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**Using Tellington TTouch  
Body Wraps with  
Traumatic Brain Injury:**  
*Light Touch Releases Oxytocin and  
Soothes the Polyvagal System*

**by Robin Bernhard**

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By Robin Bernhard, LCSW

## **Light Touch Releases Oxytocin and Soothes the Polyvagal System**

Our Self-Help group to learn TTouch for themselves was created by Sandy Rakowitz for those with mild Traumatic Brain Injury. The program was designed to teach participants TTouces they could do for self-help, recovery and empowerment.

Our small group consisted of three people with mild brain injuries, three personal support people, three professionals and an occasional volunteer to videotape. This permitted personal instruction within a group experience for support and sharing. Sandy's program consisted of six 2 1/2 hour meetings over the course of three months with three follow-up meetings over the course of the following year.

One of the participants, Susan, was particularly comforted by the feeling of safety and security provided by the wraps. We saw a similar pattern as each person responded. There was an initial quieting; a serious facial expression that was accompanied by the appearance of a soft eye and an internal focus.

Next, either a positive or negative reaction promptly occurred. When the reaction was positive, we saw a sudden look of surprise followed by smiling, laughing and playfulness. If the reaction was negative, the wrap was removed and a new location was explored. Some have said that the wraps generate a feeling of security like a hug.

A study designed to explore the benefits of massage was expected to demonstrate that massage supports the immune system by boosting the body's levels of **oxytocin, "the trust hormone"** and thereby indirectly reducing the body's secretion of cortisol, "the stress hormone."

Both groups in this study, funded by the US government's National Center for Complimentary and Alternative Medicine, showed an increase of oxytocin, but the people in the control group who received "light touch" actually produced more oxytocin, and therefore less cortisol, than the people in the deep touch group.<sup>7</sup> This news was very interesting, since all Tellington TTouch falls into the category of light touch.

**Since oxytocin is the neuropeptide of trust and safety it would be the perfect antidote to the fight-flight-freeze response.**<sup>8,9,10,11</sup> It is released in high doses during delivery, nursing and sex to promote bonding, but it is also released in lesser amounts within the context of relaxing, pleasurable and safe relationships. Just touching another person in a kind way or hugging a pet can release oxytocin.

As we have seen in the previously mentioned study, the relationship does not have to be of the personal nature for this release to occur; the safety and structure of a therapeutic relationship with a trained professional works just fine.

**Part of the experience of support, security and safety often created by the wraps may turn out to be the result of oxytocin.**

Also of great interest, it has been shown in laboratory studies that **oxytocin can completely erase an old memory** and is being studied as a new therapy for PTSD.

Studies show that oxytocin produces the right attitude for learning. It reduces anxiety and improves social learning in autistic children by activating the right hemisphere of the brain associated with bonding and emotional recognition.<sup>12</sup> It is believed to create an inner atmosphere of safety that promotes flexibility and openness to change.

Maybe oxytocin plays a role in erasing or altering the old memory and providing a neuropeptide source for a positive feeling. This neuropeptide could be released in an instant and the positive feeling would truly contradict a memory that was formed during fight-flight-freeze or faint. It would satisfy both conditions of the brain's rules for change.

Is oxytocin part of the new and contradictory information that becomes available at the right moment to create instantaneous memory change?

## **The Polyvagal Theory and the Completion of the Orienting Response**

Light touching of the skin stimulates the parasympathetic nervous system and provides a natural way for us to calm down.

The vagus nerve makes up most of the parasympathetic nervous system and connects the heart, the lungs, the organs and the intestines to the brain.

Light touch of the skin over the heart, lungs and gut triggers both the release of oxytocin and simultaneously engages the vagus nerve.

Unconscious changes in breathing patterns seen in group members indicate the Polyvagal System has been engaged. The Polyvagal System can be engaged intentionally through breath work as in many forms of yoga, meditation and simple relaxation exercises.

**It is a natural and underutilized part of mammalian biology that serves to reduce stress.** Lori Parker has written an easy to read e-booklet that summarizes the wonderful work of Stephen Porges' Polyvagal Theory. The following summary of Stephen Porges' work was taken from the e-booklet.

The initial quietude and appearance of the soft eye seen in our group members when they were first wrapped may be a subtle sign of what is called **the natural orienting response**.<sup>13,14</sup> When something changes in an animal's environment certain innate behaviors such as turning the head in the direction of the change and becoming erect and alert are all a part of this response.

Trauma theory describes PTSD as the orienting response stuck in the freeze mode of the fight-flight-freeze-faint trauma response.

Animals in the wild either run away or fight unless death is imminent at which point they will freeze and faint before they are killed. This part of the Polyvagal System is the most ancient, the dorsal motor portion of the vagal system.

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Humans and domesticated animals in modern society are often unable to release fear using this mechanism because fighting or fleeing is discouraged or prevented. Instead, frozen states of fear and rage are held in body memory, in the cells and tissues.<sup>15</sup>

Without alternate ways to care for these reactions we develop the symptoms associated with chronic stress.

When Tellington TTouch Body Wraps stimulate and warm the skin they offer another pathway to care for our stress reactions - which can be partially explained by the healthy engagement of the vagus nerve and the ventral portion of that system.

The Polyvagal System is actually two systems which can function independently, the dorsal motor pathway and the ventral vagal pathway.

The ventral vagal pathway offers the second pathway for handling a stress response. Stephen Porges labeled this pathway “**the social nervous system**” because it represents a solution to stress or fear that involves social engagement.<sup>16</sup>

Infants activate this system when they seek and obtain support and nurturance from parents who create safety through protective and loving actions toward them.

The Social Engagement System includes the face and facial expressions, the neck for turning the head in the direction of seeking help, the chest, the back and the arms for reaching out. When this social nervous system is activated, the ancient fight-flight-freeze-faint reactions are inhibited.

In summary, fear, helplessness or trauma creates low tone in the ventral vagal pathway and activates the more primitive dorsal motor complex.

**As mentioned, the release of trauma reactions through active expression of fighting or fleeing is not the most useful method of releasing trauma in the modern world.**

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**An alternate response is to calm the body by engaging someone in the social sphere to help solve the problem. The act of social engagement is what triggers an increase in tone of the ventral vagal pathway which then soothes the nervous system.**

Stephen Porges believes that the stimulation of any part of the Social Engagement System can trigger the activation of the ventral vagal complex.

Keeping the eyes open is one way of keeping someone engaged with the environment and preventing the primitive dorsal motor complex from becoming activated. <sup>17</sup>



Jessica is sensing the points of shoulders.



Jessica is relieved to alter position of leg wraps.

It is believed that keeping the eyes open stimulates the ventral vagal complex and allows the orienting response to be completed in safety. As we mentioned earlier, the application of the wraps seems to trigger an orienting response in group members. Simply allowing the orienting response to complete rather than to be disrupted, as it was at the time of the trauma, is one way of helping to release trauma holding patterns. Tellington TTouch and work with Tellington TTouch Body Wraps is done with the eyes open.

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The group members using the wraps are unconsciously paying attention to the skin boundary between the external and internal environments and scanning for safety.

The soft eye expands the peripheral field to take in and engage with the environment and allows one to simultaneously look inward for internal signs of distress or safety. The completion of this response is believed to notify the body that danger is past. As the body absorbs the truth that the danger has passed, the orienting response gives way to subtle muscular releases and spontaneous muscle movements which were seen by people using the wraps.

Anna Wise, a neurofeedback pioneer who has worked extensively with Linda Tellington Jones, believes that the orienting response is indeed unconscious and can be measured in the delta frequency.<sup>18</sup> She refers to it as radar that is triggered by environmental changes that promote a need to reach outside of oneself and into the world to check for safety. She calls this animal radar or the orienting response.

Soon after each person completed the orienting response, as seen by the spontaneous subtle muscle movements, the body was freed of the long held trauma patterns which had inhibited movement and the even older healthy patterns were freed up for use again.

At this point, the members of our group moved fluidly and easily. The group itself served as ‘the supportive other’ to be engaged by the social nervous system.

### Conclusion

This article has been an attempt to describe the use of Tellington TTouch Body Wraps for people with brain injury and to inform those interested in using Tellington TTouch Body Wraps that there is a wealth of information already available from many fields of science that may help explain the dramatic changes that are seen when the wraps are used.

Some examples have been reported here from our brain injury support group but there have been hundreds of case studies like these from decades



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of working with wraps that may be found in the archives of the TTouch literature.

**This discussion began with:**

- **The sensory and biochemical systems** to explain how touch might produce positive feelings of connection and support.
- How **feelings of connection and support** help engage the calming portion of the Polyvagal System as a **healthier alternative** to the fight-flight-freeze response.
- **The type of touch** created by **Tellington TTouch Body Wraps** enhances spatial awareness with the potential to support harmonious well organized brain waves similar to those seen in meditation and peak performance and they may actually produce some of the same benefits for the body.
- At the cellular level, old memories of pain and fear have the potential to be changed in an instant.
- And finally and most spectacularly, the heart serves as the organizing principal for transmitting and processing all information from all of the cells and all of the activities in the body via many known physiological processes and through a lesser understood field of subtle energy called the quantum field.

The information from HeartMath Research Center suggests there are optimal low frequency states for healing that may be easily accessed, for example, through their work with heart rate variability training. This supports Les Fehmi's suspicions of a low frequency healing state, Anna Wise's work with healers who produce large amounts of low energy delta brain waves during states of healing and Stephen Porges' work about a low frequency biological system for recovering from stress.

But as Anna Wise emphasized, all of the frequencies are needed in a particular balance for optimal function. It just appears that the majority of the needed frequencies fall in the lower ranges. It seems reasonable to suspect, as Stephen Porges did, that there are indeed many entry points into the body's innate process for healing, no matter whether it is through touch, the breath, the heart or the mind, whether the entry points are at the molecular, cellular or quantum level because all are intricately linked via the heart. A shift toward health created through any one of the access points to our innate resources has the potential to shift the entire system.



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It seems fitting to end with a discussion of the heart, as that was where the entire journey began. It was Sandy's desire to help that led her to offer a support group for people with brain injuries.

We did not know how effective the group would be or how it might be received. All of us, the participants and facilitators, shared in the thrill of watching these changes for the very first time.

The results were so amazing that Terri and Susan were pleased to have their photographs included and their personal stories made public so that others might be helped. Thank you to Terri and Susan. We are deeply grateful.

## **End Notes**

<sup>1</sup> Lang, Carol. [Rehabilitation of Horses with Neurological Deficits.](#)

<sup>2</sup> Wendler, M. Cecilia, RN, PhD, CCRN & Tellington-Jones, Linda. [TTouch for Healthcare: The Health Professional's Guide to Tellington TTouch.](#) Tellington TTouch Training (2008).

<sup>3</sup> Hood, Robyn and Pretty, Mandy. [All Wrapped Up for Horses: Improving function, performance and behavior with Tellington TTouch Body Wraps.](#)

<sup>4</sup> Tellington-Jones, Linda. TTouch For You Training, Charlottesville, Virginia , 2009 & Clinton Iowa, 2011. Discussion of releasing fear and memory from the body.

<sup>5</sup> Tellington-Jones, Linda. TTouch For You Training, Charlottesville, Virginia, 2009 & Clinton, Iowa, 2011. Discussion of the effects of wrapping the side opposite from an acute or old injury.

<sup>6</sup> Ecker, Bruce, M.A., M.F.T. ["The Brain's Rules for Change: Translating Cutting Edge Neuroscience into Practice."](#) Psychotherapy Networker online (2011).

<sup>7</sup> Main, Emily. ["Benefits of Massage and Light Touch"](#) @ Rodale News.com.

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<sup>8</sup> Delgado, Maurice. [“To Trust or Not to Trust: Ask Oxytocin.”](#) Scientific American online (2008).

<sup>9</sup> Feldman, Ruth. [“Oxytocin and Social Affiliation.”](#) Hormones and Behavior [Epub ahead of print] Elsevier B.V. (January 2012).

<sup>10</sup> Smith, Abbie, LCSW, Director of Clinical Services, Holt International Post Adoption Services. [“Oxytocin: The Bonding Hormone.”](#) (2012) Word Press.

<sup>11</sup> Baumgartner, Heinrichs, Vonlanthen, Fischbacher, Fehr. [“Oxytocin shapes the neural circuitry of trust and trust adaptation in humans.”](#) Neurohttp://www.ncbi.nlm.nih.gov/pubmed/18498743n. 2008, May 22;58(4):470-1.

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<sup>13</sup> Wise, Anna. Transcript from Tellington TTEAM Training 1984.

<sup>14</sup> Parker, Lori, PhD. [Polyvagal Theory: What Is It and Why Should We Care?](#) Michi Press (2006), p. 4.

<sup>15</sup> Parker, Lori, PhD. [Polyvagal Theory: What Is It and Why Should We Care?](#) Michi Press (2006), p. 34.

<sup>16</sup> Parker, Lori, PhD. [Polyvagal Theory: What Is It and Why Should We Care?](#) Michi Press (2006), p.19.

<sup>17</sup> Parker, Lori, PhD. [Polyvagal Theory: What Is It and Why Should We Care?](#) Michi Press (2006), p. 45.

<sup>18</sup> Wise, Anna. Transcript from Tellington TTEAM Training 1984.

<sup>19</sup> Hood, Robyn and Pretty, Mandy. [All Wrapped Up for Horses: Improving function, performance and behavior with Tellington TTouch Body Wraps](#), p. 6.

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<sup>31</sup> McCraty, Rollin, PhD. “The Coherent Heart: Heart-Brain Interactions, Psychophysiological Coherence, and the Emergence of a System Wide Order.” HeartMath Research Center, Institute for HeartMath (2006).

<sup>32</sup> McCraty, Rollin, PhD. “The Coherent Heart: Heart-Brain Interactions, Psychophysiological Coherence, and the Emergence of a System Wide Order.” HeartMath Research Center, Institute for HeartMath (2006) p. 33.

<sup>33,34</sup> McCraty, Rollin, PhD. “The Coherent Heart: Heart-Brain Interactions, Psychophysiological Coherence, and the Emergence of a System Wide Order.” HeartMath Research Center, Institute for HeartMath (2006) p. 55.

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