THE MEDICAL ISSUE

The Boston Globe

A Clear Connection?

Most dermatologists tell their patients diet plays no role in acne. New research suggests that's wrong.

By Cynthia Graber | December 16, 2007

Matthew, a 33-year-old from Jamaica Plain, has battled acne since adolescence. In high school and college, he became obsessed with how lighting could accentuate the marks on his skin. "Fluorescent lighting was the worst and could make me feel depressed all day," he says, "not to mention wildly self-conscious, to the point of hanging my head in an attempt to shade my acne from friends and family."

By high school, Matthew, who asked that his last name not be used, became convinced that certain foods could trigger breakouts. Anything with concentrated sugar or caffeine, from chocolate to orange juice to coffee, could intensify the occurrence of those scarlet bumps, he believed. But whenever he questioned a dermatologist, he got the same rather patronizing answer: There's nothing linking food and acne, but if something bothers you, don't eat it.

"I felt like I had such a clear experience. I felt like, how can this [response] just be so casual?" says Matthew. "I can't be the only one."

Matthew is not the only one. Dermatologists say that many patients ask about a connection between diet and pimples. These sufferers have, for the past 40 years, received the same information: Science shows no link between the two. Doctors learned this in medical school, where they were taught that the diet-acne connection is a myth. But what if the patients are right and the dermatologists wrong? Can a small band of defiant dermatologists - including one in Newton and another in New Hampshire - actually help prove that myth is fact?

DR. VALORI TRELOAR became a dermatologist in 1990, and since then, a large number of patients have come to her suffering from years of mild to severe acne. Treloar, whose practice is based in Newton, had a limited number of treatment options for these patients: cleansing techniques, topical retinoids such as Retin-A, topical or oral antibiotics, and the powerful drug Accutane. But the drugs, particularly Accutane, have a variety of side effects, and for some of her patients the standard acne treatments did not work or worked for only a few months.

After nearly a decade of practice, Treloar became frustrated and began to investigate alternatives. She stumbled across functional medicine, which holds that many diseases are affected by diet, nutrients, exercise, and trauma. She took courses and began to read everything she could about nutrition and physiology. Eventually she sat for the American College of Nutrition exam to become a certified nutrition specialist. "It gave me a whole new toolbox to use with people with chronic diseases for which conventional dermatology is not working," she says.

Treloar began poring over international scientific journals, even reaching outside dermatology journals for information that could help her patients. For instance, studies about heart health demonstrate that omega-3 fatty acids, like those in fish oil, reduce inflammation, and she explains that inflammation is a clear actor in the appearance of acne. Then Alan Logan - a Westchester, New York-based naturopathic physician, meaning a practitioner who encourages the body's ability to heal by considering lifestyle, diet, and stressors - invited Treloar to coauthor a book. In September, the two published *The Clear Skin Diet.* Filled with references to hundreds of scientific studies, the book explains, in biological detail, how everything from sugar, white flour, and dairy to stress and sleep affect hormones and chemicals in our body that could lead to acne.

Years before Treloar began looking into a link between diet and acne, Dr. William Danby, a dermatologist in Manchester, New Hampshire, and an assistant professor at Dartmouth Medical School, had been conducting his own investigations. From 1973 to 1980, he kept a detailed log of his patients' diets in a

quest to understand the root of their acne. After compiling thousands of patient surveys, he noticed a trend: Those who consumed the most dairy also had the most severe acne. "I had some serious cases," he says. "One was a gal who was an identical twin. She and her sister were raised in Scotland. She took the creamy top of everything; she loved milk and had awful acne. Her sister would drink minimal amounts of the bottom and had no acne."

Without waiting for a peer-reviewed scientific study - though that, too, would come - Danby began counseling patients by the late 1970s to avoid all dairy for six months. Danby says it has worked for many of his patients: "Another guy was 61, the son of an ice cream dealer. He had acute acne all over his back at 61. When I told him he had to stop dairy, he nearly cried. A year later, he was free of fresh lesions."

In the early 1980s, Danby began searching through scientific literature and discovered a nearly forgotten paper from 1966 in which a California doctor named Jerome Fisher had interviewed more than 1,000 acne patients and found a correlation between dairy and acne.

Danby knew the importance of amassing peer-reviewed studies to support his dairy hypothesis. In 2001, he contacted Dr. Walter Willett, a professor of epidemiology and nutrition at Harvard School of Public Health, who has conducted extensive research on diet and cardiovascular disease, cancer, and other health conditions like infertility. Willett had already been interested in investigating acne, as previous research showed a link between dairy and breast cancer. He thought perhaps the hormones in milk played a role in that cancer and that milk might play a role in other hormonally influenced ailments like acne. With Danby's collaboration, researchers in Willett's lab have so far produced three acne studies. One mined health and diet surveys from tens of thousands of nurses, and the others followed thousands of nurses' sons and daughters. All found a correlation between increased dairy consumption and acne.

The connection between food and acne is a complicated one. Acne is largely caused by increases in male-type hormones, particularly testosterone. And foods can cause the production of different hormones or growth factors in our body or can inhibit proteins in our body that bind with some hormones. For instance, while the exact reason dairy may lead to acne has not been scientifically tested, Danby says that milk from pregnant cows contains hormones that our body can then turn into the most potent form of testosterone.

This summer, a group of Australian researchers published a paper in a US journal on the effects of high-glycemic diets full of, for instance, sugars and white flour and showed a correlation between restricting those foods and decreased acne. This makes biological sense: High-glycemic foods have been shown to lead to insulin spikes. Insulin spikes are known, in turn, to limit the production of proteins that attach to testosterone, so there's more testosterone freely roaming the body, which could theoretically lead to increased acne.

SO WHY HAVE DOCTORS been taught for so long that there's no link? The anti-diet hypothesis that Treloar and Danby struggle against arose solely from two studies from the late 1960s and early 1970s. "I got the papers, and I reviewed them," says Treloar, "and they wouldn't be published today. They just don't meet the standards."

One compares real chocolate bars with fake ones and was conducted at the University of Pennsylvania School of Medicine with funding from the Chocolate Manufacturers Association. But that's comparing sugar with sugar, as Treloar says, and the fake chocolate bars were also loaded with trans fats known to trigger inflammation. The other study examines sugar in the diet of a small group, but, Treloar says, does not take into account what we know now about how glycemic loads from other foods such as white flour and potatoes affect insulin levels.

At the time, the studies seemed to debunk two popular theoretical culprits - chocolate and sugar - and so they stuck. By the 1970s, all dermatologists were being inculcated with the prevailing view that food has no relationship to acne. Since then, most research about food and acne other than the dairy studies has been conducted outside the United States.

The diet-acne camp received a blow last April, when the *Journal of the American Academy of Dermatology* came out with its "Guidelines of care for acne vulgaris management." This overarching paper is intended to evaluate the latest research from around the world and bundle it into one easy-to-read package. The paper contains only one sentence about nutrition: "Dietary restriction (either specific foods

or food classes) has not been demonstrated to be of benefit in the treatment of acne." The two papers referenced for that statement are the ones from 40 years ago, though the article authors agree those studies weren't scientifically rigorous.

One author expresses doubts about the validity of the recent dairy studies. "At least one of the studies was about people remembering how much milk they drank when they were teenagers, and that's hard to do," says Dr. Diane Thiboutot, a professor of dermatology at Pennsylvania State University College of Medicine. Other researchers involved say the milk studies were not included because the "Guidelines for care" took many years to develop and were not easily changed to include relatively new information.

In another hit to the diet hypothesis, the American Academy of Dermatology website has "Acne is caused by diet" as number two on the "Myths About Acne" page. When asked for an official comment, the AAD suggested Dr. Jeffrey Dover, a dermatologist in Chestnut Hill and associate clinical professor of dermatology at Yale School of Medicine. But rather than supporting what appears to be an official AAD stance, Dover finds the milk studies fascinating. "I have had some nice successes with suggesting to patients that they don't eat dairy," he says, "and I've seen at least a handful of patients with very impressive improvement of their acne that was very stubborn up to that point."

Dover tells the story of an early 1970s paper stating ultraviolet light doesn't improve acne, a belief that held for decades. "It turns out that the paper was wrong," he says. "This is an example of dogma getting in the way of progress in science and medicine. It happens all the time. Someone really important proves something and says this is the way it is, and everybody else stops thinking. It takes about 30 years, usually a generation, until someone says, 'Wait, this can't be true.'"

Relying on scientific proof, the foundation of modern medicine, has a number of challenges when it comes to studying the diet-acne connection. For one, diet studies are notoriously difficult to conduct, as participants may misrepresent what they do or do not eat. Then there's funding. For dermatology research, most money comes from pharmaceutical companies.

"I think the nutritional aspect of health is incredibly overlooked," says Dr. Gary Rogers, the director of dermatologic surgery and oncology at Tufts University School of Medicine. "I'm not trying to sound too cynical, but I think it has to do with 'big pharma.'. . . If there's no patent in it to do the studies, then [the pharmaceutical industry] is not going to pursue it."

WITH THESE challenges, Treloar and Danby say they can count on both hands the number of US dermatologists and researchers who lend their voices and efforts to helping prove a food-acne connection.

For many dermatologists, swamped with seeing patients and unable to keep up with the latest journals, the debate continues out of hearing range. Of those interviewed who had heard about the milk or insulin studies, most say it's too early to advise patients to try lifestyle changes and they'll wait for further research - despite, as Treloar says, the low risk involved in this type of intervention. Dr. Jack Krushell, chief of dermatology at Harvard Vanguard Medical Associates, says the food hypothesis is intriguing but "I still kind of follow the party line, which is that food doesn't seem to be a cause of acne."

As for Matthew, the acne sufferer, yet again this year a dermatologist told him there's no link between diet and his outbreaks. After nearly 20 years combating this skin disorder, his frustration boils over: "It's ridiculous. . . . If there's information that can prevent even minor breakouts, physicians should empower their patients so they can make informed choices about food and diet."

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