

FEATURE ARTICLE



There Is Hope: Autogenic Biofeedback Training for the Treatment of Psoriasis

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Many college students experience stress-related illness, and in one study, 82% of students reported significant improvement in health when they participated in a semester-long stress management program. The factors that contribute to symptom reduction are illustrated by the case report of a 23-year-old male student who had been suffering from psoriasis for the past 5 years, which was not alleviated with medication and traditional medical treatment. He participated in an integrated self-regulation program consisting of daily self-healing home practice for 3 weeks, a desensitization strategy, autogenic training, and biofeedback training, coupled with pre- and posttreatment biofeedback assessments. Results showed a significant improvement in the clearing of the skin, more positive self-talk, and improved posture. The benefits have been maintained at the 4-month follow-up. Discussed are the training components and procedures along with factors that contributed to the clinical success and that can be applied to numerous other stress-related disorders.

I was helpless. I was scared. I was incurable. I became self-healing. I became powerful. I accomplished what my doctors could not. I successfully treated my psoriasis with the power of my own mind. Through this journey, I learned to understand the self as a process. Instead of emotionally

punishing myself for who (what, where) I was not, I began to accept myself as I was. (James, a 23-year-old college student)

The biological cause of many ailments for which patients visit their health care provider is not clear. In most cases, the cause of the symptoms is of unknown etiology, as shown in Figure 1. In 74% of patients, there is no identifiable physical cause. Most of these symptoms are a manifestation of stress, anxiety, and depression. Yet many patients are not offered the option of stress management, even though learning cognitive and somatic skills to reduce stress can help reverse the felt sense of powerlessness and hopelessness and decrease symptoms (Peper, Harvey, Takabayashi, & Hughes, 2009). These self-management approaches should be offered as the initial treatment/teaching strategy instead of medication (McGrady & Moss, 2013).

When these self-regulation skills are offered as part of a college curriculum, students can begin learning these skills without having to even define themselves as sick. In previous studies, students practiced stress management and self-healing skills as part of a university curriculum, and 82% of them reported improvement in achieving positive benefits such as increasing physical fitness; changing diets; reducing depression, anxiety, and pain; eliminating eczema; and even reducing substance abuse (Peper, Sato-Perry, & Gibney, 2003; Bier, Peper, & Burke, 2005; Ratkovich, Fletcher, Peper, & Harvey, 2012). The major factors that contributed to the students' improvement were the following:

1. Daily self-practice and monitoring subjective and objective experiences, which facilitates awareness

Adapted in part from the Distinguished Scientist Award lecture, "There Is Hope: Biofeedback in Context of an Ancestral Perspective," presented at the 44th Annual Meeting of the Association for Applied Psychophysiology and Biofeedback, Portland, OR (Peper, 2013).

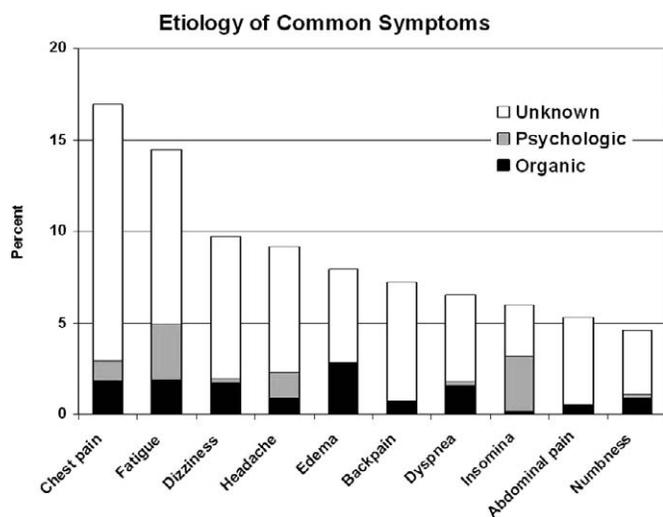


Figure 1. Three-year incidence of 10 common symptoms observed in primary care. Sixteen percent of the symptoms have organic causes, and 10% of the symptoms have psychic causes, whereas 74% of the symptoms have unknown causes. Graph drawn from the original data in Kroenke and Mangelsdorff (1989).

- Sharing subjective experiences in small-group sessions of about six students, which reduces social isolation, normalizes experiences, and encourages hope; in addition, a few students will report rapid benefits such as aborting a headache, being able to fall asleep, or reducing menstrual cramps, which helps motivate other students to continue their practices
- Writing a reflective paper, which summarizes and describes their experiences and how the practices affected them
- Having to do the daily practice because it comprises 50% of the university class grade; in most cases, 4 weeks of practice is long enough to experience a significant change, which again facilitates motivation to continue

Students have reported that numerous symptoms/disorders decrease, such as lowering blood pressure in cases with hypertension, stopping smoking, reducing hair pulling from 855 to 19 minutes per week in a case of trichotillomania, decreasing depressive symptoms, and reducing eczema, psoriasis, and acne (Ratkovich et al., 2012). In many cases, the students have integrated stress management with other changes, transforming internal dialogue, modifying body posture, and interrupting the chained behaviors related to symptoms (Peper et al., 2003). The purpose of this case report of successfully healing psoriasis is to highlight the processes that contributed to this student's improvement and that also appear to underlie the clinical improvements observed in other students and clients.

Background

Psoriasis is the most common autoimmune disease in the United States and affects about 2% of the population (Gelfand et al., 2005; Langley, Kreuger, & Griffiths, 2005; Raychaudhuri & Farber, 2001). It causes red flaky patches on the skin, known as scales. These are most often found on the elbows and knees but can appear on any and every part of the body. It affects most often people between the ages of 15 and 35 years. The total annual costs for patients is estimated at \$11.25 billion, with almost half of that coming from missed work due to their condition (De Arruda & De Moraes, 2001). Besides the medical and economic cost, there is a very high emotional cost including stigmatization, psychological distress, pain, discomfort, and physical disability (Fortune, Richards, & Griffiths, 2005; Bhosle, Kulkarni, Feldman, & Balkrishnan, 2006). More than 20% of people with psoriasis have contemplated suicide (Bhosle et al., 2006). Many students with psoriasis report feeling defeated and hopeless because their health care providers tell them that they have a chronic disease and there is nothing that they can do except suppress the condition with medication.

Although there is no specific cause, multiple factors appear to contribute to psoriasis, including genetic predisposition, smoking, viral infections, dry air, injury (cuts, burns, etc.), lack of or too much sun exposure, and excessive alcohol consumption. In addition, stress is associated with the onset of psoriasis (Zachariae et al., 2004). The most common treatments are cortisone creams, coal tar creams, salicylic acid, dandruff shampoos, moisturizers, prescription vitamin D or vitamin A creams, immune-suppressant drugs (such as methotrexate, acitretin, Humira, and Amevive), and phototherapy. Many of these treatments have negative side effects: Cortisone creams cause thinning of the skin, immune-suppressant drugs reduce skin cell production and increase susceptibility to infections, and phototherapy increases the risk of skin cancer.

Stress management strategies appear useful and sometimes enable patients with psoriasis to become symptom free (Keinan, Segal, & Brenner, 1995). For example, McMenemy et al. (1988) demonstrated that muscle biofeedback combined with progressive relaxation allowed four of five patients to become symptom free. Luthe and Shultz (1969, p. 158) reported that autogenic training (AT) had been used to treat psoriasis successfully. Mindfulness meditation approaches have been shown to produce clinical success (Ludwig & Kabat-Zinn, 2008; Quintiliani, 2008).

Case Example: James

The participant was a 23-year-old male student who had been suffering from chronic psoriasis for the past 5 years.

His condition consisted of psoriatic plaques covering his elbows, knees, ankles, and scalp, as well as smaller red irritations periodically appearing on the entirety of his body. His condition was first diagnosed in 2008, and he had been using a combination of topical corticosteroids daily since diagnosis. He had also experimented with ultraviolet light treatment for a short period of time but had stopped for fear of developing skin cancer. Despite treatments, his condition did not improve. He reported that if he missed even 1 day of topical corticosteroid application, his symptoms worsened dramatically. His failure to respond to treatment motivated him to explore an alternative approach. Prior to beginning the self-regulation study, he had stopped all medication for 1 week. The procedure consisted of pre and post photos of his elbows and knees, a biofeedback assessment (including a desensitization-to-touch trial), and self-regulation training.

Biofeedback Assessment with Desensitization Trial

The pre and post baselines were recorded with surface electromyography (SEMG) of the upper right trapezius, temperature from the left index finger, skin conductance levels from the pinky and middle finger of the right hand, blood volume pulse from the right index finger, and thoracic and abdominal strain gauges on the first day of treatment and 3 weeks later at the end of the intervention procedure. The assessment consisted of the subject sitting with his eyes closed during the following conditions: (a) prebaseline (sitting comfortably for 3–5 minutes), (b) an imagined stressor (thinking about feeling the itching of the psoriasis for 3–5 minutes), (c) sitting relaxed for 3 to 5 minutes, (d) the trainer randomly touching the subject’s psoriatic plaques, and (e) a postbaseline (sitting comfortably for 3–5 minutes). The postassessment 3 weeks later repeated the identical procedure.

Training Procedure

The training protocol consisted of daily AT to induce relaxation, stress reduction, and desensitization. James was instructed to practice AT on his own time and was instructed to use it throughout his day whenever he felt the urge to itch, touch his psoriatic plaques, or when thinking self-critical thoughts. When the subject had such an urge, he was to stop and conduct a quick five-step AT session in that moment.

1. Stop.
2. Take a quick self-talk assessment from 0 to 10 (0 being negative or low, 10 being positive or high).
3. Breathe deeply.

4. AT, using a quick series of cues: “My right hand is heavy, my hands and feet are heavy and warm.” “My skin is cool, clear, and regenerative.” “I am worthy.”
5. Post AT self-talk rating 0 to 10.

In addition, James was instructed to change his body posture from a more powerless body posture to an empowered body posture, namely, from a slightly collapsed and shrinking posture to sitting and standing upright and being expansive (power pose), while feeling happy to be working on empowering his health (Cuddy, 2012). The subjective data were collected daily.

Results

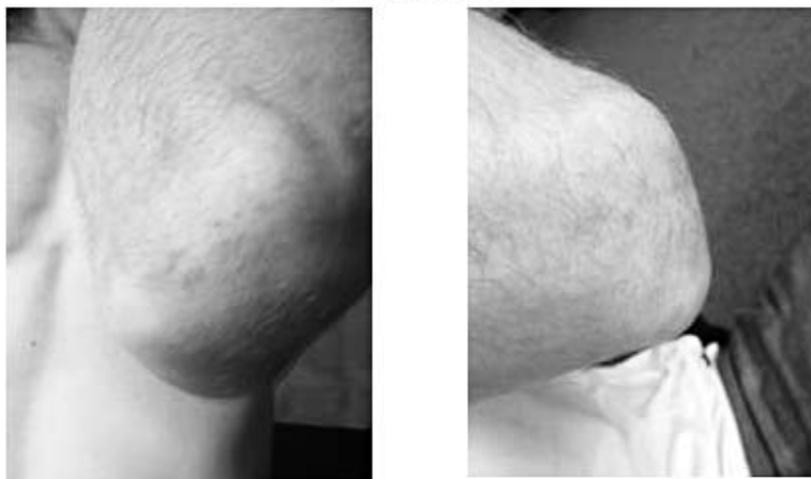
After 3 weeks, James’s skin cleared for the first time in 5 years, as shown in Figure 2. The skin was smoother and less red. The subject reported that his skin was the clearest and smoothest in the 5 years since his diagnosis. At a 4-month follow-up, his improvement was maintained. In addition, he transformed his body posture and expression from being collapsed and having a hoodie over his head to sitting and standing upright with an expression of confidence, as shown in Figure 3.

James practiced the modified AT whenever he felt an urge to scratch, “collapse,” or become self-critical. He reported that his psoriasis continuously created negative thought cycles that were extremely difficult to break. He described the process in achieving the successful outcome as follows:

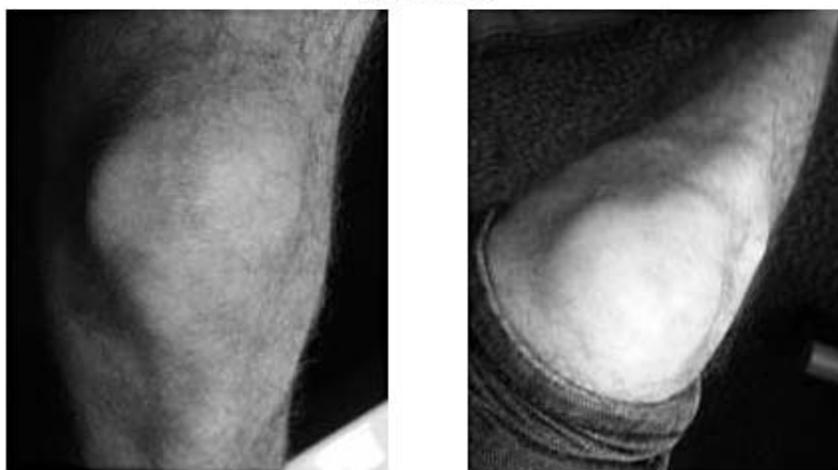
I was disgusted by my plaques and by my inability to effectively treat them. Acceptance that my condition was incurable left me feeling like a lost child, hopeless and scared. Whenever I found myself collapsing and scratching, a series of negative thoughts would enter my mind, “repulsive, ugly, sickly, helpless.” These thoughts would perpetuate my consciousness, leaving me feeling self-disgusted, unworthy, and helpless. It was only once I gained conscious control over my urges to collapse and itch that I was able to foster more positive self-talk. I began to be more in control, more powerful. I was no longer just reacting. I was able to once again take charge of my mind and my body. Instead of feeling defeated, I was hopeful. With each practice of autogenic training, I would fill my consciousness with positive thoughts; eventually positivity began to prevail. No longer was I self-loathing; rather, I was proud.

By changing his posture and self-talk, the practices quelled the itch and transformed his self-talk, as shown in Figure 4.

Elbow



Knee



Pre

Post

Figure 2. Pre and post photos of the elbow and knee showing the improvement of the skin.

The biofeedback pre- and posttraining data showed that James demonstrated a more relaxed state throughout the posttraining assessment. During the posttraining assessment, James's trapezius SEMG readings decreased from the pretouching to the posttouching segment (see Figure 5). At the close of the study, James was able to return to baseline SEMG values much more quickly. He also demonstrated an improved ability to inhibit his automatic skin conductance response to touching and when thinking about the psoriasis. His skin conductance level showed very minimal reactivity to touch during the posttraining assessment as

compared with the pretraining assessment, as shown in Figure 5.

Discussion and Implications

This case report showed how an integrated educational stress management approach, which combined AT, biofeedback, and postural retraining, was an effective method for treating chronic psoriasis. This approach was beneficial without any of the negative side effects associated with medication. Pharmaceutical treatments tend to reinforce the concept that the person is helpless and communicate



Figure 3. Change in posture and presence that occurred as a result of the study. Left figure is at the beginning of the study where he usually wore a hood and tended to hide away; right figure shows 4-month follow-up where he stands straight and is open and expansive.

that the only hope is an external masking of the symptoms. In contrast, the self-mastery approach enhances self-efficacy. It empowers the person in a self-healing process, thus increasing self-esteem. This case example is similar to that of many other students who have reported

success. Common to the successes are the following factors:

1. Biofeedback monitoring and training change the illness beliefs of the person—“seeing is believing” (Peper,

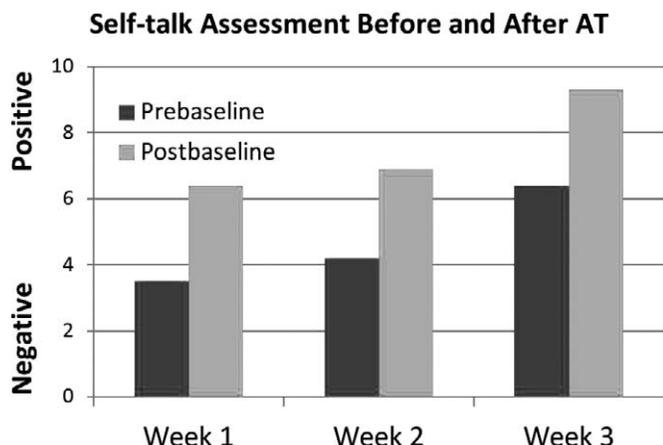


Figure 4. Self-rating showing changes in negative-positive self-talk within each session and across the course of training.

Shumay, & Moss, 2012). In this case example, the initial temperature monitoring during AT demonstrated that peripheral hand warming was possible. The physiological assessment demonstrated that touching the psoriasis plaques triggered physiological changes of which the participant was unaware and that by practicing the AT, he could reduce the physiological responses.

2. Graphs and numbers make the changes believable and increased motivation. Detailed log keeping demonstrates that changes occur over time. Without accurate log keeping, it is more difficult to confirm that changes have occurred. Similarly, biofeedback monitoring demonstrates that physiological changes have occurred even when the participant is unaware that such change occurred.
3. Self-monitoring of specific behaviors (touching, body collapsing, negative thoughts) and then substituting a new self-healing behavior interrupts the chained behavior and transfers the learning from the training session into everyday life. Whenever James was aware that he initiated the hand movement to touch his skin, he would interrupt the chained behavior and perform an autogenic practice. He needed to be mindful during all activities. This is very challenging because people are normally captured by whatever they are doing at that moment. As he stated,

Breaking this chain behavior was by far the hardest things I've ever done. It didn't matter what situation I found myself

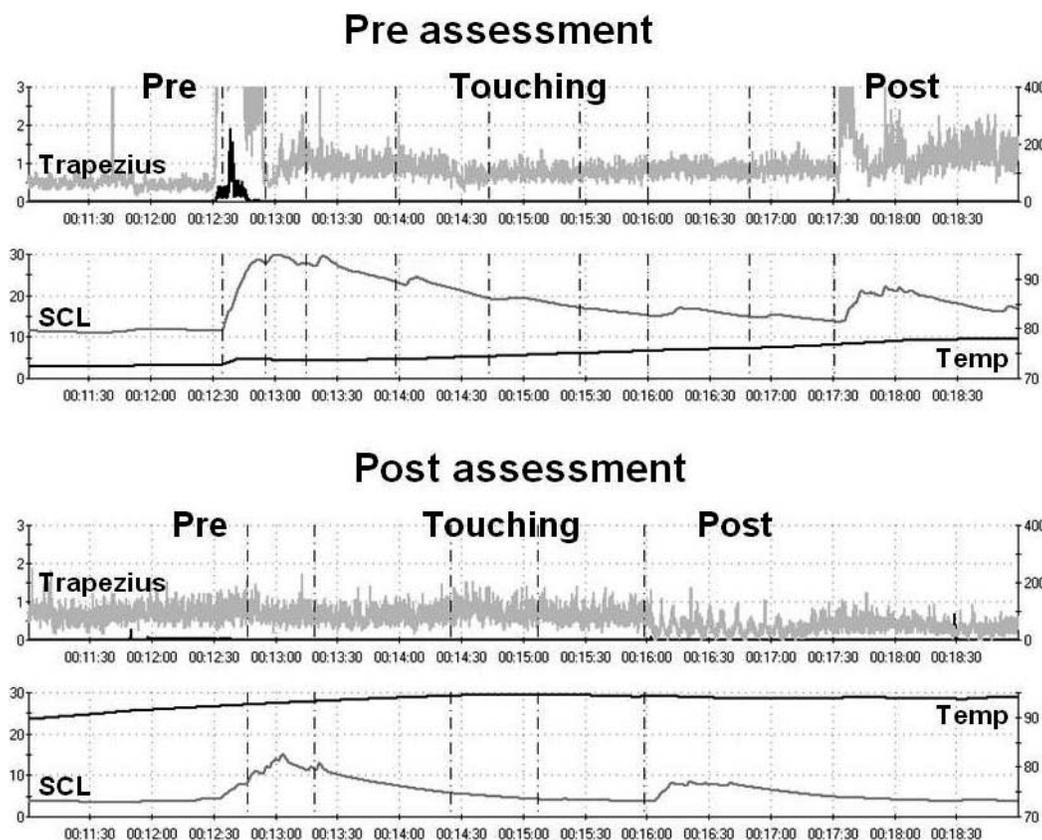


Figure 5. Pre- and posttraining assessment of desensitization response to touching. Overall, the skin conductance was lower and showed minimal response to touching. The SEMG also decreased to lower levels in the postassessment.

in, my AT practice took precedence. The level of self-control I had to maintain was far beyond my norm. I remember taking an exam. I was struggling to recall the answer to the last essay question. All I wanted to do was finish the exam and go home. I knew that I knew it, it was coming to me, I began to write. . . . Yet in that same moment I felt my right elbow start to tingle and my left hand started to drift towards it. Immediately I had to switch my focus. Despite my desire to finish I dropped my pen. I paused to breathe and ran through my AT. Moments like this happened daily, my normal functions were routinely interrupted by urges to scratch. Sometimes I would spend significantly more time doing AT than the task at hand.

Whenever James observed his body posture “collapsing” and “hiding,” thus falling into a more powerless posture, he would interrupt the collapse and shift to an expanding posture by standing more erect and expansive. He did this while standing, sitting, and talking to other students. As he stated,

I hadn’t realized how my collapsing posture was effecting my self-image until I began practicing a more powerful posture. In class I made myself sit with my butt pushed back against the back of the chair instead of letting myself slide forward into a slouch. Just like the urge to itch, I had to stay conscious of my posture constantly. At work, at school, even at home on the couch I practiced expanding body posture. The more I was aware of my posture the better my posture became, and the more time I spent in power pose the more natural it began to feel. The more natural it felt the more powerful I felt.

Continuous self-monitoring and learning to interrupt/divert the symptom promoting chained behavior appears to be a major factor in achieving success. This is somewhat different from just practicing a skill for 20 minutes a day. This process enabled James to integrate the new habit into a variety of behaviors. It is very similar to the commitment that athletes exhibit in their skill mastery. It takes practice, practice, practice; not mindless practice, but practice with intent (Wilson & Peper, 2011).

4. Adopting an attitude of passive attention and acceptance—the basis of mindfulness. As James stated, “I was able to attune myself to my body in such a way that I became aware of my body functioning’s without judgment. I began to notice small stressors before they became overwhelming. By being attentive to my body instead of reactive, I was able to become aware of my

plaques itching without going into a negative mind-set. I was able to accept its occurrence as part of my journey. An itch was no longer a failure; it simply meant there was still room for growth and improvement.”

5. Evoking hope is critical for health. As James reported, “For years I had been under the impression that I was hopeless in combating my psoriasis. It had been ingrained in me from my first diagnosis. Every doctor from general care to dermatologists said essentially the same thing, ‘This is a life-long condition without any cure, all we can do is help negate the symptoms.’ Even the naturalistic methods I had tried were all following the same pattern, using external substances applied to the skin to lessen plaques. Even going into the study I had feelings of doubt. Reservations, not wanting to get my hopes up for nothing. Yet less than 1 week into the process, I began to see objective improvement in my skin. I found hope and comfort in knowing I was making progress. The power to heal myself was mine, and no Western medical professional could take it away again.”
6. Healing is an ongoing journey. As James reported, “Through this journey I learned to understand myself as a process. Instead of emotionally punishing myself for who (what, where) I was not, I began to accept myself as I was. This is not to say I became docile, in fact quite the opposite. It was as though a light went off in my head. My goals were still important even if they were not the end of the journey. I found peace in the understanding that personal growth is not measured in external goal achievement (though they are encouraging) but more so in one’s commitment to evolve. In other words, achievement is a process and forward movement is progress to be celebrated. This realization lifted an immense weight off of my shoulders. I was no longer failing to achieve because my goals were still in the distant future. I was achieving every day as I committed myself to forward progress. I had become able to internalize and rejoice in my day-by-day devotion to life in the present moment. Being able to stay in the here and now, not comparing myself to a hypothetical ‘what if–self’ was an incalculably beneficial realization for me. My life will never be the same.”

Acknowledgment

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