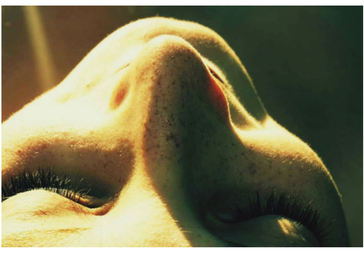
# The Science of How Your Feelings Affect Your Face

By Melissa Dahl



Welcome to the world of psychodermatology. Photo: Cristina Amaral / Eyef.m/Getty Images

"Tell me about your relationship with your skin," the nice man on my computer screen asks me. It's something I've spent countless hours thinking about, but never talking about, and so I falter for a moment before figuring out how to reply. "Well," I begin. "I guess it started in college?"

I'm teleconferencing with Matt Traube, a licensed clinical therapist who specializes in something called psychodermatology: therapy, but for your skin. It's a small field — there are only about a half-dozen clinics in the U.S. — and from the outset it sounds a little quacky, maybe even a little Goop-y. But in recent years, researchers across the world have quietly made advances in understanding the physiological mechanism underlying the so-called "brain-skin axis," the term often used to describe the interplay between the nervous system and the skin. So far, it's safe to say that, for some people, emotional problems do seem to worsen skin problems, and vice versa. But what's happening in the brain and body to cause this? And is psychotherapy really powerful enough to make it stop?

The field of psychodermatology encompasses a few different ways of dealing with the connection between the mind and the skin. Some psychologists work with people whose dermatological problems, like severe psoriasis or eczema or alopecia, have caused or exacerbated psychological issues such as social anxiety or depression. Others work with those whose psychiatric issues have manifested into skin problems, like hair-pulling, skin-picking, or other body-focused repetitive disorders. Still others may work with people who suffer from delusions involving the skin — like delusional parasitosis, in which patients vehemently insist that their skin is infected with mites or fleas or other organisms, when in reality none are present.

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But some of the most intriguing scientific research is being done in an area I want to talk to Traube about: how emotional stress may *cause* skin problems, and how alleviating the stress may help alleviate the skin problems, too. Traube tells me that he's usually something of a last resort for patients, and he wants it that way. "I always tell people, 'Go see a dermatologist first, see how you do,'" Traube says. "'And if you get the results you need, great. And if not, let's talk.'" Medicated creams and lotions prescribed by a physician certainly help, as can a change in diet. But in addition to these interventions — or if they are simply not working well enough — it can be worth trying to address the role of the mind.

In working with his patients, Traube tries to ask open-ended questions, searching for patterns around their flare-ups. "People will say, 'Oh, I noticed it was whenever I had to go to my in-laws' house,' or 'I was getting married' — something, some big life event, or some stressful situation that triggers it," he tells me. Mine is easy: It is work. To help me understand psychodermatology, Traube has agreed to do a 40-minute pseudotherapy session with me, during which I tell him about the way the acne that plagued me in college has a way of coming back when I take on too much work, which is not ... *not* often. "When you think about a standard psychological visit, you talk about all that," he explains. "But here, we're really focused on what these real, psychological influences may be doing to the skin."

I'm lucky in that, apart from the occasional flare-up, I seem to have mostly outgrown the worst of my skin issues. Others are not so fortunate. Much of the research in psychodermatology has focused on psoriasis, a chronic skin condition caused by a haywire immune system that creates an overgrowth of skin cells, which manifests in itchy, scaly patches on the skin. The findings that have emerged from studying psoriasis likely apply to acne or eczema or other conditions resulting from inflammation, explained John Koo, director of the Psoriasis, Phototherapy and Skin Treatment Clinic at the University of California, San Francisco. One of the reasons so much of the research so far has focused on psoriasis is the same reason the condition is so distressing to people who have it: It's so easy to study because it's so easy to see.

As many of the estimated 7.5 million Americans who have psoriasis could tell you, stress has a way of making the condition worse. A couple of recent studies have corroborated this, with one finding that most people with psoriasis named emotional stress — not diet, not the weather, not medications or infections — as the No. 1 trigger for their symptoms. "I think dermatologists have always accepted the fact that the skin and the mind are very intertwined," Dr. Richard Granstein, a physician and researcher specializing in psychodermatology at Weill Cornell Medicine, tells me. "I think it's always been true. What's different now is there is a scientific basis for understanding *how* the mind affects the skin."

Perhaps your understanding of the body's physiological stress response goes something like mine did before I started poking around in the world of psychodermatology: *something-something cortisol ... ?* In his lab, Granstein and his colleagues have found cortisol is a key factor, but they've also investigated how specific immune cells react to stressors. In response to stress, Granstein explains, "There are certain neurohormones that are released — so, for example, cortisol — which may cause cells to release other things that might make blood vessels dilate or widen a bit, and become leaky." On the skin, this would show up as redness and swelling — inflammation, in other words — and if you are genetically predisposed to inflammatory skin conditions like acne, eczema, or psoriasis, this could be how a flare-up begins.

But the latest research has stretched beyond cortisol response, zeroing in on specific types of immune cells that appear to respond to stress regardless of whatever cortisol is or is not doing in the body. Take something called Langerhans cells, for instance, which are in the upper layers of the skin, and act as a go-between for the nervous system and the immune system. In psoriasis patients, those scaly skin patches that are symptomatic of the condition tend to form when Langerhans cells leave the upper layer of the skin — and research has suggested that stress may be involved in *causing* this movement of those cells. In one recent experiment, scientists stressed out their study participants by putting them through something called the Trier social stress test, a mildly nightmarish task in which people are asked to prepare and deliver a short speech, all while a panel of strangers stares at them blankly, judging. It's an exercise that has been shown to reliably induce stress, and in this study, the Langerhans cells in these volunteers' upper layers of skins decreased after suffering through the Trier test. It's not confirmed that this is what's happening in inflammatory skin conditions like psoriasis. But it could be.

**In my session, Traube asks me what I was feeling the last time I had a bad acne flareup.**

Or consider the mast cell, which is also associated with inflammatory response. Some researchers have observed a kind of vicious cycle when it comes to stress and psoriasis: "[S]tressed nerves release substances that activate mast cells," as *Nature* reported in 2012, "and these cells encourage the growth of more nerve fibers, which in turn release more of the molecules that activate mast cells." This biological vicious cycle is not a bad metaphor for the psychological problems here, and how stress can induce skin problems, skin problems can induce stress, and round and round. "You're stressed because of your disease, and your disease gets worse because you're stressed," Granstein said. "I think that's certainly true. And the fact that stress probably causes the diseases to get worse is, I think, a good reason why — in selected patients — things that alleviate stress, including support groups and, sometimes, psychotherapy are useful."

In my session with Traube, for instance, he takes me through a guided-imagery exercise, after which I feel extremely relaxed, and also a little bit high. He also tiptoes into some cognitive behavioral therapy, an evidence-based psychotherapy practice that helps people unravel their cognitive distortions. He asks me to share what I was feeling the last time I had a bad acne flareup, and as he does I can picture myself in a hotel bathroom in Louisville, Kentucky, angrily scrubbing my face the night before giving a talk at a psychology conference. I tell him that it can feel distracting, like I can't concentrate on what I'm saying or a presentation I'm trying to deliver, because I'm imagining that no one is listening because they are too busy staring at my stupid, broken-out face. Traube starts to gently point out that this probably isn't true, and I agree with him intellectually, of course.

But I also know what he's doing. The first time I talked to him, a few days earlier, he mentioned the vicious skin-stress cycle, and how CBT can help. "If we can somehow get in the middle of that and work with those thoughts that are not necessarily always accurate, like this idea that everyone is somehow staring at them and their skin imperfection, we can reduce the stress, and we can reduce flare-ups," Traube said. It makes sense intuitively, and there's now a growing case coming out of labs like Granstein's that suggests this approach makes sense biologically, too. "But even if it's not true," Granstein told me, "it's useful anyway. Because the disease makes you stressed. And this can help you cope with the disease, even if it doesn't make it better."