

Acne

Definition:

Abnormal inflammatory response by the skin's oil glands, known as sebaceous glands. Cystic acne is a condition of large collections of oxidized skin oil (sebum) which resolve and may leave scars. Cystic acne may persist into adulthood.

Incidence:

Nearly 80% of the population experiences acne of varying degrees at some time in their lives. Ten to 15% of the population continue to have recurrent acne through out their lives.

Causes and/or Risk Factors:

Unknown Direct Cause
Genetics
Nutritional Deficiencies

Mechanism of Action:

During puberty, the androgenic (male) hormones are produced in both male and female, which stimulate the skin's sebaceous glands. The skin of those with problematic acne has increased levels of the enzyme 5-alpha-reductase. This enzyme converts testosterone into the more potent form, di-hydro-testosterone (DHT). DHT stimulates the sebaceous glands, which in turn produce excessive sebum. Bacteria in blocked pores and follicles of the skin oxidizes and solidifies sebum, which causes it to thicken and become white (much like lard), producing acne.

Saw palmetto blocks the action of 5-alpha-reductase, reducing the amount of DHT in the skin, and thereby reducing the stimulation of excessive sebum. Oral and topical antibiotics can reduce the bacteria, which oxidizes skin oil. Antioxidants block oxidation of skin oil, and reduce acne. Omega-3 fatty acids are oils that are not easily oxidized, and therefore may reduce acne formation.

Those with acne have impaired glucose tolerance in their skin cells, which is associated with acne due to the immuno-suppressive effects of sugar. Chromium is a trace mineral associated with insulin regulation and glucose metabolism. It has been shown to be helpful in the treatment of acne. Avoiding high glycemic foods, that is foods high in simple sugars, is helpful to reduce the impairment of glucose tolerance.

Many women have "premenstrual acne." This is due to the increase of androgenic hormones, and therefore skin oils, which reach their peak at ovulation. The resulting effects approximately a week later as acne due to the increase of oxidized sebum.

Traditional Therapies:

Topical medications containing benzoyl peroxide, oral and topical antibiotics, and the retinoid, Accutane. Birth control pills are often used to treat acne in women, as they suppress the increased production of testosterone generated by the ovarian follicle by suppressing the cyclical development of the follicle in which the egg resides.

Nutritional Supplements:

Antioxidants have anti-inflammatory, anti-allergy, and anti-acne capabilities, some more than others. The grape seed extract is one of the most effective “anti-acne” supplements available. It is particularly helpful to take grape seed extract with vitamin C, which also has anti-inflammatory, i.e., anti-acne effects. The grape seed extract blocks oxidation of the fats in the skin, and helps prevent acne formation. Co-enzyme Q10 also blocks oxidation of the oils in the skin and helps with the health of the skin. This means less chance of acne.

Omega-3 fatty acid can be obtained from salmon oil or flax seed oil. The essential fatty acids, particularly DHA, as found in fish oil will not oxidize. If it is found in the skin there is less chance of acne formation. Omega-6 fatty acids are obtained from canola, borage, or primrose oils. Of the two, omega-6, or gamma-linolenic acid (GLA) is the most potent in reducing inflammation and acne. However, since GLA can also have some pro-inflammatory effects, omega-3 fatty acids, which block the pro-inflammatory response of GLA, should be used at twice the dose of omega-6 fatty acids.

Saw palmetto is useful in both men and women to reduce DHT in the skin. In other words, saw palmetto reduces the oiliness of the skin. Less oil means less oil to get oxidized, and the less the chance of acne. Vitamin A in high doses (100,000 IU) has been shown to reduce sebum as well, but it also runs the risk of liver toxicity and birth defects. Beta-carotene, a pro-vitamin A supplement, can be used to support skin health, but cannot “push” vitamin A to therapeutic levels. It is therefore, not as helpful in the treatment of acne, but it is also safe and does not run the risk of causing birth defects.

Vitamin E, the B vitamins, particularly vitamin B6, zinc, and chromium are helpful in the treatment of acne, both for the antioxidant properties, and because of their effect on glucose metabolism in the skin cells.

Specific Daily Supplement Considerations:

A basic multi-vitamin, antioxidant, and mineral combination, along with omega-3 (salmon or flax seed oil) and particularly omega-6 fatty acids (canola, borage, or primrose oil), should aid with this condition. Specific supplements and doses are shown below, bearing in mind that one should always check with their physician. Personally, I use and recommend the USANA products as the most effective products in reducing the production of excessive skin oil and the oxidation of the oil that leads to acne formation. The following are my recommendations:

Supplement	Dosages
MegaAntioxidants	3 per day
Chelated Minerals (Ages 9 – 12 use: Body Rox)	3 per day 3 per day)
BiOmega-3	4 per day
Proflavanol-90	4 per day
CoQuinone-30	2 per day
Palmetto Plus	3 per day

Skin Therapies:

- Wash face daily with Sense's Gentle Daily Cleanser
- Apply antioxidant emollient (Serum Replenisher or Perfecting Essence), one that replenishes serum, twice daily. This will directly increase antioxidant action within the skin.
- Three times per week use a rice bran polisher and masque. Avoid irritating skin by scrubbing too harshly.
- If acne flares up, use Neosporin, Polysporin, or Metrogel on skin to reduce the amount of bacteria in the follicles.