

Perry: Rhythm Regulates the Brain

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Dr. Bruce Perry, MD is taking his healing for trauma to Washington in a May 4 program for the National Council for Behavioral Health.

And the doc's got rhythm. In fact, he and other trauma experts are reporting revolutionary success with treatments using yoga, meditation, deep breathing, singing, dancing, drumming and more.

These principles are so fundamental to our brains they go back to the dawn of man; the Vedas were sung before 5,000 BC (likely with yoga and meditation.) My book describes how yogic chant and meditation saved my life in 2010, before I ever read a word about brain science.

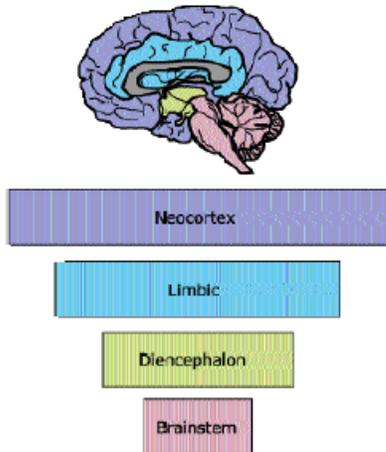
One California county is trying to cancel such programs, insisting on Cognitive Behavioral Therapy (CBT) which relies on the thinking brain. But Perry and many experts say talk therapy alone can re-traumatize trauma survivors.

Perry says we need "*patterned, repetitive, rhythmic somatosensory activity*," literally, bodily sensing exercises. Developmental trauma happens in the body, where pre-conscious "implicit memory" was laid down in the primitive brain stem (survival brain) and viscera. Long before we had a thinking frontal cortex or "explicit memory" function. [FN1]

The list of repetitive, rhythmic regulations used for trauma by Dr. Perry, Dr. Bessel van der Kolk, Dr. Pat Ogden and others is remarkable. It includes singing, dancing, drumming, and most musical activities. It also relies on meditation, yoga, Tai Chi, and Qi Gong, along with theater groups, walking, running, swinging, trampoline work, massage, equine grooming and other animal-assisted therapy.... even skateboarding. Click here for [Perry's web page on interventions](#).

"I am asked how hip hop and skateboarding can help a child with depression or ADHD," reports Dr. Sarah MacArthur of the San Diego Center for Children. "Yet 70% of the children showed improvement in symptoms of depression, anxiety, and PTSD." [FN2]

The Brain Stem Rules



The brainstem controls heart rate, body temperature, and other survival-related functions. It also stores anxiety or arousal states associated with a traumatic event. Moving outward towards the neocortex, complexity of functions increases. The limbic system stores emotional information and the neocortex controls abstract thought and cognitive memory.

“The brain organizes from bottom to top, with the lower parts of the brain (brain stem/diencephalon aka “survival brain”) developing earliest, the cortical areas (thinking brain) much later,” Perry says. “The majority of brain organization takes place in the first four years.

“Because this is the time when the brain makes the majority of its “primary” associations... early developmental trauma and neglect have disproportionate influence on brain organization and later brain functioning... When a child has experienced chronic threats, the brain exists in a persisting state of fear... and the lower parts of the brain house maladaptive, influential, and terrifying pre-conscious memories...” [FN3]

“People with developmental trauma can start to feel so threatened that they get into a fight-flight alarm state, and the higher parts of the brain shut down,” says Perry. “First the stress chemicals shut down their frontal cortex (thinking brain). Now they physically can not think. Ask them to think and you only make them more anxious.

“Next the emotional brain (limbic brain) shuts down. They have attachment trauma, so people per se seem threatening; they don’t get reward from emotional or relational interaction.

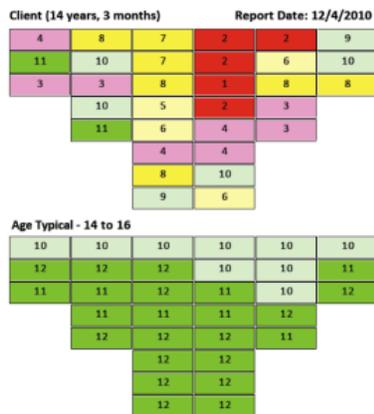
“The only part of the brain left functioning is the most primitive: the brain stem and diencephalon cerebellum. If you want a person to use relational reward, or cortical thought – first those lowest parts of the brain have got to be regulated,” Perry concludes.

“We must regulate people, before we can possibly persuade them with a cognitive argument or compel them with an emotional affect.

“The only way to move from these super-high anxiety states, to calmer more cognitive states, is **rhythm**,” he says. “Patterned, repetitive rhythmic activity: walking, running, dancing, singing, repetitive meditative breathing – you use brain stem-related somatosensory networks which make your brain accessible to relational (limbic brain) reward and cortical thinking.

“Cognitive behavioral therapy (CBT) is great if you have a developed frontal cortex – but we’re talking about a five year old kid who’s so scared to death most of the time that it’s shut down his frontal cortex ’cause he just saw his mother get shot,” Perry told an audience of therapists. “You’re going to do 20 sessions of CBT and expect change? That’s a fantasy.” [FN4]

6 R’s for Healing Trauma



Dr. Perry does separate developmental “maps” of each person (left) using his “Neurosequential Model of Therapeutics” (NMT). Each individual is so unique that using NMT needs training; this blog is meant only to point you toward it. For an overview of NMT, click here for Perry, B.D. and Hambrick, E. (2008), [“Neurosequential Model of Therapeutics.”](#) Click here for [training in NMT and Somatosensory Regulation](#).

Trauma healing, says Perry, requires 6 R’s; it must be:

- **Relational** (safe)
- **Relevant** (developmentally-matched to the individual)
- **Repetitive** (patterned)
- **Rewarding** (pleasurable)
- **Rhythmic** (resonant with neural patterns)
- **Respectful** (of the child, family, and culture)

“To change any neural network in the brain, we need to provide patterned, repetitive input to reach poorly organized neural networks involved in the stress response. Any neural network that is activated in a repetitive way will change,” Perry explains.

“The rhythm of these experiences matter. The brain stem and diencephalon contain powerful associations to rhythmic somatosensory activity created *in utero* and reinforced in early in life. The brain makes associations between patterns of neural activity that co-occur.

“One of the most powerful sets of associations created *in utero* is the association between patterned repetitive rhythmic activity from maternal heart rate, and all the neural patterns of activity associated with not being hungry, not been thirsty, and feeling ‘safe’ (in the womb).

“Patterned, repetitive, rhythmic somatosensory activity... elicits a sensation of safety. Rhythm is regulating. All cultures have some form of patterned, repetitive rhythmic activity as part of their healing and mourning rituals — dancing, drumming, and swaying.

“EMDR and bilateral tapping are variations of this patterned, repetitive rhythmic, somatosensory activity... We believe that they are regulating in part because they are tapping into the deeply ingrained, powerful permeating associations created *in utero*.” [FN5]

For each child, the NMT develops a unique, personalized “map” (see above) of what the specific neurological damage has been, how far development has come (or not), and where the child needs to go. Next it creates “a unique sequence of developmentally-appropriate interventions,” says Perry. “While many deficits may be present, the sequence in which these are addressed is important. The more the therapeutic process can replicate the normal sequential process of development, the more effective...

“The first step in therapeutic success is brain stem regulation... Start with the lowest undeveloped/ abnormally functioning set of problems and move sequentially up the brain as improvements are seen...

“An example of a repetitive intervention is positive, nurturing interactions with trustworthy peers, teachers, and caregiver... using patterned, repetitive somatosensory activities such as dance, music, movement, yoga, drumming or therapeutic massage... This is true especially for children whose persisting fear state is so overwhelming that they cannot improve via increased positive relationships, or even therapeutic relationships, until their brain stem is regulated by safe, predictable, repetitive sensory input.” [FN6]

Sound like your family doctor saying “Go calm down in the gym” ? I thought so – until I tried it. It works, big time. My story is here: [“Dr. Perry: Music Makes Your Case.”](#)

Footnotes

FN1 Perry, Bruce D., MD, “Born for Love: The Effects of Empathy on the Developing Brain,” Annual Interpersonal Neurobiology Conference “How People Change: Relationship & Neuroplasticity in Psychotherapy,” UCLA, Los Angeles, March 8, 2013 (unpublished). Library of articles on interventions, trauma, brain development: <https://childtrauma.org/cta-library/>

Training in NMT Method and Somatosensory Regulation, Power of Rhythm — Individual and Site Training Certification Programs, DVD/streaming training, and online training:

<http://www.ctaproducts.org>

Dr. Perry's latest research and key slides: "Helping Children Recover from Trauma," National Council LIVE, National Council on Behavioral Health, Sept. 5, 2013 at

www.thenationalcouncil.org/events-and-training/webinars/webinar-archive/ (scroll down to Sept. 2013.)

Dr. Perry's YouTube channel with educational videos in depth:

<https://www.youtube.com/channel/UCf4ZUGIXyxRcUNLuhimA5mA?feature=watch>

FN2 MacArthur, Sarah, PhD., "Wellness Innovations Transform Children," San Diego Center for Children, June 2013, <http://www.centerforchildren.org/live-blog/87-wellness-innovations-transform-children/>

FN3 Perry, B.D. and Hambrick, E. (2008), "The Neurosequential Model of Therapeutics (NMT)," *Reclaiming Children and Youth*, 17 (3) 38-43; and

Dobson, C. & Perry, B.D. (2010), "The role of healthy relational interactions in buffering the impact of childhood trauma in "Working with Children to Heal Interpersonal Trauma: The Power of Play," (E. Gil, Ed.), The Guilford Press, New York, pp. 26-43

Both at: <http://childtrauma.org/nmt-model/references/>

FN4 Perry, Bruce D., "Born for Love," op. cit. FN1

FN5 MacKinnon, L. (2012), "Neurosequential Model of Therapeutics: Interview with Bruce Perry," *The Australian & New Zealand Journal of Family Therapy*, 33:3 pp 210-218,

<http://childtrauma.org/cta-library/interventions/>