softer skin is revealed. AHAs also help to unclog pores and thus decrease the tendency for acne to develop.

Niacinamide 4% Topical Gel

In an 8-week double-blind trial, 38 patients with moderate inflammatory acne vulgaris were treated with 4% niacinamide topical gel while an equal number were treated with 1% clindamycin topical gel. Patients treated with 4% niacinamide gel made slightly greater improvements compared to the patients treated with 1% clindamycin gel.(22) Because it is safe, effective, and without the antibiotic-associated risk developing resistant strains of bacteria, 4% niacinamide topical gel should be considered as an important alternative treatment for acne vulgaris.

Herbal Medicine

Tea Tree Oil

A study compared the use of topical tea tree oil (5% gel) with benzoyl peroxide (5% gel) in the treatment of mild to moderate acne.

The results of this study reported 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, patients treated with tea-tree oil experienced fewer side effects.

We believe that this 5% solution is probably not strong enough for moderate to severe acne. Stronger solutions (up to 15%) should provide even better results.

Guggul

An interesting study comparing tetracycline and guggul showed surprising promise in using guggul to treat nodulocystic acne.

In this study, twenty patients were randomly assigned to a group taking either Tetracycline at 500mg twice each day for 90 days, or a group taking guggulipid twice each day for 90 days. There was a slightly better outcome with the guggul group as well as slightly fewer relapses reported.

In addition, participants with oily skin seemed to respond better to the guggulipid treatment.

Clinical Notes

High Dose Vitamin A Found to Benefit Acne But Has Risks

In general, acne does not respond well to oral ingestion of vitamin A ranging from 50,000 IU to 100,000 IU per day.

However, one group of investigators reported highly effective results treating 123 patients with acne vulgaris at doses of 300,000 IU/day for women and 400,000 to 500,000 IU/day for men. Unfortunately high amounts of vitamin A needed to control acne can be toxic and should be used only under careful medical supervision.

Dietary Changes That May Be Helpful

Milk and Acne

Dr. Jerome K. Fisher conducted a clinical study of 1,088 teenage patients over 10 years and reported to the American Dermatological Association that milk was a principal contributor to some patients' acne. Dr. Fisher found that their acne tapered off as their milk consumption was reduced.

“ 124 patients with mild to moderate acne in a single-blind randomized trial were given either a 5% gel of tea-tree oil or 5% benzoyl peroxide lotion. Both treatments resulted in significant improvement of noninflamed and inflamed lesions after three months. There were fewer unwanted side-effects in the tea tree oil group - 44% versus 79%. It was concluded that tea tree oil may be a valuable alternative to some traditional treatments of acne. ”

*--Lancet, Decemeber 8,
1990*

Dr. Fisher noted that dairy products often contain large amounts of butterfat and milk sugar, both of which, he believed, aggravate acne. He also suspected that the hormones produced naturally in the milk of pregnant cows may break down into androgen when consumed, which stimulates the production of sebum, the waxy substance secreted by the sebaceous glands that clogs pores and creates acne when the pores become infected.

Milk may also contain excessive amounts of iodine, which can irritate pores, bringing on acne flare-ups. Iodine gets into the milk through the use of contaminated milking equipment and medication given to the cows.

Grains and Acne Those with acne may find that a low or no-carbohydrate diet leads to clearer skin. When breads and cereals are digested, it leads to an increased amount of sugar. This excess sugar allows the body to produce high levels of insulin and insulin-like growth factor (IGF-1). The processes used to manufacture modern breads and cereals may alter the protein structures in the grains, leading to rapid digestion followed by excess releases of insulin. Elevated insulin levels lead to an excess of male hormones, which cause pores in the skin to secrete sebum, a greasy substance that attracts acne-promoting bacteria. Additionally, IGF-1 promotes the multiplication of skin cells known as keratinocytes, a process associated with acne.

Previous evidence has shown a link between insulin or IGF-1 and acne. It has been found that when IGF-1 is used to treat certain illnesses, male hormones increase, followed by acne. On the other hand, when women with polycystic ovary syndrome, a condition that causes an excess of insulin, were treated with the insulin-reducing drug metformin, acne was improved. Moreover, many women with acne problems overproduce insulin and IGF-1, researchers say. Researchers say that many dermatologists report improvements in their patients' acne after putting them on low-carbohydrate diets. [Archives of Dermatology December 2002]

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