Autogenic Training: An Integrated Approach with Biofeedback for Supporting Health

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Autogenic Training (AT)

- The techniques of autogenic training have been designed to support and facilitate the natural self-healing mechanisms that already exist in our bodies.
- The emphasis is to not to control these natural healing systems, but rather to use their intrinsic potentials more fully.
- AT develops a state that is the opposite of that which is elicited by stress.
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<thead>
<tr>
<th>Sympathetic Nervous System</th>
<th>Parasympathetic Nervous System</th>
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<tbody>
<tr>
<td>Fight-or-Flight Response</td>
<td>Rest-and-Digest</td>
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<tr>
<td>Energy Expenditure</td>
<td>Promotes Healing and Growth</td>
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<tr>
<td>Increased Heart Rate</td>
<td>Decreased Heart Rate</td>
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<tr>
<td>Increased Blood Pressure</td>
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<tr>
<td>Tense Muscles</td>
<td>Relax Muscles</td>
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<tr>
<td>Systems Shut Down</td>
<td>Systems are Active</td>
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Adapted from: ???????

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My Background in AT

• Observed Elmer Green’s use of autogenic phrases to facilitate hand warming for the very successful treatment of migraine
• Attended, organized and co-taught workshops with Wolfgang Luthe at the Biofeedback Society (AAPB) in the early and mid 1970s
• Impressed by the accumulated knowledge of observing thousands of patients who had practiced AT
Useful Info from AT (1-2)

- Offers guidelines about autonomic self-regulation based upon thousands of patients who were follow-up (successful and unsuccessful). The Germanic compulsiveness showed when voluntary self-regulation could be helpful or harmful.

- In most interventions, people who drop out are not follow-up (yoga, biofeedback).

- Biofeedback/neurofeedback has almost no data or follow-up on unsuccessful patients. Journals tend to only publish success.
Useful Info from AT (2-2)

- The precision in teaching the basic postures with facilitated mindfulness and directed participants to be in the “present”
- Using patient feedback to observe and support a passive attentive mindfulness state
- Developing somatic awareness (mind/body)
- Successful outcomes clinical disorders and optimizing health
Two examples

• Pain in back during AT collapse
• Terror and panic when neck relaxed
• Headache patient not wanting to say aggressive thoughts
• Warning when working with diabetes
Autogenic Training: Overview

- Background
- Components of Autogenic Training
- Understand and psychological benefits
- Learn how to perform autogenics
- Guidelines
- Illustration of process with case example
Autogenic Training: Background

• Grow out of the work in the late 19th century (1894-1903) by Oskar Vogt and Korbininan Brodmann in Berlin on the studies of sleep and hypnosis
• They observed that patients were able to put themselves in an auto-hypnotic state which had positive recuperative effects
• Observed that short-term mental exercises when practiced several times during the day reduced the stress of effects of fatigue and tension as well as other disturbing symptoms such as headaches
• Johannes Schultz, a German psychiatrist and neurologist, in 1905 was stimulated by their work and the therapeutic potential of hypnosis.
Origin of Autogenic Training

- Johannes H. Schultz in 1932 wrote his first book in which he described Autogenic Therapy as a way to reduce the dependency on the therapist.
- Wolfgang Luthe in the 1960s consolidate AT and developed more advanced techniques.
- Predominant research sources from Germany and Japan.
Derived from Self-hypnosis

Émile Coué (1857-1926) was a French psychologist and pharmacist and founder of self-hypnosis (autosuggestion) in Nancy, France. He explored the power of suggestions during

- By giving suggestions to the patients for whom he filled their prescriptions I the pharmacy
- He implemented the conscious autosuggestions, *Every day, in every way, I'm getting better and better* and suggested the (repetition of such expressions, according to a specified ritual, at the beginning and the ending of each day.

From: http://en.wikipedia.org/wiki/%C3%89mile_Cou%C3%A9

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History of Self-Regulation

- Yoga
- Progressive relaxation
- Autogenic training
- Autogenic biofeedback training
- Transcendental meditation (TM)-Herbert Benson’s Relaxation Response
- Quieting response
- EMG biofeedback
- Temp biofeedback
- Respiration biofeedback
- Neurofeedback
- Heart rate variability biofeedback

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AT Use in the USA

• Autogenic training is usually done with a few phrases within relaxation/visualization approaches without teaching a type of mindfulness (much less success)

• AT as developed by Schulz and Luthe is totally different which leads to remarkable clinical outcome data

• Similar to Jacobson’s Progressive Relaxation which consists of learning very specific control over sessions; instead, it is taught by an audiofile as a general relaxation for a short time
Biofeedback and Autogenic Training in the USA

• Initially combined by Elmer and Alice Green at Menninger Foundation

• Wolfgang Luthe, M.D. taught AT workshops at AAPB from about 1975-1979

• Erik Peper initially learned AT from Wolfgang Luthe and co-taught AT and presently teaches AT as part of the biofeedback class at SFSU
Reason for studying AT

- It is a means for self-regulation/regeneration (reestablishes homeostasis)
- It offers guideline and limitations in autonomic self-regulation (being Germanic, it followed both successful and unsuccessful patients)
- It is a reliable method of body/mind relaxation and way to achieve peace and calmness.
- Observe how others react
- Western Mindfulness/training approach
- Useful clinical and health applications
- Useful approach to integrate with biofeedback
- Phrases are felt experiences can be used as conditioned cues warm hands, heaviness
AT Training is Skill Mastery

• AT is a psychophysiological skill mastery
• Learning passive attention
• Specific skill mastery
• Focuses upon being in the present
• It is a minimum of three to six months training—just like Progressive relaxation
• Practicing many, many times till the skill is mastered and generalization into daily life

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Benefits of Autogenic Training

• Has been shown to have physiological and psychological effects and reduces allostasis (promotes homeostasis),

• Primary or adjunctive therapy for medical and psychiatric disorders. Applications range from gastritis, diabetes, constipation, food allergies, asthma, sleep disorders, time management, peak performance, child birth, hemophilia etc.
Applications of A.T.

- Psychological
  - Anxiety
  - Insomnia
  - Depression
  - PTSD
  - Sports

- Physical:
  - Asthma
  - Skin Conditions
  - Hypertension
  - Arthritis
  - Migraines
  - Irritable Bowel Syndrome
  - Pregnancy
  - Sports

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Application of A.T. in Sports

- Better performance
- Improved reactivity
- Improved coordination
- Better endurance
- Faster recuperation
- Reduction or elimination of arousal before competitions
Common Themes

• Hierarchical skill mastery-each built upon the other and trains attention (heaviness, warmth, etc.)

• Passive focus of attention
• Being in the present/mindfulness
• Practicing at home and at work
• Inhibiting the stress response
• Global desensitization
• Interrupting chained behavior
What is Autogenic Therapy

- Standard exercises (the six standard formulae) followed by partial formulae
- Autogenic modification
  - Organ specific formulae
  - Intentional formulae
- Autogenic neutralization
  - Autogenic verbalization
  - Autogenic abreaction
- Autogenic meditation
- Interdisciplinary techniques that include biofeedback
Autogenic methods: combinations and procedural interaction. In 10-20% of patients, a more intensive method called *Autogenic Neutralization* (AN) may be necessary. *Meditative Exercises* (ME), *Autogenic Modification* (AM), and *Graduated Active Hypnosis* (GAH) are less frequently employed. *Autogenic Feedback Training* (AFT) and *Autogenic Behavior Therapy* (ABT) are relatively new techniques that are the result of interdisciplinary interaction.
Optimum Way to Teach Individual Guidance / Web seminar

- Meet once a week
- Assign one of the standard exercises to practice at least three times a day as triplets
- Record data
- Next meeting share your observations
- Practice next formula and report feedback

Recommendation
- Teach a web seminar for 10 weeks practicing AT

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<table>
<thead>
<tr>
<th>Standard Exercise</th>
<th>Physiological State</th>
<th>Phrase</th>
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<tbody>
<tr>
<td>1</td>
<td>Heaviness in the extremities</td>
<td>My arms and legs are heavy</td>
</tr>
<tr>
<td>2</td>
<td>Warmth in the extremities</td>
<td>My arms and legs are warm</td>
</tr>
<tr>
<td>3</td>
<td>Calm and regular function of the heart</td>
<td>My heart is calm and regular</td>
</tr>
<tr>
<td>4</td>
<td>Calm and regular respiration</td>
<td>My breath is calm and regular or It breaths me</td>
</tr>
<tr>
<td>5</td>
<td>Solar plexus warm</td>
<td>My solar plexus is warm</td>
</tr>
<tr>
<td>6</td>
<td>Forehead cool</td>
<td>My forehead is cool</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>I am at peace</td>
</tr>
</tbody>
</table>

**Partial formula** e.g., My neck and shoulders are heavy

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Training Length

- Weekly individual or group sessions (group sessions preferred) for a minimum of 12-15 weeks
- Daily practice at least 3 or four times a day practicing as triplets
- Recording of daily subjective experiences for session review
Purpose of standard phrases and positions

- Limits the degrees of freedom so that you can understand what is going on
- Minimizes distractions
- Understand what is happening (e.g., is an autogenic discharge alright or an indication to do further investigation)
- Train mindfulness/being in the present
- Passive attention
Main Principals

1. Mental repetition of specifically oriented verbal formulae for brief periods (e.g., 30 seconds)
2. Passive Concentration
3. Reduction of exteroceptive and proprioceptive stimulation
4. Training Postures
5. Termination: flex the arms, take a deep breath, and open eyes
Prepare for AT

• Practice in a quiet setting where you feel SAFE
• Reduce external stimulation
  – Bright lights
  – Loud noises
  – Cold and breeze
• Reduce somatic stimulation
  – Loosen clothing (belt, bra, shoes
  – Take out hard contacts, dentures
  – Remove wallet, watch
Main Principals

1. Mental repetition of specifically oriented verbal formulae for brief periods (e.g., 30 seconds)
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5. Termination: flex the arms, take a deep breath, and open eyes
Body positions

Sitting in an upright chair, is a position that can be used at work. It helps to relax the neck and shoulders, areas which often carry tension.

Lying down is the preferred position for practicing autogenic exercises when going to sleep. Pillows are sometimes placed under the head and knees. ©2013 Erik Peper
Coachman Position

• Ideal position
  – Neutral joint positions
  – Freedom of pelvic movement
  – Opposite of startle position
  – Total letting go

• Problems
  – Neck does not let go
  – Arms are held tight
  – Legs are held contracted
  – Pelvic does not let go
Seated Position

• A seated position in a chair is recommended with your arms on lap
• Let your head hang comfortably
Lying down position

- The preferred position is lying on your back with arms at your sides, palms facing up
- Heels resting evenly on surface
Lying down position

• The preferred position is lying on your back with arms at your sides, palms facing up
• Heels resting evenly on surface
• Body in neutral position
Are you really relaxing?
Physiological recording of right and left cervical sEMG, electrodermal activity and skin temperature. During the AT Coachman position (CP1, CP2 & CP3), the Right Cervicals EMG increased even though the person reported being totally relaxed.

Use Webcam to illustrate how to do Coach position
AT and Biofeedback

AT phrases are the subjective experience and can be combined with:

- **EMG** - *My arm is heavy*
- **Temp** - *My arm is warm*
- **Respiration** - *It breathes me*
- **HRV** - *My heart beat is calm and regular*
- **EEG** - *My forehead is cool; I am at peace*
Collapse versus Erect Posture
Defeated versus Empowered

• The collapse position normally triggers hopeless, helpless, powerless, defeated memories which encourages depression

• AT phrases focuses attention and inhibits the negative powerless thoughts and memories

• At the end the person stretches and moves into an expanded position (Cuddy)
Tips & Suggestions

- Start a habit. Practice 3-4 times a day.
- Practice where you feel safe
- Avoid all distractions
- Avoid AT after eating, drinking, or smoking (cigarettes)
- Develop a ritual
- Experiment with the practices
- Keep a journal
Benefits of following formal procedure

- By controlling the body position and cognitive activity, subjective discharges can be discriminated and may identify problems.
  - Difficulty with breathing during collapse possibly linked to early drowning/suffocation experience
  - Discomfort in position possible discharge or indication of problems
Reporting what you experience

• Only what you experience at this moment of time without any judgments.
• It is training in being totally present
• Many people say:
  – it is the same as before or previously
  – My hand did not warm as much as before
• These are all judgments, the key is to learn to only report “what is.”

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Mental attitude during practice

- AT phrases are similar to meditation with a word-it, keep the mind occupied and passively focused.
- Passively say the phrase and be present with the area of the body without any judgments.
- If attention wanders such as a thought, *When is it over, I am hungry, Distracted to the area of discomfort*, bring the attention back to the phrase and passive attention to the body.
- If attention keeps wandering, do many short AT sessions instead of forcing the attention.
Many people are somatically disconnected and do not know or feel their body.

Possible options to increase awareness:

- Stroke the arm or legs so that the person can feel the skin; ideally, it is the interior of the body.
- Do movement to activate the areas and then relax so it is easier to feel.
- Put hand in warm water.

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Generalize the Practice

• Structured phrases at least three times a day to develop awareness
• Partial formula many times during the day to interrupt chained behavior
Interrupting the Cascading Discomfort Process

Pain/severe discomfort

First symptoms

Initial awareness of discomfort such as stiffness

Thoughts and emotions

Self-healing interventions

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Awareness of Minimum Forearm Tension (N=34)

- Pre relax
- Minimum tension
- Post relax

µV

- Pre training
- Post training

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Autogenic modification

Allow specific changes to occur. This includes additional phrases in addition or in combination with standard exercises that focus on either physiologic change (organ-specific formulae) or on attitudinal or behavioral change (intentional formulae)

- Organ specific formulae (e.g. my lower abdomen is warm to simulate peristalsis in the colon;
- Intentional formulae (e.g., breath carries the words for stuttering, or I am satiated for obesity)
Autogenic neutralization

Autogenic neutralization is a structured release of material in order to neutralize or reduce its disturbing effect.

– Autogenic verbalization in which the trainee is encouraged to verbalize any materials related to a theme.

– Autogenic abreaction in which the trainee just reports what is occurring – just reporting without any judgments

• Clinical example of patient with headache (aggression)
Autogenic Meditation (1-2)

Autogenic Meditation is a series of seven exercises begun only after the trainee has developed the ability to maintain passive concentration for at least 30 minutes (after at least 6 months of AT practice.)
Autogenic Meditation (1-2)

- Preparatory training (extending the time of Standard formulas to 30-50 minutes)
- Spontaneous experience of colors
- Experience of selected colors
- Visualization of concrete objects
- Visualization of abstract objects
- Experience of selected state of feeling
- Visualization of other people
- Answers from the unconscious

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Themes Underlying AT (1-2)

• It evokes the autogenic state diametrically opposed to that elicited by stress. It is self-generating thereby promotes health.
• Combines mind and body (mind and body is the same) (often if one is with the body it will warm up).
• Soma has an innate capacity for self-healing and this capacity is allowed to become operative in the autogenic state. Neither the trainer nor trainee has the wisdom necessary to direct the course of the self-balancing process, hence the capacity is allowed to occur and not be directed.

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Themes Underlying AT (2-2)

- Homeostatic self-regulation is encouraged.
- The trainee does most of the learning at home, hence responsibility for the training lies primarily with the trainee.
- The trainer must be self-experienced in the practice.
- The attitude necessary for successful practice is one of passive attention: active striving and concern with results impedes the learning process. An attitude of acceptance is cultivated, letting be whatever comes up. This quality of attention is known as ‘mindfulness’ in meditative traditions.
Training Concepts (1-2)

- Requires regular practice (brief mental exercise of passive concentration upon the soma) of verbal stimuli (the basic six autogenic formulae)
- Designed to promote an autogenic state which is a relaxed trophotropic state to facilitate homeostasis and the self-normalizing process. (*Trophotropic: the technical term used by W.R. Hess, having to do with those mechanisms which physiologically belong to recuperation, protective mechanisms, unloading, restoration of achievement capacity, normalization and healing.*)
- It focuses upon doing it yourself
- Process similar to Zen and Buddhist meditation.

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Training concepts (1-2)

- Specific postures
- Internal mental attention to parts of the body
- Inner repetition of the six phrases of the Standard exercises.
- Reporting upon experiences without judgment (learning to be in the present without justification).
- Short exercises to learn mastery of mind (passive attention) and learn to evoke the physiological (somatic) response. It is being with the soma.
- 3-6 months for the standard formula (similar to Progressive Relaxation by Jacob Edmunson)
Non-indications, contra-indications and relative contra-indications in Autogenic Training (AT), Progressive Relaxation (PR) and biofeedback (BF)
Non-indications: Not advisable to use AT, PR, BF

• Persons incapable of or unwilling to follow instructions:
  – Mentally retarded
  – Under 5 years
  – Recalcitrant psychopath/-Acute schizophrenic
  – Different language

• When careful and critical control of person’s training symptoms is not possible

• When differential diagnostic evaluation (e.g., autogenic discharges vs. unrecognized pathology) is not possible
Contra-indications: Potential for problems with AT, PR, BF

- Persons in critical care state and where system is too fragile, e.g., cardiac disorders (potential for heart attack, during/after heart attack or presence of related disorders such as arrhythmia, embolism)
- Persons taking medication, unless monitored closely, e.g., in diabetes, glaucoma, hypoglycemia
- Persons showing significant paradoxical increases in blood pressure during AT
- Persons with psychoses (sub-acute and paranoid) and with dissociative (non-psychotic) reactions
Relative contra-indications: Particular caution modification of procedure required with AT, PR, BF (1-2)

• Avoid area of concern to avoid:
  – Heart command with cardiac disorders
  – Breath command with respiratory disorders
  – Solar plexus command during pregnancy
• Persons with poor experience during relaxation
• Persons with experience in min-altering drugs and/or anesthesia
• When response is incongruous with instructions, e.g., trainee reports pain during “letting go” instruction, trainee becomes panicky when imagining a “relaxation” scene
• Excessive or unusual physiological response, e.g., flushing of face, sweating palms, heart palpitations, headache

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Relative contra-indications: Particular caution modification of procedure required with AT, PR, BF (2-2)

- Excessive or unusual psychological response, e.g., disorientation in time and space, discharge of emotions such as crying, intense dynamic changing of image which is predominantly red
- With persons blocking the need to cry or vomit
- No low frequency brainwave training with trainees who have epilepsy
- No improper placement in muscle re-education
- No unilateral training with bruxism
- With persons who tend to “over tighten” during tightening in PR
- When person is insufficiently aroused before leaving a training session
Case Example: The use of Autogenic Training and Biofeedback for the Treatment of Plaque Psoriasis

Aaron Klein and Erik Peper
San Francisco State University

Subjective Experience

• “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.”

• --a 23 year old college student

What is Psoriasis?

- Most common autoimmune disease in the US
- Skin cell production is sped causing dead skin cell patches to build up on the surface of the body
- These patches, known as scales, are most often found on the elbows and knees but can appear on any and every part of the body

Who does it affect?

- 7.5 million Americans suffer from psoriasis
- 125 million people worldwide
- Most common between the ages 15-25

(National Psoriasis Foundation, 2012)

Costs?

• Psychological Defeat
  o doctor tell you your condition is lifelong
  o your only hope is continuous symptom suppression

• Treatment costs
  o $11.25 billion annually

• Missed work
  o accounts for 40% of annual costs
  o 60% of patients miss on average 26 days annually

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Traditional Treatments

• Cortisone creams
  o causes thinning of the skin
  o require vigilant application

• Pharmaceuticals
  o suppress the immune system
  o Increase susceptible to other illness

• Phototherapy (tanning)
  o may cause skin cancer
  o regular treatment required

(PubMed Health, 2011)
Background for Self-Regulation

- Five adults studied over five weeks
  - Had symptoms for five plus years
- EMG training recorded from the anterior temporalis with auditory feedback
- Training in progressive relaxation
- Significant reduction in stress and symptoms at five weeks
- Four patients were symptom free at the two month follow up
  - Three were reachable two years later and were still symptom free

Research by McMenamy (1988)

Case Example

• Twenty-three year old male student who had been suffering from chronic psoriasis for the last five years with psoriatic plaques covering his elbows, knees, ankles, and scalp, as well as smaller red irritations periodically appearing on the entirety of his body.

• Diagnosed in 2008 and unsuccessfully treated with standard medical approach.
Previous treatments

• Combination of topical corticosteroids daily since diagnosis.
• Experimented with ultra violet light treatment for a short period of time (stopped for fear of developing skin cancer).
• Despite treatments his condition did not improve. If he even missed one day of topical corticosteroid application, his symptoms worsened dramatically.
• His failure to respond to treatment motivated him to explore an alternative approach.

Method (1-2)

• Daily autogenic training (AT) for relaxation, stress-reduction, and desensitization.
• Practice AT whenever he felt the urge to itch, touch his psoriatic plaques, or when thinking self-critical thoughts. He was to stop and conduct a quick five-step AT session in that moment. AT, utilizing 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.”

Method (2-2)

- Perform self-talk assessment from 0-10 (0 being negative or low, 10 being positive or high)
- Breathe deeply
- Post AT self-talk rating (0-10)
- Change body posture from a powerless body posture (collapsed and shrinking posture) to an empowered body posture* (upright and expansive), while feeling happy to be working on empowering his health (Cuddy, ted video)

Results

• The skin was smoother and less red. His skin was the clearest and smoothest in the five years since his diagnosis.

• At a four month follow-up his improvement was maintained.

• 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.

Self-talk Assessment Before and After AT

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<thead>
<tr>
<th></th>
<th>Prebaseline</th>
<th>Postbaseline</th>
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<tbody>
<tr>
<td>Positive Week 1</td>
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<tr>
<td>Positive Week 2</td>
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<tr>
<td>Positive Week 3</td>
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<tr>
<td>Negative Week 1</td>
<td></td>
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<tr>
<td>Negative Week 2</td>
<td></td>
<td></td>
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<tr>
<td>Negative Week 3</td>
<td></td>
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</tbody>
</table>
Results

- Three weeks the skin cleared for the first time in five years
- One year follow-up the skin stayed clear


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Results

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.

Implications 1-

- Biofeedback monitoring and training changed the illness beliefs of the person—“seeing is believing.” The initial temperature monitoring during autogenic training demonstrated that peripheral hand-warming was possible.

- Graphs and numbers made the changes believable and increased motivation. Detailed log keeping demonstrated that changes occurred over time.

Subjective Experience (1-2)

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

Subjective Experience (2-2)

• 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 thought 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.

Implications 2-

- Self-monitoring of specific behaviors (touching, body collapsing, negative thoughts) and then substituting a new self-healing behavior interrupted the chained behavior and transferred the learning from the training session into everyday life.

Adopting an attitude of passive attention and acceptance--the basis of mindfulness.

• “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 mindset. 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.”

Evoking hope is critical for health (1-2)

“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.”

Evoking hope is critical for health (1-2)

• “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.”

Evoking hope is critical for health (2-2)

“Even going into the study I had feelings of doubt. Reservations, not wanting to get my hopes up for nothing. Yet less than one week into the process I began to see objective improvement in his 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.”

Healing as an ongoing journey (1-3)

“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. 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.”

Healing as an ongoing journey (2-3)

“I found peace in the understanding that personal growth is not measured in external goal achievement 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.”

Healing as an ongoing journey (3-3)

“I was achieving every day as I committed himself 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”.

High testosterone
Low cortisol

http://www.ted.com/talks/amy_cuddy_your_body_language_shapes_who_you_are.html
Low Testosterone
High cortisol

http://www.ted.com/talks/amy_cuddy_your_body_language_shapes_who_you_are.html

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Body changes Mind/emotions

- Hold pencil between teeth you will become less depressed
- If you are powerful you can do more risk action is modulated by cortex
- Low power actions revert back to overlearned patterns modulated by amygdala

http://www.ted.com/talks/amy_cuddy_your_body_language_shapes_who_you_are.html
Power /non-power posture

• Power posture (take up space/enlarge/open up)
• Powerless posture (making yourself smaller/defeated)

http://www.ted.com/talks/amy_cuddy_your_body_language_shapes_who_you_are.html
Pose 2 minutes

Testosterone Change (pg/ml)

High power +20%
Low power -10%

http://www.ted.com/talks/amy_cuddy_your_body_language_shapes_who_you_are.html
Cortisol Change (pg/ml)

High power

Low power

High power

Low power

+15%

-25%

http://www.ted.com/talks/amy_cuddy_your_body_language_shapes_who_you_are.html,

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