

# Six Empirically-Supported Premises About Energy Psychology: Mounting Evidence for a Controversial Therapy

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## ABSTRACT

A database of peer-reviewed journal articles exploring the emerging sub-specialty known as “energy psychology” was assessed. This paper focuses on the 245 clinical trials, meta-analyses, systematic evaluations, and theory pieces examining energy psychology protocols that include tapping on acupuncture points (acupoints), the most frequently used and investigated intervention in energy psychology. The review derives 6 premises about the method’s efficacy, speed, durability, and physiologic effects that have enough empirical support (at least 6 clinical trials each) to serve in delineating and making claims about the approach. These include that acupoint tapping protocols (a) are effective in treating a range of clinical conditions, (b) are rapid compared to conventional treatments, (c) lead to durable benefits, (d) produce changes in biologic markers that corroborate the subjective

assessments of clients, (e) are a critical ingredient for the demonstrated clinical effects and (f) send signals that can increase or decrease arousal in specific areas of the brain. Further consideration of the mechanisms that lead to the reported rapid, durable outcomes suggest that the approach has an unusual capacity for revising outdated mental models. Specifically, a hypothesis is developed proposing that acupoint tapping protocols are facile for producing vivid and emotionally intense experiences that contradict outdated mental models. Such mismatches between what is expected and what actually occurs, called “prediction errors,” have been shown to be an essential requirement for substantially altering a maladaptive mental model and reconsolidating a revised mental model into existing neural networks. (*Adv Mind Body Med.* 2021;35(2):17-32.)

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## INTRODUCTION

Energy psychology is an umbrella term for treatment approaches that incorporate an energetic component into the psychotherapeutic process.<sup>1</sup> The stimulation of acupuncture points (acupoints) by tapping on them is the most widely-used and well-investigated intervention distinguishing the approach. First formulated in the early 1980s, the original proponents of acupoint tapping protocols within psychotherapy made bold claims about the speed and effectiveness of the approach, and these claims received considerable press. Peer-reviewed clinical trials investigating the method did not, however, appear for another 2 decades, nor had persuasive explanatory mechanisms been offered for

the promised benefits of the strange-looking protocols. The clinical community met the claims with widespread skepticism and occasional mockery.<sup>2</sup>

Nonetheless, the popularity of the approach has been increasing over the 4 decades since it was first introduced, both in its use by the general public as well as by clinicians. Traffic on the top 5 websites for one of the variations of energy psychology was tracked using a statistical tool that showed more than 6 million visits during a randomly selected month.<sup>3</sup> The Tapping World Summit, an annual 10-day online conference open to anyone has averaged more than a half million participants each of the past 12 years, with more than 600 000 individuals having participated in the 2020 event (personal communication, Nick Ortner, August 4, 2020). Because the method can be self-applied, a spate of online programs has emerged providing instruction in the use of tapping for weight management, insomnia, intimate relationships, financial issues, classroom success and various other practical concerns. A mobile app that guides users in applying acupoint tapping protocols for anxiety and stress

was investigated in a large-scale study including 270 461 app users and found highly significant ( $P < .001$ ) symptom reduction.<sup>4</sup>

Most therapists who incorporate energy psychology into their practices do not identify it as their primary modality,<sup>5</sup> and no reliable figures exist for how many therapists utilize the approach. A survey submitted to licensed psychotherapists on listservs—such as those for the Association for Behavioral and Cognitive Therapies and the Society for the Science of Clinical Psychology—found that 42% of 149 respondents reported that they were using or inclined to use an energy approach.<sup>6</sup> While individuals favorable to such techniques would presumably be more likely to respond to a survey about them, it is still a sampling, even if an imperfect one, of licensed therapists who were identifying with more conventional modalities. A credible estimate placed the number of therapists using an energy psychology approach in the “tens of thousands.”<sup>7</sup> The website of the Association for Comprehensive Energy Psychology (ACEP), a professional organization with more than 1200 dues-paying members, claims that energy psychology techniques “integrate easily into most psychotherapy models [and] are often exceedingly rapid, have little to no adverse effects, are usually experienced as self-empowering by clients and patients, and are easily amenable to self-help protocols.”<sup>8</sup>

The most popular variations of energy psychology—Emotional Freedom Techniques (EFT) and Thought Field Therapy (TFT)—combine the stimulation of electrochemically-sensitive points on the skin by tapping on or holding them during imaginal exposure and other cognitive activities. The points used in these protocols correspond with points used in acupuncture. Tapping or holding an acupuncture point (acupoint) is an *acupressure* technique, as distinguished from *acupuncture*, which stimulates acupoints for similar effects but uses needles or lasers.

The use of the term “energy” in energy psychology has been the subject of confusion and controversy. The energetic component of the approach includes a focus on the body’s well-established electromagnetic activity, as well as on purported “subtle” energies described in ancient healing traditions, such as the aura, chakras, or acupuncture meridians.<sup>9</sup> Skepticism about explanations that invoke invisible forces or ancient philosophies to explain a therapy’s effects have been a large impediment to the acceptance of energy psychology within the broader clinical community.<sup>10</sup> However, empirically-informed frameworks that account for the mechanisms of action in energy psychology treatments and which do not rely on invisible forces or ancient philosophies are appearing.<sup>11-12</sup> This paper likewise restricts its examination of mechanisms to empirical evidence.

ACEP maintains a database that stays current with energy psychology, acupoint tapping and related topics that are listed in indexing services such as PubMed, PsychInfo, and Medline, as well as graduate theses and other documents that are not as readily available.<sup>13</sup> The database shows that

since the first peer-reviewed randomized clinical trial (RCT) investigating an energy psychology protocol was published,<sup>14</sup> 245 peer-reviewed journal articles focusing on acupoint tapping protocols, the most widely studied variation of energy psychology, have appeared in the English language. Papers investigating acupoint tapping protocols include 64 RCTs, 51 other pre- to post-treatment outcome studies, 5 meta-analyses, 17 additional systematic reviews, 14 observational reports, 19 case studies or case series, 11 summaries of multiple practitioner or client surveys or interviews, and 64 theoretical articles on acupoint tapping or related topics.

More than 50 additional clinical trials of psychotherapies that involve an acupoint tapping component are not included in these tallies because they are not published in English-language journals. Translated abstracts, however, suggest encouraging outcomes with a wide range of issues, such as drug addiction, dementia, depression, anxiety disorders, post-traumatic symptoms, aggression, and post-operative pain. In addition to the peer-reviewed papers, hundreds of anecdotal reports showing positive effects following the use of energy psychology techniques are found on various websites (such as <https://eftuniverse.com/faqs/eft-and-tapping-hundreds-of-case-studies/>).

Within this rapidly growing literature, several premises can be found about the method’s effectiveness, speed, and mechanisms. A premise is an assumption that is logically consistent with existing evidence and related assumptions. The purpose of this project was to identify premises that have enough empirical support that they can serve in delineating and making claims about the approach. Premises that had reasonable empirical support (arbitrarily defined as being backed by at least 6 independent studies each) follow.

## SIX PREMISES

1. Acupoint tapping protocols are effective in treating a range of clinical conditions.
2. Acupoint tapping protocols are rapid compared to conventional treatments.
3. Acupoint tapping protocols lead to durable benefits.
4. Acupoint tapping protocols produce changes in biologic markers that corroborate clients’ subjective assessments .
5. Acupoint tapping is a critical ingredient for the demonstrated clinical effects.
6. Stimulating selected acupoints sends signals that can increase or decrease arousal in specific areas of the brain.

The first 3 premises address efficacy, speed, and durability; the other 3 explore the physiologic effects of the procedure. Finally, a hypothesis about the mechanisms of action, for which empirical evidence is still only preliminary, will be discussed.

## A TYPICAL ACUPOINT TAPPING PROTOCOL

A total of 48 “core clinical techniques” are taught in one of the most well-attended tapping certification programs.<sup>15</sup> These include skills for identifying sources of emotional distress, examining specific events linked to the origin of the distress, and having the client tap on a sequence of acupuncture points while focusing on specified mental content.

After developing rapport and discussing the client’s reasons for seeking help, the issue that will be the initial focus of the tapping is agreed upon, briefly explored, and given a rating on a 0-to-10 “subjective units of distress” (SUD) scale, after Wolpe et al.<sup>16</sup> A “set-up statement” is then formulated that succinctly frames the problem. The set-up statement usually references memories or situations that result in the activation of troubling emotions. The statement is also formulated in a manner that reflects self-acceptance and an acceptance of the client’s situation. For instance, “Even though I have difficulty controlling my anger toward Debbie [the client’s teenage daughter], I am managing my anger in ways my own mother never could.” Energy points on the body, which are believed to enhance the suggestive effects of a repeated affirmation, are stimulated by the client while saying the set-up statement several times. The set-up statement is next converted into an even shorter “reminder phrase” that is used to keep the client emotionally engaged with the targeted issue, such as “My anger toward Debbie.” The reminder phrase is repeated as a number of acupoints (usually between 4 and 14) are tapped in succession for several seconds each. A round of tapping can often be completed in a minute or less.

The initial concern is then again brought to mind and another SUD rating is given. This may lead to a discussion that results in changing the reminder phrase (eg, “Mama slapped me for crying when Grandma died”), or the same reminder phrase may be used to further lower the SUD. The therapist may also introduce other words than the reminder phrase for the client to repeat as different acupoints are stimulated by tapping on them (eg, “My anger toward Debbie”; “The heat I feel in my face when Debbie talks back to me”; “I’m embarrassed that I let Debbie talk back to me”; “Feeling powerless with Debbie”; “Mama wouldn’t let her get away with that”; “Expecting Debbie to respect me”; “I’m not Mama”). Energy psychology is by no means unique in its ability to identify multiple aspects of a presenting problem. Its special strength is in its ability to rapidly tap down their emotional charge.

As will be discussed in Premise 6, the words that are spoken and the images or feelings they evoke seem to direct activating or deactivating signals generated by the tapping to brain regions that are aroused by the words or situations brought to mind. Choosing the wording that accompanies the tapping is, thus, part of the art of delivery in the approach. A coding of videotaped acupoint tapping sessions identified 62 therapeutic functions of the language that is used.<sup>17</sup> All of these fell into 3 major categories: (a) the statement helped the

practitioner become better *attuned* to the client’s intentions for and experience of the target issue or with the therapy, (b) it *explored* issues relevant to the client’s concerns in order to deepen both the client’s and the therapist’s understanding of them, and/or (c) it *led* the client toward resolving emotional difficulties or developing more effective ways of addressing pertinent issues. Phrasing that serves one or more of these 3 functions—attune, explore, lead—are suggested by the therapist or introduced by the client simultaneously with the tapping.

Each stressful aspect of the problem (past associations, unresolved grief or trauma, current triggers or challenges, fear, anger, jealousy, bodily sensations, etc) is identified and tapped down to a SUD of zero or near-zero before the problem is considered to be fully resolved. The speed by which a session can move through these contributing issues as the arousal evoked by each is quickly tapped down is an enormous strength of working with acupoints. A variety of auxiliary techniques, some designed, for instance, to facilitate information processing that engages and integrates both the left and right brain hemispheres, may be introduced at the therapist’s discretion. The resolution of the initial concern may lead the session toward a formative event in the client’s life or a related issue requiring further attention.

A 13-minute video illustrating an acupoint tapping session in the treatment of a height phobia provides a glimpse into the relatively unusual procedures (available at <http://phobiacase.EnergyPsychEd.com/>).

We will next explore each of the 6 empirically-supported premises pertinent to acupoint tapping protocols.

## PREMISE 1: ACUPOINT TAPPING PROTOCOLS ARE EFFECTIVE IN TREATING A RANGE OF CLINICAL CONDITIONS

Of the 64 RCTs investigating acupoint tapping protocols, the ACEP database classifies 48 as having “potentially strong generalizability,” based on the study design quality, with the remaining 16 identified as having “limited generalizability.” An additional 51 outcome studies tracked pre- to post-treatment measures but did not use a comparison condition. Of these 115 clinical trials, all but 2 reported statistically significant improvement in at least one of the targets for change being examined. The range of psychological conditions that have been shown to respond to acupoint tapping based on studies referenced in the ACEP database includes anxiety, depression, post-traumatic stress disorder (PTSD), phobias, anger, stress, concentration difficulties, food cravings, insomnia, and performance blocks. Physical conditions that have shown improvement after acupoint tapping include fibromyalgia, pain, headaches, frozen shoulder, psoriasis, obesity, immune function, and cardiovascular function.

Of the 5 meta-analyses, 3 focused on specified psychological conditions: anxiety, depression, and PTSD. In the meta-analysis investigating anxiety, 14 clinical trials applying acupoint tapping protocols included 658 participants.<sup>18</sup> The overall pre-treatment to post-

treatment effect size (which shows the magnitude of the outcome produced by an intervention) for these 14 studies was 1.23. An effect size of .5 is considered a medium effect and .8 or above is considered a large effect, so 1.23 is interpreted as indicating a large effect. In the meta-analysis investigating the treatment of depression,<sup>19</sup> 12 studies, including 398 participants, had an overall pre- to post-effect size of 1.85, again a large effect. The PTSD meta-analysis<sup>20</sup> evaluated 7 studies that included 247 participants and had an effect size of 2.96, an unusually large effect.

The validity of the conclusions derived from a meta-analysis, however, depend on the quality of the studies being examined. Many of the early clinical trials suffered from (a) the inclusion of only a small number of participants, making generalization of the findings unreliable, (b) waitlist-only comparison conditions that did not isolate non-specific therapeutic effects such as placebo, the therapist's caring or the desire to please the therapist, (c) inadequately defined or applied selection criteria, (d) over-reliance on self-reports, (e) failure to insure strict adherence to manualized treatment protocols, and (f) possible bias because the investigators were often proponents of the therapy being investigated. Claims based on these early studies have been sharply criticized.<sup>6,21-22</sup> As study designs have become stronger, however, they have tended to corroborate rather than contradict the earlier findings.<sup>23-24</sup>

Criticisms that the researchers are proponents of the method being studied, whose bias and expectations might influence the study design and interpretation, are of concern in the investigation of almost any new therapy. Individuals who use and believe in the approach are the most likely to have the interest and incentive to conduct research before the therapy has begun to accumulate reasonable empirical support. However, as disinterested researchers, not affiliated with the approach, are beginning to investigate acupoint tapping protocols, they are also reporting strong outcomes. For instance, two comprehensive reviews examined the outcomes of a range of therapies in treating the same condition in a defined population. This allows for an assessment of the comparative effectiveness of each approach. The first study, by Brown et al,<sup>25</sup> was a meta-analysis of psychological treatments for children who experienced the effects of trauma following manmade and natural disasters. The therapies reviewed included Cognitive Behavioral Therapy (CBT), Narrative Exposure Therapy (NET), a short-term, trauma-focused form of CBT; Eye Movement Desensitization and Reprocessing (EMDR), and other frequently utilized trauma treatments. Only one of the 36 studies used an acupoint tapping approach, Thought Field Therapy (TFT). Effect sizes ranged from .09, a small effect, to 4.19, which is an extremely large effect. The average pre-treatment to post-treatment effect size across the groups was 1.47, a large effect. The largest effect of the treatments investigated, 4.19, was produced by TFT.

Since only 1 tapping study was included in Brown et al, it might have been an outlier. Another comprehensive meta-analysis, in which 32 studies investigated 17 different

interventions for treating traumatized youth with PTSD,<sup>26</sup> lends corroboration. Among the interventions were CBT, exposure therapy, EMDR, NET, play therapy, family therapy, meditation, and the Emotional Freedom Techniques (EFT). EFT was one of the two most effective therapies in reducing PTSD symptoms at treatment endpoint and the most effective of the 17 interventions in retaining improvement in PTSD symptoms on follow-up. While the report emphasizes that variances in the data collected make some of the inferences that might be drawn from the study tentative or inconclusive, the study provides independent support for the finding by Brown et al regarding the relative power of an acupoint tapping protocol.

Head-to-head comparisons with a treatment that has strong empirical support is another way of investigating an emerging therapy. CBT and its variations are considered the "gold standard" for treating many psychological conditions.<sup>27</sup> A total of 10 head-to-head studies compared CBT to an acupoint tapping protocol, and in all 10, the acupoint tapping outcomes were approximately equivalent or compared favorably with CBT.

Of the 10 studies, 9 were peer-reviewed and 8 were RCTs. One of the two that was not randomized, a retrospective study in Kurdistan with individuals who had experienced ongoing violence, atrocities, and political upheavals,<sup>28</sup> produced a striking finding. Treatment outcomes were evaluated in patients who had been assigned to a single clinician over a 2-year period. The clinician had been trained in CBT and subsequently in TFT. Excluded from the study were children and adolescents, patients with psychotic or personality disorders, patients who required psychiatric medication, who made only 1 visit, and patients who did not consent to their information being used. Patients who met the study criteria were assigned to CBT or TFT treatment using purposive sampling. All 11 patients who received TFT treatment showed symptomatic improvement. Of the 13 patients receiving traditional CBT, 1 improved and the others showed either no change in symptoms, deterioration of symptoms or dropped out of treatment. Of the patients who received CBT treatment and showed no improvement and no promise of improvement (reasons given by the therapist included cultural factors, education level, difficulty applying theoretical concepts such as overgeneralization, failure to complete homework assignments and fatigue from the number and length of therapy sessions), 7 were subsequently provided with TFT treatment, which led to improvement in all cases.

A large, informal pilot study (described in a book, but not peer-reviewed) was the first systematic comparison of CBT and TFT.<sup>29</sup> Conducted at 11 allied clinics in Argentina and Uruguay, both methods were assessed in the treatment of anxiety and related disorders. CBT was the standard treatment for anxiety at the time a number of the clinicians received TFT training. The physician owners of the clinics were interested in the relative effectiveness of each approach. Some features of the study design they initiated became standard practice within the clinics, explaining the large number of

subjects. Over a 5 and a half-year period, approximately 5000 patients diagnosed with a range of anxiety-related disorders were randomly assigned to either TFT or CBT treatment. At the termination of therapy, interviewers who were blind to the treatment modality placed each former patient into one of three categories: no improvement, some improvement, or complete remission. Some improvement was reported by 90% of the patients in the TFT group and 63% in the CBT group; complete remission was reported by 76% of the patients in the TFT group and 51% in the CBT group.

In a more stringently designed comparison, Gaesser et al<sup>30</sup> randomly assigned 63 students in grades 6 through 12 who scored in the moderate to high ranges for anxiety to a brief course of treatment (3 sessions) of CBT (n=21) or EFT (n=21) or a waitlist control condition (n=21). The investigators introduced the study by noting that accelerating rates of anxiety in children is a worldwide problem. Approximately 10% of school-age children in the United States struggle with the negative effects of anxiety. Both the CBT and EFT treatments resulted in reduced anxiety compared with the waitlist control group. This reduction did not, however, reach statistical significance for the CBT group whereas it did for the EFT group, suggesting at a minimum that EFT produced a more rapid effect.

In a study comparing CBT and TFT, 72 patients diagnosed with agoraphobia were randomly assigned to one of two treatment groups or a waitlist.<sup>31</sup> Both treatments resulted in highly significant symptom reduction, which was maintained at 12-month follow-up. No significant difference was found between the CBT and TFT outcomes, but TFT accomplished these outcomes in 5 sessions of 50 to 55 minutes each (per the TFT manual used), whereas the CBT group received 12 sessions of 50 to 55 minutes each (per the CBT manual used).

A study conducted in Iraq randomly assigned 60 secondary school students aged 16 to 19 years who met Diagnostic and Statistical Manual of Mental Disorders, fourth edition (DSM-IV) criteria for PTSD into EFT treatment, NET treatment, or a no-treatment control group.<sup>32</sup> Participants in each treatment group received 4 sessions of 60 to 90 minutes over a 2-week period. While both treatments produced pre- to post-treatment improvements in variables such as anxiety, re-experience, and avoidance behavior, the effect sizes were greater for EFT than NET, and only EFT produced improvements in hyperarousal and depression. Benefits were stable for EFT on 3-, 6-, and 12-month follow-up but unstable for NET.

An earlier peer-reviewed pilot study, with self-acknowledged design flaws including a small number of participants and a lack of true randomization, investigated 3 types of treatment for test-taking anxiety in university students.<sup>33</sup> Each of the treatment conditions resulted in a significant reduction in the target condition, but EFT achieved the same improvements in 2 sessions that CBT achieved in 5 sessions.

An RCT conducted by Chatwin et al<sup>34</sup> at Bond University in Australia found that 8 weekly sessions of CBT and 8 weekly

sessions of EFT for reducing anxiety and depression in adults resulted in statistically significant improvements across both interventions. While the improvements in depressive symptoms were not maintained for CBT at 3- and 6-month follow-up, a surprising outcome was that EFT seemed to have had a “delayed effect” in which the improvements in depression did not appear until the follow-up periods. A second study, also conducted by a Bond University team, found approximate equivalency between CBT and EFT for reducing food cravings in 83 adults who were overweight or obese.<sup>35</sup> Following an 8-week intervention (weekly 2-hour group sessions), outcome data were collected at baseline, post-intervention, and at 6- and 12-month follow-up. EFT and CBT demonstrated comparable efficacy in reducing food cravings, responsiveness in the presence of food, and dietary restraint, with effect sizes suggesting moderate to high practical significance. Calculations for other psychological outcomes<sup>36</sup> found that both methods also reduced anxiety and depression. The lower anxiety scores were not, however, sustained for CBT at 6- and 12-month follow-up but were for EFT. The unexpected “delayed effect” for depression with EFT was also found in this study. The investigators speculated that this might have been a result of a greater consolidation of skills and techniques over time.

A partial replication of Chatwin et al conducted in India found that CBT and EFT each yielded statistically significant and approximately equivalent improvements in both anxiety and depression,<sup>37</sup> as well as at 1-month follow-up. The EFT group, however, showed continued significant improvements in depression scores on follow-up, which the CBT group did not. This corroborates the delayed effect for depression that was the surprising finding in the Bond studies.

In a tenth study, 50 displaced female refugees who had been victims of sexual violence were randomly assigned to CBT or EFT treatment of two 2-1/2-hour group sessions per week for 4 weeks.<sup>38</sup> Both therapies led to highly significant post-treatment improvements of trauma symptoms ( $P < .001$ ), which were sustained at 6-month follow-up ( $P < .001$ ). The baseline scores of the CBT group were even lower on one of the measures at 6 months than immediately after treatment, which might involve another “delayed effect.” The investigators speculated, however, that since members of both groups frequently visited the same facility during the 6 months between the end of treatment and follow-up, it is probable that those in the CBT group witnessed those in the EFT group tapping on themselves. Because self-tapping is easy to learn, this might have led to cross-contamination between the 2 treatment groups on the follow-up measures.

### **Summary, Premise 1: Acupoint tapping protocols are effective in treating a range of clinical conditions.**

Clinical trials and meta-analytic reviews showed significant pre- to post-treatment improvements in 113 of the 115 studies investigating outcomes of acupoint tapping protocols for a range of conditions. Two studies comparing various trauma treatments for children found acupoint

tapping to be among the most effective of the approaches examined. Of 10 head-to-head studies, 9 found not only a general equivalency between acupoint tapping and CBT, but also at least 1 superior effect of acupoint tapping, such as greater speed, impact, or durability. This body of evidence provides a reasonable base of support for Premise 1.

## **PREMISE 2: ACUPOINT TAPPING PROTOCOLS ARE RAPID COMPARED WITH TRADITIONAL TREATMENTS**

One of the claims the clinical community has had the most difficulty with since Roger Callahan's *Five Minute Phobia Cure*<sup>39</sup> gained popular attention after its 1985 publication is the reported speed with which longstanding problems are said to have been overcome using energy psychology protocols. Clinical trials do, however, lend support to claims of unusually rapid results compared with traditional treatment methods.

A *single* tapping session of 30 to 60 minutes resulted in statistically significant or client-reported therapeutic gains with the fear of small animals,<sup>14,40</sup> claustrophobia,<sup>41</sup> other specific phobias,<sup>42</sup> insomnia,<sup>43</sup> the symptoms of frozen shoulder,<sup>44</sup> and even PTSD.<sup>45-48</sup> Significant relief of PTSD after a single treatment session is rarely claimed in the clinical literature, and the investigators in all 4 single-session acupoint tapping PTSD studies were limited by practical constraints that necessitated the brief designs. When queried by this investigator, each acknowledged that additional sessions would have been preferable, and some expressed surprise at the strength of the benefits that resulted from the single session.

In one of these four studies, 16 abused male adolescents who had been removed from their homes due to safety concerns all scored in the PTSD range on a standardized symptom inventory. They were randomly assigned to receive either an EFT treatment session or no treatment.<sup>45</sup> Each of the 8 boys in the treatment group no longer met the inventory's PTSD criteria 30 days after the single treatment session. No one in the waitlist control group showed significant change. In a larger study, 145 traumatized adult survivors of the Rwanda genocide more than a decade earlier were randomly assigned to a single session of TFT or a waitlist control group.<sup>47</sup> Pre- and post-treatment scores on 2 standardized PTSD self-inventories showed improvements that were highly significant on all scales, including anxious arousal, depression, irritability, intrusive experiences, defensive avoidance, and dissociation. The improvements held at a 2-year follow-up. Subjects in 2 other studies also experienced significant relief of PTSD symptoms after a single tapping session.<sup>46,48</sup>

Again, none of the investigators in these 4 studies meant to suggest that a single-session format is adequate for treating PTSD, and certainly not for "complex PTSD."<sup>49</sup> Nonetheless, the number of sessions that have been required for successfully treating PTSD with acupoint tapping protocols has been relatively low in the investigations that have been conducted. A study of the use of EFT in PTSD in a public

health facility in Scotland allowed patients to receive up to 8 treatment sessions.<sup>50</sup> Voluntary termination of treatment occurred, however, after an average of 3.8 sessions, with a large overall effect size (1.0) on post-treatment measures.

The first RCT of energy psychology in the treatment of veterans with PTSD had a low dropout rate and found that only 14% of 49 patients treated still had the disorder after six 1-hour tapping sessions,<sup>51</sup> a study that has been replicated with similar findings.<sup>52</sup> By way of contrast, CBT and its variations, which are the standards of care for treating PTSD,<sup>53</sup> average 12 to 16 treatment sessions,<sup>54</sup> and approximately two-thirds of service members and veterans completing a course of cognitive processing therapy or prolonged exposure in peer-reviewed studies published between 1980 and 2015 still met PTSD diagnostic criteria after treatment.<sup>55</sup> A 10-minute video illustrating an acupoint tapping approach in the rapid treatment of 4 combat veterans who had PTSD can be viewed at <http://www.vetcases.com/>.

## **Summary, Premise 2: Acupoint tapping protocols are rapid compared with traditional treatments.**

The improvements in phobias, insomnia, frozen shoulder discomfort, and PTSD following a *single tapping session* suggest the power of the approach for facilitating rapid change. The meta-analyses described earlier found remediation of the symptoms of anxiety,<sup>18</sup> depression,<sup>19</sup> and PTSD<sup>20</sup> after relatively brief treatments. The 2 outcome studies of EFT in the treatment of PTSD in combat veterans<sup>51-52</sup> led to benefits on standardized self-report instruments that exceeded those generally found in CBT studies in speed, as well as the percentage of veterans no longer meeting the criteria for PTSD. The 3 head-to-head studies showed acupoint tapping brought about at least equivalent outcomes *in fewer sessions* than CBT<sup>30-31,33</sup> and also provide evidence that Premise 2 has reasonable empirical support.

## **PREMISE 3: ACUPOINT TAPPING PROTOCOLS LEAD TO DURABLE BENEFITS**

Of the 115 clinical trials of acupoint tapping in the ACEP database, 79 did follow-up investigations (including 48 of the 64 RCTs and 31 of the 51 outcome studies that did not include a comparison condition). Of the 79 studies reporting follow-up, 77 found that "benefits were sustained." This was defined as follow-up testing showing a statistically significant ( $P < .05$ ) improvement between pre-treatment assessments and assessments at the end of the follow-up period in at least 1 major target for change being tracked. Follow-up periods ranged from 1 month to 2 years. The most frequent follow-up periods were 1 month (8 studies), 3 months (9 studies), 6 months (22 studies), and 12 months (10 studies), with a mean of 7 months. Since 97% of the studies that conducted follow-up found that at least 1 targeted change was sustained, the evidence strongly supports Premise 3: *Acupoint Tapping Protocols Lead to Benefits That Are Durable Over Time.*

#### **PREMISE 4: ACUPOINT TAPPING PROTOCOLS PRODUCE CHANGES IN BIOLOGIC MARKERS THAT CORROBORATE CLIENTS' SUBJECTIVE ASSESSMENTS**

Many of the clinical improvements reported in the efficacy studies were based on self-inventories and other subjective measures. A client's emotions and cognitive judgements may, however, be influenced by many factors—such as (a) the quality of the therapeutic alliance; (b) the enthusiasm, charisma, and/or status of the practitioner; (c) an expectation that the therapy will be helpful; and/or (d) a desire to believe that the time, money and effort that went into the therapy were worthwhile investments. A way of detecting treatment effects that do not rely on subjective reports is to measure the pre- and post-treatment status of “biologic markers,” physiologic changes. Acupoint tapping protocols have been followed by clinically desirable changes in biologic markers such as hormone production, cardiovascular function, immune response, gene expression, brain wave patterns, and blood flow in targeted brain regions.

The stress hormone cortisol was measured in 83 non-clinical individuals who were then randomly assigned to receive a 1-hour EFT session, a 1-hour supportive counseling session on topics of concern, or no treatment.<sup>56</sup> Significant reductions in cortisol, based on salivary cortisol assays, were found following the EFT session but not for individuals in the other 2 groups. This single-session study was replicated by Stapleton et al using group rather than individual treatment.<sup>57</sup> The cortisol reductions following the EFT session were again significant and, this time, even greater than those in the original investigation (43% vs 24%). The investigators speculated that this difference may have been a product of an energy psychology technique that can only be administered in a group setting. Called “borrowed benefits,” EFT is administered to 1 individual who is focusing on a recent stressful memory as the remainder of the group simultaneously self-applies the method using the wordings of the person working with the practitioner. While used in part to lend the group support to the individual, benefits for group members on their own personal issues has also been widely reported.

Pre-/post-treatment testing was administered to 31 participants attending a training program that included 4 days of group EFT sessions.<sup>58</sup> Psychological changes included significant declines in anxiety, depression, PTSD symptoms, pain, and food cravings. Physiologic indicators of endocrine, cardiovascular, and immune function were also tracked. Improvements were found in all 3 areas, including reduced cortisol levels, reduced resting heart rate, reduced systolic and diastolic blood pressure, and increased salivary immunoglobulin A, an antibody supportive of immune function.

Changes in gene expression have been shown to correlate with improvements following acupoint tapping treatments. Differential gene expression was found in 72 genes of 4 non-clinical participants following a 1-hour EFT session,

**Figure 1.** A demonstration subject (left) wearing EEG sensors as the author (right) conducts a tapping session with real-time EEG changes projected for a conference audience.



including desirable changes in the expression of genes involved with learning, emotional regulation, neuroplasticity, synaptic connectivity, and building white matter in the brain.<sup>59</sup> A 10-session EFT program treating 16 veterans with PTSD found that the treatment upregulated the interleukin family of genes, which influence inflammation and immunity.<sup>60</sup>

Electroencephalogram (EEG) monitoring found reduced arousal in the right frontal cortex of 9 victims of motor vehicle accidents following EFT treatment for trauma.<sup>61</sup> EFT treatments in patients with seizures led to desirable increases in the amplitude of the sensory motor rhythm of the sensory motor cortex.<sup>61</sup> Lambrou et al found a normalization of theta waves, as well as reductions in muscular tension, in 4 clients after receiving a single EFT session for claustrophobia.<sup>41</sup> During an EFT session with a 51-year-old woman that resolved several residual symptoms following a traumatic brain injury that occurred 6 years earlier, EEG patterns showed increasing relaxation and a marker for feeling “centered” as the treatment progressed.<sup>63</sup>

Neurofeedback researchers Gary Groesbeck and Donna Bach, who have conducted hundreds of EEG readings during acupoint tapping sessions, use digital EEG equipment. A digital EEG allows the brain wave changes to be shown on a monitor in real time during the tapping session, or even projected on a screen for an audience, as shown in Figure 1. Groesbeck and Bach were able to describe to the audience how the brainwave patterns revealed disturbances when the client focused on stressful thoughts, as well as how, as the session progressed, they shifted in ways that corresponded with reduced distress, improved left-right hemisphere synchronization, and an overall optimization of brain wave ratios.

In addition to brain wave patterns, a study using fMRI showed that after EFT treatments for food cravings, blood flow to brain regions involved with craving were significantly

reduced in the presence of the desired food.<sup>64</sup> Additional implications of this finding will be discussed in Premise 6.

These changes in biologic processes following tapping treatments also help explain a question that is often asked about any therapy that claims to be effective in a wide range of disorders. Is the modality actually having an impact on a smaller set of underlying causes? The demonstrated shifts in gene expression, stress hormones, and brainwave patterns may begin to answer this question.

#### **Summary, Premise 4: Acupoint tapping protocols produce changes in biologic markers that corroborate clients' subjective assessments.**

Documented beneficial changes in hormone production, cardiovascular function, immune response, gene expression, brain wave patterns, and blood flow in targeted brain areas provide an evidential base for Premise 4. Several of these changes were brought about by a single tapping session,<sup>41,56,57,59,63</sup> offering additional confirmation of Premise 2 regarding the method's speed.

#### **PREMISE 5: ACUPOINT TAPPING IS A CRITICAL INGREDIENT FOR THE DEMONSTRATED CLINICAL BENEFITS**

Even if energy psychology treatments do bring about the benefits reported in the clinical trials, acupoint tapping is not the only therapeutically active component in acupoint tapping protocols. The psychological benefits of cognitive interventions and imaginal exposure, both used during acupoint tapping sessions, are well-established.<sup>27,65</sup> The relaxation and meditative effects of repetitive physical movements<sup>66</sup> may be involved. Non-specific therapeutic influences such as the attention of a caring professional, the placebo power of hope and positive expectations, and the therapeutic alliance may all add to the impact of virtually any psychotherapeutic approach.<sup>67</sup>

Six studies have attempted to isolate the influence of acupoint tapping on treatment outcomes. Each compared an energy psychology protocol with a nearly identical protocol, except that in the control group acupoint tapping was replaced with a different intervention. The substitutions included diaphragmatic breathing, mindful breathing, or tapping on points that are not acupuncture points, referred to as "sham points." For example, burnout risk was assessed among 126 public school teachers (kindergarten through 12th grade) who were then taught to self-apply, for a 4-week period, tapping treatments designed to reduce burnout.<sup>68</sup> One group tapped on the standard EFT acupoints while a control group tapped on sham points. Participants in both groups were given the same list of situations and cognitions that contribute to burnout and were instructed to bring them to mind while doing the tapping. The 2 groups were drawn from different school districts but within the same county and with similar demographic profiles in order to minimize contact and contamination between the treatment and control participants. Pre- to post-treatment

reductions on the 3 indicators of burnout that were measured (emotional exhaustion, depersonalization, and personal accomplishment) were significantly stronger in the group that tapped on the EFT points than in the group that tapped on the sham points.

The 6 studies were evaluated in a review and meta-analysis which concluded that acupoint tapping is an active ingredient in the outcomes reported in the clinical trials, independent of other influences.<sup>69</sup> Since many of the critiques of energy psychology suggest that it is not the acupoint tapping but other components of the protocol that account for any clinical improvements, this is a cardinal finding. While it has been challenged,<sup>70</sup> the original investigators subsequently engaged an independent senior statistician to recalculate the meta-analysis and also address other criticisms.<sup>71</sup> Their conclusion was that while some computational errors were found, the original conclusion is supported, which is that "the acupressure component of the EFT protocol is an active ingredient that contributes to the method's favorable health effects."<sup>(p632)</sup>

In any case, acupoint tapping is the observable ingredient that distinguishes energy psychology protocols from other treatments that utilize exposure, cognitive interventions, and the non-specific factors shared by all therapies. If acupoint tapping protocols are faster and more potent than therapies that share some of their other components—as the clinical trials suggest—the component that is not shared with the other approaches may be the essential ingredient for the unusual effectiveness of the method. And that component is tapping on specified areas of the skin, however counterintuitive it might seem that this could result in psychological benefits.

How might tapping on the skin have a psychotherapeutic effect? Stimulating an acupuncture point generates an electrical charge that may be sent to areas of the body located at a distance from the point being stimulated. At least 361 points on the surface of the skin are recognized in traditional Chinese medicine as having special properties compared with neighboring areas of the skin,<sup>72</sup> which include higher electrical conductivity and a corresponding lower electrical resistance.<sup>73-74</sup> Most acupuncture points are also located in areas with a high density of free nerve endings.<sup>75</sup> So acupoints have distinctive physiologic features that might explain their effect on the body's electrochemical activity. While acupuncture and energy psychology are vastly different practices, traditional needling on an acupoint and stimulating it manually generates similar effects. For instance, a double-blind study comparing penetration by acupuncture needles with non-penetrating pressure found equivalent clinical improvements for both interventions.<sup>76</sup>

This finding can be explained by the well-established principle that certain large proteins within cells can convert a mechanical stimulus, such as needling or pressure on the skin, into electricity. This process, mechanosensory transduction,<sup>77</sup> produces *piezoelectricity*, or "electricity generated by pressure." The path traveled by the electrical impulses produced by tapping on the skin appears to be along the body's connective



tissue.<sup>78</sup> The majority of acupoints are located above aggregates of connective tissue, which is composed largely of collagen. Because collagen conducts electricity, signals can quickly reach specific areas of the body rather than having to travel neuron to synapse to neuron through the nervous system,<sup>79</sup> which may help explain the observed speed of acupoint tapping protocols. Many acupoints on the body, when stimulated, send signals directly to the brain,<sup>80</sup> which is of particular relevance for their role in psychotherapy.

Because of its reliance on acupuncture points, the credibility of energy psychology is tied to the status of acupuncture. The reception of acupuncture in the West has been contentious, with passionate advocates and strong detractors. Hundreds of scientific papers devoted to acupuncture and related topics are published in English each year in more than a dozen peer-reviewed journals. While interpretations of this vast literature regarding the effectiveness of the method have been equivocal, a definitive review by the Acupuncture Evidence Project<sup>81</sup> is both comprehensive and rigorous. Released as a monograph, so not peer-reviewed itself, the investigators drew upon 136 systematic reviews and meta-analyses to examine pooled data from more than a thousand peer-reviewed RCTs. The studies were evaluated according to the National Health and Medical Research Council of Australia's criteria (the study was conducted in Australia) for assessing "levels of evidence" and the Cochrane GRADE criteria for assessing the risk for study bias. Applying these stringent standards, the quality of evidence for the efficacy of 122 medical conditions that had been investigated in the various reviews was evaluated. "Moderate" to "high quality" evidence of beneficial effects of acupuncture was found with 46 conditions, including asthma, hypertension, irritable bowel syndrome, osteoarthritis, postoperative nausea, constipation, stroke rehabilitation, and various types of pain. Moderate evidence suggests that acupuncture is also effective with several psychiatric diagnoses, including anxiety and insomnia, as well as when used as an adjunct to medication in the treatment of depression and schizophrenia. At least some supportive evidence was found for 117 of the 122 conditions reviewed.

### **Summary, Premise 5: Acupoint Tapping Is a Critical Ingredient for the Demonstrated Clinical Benefits.**

The review investigating the components of energy psychology protocols concluded that acupoint stimulation was indeed "an active ingredient . . . outcomes were not due solely to placebo, nonspecific effects of any therapy, or non-acupressure components."<sup>69</sup> Meanwhile, an extensive body of evidence, independent of energy psychology, has demonstrated that acupuncture is a potent intervention in healthcare contexts. Needling and tapping produce similar physiologic effects, and pathways by which the electrical signals generated by stimulating acupoints on various areas of the body are conducted to the brain have been found in the body's connective tissue. This mapping of the physiology underlying the ways in which acupoint tapping appears to

influence neural processes, along with the 6 active-ingredient studies, lends support to Premise 5.

### **PREMISE 6: STIMULATING SELECTED ACUPOINTS SENDS SIGNALS THAT CAN INCREASE OR DECREASE AROUSAL IN SPECIFIC AREAS OF THE BRAIN**

It may seem self-evident that the changes in biologic markers brought about by tapping—such as decreased cortisol production, turning on genes that support emotional regulation, and optimizing brain wave patterns—would have a generally positive impact on mood and sense of well-being. But how can the complex changes seen in psychotherapy involving deeply embedded emotional learning, such as overcoming a spider phobia or the symptoms of PTSD, be brought about by acupoint tapping protocols?

A 10-year-research program conducted at Harvard Medical School used fMRI and other imaging equipment to study the effects of stimulating selected acupuncture points in various brain areas.<sup>80,82-83</sup> The investigators found that certain acupoints can send signals to the amygdala that reduce threat activation almost instantly. Without talking, this somatic intervention can quickly turn off hyperarousal, a state of high alert, in the limbic system. Because hyperarousal is the neurologic substrate of many of the challenges faced by psychotherapy clients—such as sleeping problems, difficulties concentrating, irritability, anger, panic, anxiety, self-destructive behavior, guilt, and shame<sup>84</sup>—the implication of this finding for clinicians is substantial. It suggests the possibility of rapid intervention for deactivating hyperarousal in situations, real or imagined, in which high alert is not adaptive. Energy psychology protocols leverage this possibility by sending deactivation signals to the limbic system when scenes that trigger the problematic response have been mentally evoked.

The study investigating a program that applied acupoint tapping to weight management, mentioned earlier, used pre- and post-treatment fMRI imaging.<sup>64</sup> Photos of high-caloric foods that activated hunger and craving in overweight individuals sent blood to reward and cognition regions of the brain that were, not surprisingly, associated with hunger and craving. After 4 weeks of 2 hours per week group acupoint tapping sessions, the same food images produced little or no fMRI activation in those brain areas. The decreased brain activation corresponded to a diminished desire for those foods.

This finding holds strong implications, not only for food cravings but also for other emotions and motivations. Of course, eliminating cravings for unhealthy food is a different order of intervention than eliminating, for instance, the symptoms of PTSD, but both involve survival mechanisms gone awry. The motivation for acquiring food and for staying safe are deeply embedded in the nervous system, and either can become associated with triggers that result in excessive arousal and consequent psychological and other health-related difficulties. The rapid reduction of anxiety, irritability, and other PTSD symptoms discussed earlier suggests deactivation in brain regions implicated in these symptoms.

The clinical advantages of being able to send signals that *deactivate* neural mechanisms that trigger undesirable emotions or behaviors are obvious. Reducing limbic system hyperarousal also permits greater executive activity. But tapping can also *activate* executive brain regions. Subjects in the PTSD studies frequently reported increased executive function post-treatment, such as an enhanced ability to concentrate.<sup>47</sup> Increases in happiness and well-being have also been found on pre- to post-tapping self-report measures.<sup>58</sup> In an imaging study of an acupoint tapping session that successfully eliminated a flying phobia, the treatment, as would be expected, downregulated activity in brain areas involved with the fear response.<sup>85</sup> However, it also increased activity in frontal executive regions that are involved with rational choices and managing emotional responses in stressful situations. Another fMRI study, conducted at Hannover Medical School in Germany, tracked 17 healthy individuals who stimulated acupoints while viewing fear-inducing and disgust-inducing images. The intensity of their subjective responses to the negative emotional stimuli was reduced. Activation in various brain regions involved in affect and information processing was selectively increased or decreased as required for adaptively “re-organizing the underlying neural pathways.”<sup>86</sup>

Acupuncture points that decrease arousal are called “sedating points.”<sup>9</sup> Sedating points send deactivation signals to specific areas of the brain or body. Acupoints that increase arousal are called “strengthening points.”<sup>9</sup> Strengthening points send activation signals. While very few brain imaging studies on acupoint tapping have been conducted to date, preliminary data suggest that tapping on acupuncture points produces these sedating and/or stimulating effects in the management of cravings and fear.<sup>64,85,86</sup> Generalizing from the breadth of outcomes in the 115 clinical trials, acupoint tapping also appears to send activation and deactivation signals when applied to problematic responses involving a range of other emotions, including anxiety, anger, jealousy, prolonged grief, shame, and guilt. This can be confirmed or disconfirmed by tracking the specific effects of stimulating each of the acupoints used in energy psychology protocols with brain imaging equipment.

In any case, the emotion, memory, or situation that has been mentally evoked seems, in a still unknown way, to determine which areas of the brain will receive the activation or deactivation signals generated by the acupoint tapping. In the weight management study,<sup>64</sup> the food images increased blood flow to parts of the brain that are involved with hunger and cravings, and the subsequent acupoint tapping treatment reduced such activation in the presence of the images. In the study treating the flying phobia,<sup>85</sup> visual images and memories initially evoked arousal in brain areas involved with fear. This arousal was deactivated by the acupoint tapping while executive brain regions involved with managing fear were activated. In the Hannover study,<sup>86</sup> tapping on acupoints favorably activated or deactivated areas of the brain related to fear or disgust, depending on the images being viewed.

### **Summary, Premise 6: Stimulating selected acupuncture points sends signals that can increase or decrease arousal in specific areas of the brain.**

Three laboratory studies go beyond the clinical trials in suggesting that the signals generated by acupoint tapping go to areas of the brain that have been aroused by the words, images, memories or emotions that are brought to mind during the tapping. So, by selecting what the client focuses upon during the tapping, the therapist seems able to direct the regulating signals produced by the tapping to targeted brain regions with unusual precision. This line of evidence and reasoning lends support to Premise 6.

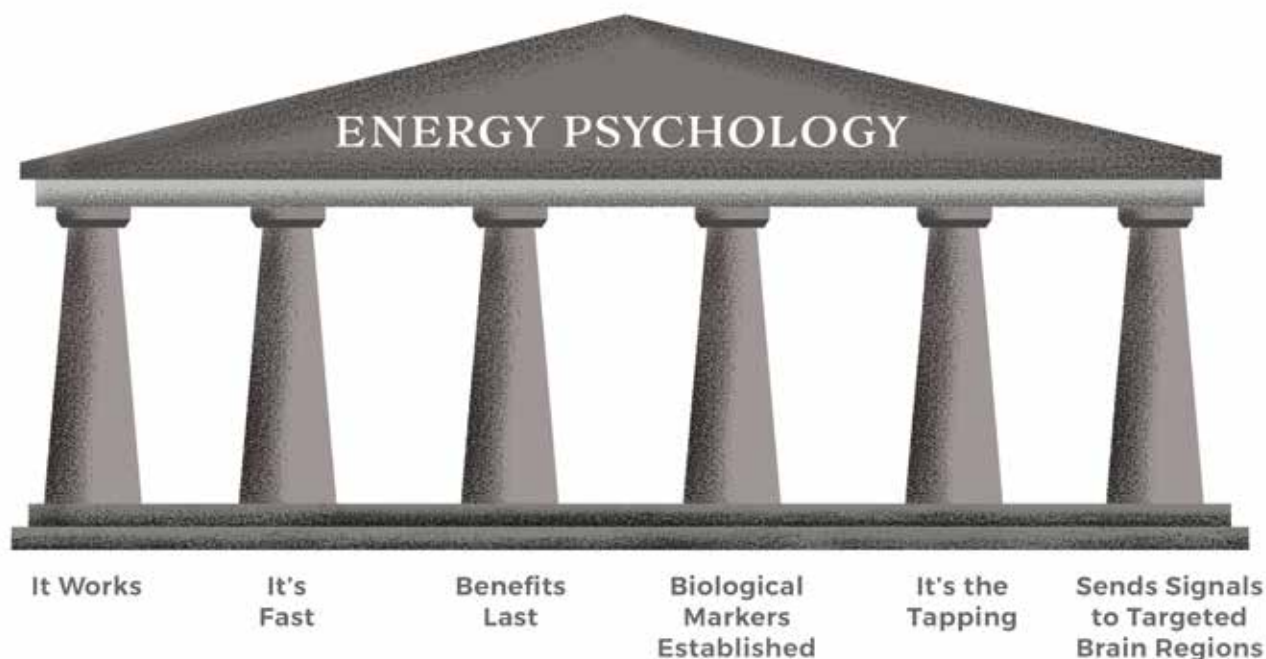
### **AN ESSENTIAL UNANSWERED QUESTION**

So far, we have surveyed studies showing that energy psychology treatments are effective in a range of psychological and physiologic conditions, are unusually fast, and that the benefits are durable. We have also reviewed evidence that tapping on acupuncture points combined with well-chosen wording or images can send signals to the brain that account for these clinical benefits, leading to 6 empirically-supported premises (as shown in Figure 2).

Introducing an acupoint tapping protocol also appears to have an impact on the therapeutic alliance. A phenomenologic doctoral thesis found that 16 of 16 seasoned therapists who introduced EFT into their existing practices reported that it enhanced the therapeutic alliance.<sup>87</sup> Their speculation on the reasons for this included that (a) clients could experience rapid, ongoing, tangible changes that constituted subjective proof that the therapy was working; (b) seeing the therapist tap along with the client demonstrated the therapist’s engagement, resulting in the client feeling a greater sense of “togetherness”; (c) the addition of coordinated physical movement introduced a ritualistic quality that brought the therapist and client into greater alignment; and (d) the therapist’s self-tapping on the client’s issues enhanced the therapist’s intuition about those issues. Excerpts from interviews with the investigator showed the therapists straining to also articulate a less tangible “dimension” that was added by working with the body and its “energetic field.” As one therapist put it: “Once you start working with energy... of course it changes the relationship... It brings you together in an energetic loop” that is altogether different from psychotherapeutic “distance.”<sup>(p63)</sup>

The 6 premises and speculation about a stronger therapeutic alliance do not, however, answer a fundamental question: What are the neural mechanisms that make the changes permanent? Clinical trials have established that acupoint tapping can reduce fear while an individual with a spider phobia, for instance, imagines a spider. But why would fear not re-emerge the next time a spider is encountered? While the empirical support for Premise 3 shows that outcomes following acupoint tapping treatments tend to be durable, none of the 6 premises explain why. A hypothesis that offers a plausible explanation, which can be proven or disproven by experimentation, addresses this question.

**Figure 2.** Six empirically-supported premises as “pillars” of an energy psychology approach.



**HYPOTHESIS: IMPROVEMENTS ARE DURABLE BECAUSE TAPPING PROTOCOLS RECONSTRUCT THE NEURAL CIRCUITS THAT MAINTAIN MALADAPTIVE MENTAL SCHEMAS**

A man whose father was abusive is not likely to form a trusting relationship, at least not easily, with a boss whose physical features or personality traits resemble those of his father. His mental schema is likely to be relatively fixed and, although it may, like tinted glasses, be outside his awareness, it will color his perceptions and reactions. Mental schemas (also called “mental models,” “internal working models,” “cognitive maps,” “internal representations,” and “knowledge structures”) provide the mechanisms through which new information is filtered and stored.<sup>88</sup> They are built upon compelling experiences that share a similar theme and include beliefs, perceptual filters, propensities for action, remnants of the experiences that led to their formation, and associated sensations, emotions, and muscle memories. Mental schemas reflect values and goals and are used to reason and make decisions.

**Mental Schemas**

Ecker et al<sup>89</sup> explain that “learning accompanied by strong emotion form neural circuits in subcortical implicit memory that are exceptionally durable, normally lasting a lifetime. Mental schemas that are constructed on the foundation of experiences involving physical threat or emotional injury may be neurologically embedded with the intransigency of inherited survival strategies. While these guiding schemas may attest to a child’s brilliant ways of attempting to navigate an impossible situation, they often become self-defeating later in life. They may even come to be at the core of a range of mental disorders, and they are not easily altered.”<sup>90-91</sup>

Nature did, however, develop 2 neurologic processes by which outmoded mental schemas can be updated: (a) the *integration* of new experiences that do not conform to the schema<sup>92</sup> and (b) the fundamental *updating and revision* of the schema through a process that unlocks the schema’s neural encoding and allows it to be rewritten according to new learning.<sup>93</sup> If the man described previously has a series of positive experiences with bosses and other authority figures who bear a resemblance to his father, he may update the schema by gradually, though largely unconsciously, integrating information from the new experiences. If, however, a consequential situation arises in which the man fully expects and is bracing himself to be judged harshly but is instead met with compassion and understanding, the entire schema may be disconfirmed and nullified. A radically altered schema may be formed based on just a few or even a single persuasive experience.

**RECONSOLIDATION**

This process is known as “memory reconsolidation” because a mental schema that was previously created and incorporated (consolidated) into existing knowledge structures has been activated, durable neural pathways unlocked, its content modified significantly, and the updated schema then *reconsolidated* into implicit memory.<sup>93</sup> Here we will focus on the way acupoint tapping accelerates the reconsolidation process.

For reconsolidation to produce a permanent, substantial change, 2 conditions are necessary. First, an old learning or mental schema must be emotionally engaged. This readies the neural circuitry maintaining the schema for the possibility of change. The schema is activated and will be integrated

intact or altered depending on what happens while it is active. For it to be altered, the second condition must occur, which is that a new experience must vividly and decisively contradict what the activated old schema expects or predicts. Called a *prediction error*,<sup>94</sup> this can lead to a major revision of the schema before it is then reconsolidated.

Recognizing a prediction error provides “surprising, but relevant” information<sup>89</sup> about the old schema and can lead to rapid changes in perception, understanding, and behavior, as well as in associated sensations and emotions. Most experiences that differ from a prevailing schema are discounted and do not change it, a dynamic cognitive scientists call “confirmation bias.”<sup>96</sup> For instance, expanding on the earlier example, the schema that is resistant to change might be: “People who make me feel this way [a feeling that is reminiscent of what his father evoked in him] will judge me and hurt me.” The corollary that applies to his current situation might be: “Although my boss treats me well enough, he may turn on me at any moment and can never be trusted.” Not only do such schemas not change easily, for most people throughout history, their most fundamental mental schemas could never be cast off. In fact, until the 1990s, neuroscientists generally agreed that once a deep emotional learning was acquired, it was “forever.”<sup>96</sup> The brain’s neuroplasticity was not widely recognized until the second half of the 20th century,<sup>97</sup> and studies of the neural mechanisms that have evolved for rapidly and decisively countering outdated entrenched learning only began to gain attention in the 1990s.<sup>98</sup>

Even psychotherapy, which attempts to produce deep changes in maladaptive mental schemas, and which does help people refine old models through the integration of new learning, often places its primary focus on assisting clients to better *adapt* to their long-standing mental schemas. For instance, it is easier for a therapist to assist a female executive in formulating strategies that serve her strong ambition to succeed in her career than to uncover and work with the roots of unquestioned ambition that traces back perhaps to a childhood longing to please her father. While helping people operate more effectively within ways of thinking they have developed over a lifetime is not a negative outcome, it does not usually free them from the most limiting features of the old schema.

If the man whose father was abusive marries a woman who shares certain distinct characteristics with his father (as often happens), such as a particular tone of voice when stressed, it is likely that this characteristic will become a trigger that troubles the marriage. Perhaps when the wife is stressed, her tone of voice catapults the husband into unwarranted defensive anger. Many marriages wrestle with such dynamics, and they may seem unresolvable to the partners even after applying all the communication tools at their disposal. Psychotherapy or couples counseling can often untangle these undercurrents, but the subtle interactions need to be detected and modified for this to occur. With energy psychology, having the man tap on acupoints while visualizing an incident in which such an interchange occurred

can send signals to the amygdala that will reduce his anger. The emotional charge is expunged from the recent memory, and the man may no longer hold anger toward his wife about the incident. But what would prevent his anger from again being triggered the next time her voice assumes that tone? How might the mental schema that brought about his anger in the first place have been changed?

The hypothesis being formulated here is that acupoint tapping protocols are unusually potent in bringing prediction errors into the client’s awareness, which is the engine for changing deeply embedded emotional learning. For the recognition of a prediction error to catalyze lasting therapeutic change, the mismatch between the current experience and what the old learning predicts must, according to Ecker et al,<sup>89</sup> “feel decisively *real* to the person based on his or her own living experience.” It must involve “experiential learning” rather than mere insight. In permanently changing outdated mental models, the “new learning directly impinges upon and revises the circuits of the old learning, rewiring and updating them.” This process must occur for symptom cessation to be *rapid, complete, and not subject to relapse* “whether or not the therapist or client was cognizant of this sequence of experiences taking place.”

Ecker et al go so far as to assert that all therapies which achieve such decisive outcomes are utilizing reconsolidation, intentionally or by happenstance. They hold that the implication for psychotherapists of the emergence of reconsolidation theory is that “with clear knowledge of the brain’s own rules for deleting emotional learning via memory reconsolidation, therapists no longer have to rely largely on *speculative theory, intuition, and luck for facilitating powerful, liberating shifts.*”<sup>89</sup> Within this model, the existing mental schema must be neurologically transformed or eradicated for deep lasting change, and this requires that an experience of decisive disconfirmation be introduced while the outdated schema is active. The concept of the *corrective emotional experience*—in which an old, unsettled conflict is re-experienced “but with a new ending”<sup>99</sup>—has been recognized since it was introduced by Alexander and French in 1946<sup>100</sup> and describes a similar process. Reconsolidation has been proposed as the neural mechanism underlying corrective emotional experiences.<sup>101</sup>

Within the reconsolidation framework, 3 basic strategies can be used by psychotherapists for facilitating a pivotal change in an outdated mental schema. The first is to find an experience from the client’s past that vividly contradicts the existing schema while that schema is still emotionally active. The second is to induce or access recent experiences that vividly contradict the old schema while it is still active. The third is to evoke a powerful positive emotion or bodily sensation that is different from what the old schema expects during the therapy session by working with the client’s transference, projections, or related dynamics. Each strategy, whether accomplished with or without the reconsolidation process in mind, requires considerable clinical acumen.

## Acupoint Tapping and Reconsolidation

In acupoint tapping protocols, a different sequence is involved. A memory or situation that calls up an existing mental schema is brought to mind. The sensations and feelings evoked by this imaginal exposure are experienced, mindfully observed, and given a distress rating. The acupoint tapping then sends signals to the limbic system that markedly reduce the somatic and emotional responses. Now, with the old schema engaged or recently engaged (the “disconfirming experience” must occur within a relatively brief timeframe called the “reconsolidation window”), the client is no longer experiencing the sensations and feelings the schema expects or predicts. At some level, surprise will be generated. Surprise is typically evoked in psychotherapy by unexpected “schema-discrepant” experiences (prediction errors), and it accompanies “schema revision.”<sup>102</sup> The focus of the tapping may be on *recent experiences* that activate the schema, on *earlier experiences* that played a role in its formation, or may shift back and forth between the two. Tapping on either may lead to a fresh experience that is viscerally different from what the schema expects, leading to its revision. When the conditions for reconsolidation are met (old schema active; disconfirming information prominently registered), the lessons of recent experiences can dislodge outdated, even deeply embedded old learning.

Pertinent memories and other knowledge related to the old schema may still be incorporated into the revised schema, but problematic emotional reactions (the targets of the acupoint tapping) will have been excised. The man whose father was abusive can recall instances of abuse, as well as hear his wife’s tone of voice, with no anger arising within him. A woman being treated for a spider phobia can, after the tapping, recall her brother having dropped a spider down her blouse or imagine being in the presence of a spider with no fear arousal. The mental schema’s expectations and predictions about these most intimate personal reactions have been vividly contradicted, and a revised schema that corresponds to the more recent experience has been consolidated into implicit memory. It will govern perceptions and reactions in future situations.

In brief, although “old learning dies hard,” when a new experience firmly contradicts an old learning, the reconsolidation process is engaged, neural circuits maintaining the schema are significantly altered, and profound shifts may ensue. In fact, Ecker et al suggest that the changes brought about by reconsolidation are of a different order than the extinction process that is produced by conventional exposure therapy. In conventional exposure therapy, new learning is formed “in a physically separate memory system” that competes with old learning.<sup>89</sup> Although old learning and responses may be challenged and temporarily overridden by the new conditioning—the neural circuits maintaining them are not fundamentally changed or erased. The fear response is suppressed, but the ease by which it may be reinstated has proven problematic in the treatment of anxiety and fear. In reconsolidation, the original neural

circuits are themselves fundamentally reconstructed.<sup>90</sup> As a result, when the conditions for reconsolidation have been met, the changes are often rapid and permanent.<sup>103-104</sup>

With an energy psychology approach, bringing to mind a traumatic memory, fear, or other difficult emotion while tapping on points that send deactivation signals to the limbic system is a different order of exposure therapy. Rather than repeatedly evoking a traumatizing scene, memory, or trigger—or pairing it with relaxation techniques whose effects are less immediate or powerful—acupoint stimulation quickly reduces the disturbing response. As well as being a more efficient process, acupoint tapping protocols are, according to a survey of therapists who work with victims of childhood sexual abuse, able to “relieve the trauma in a non-invasive manner [that] lessens the possibility of retraumatization.”<sup>105</sup> A review of clinical trials of acupoint tapping protocols involving more than 1000 subjects found that no adverse events were reported.<sup>106</sup>

Reconsolidation theory had not been formulated when acupoint tapping protocols were first introduced in the early 1980s, so any advantage energy psychology protocols have in facilitating reconsolidation is not by plan. It is due to the way acupoint tapping is often able to reduce limbic arousal almost instantly, so the client’s emotional or bodily response is different from what is expected when an evocative scene is mentally evoked. This is the ingredient, an emotionally compelling experience of a prediction error, that prepares the neural circuits for deep change. The situation governed by the old schema ceases to arouse the emotional reaction that the old schema predicts, and the reconsolidation process has been set in motion. The wife’s tone of voice no longer evokes anger in the man we’ve been discussing because the schema built around his father’s abuse, which his wife’s tone of voice had been activating, has been divested of its emotional triggers and then reconsolidated.

## SUMMARY: HOW ACUPOINT TAPPING CHANGES MALADAPTIVE MENTAL MODELS

1. Tapping on acupoints causes a class of large proteins in skin cells to convert the mechanical stimulation into electrical signals that may be carried to remote areas of the body via the connective tissue. This transmission is nearly instantaneous due to the high concentration within the connective tissue of the semi-conductor collagen.
2. These signals may deactivate arousal in the amygdala and other areas of the limbic system.
3. Alternatively, they may increase activation in areas of the brain involved with executive function, enhancing such capacities as planning or managing stress.
4. The words or images the therapist asks the person to bring to mind during the tapping activate brain areas that govern the issues being addressed.
5. The brain areas that are stimulated by the words and images seem to attract the impulses generated by the

tapping, resulting in the activation or deactivation signals finding their way to clinically salient neurologic structures. This allows the therapist unusual precision in targeting interventions for desired outcomes.

6. When the signals, for instance, reduce panic while the image of a spider is being evoked in a person with a spider phobia, the neurologic changes outlast the tapping because of a process involving the dismantling of existing mental models and replacing them with new or revised models.
7. This reconsolidation sequence is initiated when what is experienced is not what was expected—a process neurologists call a prediction error—such as when the image of the spider does not produce panic due to the simultaneous tapping. The no-fear experience created during the tapping, after sufficient repetition, becomes the “new normal.”

Observations from more than 100 clinical trials and the few imaging studies that have been conducted to date<sup>64,85-86</sup> are consistent with this formulation. For it to be more persuasively verified, however, additional imaging studies are needed that show precisely how the signals generated by stimulating the acupoints used in energy psychology protocols interact with the brain regions involved in specific disorders.

## CONCLUSIONS

According to the American Psychological Association, “evidence-based practice in psychology is the integration of the best available research with clinical expertise” by applying empirically-supported principles “to promote effective psychological practice.”<sup>107</sup> The 6 premises outlined in this paper about the efficacy, speed, durability, and physiologic effects of energy psychology treatments combine with the evidence bearing upon each premise to constitute empirically-supported principles for promoting effective psychological practice. While further studies will serve to confirm or disconfirm this assertion, research to date has been trending toward supporting it.

Acupoint tapping can be readily incorporated into various psychotherapeutic frameworks, and that is the context within which most clinicians utilize it. Claims by these clinicians of rapid improvements under a wide range of conditions, while backed now by more than 100 RCTs and other systematic outcome studies, continue to be met with skepticism from the clinical community. Further adding credibility to the approach, however, has been the formulation of plausible explanations for the mechanisms of action that do not rely on ancient philosophies or the effects of invisible forces. This paper develops one such formulation: the hypothesis that a clinical strength of acupoint tapping protocols is in their ability to rapidly create emotionally vivid experiences that facilitate the modification and reconsolidation of maladaptive mental schemas.

Accumulating evidence of efficacy, as well as advances in brain science, suggest that supplementing conventional

clinical practice with acupoint tapping protocols could be widely beneficial. To the extent that this conclusion is consistent with existing and emerging data, steps to implement such a clinical breakthrough can be taken, including (a) disseminating reports of its efficacy to the treatment community, (b) building proficiency in its application through the training and continuing education of psychotherapists, and (c) formulating practice guidelines that ensure the approach will be available to patients in primary care facilities.

## AUTHOR DISCLOSURE STATEMENT

The author conducts trainings, provides clinical services, and has written books related to the approach examined in this paper.

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