

# Place Yourself in your Client's Shoes with Biofeedback to Promote Healing,<sup>1</sup> 2.

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**ABSTRACT** *The authors explore the interaction between the client's subjective experience and physiological processes. Psychophysiological monitoring can be useful in uncovering whether the external persona is congruent with the internal physical and emotional experience. Physiological recording can provide suggestions to promote healing. The therapist uses this information to guide the therapeutic process and to "speak for" the client's internal experience. Ericksonian interventions -- speaking for the client, utilizing a YES set, and reframing -- can increase rapport and allow the client to feel understood. This process can induce symptom relief and relaxation, and transform helplessness and resignation into hope and possibilities. The authors illustrate their approach through clinical examples of neck and shoulder pain.*

**KEYWORDS:** Shoulder pain, surface electromyography (SEMG), blood volume pulse (BVP), cognitive therapy, YES set

In a diagnostic interview we often pose questions such as, "Does this hurt?" or "Does it hurt there?" When we conduct a physical assessment, palpating the sensitive area may result in a pain response "Ooouch ..." and thus trigger more vigilance. When the client anticipates pain, it is more difficult to relax or trust the healthcare provider. Developing rapport before beginning a possibly painful treatment or giving a difficult diagnosis will reduce arousal and internal defences (Peper and Fuhs, 2004). This interactive approach is demonstrated in the following case example.

A woman, age 50, injured her shoulder three years ago after slipping on the bathroom floor. During the shoulder surgery, a metal plate was screwed into her right shoulder. In the initial evaluation, her right shoulder was rotated forward and still felt weak and painful. She continuously held her arm against her body to protect the shoulder. Her goal was to function as she did before the accident, but she could not. She reported that she enjoyed the rehabilitation program prescribed by her physiotherapist even though it usually increased her severe pain. She was forced to do arm and shoulder movements twice a day with the physiotherapist; this regularly induced severe pain. Despite the increasing pain during the exercise, she stated that her rehabilitation was most helpful. She thought the pain was necessary and therefore tried to do her exercises every so often.

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In this case, the physiological monitoring helped to elucidate some of the underlying process. When the client was asked to lift her arm and relax, her pectoralis muscle did not relax after the exercise. Then, when she repeated the lifting of her arm and was instructed to let go and relax, the muscle tension again increased (for more detail on this type of dynamic muscle assessment, see Sella, 1998). This illustrates Moss's fourth principle that biofeedback instrumentation identifies maladaptive physiological responses (Moss, 2005). Neither she nor her previous physical therapist were aware of this process and many therapists would not have recognized the increasing muscle tension, if physiological monitoring had not been implemented as shown in Figure 1.



*Fig. 1: Muscle activity during passive movement of the right arm. Both the right pectoralis and right upper trapezius muscles continued to remain tightened during and after passively lifting the arm and requesting the volunteer to let go and drop her arm.*

The physiological analysis and her verbal report suggested the following themes that could underlie her pain:

- **The desire to be the same as she was before the injury.**

One can never be the same as before. One can only grow and change. The client can be better or different; she can not be the same as before the injury. It is impossible to be the same because the totality of body-mind-emotions is continually changing and maturing. Holding onto the past image would mean to not live in the present but in the past, and therefore would not allow change. *A therapeutic goal is to explore ways of letting go of past images and being open to new options to support the opportunity for change.*

- **The assumption that pain during exercise or treatment must be good.**

In most cases, pain induces avoidance and fear. Anticipating pain during movement or treatment induces bracing and vigilance, which inhibits healing. It may become a self-fulfilling prophecy that movement and pain begets more pain and thereby limits movement. *A therapeutic goal is to create an experience of improved movement without pain - a non-verbal experience of hope.*

- **Inability to relax between movements.**

If the muscles do not relax between periods of activation, discomfort is very likely and healing is inhibited. *A therapeutic goal is to teach rapid voluntary relaxation between movements to encourage blood and lymphatic circulation.*

- **Feeling isolated and hopeless that the pain will not go away.**

Anticipation of pain and the thoughts that the pain will never end, combined with chronic pain, leads to exhaustion and increased dyspnoea. *A therapeutic goal is to teach emotional and cognitive reframing (meditative and mindfulness practices) to interrupt the automatic helplessness thoughts and to explore social supports.*

## **PHYSIOLOGICAL MODEL FOR ILLNESS AND THE YES SET**

The physiological monitoring discussed above demonstrated that the patient's muscles did not relax rapidly after tightening. Without that knowledge, the therapeutic interventions would probably have included muscle-strengthening exercises, which would increase discomfort and inhibit regeneration. The therapist used the following physiological model to explain how the patient's shoulder pain was being maintained and how her healing was being prevented. This explanation triggered an "Aha" experience as a strategy to change the volunteer's beliefs (Wilson, Peper & Gibney, 2004).

If muscles do not relax, they act as an occluding cuff around the blood vessels and thereby inhibit arterial, venous and lymphatic flow (Peper & Gibney, 2005). When blood flow is decreased, metabolic waste products cannot be removed, and appropriate nutrients cannot be delivered to accelerate the healing. In addition, if the tissue is held tightly, without letting go, then every time the muscle is forcefully stretched, the tissue may be damaged. This would be analogous to having a skin wound, and a scab then forming. The moment the scab forms, it is ripped off again. With the use of this analogy and the graphic surface electromyographic (SEMG) recording, the woman realized that she needed to learn to relax in order to increase healing. The treatment therefore is NOT another prescriptive exercise; instead, first it includes mastering relaxation for regeneration before the muscles are activated.

The therapist endeavoured to express the client's point of view. While speaking for the client, the therapist pointed out that she had exerted too much effort in her exercises because she wanted to get better. Similarly, at work, she tried to do a good job, and so she worked harder and longer than she should - she worked herself to exhaustion. When she heard this explanation, she sighed and said, "YES," while at the same time her whole body relaxed as shown in Figure 2.

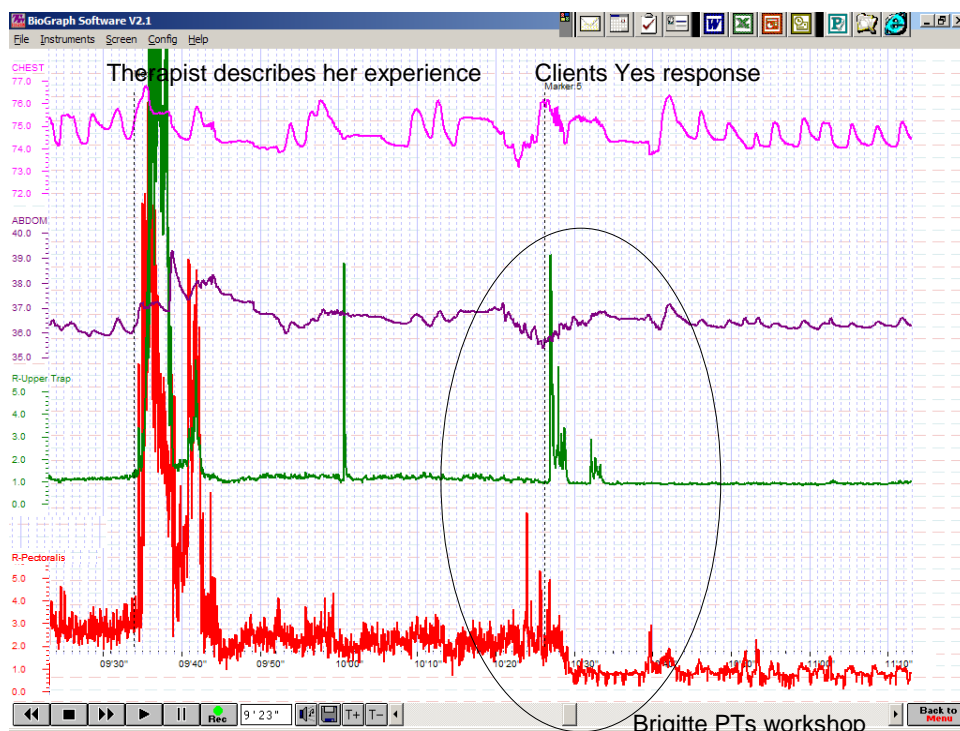


Fig. 2: The effect of a YES response on pectoralis sEMG.

The YES set intervention rapidly created trust, acceptance, and a positive rapport and led to an increased empathic understanding. The following dialogue illustrates this process.

Therapist (Th): “I can imagine that your injured shoulder was a real problem for you as you’re so used to using your right arm? Even simple things like doing up the buttons on your jeans may have seemed to be impossible after your surgery?”

Volunteer: “Yes!” in a very empathic way

Th: “After cast and sling were off people could no longer know that you still couldn’t fulfil your workload like before?”

Volunteer: “Yes“, and nodding of the head.

Th: “And you wished that everything would work out the way it was before your injury and you could just work hard because you really would like to do your job well.”

Volunteer: “Yes, exactly!” and a slight change in her face—an accepting sadness—with a sigh of relief.

Once the volunteer knew that the therapist had understood her, she could let go of her vigilance, worries and fears (e.g. “What will he do with me, will it hurt...?”) and relax - letting down internal defences. This “letting go,” as a result of the YES set, can often be observed in the physiological recording. Sometimes muscle tension decreases, at other times the skin conductance or heart rate decreases, or the finger/foot temperature increases. Once this letting go reflex is observed, then the intervention or treatment can begin.

As long as the vigilance and fear are present, the person unknowingly braces to protect him or herself and thereby induces excessive co-contractions (dysponesis) (Whatmore and Kohli, 1974). At the same time the individual remains sympathetically activated, breathes more rapidly and more shallowly, and the muscles stay contracted, when instead they could be relaxed.

## TRANSFORMING THE SUBJECTIVE MEANING OF THE ILLNESS

The YES set and speaking for a client are strategies to enhance understanding and emotional relaxation. In addition, re-labelling and changing the expectancies associated with the illness components can increase hope and promote healing. Changing the concepts of the cause and meaning of the pain can be helpful. The session described above included a discussion of the difference and confusion between “good” and “bad” pain. “Good” pain is the experience of muscle pain after excessive exercise, which will disappear in a few days when the tissue has regenerated. Most people have experienced this during sports performance or while hiking up and down a hill. The next day the muscles hurt, and after a few days the pain disappears. Usually, the muscles are not held statically for the duration but gently moved and activated. In this client’s case, a significant component of her chronic pain was the ongoing “good” pain that resulted from continued tightening of the muscles. This pain is the result of not relaxing the tissue (Cram & Durie, in press).

The discussion that “good pain” is normal after excessive activity, and just needs time to be resolved through relaxation, offered hope. It suggested a possibility that part of her shoulder pain could decrease if she learned to relax her muscles after use. If she could totally relax those muscles, it would enhance the healing of her shoulder. All she had to do was to change very little and learn to relax in between movements. Using this model, the therapist explained that her situation could change if she learned and practiced taking small breaks (micro-breaks). She felt a wave of relief with this explanation that her pain problem was normal - a common and frequent problem in many people. She could let go and reduce her worry. She felt understood, less alone in her suffering, and finally was able to relax.

### ***Pain as a Signal***

***Definition:** An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (Merskey & Bogduk, 1994).*

*Pain can be caused by temperature, pressure, or chemicals released by damaged tissues. All of these factors activate nerve cells in the nervous system. Pain serves a useful purpose in many instances. It provides us with a warning that our body is at risk of, or is, being damaged. This gives us time to react and to remove the damaging stimulus, e.g. when you burn your hand on the oven. Pain is always a signal from our body system that should make us focus to this aching body part. Without this signal we would be in danger of harming ourselves many times – e.g., if we would cut a piece of bread and cut our finger, we would not stop if we could not feel pain. Like the red warning light in your car, it means that there is something out of order that needs to be looked at. No adult would seriously suggest that taking away the red light would mean driving is safe now. However many people think taking a drug against the pain will resolve its cause.*

This re-labelling process is also applied to how we relate to our bodies. Often when our bodies hurt or are injured, we become disgusted and angry, and at times wish that the body was not there at all. These negative thoughts and associations constrain the self-healing process. Appreciating and feeling positive about oneself - a process that is part of acceptance and hope - enhances immune function and health.

The therapist suggested to the patient above that she should be more gentle toward her body and appreciate it for all the work it had done for her in the last years, even when she didn't honour it. He incorporated this attitude while teaching her to breathe more slowly. He asked her to exhale while he gently stroked down her arm from the shoulders to her fingers. At the same time, he encouraged her to appreciate all the positive things the arm and shoulder had done for her. To anchor the experience and to encourage relaxation, she was instructed to practice breathing more slowly and to direct her breath more into her abdomen, since her rapid thoracic breathing pattern contributed to her muscle tension.

The therapist also directed her to imagine breathing down through her arms while sending positive appreciative thoughts to her shoulder. The therapist explained this concept while practising with her -- touching her arm and stroking down along her arm while she was exhaling. She then repeated this stroking by herself. In this process, the stimulus of the negative association becomes the trigger for the positive appreciation - a process in which she lets go of her anger and worries and her pain disappears. The disappearance of the pain, even for a moment, anchors the experience and offers hope. It is part of the "Aha" experience by which the person experiences that a new possibility exists (Wilson, Peper & Gibney, 2004a).

### **APPRECIATION PRACTICE<sup>3</sup>**

When a body part has been injured or hurts, we often dislike that body part. The person may even wish that the specific body part would just disappear. However, healing is more likely if consciousness is not withdrawn from the aching body part, or if positive instead of negative thoughts or feelings are associated with it. Therefore, whenever you think of that aching/damaged body part, shift your thoughts to appreciating all the things that body part has done for you in the past and still does, even if it is limited. Appreciate all the times that you just took that body part for granted or even abused it. For example, think of how you used your arms and shoulders as a child throwing a ball, appreciate how your shoulder just moved without complaining while you jarred it, carried weights, hugged a beloved person, carried your child, etc.. Continue to appreciate all of the things that your shoulder has done for you.

For clients, success partially depends upon generalizing the skill. The challenge is to remember to practice relevant skills and exercises during the day such as taking micro-breaks after any movement during the day and appreciating the body for what it has done for you. After the therapist engaged in speaking for the client, developing the YES set, and re-framing the experience of pain, and after the client actually experienced a change in her pain, she reported that she would do the things that the therapist asked her to do. She would do these exercises just for herself and not for the therapist. With the experience that her pain could be relieved, she realized that she could carry out the exercises, and she felt more optimistic about following through.

The efficacy of this approach was independently confirmed by the client's supervisor, who reported that she had come back completely changed as if a miracle cure had occurred. This continued to be true even when we inquired about her several weeks later. This was not a miracle cure but a change in the client's perspective and level of hope. The therapeutic process reduced the feelings of learned helplessness that had kept her in a paralyzed state in which she

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<sup>3</sup> Adapted from a presentation by J. Carson (Carson & Keefe, 2003).

worried and focused on her limitations. Through acknowledging the present state, her focus shifted to what could be done, how it could be done differently and what would be acceptable. By increasing her acceptance for her situation and giving her the feeling that she was normal, she experienced the option to be in the present, and to work on her situation right now.

## SUMMARY

The major components that underlie this approach include:

- Normalizing the illness experience as a strategy to reduce anxiety. Most clients think and fear that they may be abnormal. Therefore, it is often a relief to know that what they experience is normal and not some kind of insanity.
- Changing the belief that healing should be a painful process and that the more one hurts the better the result. Instead, healing is promoted by a gentle and supportive approach. Usually pain is a signal to stop and not to push further.
- Inducing and experiencing hope. The experience of hope is not conveyed only in words; it must be kinaesthetically felt through pain (symptom) reduction or increased limb movement. Hope allows the relaxation to occur. Through hope, clients may feel less helpless and again experience an increase in control over their personal situations. It is one of the steps that may liberate them from the embedded flight/fight/freeze response.
- Changing the emotional image of the injury area, from an experience of anger or disgust to an appreciation for all that the injured area has done for one in the past.

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