

Acne and Diet: Does Diet Affect Acne?

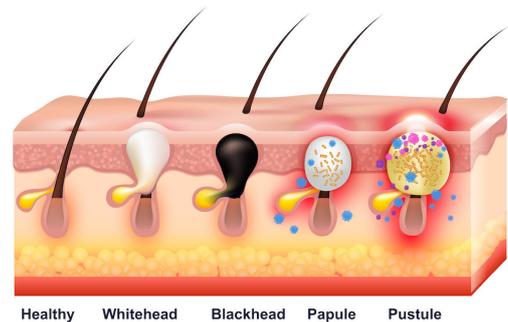
By Dana Hudepohl
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Acne is the most common skin condition in the United States, affecting as many as 50 million people annually, [according to the American Academy of Dermatology](#). While it is most pervasive in adolescence, rates of adult acne are increasing. One out of three total acne office visits are made by adult women, according to a paper in the *Journal of Drugs in Dermatology*. One study in the *Journal of the American Academy of Dermatology* found that 54 percent of women and 40 percent of men reported having some form of acne.

WHAT IS ACNE?

Acne is mediated by hormones. With the start of puberty, the hormone androgen activates oil glands, called sebaceous glands, in the pores. A bacterium called *propionibacterium acnes* lives in the pores. As bacteria and oil proliferate, they can mix with dead skin cells to clog pores or create inflammation. The areas of the body that have the most sebaceous glands—the face, neck, chest, shoulders, and back—are most affected.

Some women experience breakouts cyclically at certain times during their menstrual cycle, during pregnancy or during perimenopause or menopause. Acne can also occur as a side effect of medications or a symptom of a health condition such as [polycystic ovary syndrome](#). Acne can also be exacerbated by stress, sweaty workouts without prompt hygiene, or certain skin care products or makeup.



TYPES OF ACNE LESIONS

Severity of acne runs along a spectrum.

- **Comedones:** Comedonal acne are clogged pores that appear as blackheads and whiteheads. This is the most mild type of acne.
- **Papules and Pustules:** More severe than comedonal but less severe than cystic, papule and pustule acne are small raised red bumps, which may be pus-filled at the peaks.
- **Cystic:** Large and deep pus-filled lumps that arise from underneath the skin are known as cystic acne. This acne has the highest risk for scarring.

FOODS LINKED TO ACNE

A growing body of epidemiologic and clinical research shows an association between diet and acne, as noted in a [paper](#) in the *Journal of the Academy of Nutrition and Dietetics*. Research repeatedly implicates foods that are prevalent in the standard American diet, especially

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sugar, refined carbohydrates, processed foods, and dairy.

- **Sugar**

Compared with other dietary factors, the greatest amount of research on acne has been done on dietary glycemic load, according to a [review](#) in the *Journal of the Academy of Nutrition and Dietetics*.

“The strongest evidence we have right now for foods that aggravate acne is foods that raise blood sugar levels,” says Rajani Katta, MD, author of *Glow: The Dermatologist’s Guide to a Whole Foods Younger Skin Diet* and clinical faculty volunteer for Baylor College of Medicine and McGovern Medical School at UT Health. Sugary foods alter levels of blood insulin and insulin-like growth factor-1, according to a [paper in the journal Clinics in Dermatology](#). These trigger the production of the hormone androgen and an increase in oil production, which can lead to the development of acne. Katta advises patients to stay away from “sugar bombs” such as desserts, sweetened coffee drinks, sports drinks, sodas, juices, and supersized store-bought fruit smoothies.

- **Processed foods**

Besides sugar, are other refined carbs, such as white bread, triggers? A team of Australian researchers investigated this back in 2007 with a [randomized control trial](#). They divided 43 males who had acne into two groups: The control group ate as they normally would; the experimental group ate a low-glycemic index diet, substituting whole grains for refined carbohydrates such as white bread. At the end of 12 weeks, acne lesion counts decreased more in the low-glycemic-index group. In 2012, [researchers in Korea](#) conducted a larger follow-up study of 1,000 people. Patients who were assigned to a low-glycemic diet for 10 weeks had fewer pimples, and skin biopsies showed they had smaller oil glands and less inflammation. This may be because when food is stripped of its fiber, it is digested more quickly and leads to a sudden increase in blood sugar,

similar to the above-mentioned “sugar bombs,” according to Katta.

- **Dairy**

All dairy products naturally contain hormones. These hormones may lead to inflammation, causing acne in some people, [according to the American Academy of Dermatology](#). Of dairy milks, research has found [skim milk](#) to have the strongest association with acne, possibly because of higher levels of estrogen.

A [2018 meta-analysis](#) published in the journal *Nutrients* reviewed 14 studies that included nearly 79,000 people up to the age of 30. Intake of any dairy was associated with a higher odds ratio for acne compared with people who didn’t consume dairy.

Several studies have [directly implicated whey protein](#), which is derived from dairy, in the formation of acne. Whey is left over when milk is coagulated during the process of cheese production. In one study, Turkish researchers reported six male athletes who developed acne on the trunk area after they began supplementing with whey protein.

DO SPICY FOOD, ALCOHOL, OR CHOCOLATE CAUSE BREAKOUTS?

Spicy food and alcohol can worsen rosacea, an inflammatory skin condition that is sometimes mistaken for acne because they can look very similar. In rosacea, however, you don’t have blackheads and whiteheads, just general redness from dilated blood vessels at the cheeks and nose with inflamed red bumps. Foods that cause flushing—like spicy food, alcohol, and hot beverages—can cause rosacea to worsen.

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When it comes to chocolate and breakouts, the answer is complicated. Many chocolatey products contain added dairy, sugars, and fats—all of which can trigger breakouts. A [2015 study](#) attempted to dig deeper into this question by focusing on dark chocolate, which has fewer additives. Over the course of four weeks, 25 acne-prone males consumed 25 grams of 99 percent dark chocolate daily. After just two weeks, researchers did find a statistically significant increase in acne compared with the subjects' baselines. This could be due to chocolate's naturally high fat content, but more research is needed.

RESEARCH: COMPARING ACNE ACROSS CULTURES

Epidemiological evidence from non-Westernized cultures have found drastically lower rates of acne in indigenous populations. Thirty years ago, over a seven-week period, a Swedish doctor named Staffan Lindeberg visited all 494 houses of the small island of Kitava in Papua New Guinea. He examined 1,200 residents and found no cases of acne. "Not a single papule, pustule, or open comedone was observed in the entire population examined," the researchers wrote in a [study published in *JAMA Dermatology*](#). The Kitavan diet consisted predominantly of carbohydrates in the form of low-glycemic tubers, fruits, and vegetables.

Other research has found that when native cultures are introduced to Western culture, they experience skin changes. Otto Schaefer, MD, spent 30 years treating the Inuit Eskimo people in Arctic Canada and reported that acne was absent when they were eating in their traditional whole food manner as hunter-gatherers with a diet rich in foods like caribou, seal, fish, rabbit, birds, and berries. When they assimilated to a Western diet high in carbonated drinks, chips, and other processed foods manufactured with added fat, salt, and sugar, acne prevalence became similar to the levels seen in Western societies.

In June 2020, a [large study out of France](#) looked at adult acne and diet. Researchers surveyed more than 24,000 people and found that people who reported the most acne had diets highest in milk, sugary beverages, and

sugary and fatty foods. "Our results may support the hypothesis that the Western diet (rich in animal products and fatty and sugar foods) is associated with the presence of acne in adults," the researchers wrote in the journal *JAMA Dermatology*.

IS THERE A DIET TO CURE ACNE?

While research on diet and acne is still ongoing, avoiding potential trigger foods—dairy and sugar and other refined carbohydrates—might be a good place to start if you're looking to reduce flare-ups. Consult a dermatologist for more personalized guidance.

Anecdotally, Forks Over Knives has heard from people who have had success in clearing up their skin after adopting a whole-food, plant-based diet:

- Twins [Nina and Randa Nelson](#), who wrote *The Clear Skin Diet: The 6-Week Program for Beautiful Skin*, were able to clear their cystic acne with a low-fat whole-food, plant-based diet.
- [Kiernan Holstein](#) resolved painful cystic lesions and improved her energy on a plant-based diet.
- [Tatiana Long](#) struggled with breakouts and excess weight until going plant-based.

This may be because a whole-food, plant-based diet is free of dairy and highly processed foods and/or because plant foods are high in vitamins, minerals, and phytonutrients that have antioxidant and anti-inflammatory effects. Additionally, a diet rich in plant foods is high in fiber to help stabilize blood sugar and ward off hormonal shifts that can lead to acne. The [fiber also feeds good gut microbes](#), which can help reduce skin inflammation.

Check out our [Plant-Based Primer](#) to learn more about adopting a whole-food, plant-based diet.