

Acne is not just skin deep

Acne is a very common condition in industrialized nations and, though not life threatening, it can lead to serious mental health issues such as depression, anxiety and suicidal thoughts [1-3]. Problems of self-esteem leading to unemployment are further aggravated by bias-driven behavior in which employees with acne are more likely to be passed over by prospective employers [4].

What is acne?

Acne is a disease that involves the oil glands that are located under your skin. The glands are connected to your skin's pores through small canals called follicles. Acne results when these small follicles that carry dead cells and oil (sebum) are blocked and secondary bacterial infection develops. While the precise mechanism underlying the development of acne is not completely understood, sebum overproduction [5], oxidative stress and inflammation are thought to be contributing factors [6]. Androgens and microbes are also at work. Puberty and adolescence, pregnancy, menstrual cycles, anxiety and stress are among the various conditions associated with the appearance of acne. If you have dark skin, scarring and keloid formation are a debilitating and unfortunate consequences of this disorder [7].

Is there a role for vitamins and dietary supplements?

Research has found that dietary factors are important in modulating the inflammation and oxidative stress thought to underlie acne development. People with acne have been found to have lower levels of vitamin A, E [8] and selenium [9] with significant improvements noted after 12 weeks of treatment with 400 mcg of selenium and 20 mg of vitamin E daily [10]. Zinc levels have also been shown to be lower in acne, and both oral and topical preparations have yielded beneficial results [11-13]. Niacinamide (Vitamin B-3) is a water-soluble vitamin found in meat, fish and wheat that has also demonstrated anti-inflammatory effects in the treatment of acne. In a study using a commercial product with 4% niacinamide for a period of 8 weeks, 82% of participants showed significant

improvement compared to 68% of those treated with clindamycin [14]. Finally, in a study of 100 patients with moderate to severe acne, pantothenic acid (vitamin B-5) administered orally and topically, decreased sebum secretion and improved acne with results evident in as little as 2 days [15].

The observation that medications used to treat high blood sugar also improved acne suggests that insulin and glucose abnormalities may contribute to this disorder [16]. A low glycemic diet may be protective against the development of acne [17] and in one small open trial, 400 mcg of chromium supplementation led to improvements [18]. Chromium is an important co-factor for insulin function, and Western diets in many countries fall short of the minimum daily requirement of 50-200 mcg [19, 20].

More help from the plant kingdom, though some may be fading fast

Guggulipid is an extract from a resinous sap from guggul, a medicinal plant that has been used in India for over 3000 years. Because it has been overharvested, guggul is now on the threatened species list. The active ingredient is a steroid called guggulsterone. In a very small study of 30 patients with moderate to severe acne treated with Guglip tablets for 6 weeks, all participants showed moderate to excellent results with only a 10% relapse rate at 3 months [21]. Turmeric has also been used successfully in treating skin disorders because of its anti-inflammatory and antioxidant properties [22].

Take home message

Acne has both physical and psychological ramifications that can significantly affect the quality of life. Research suggests that deficiencies, particularly in the Western diet, of important vitamins and minerals are important contributors to this disorder.

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