

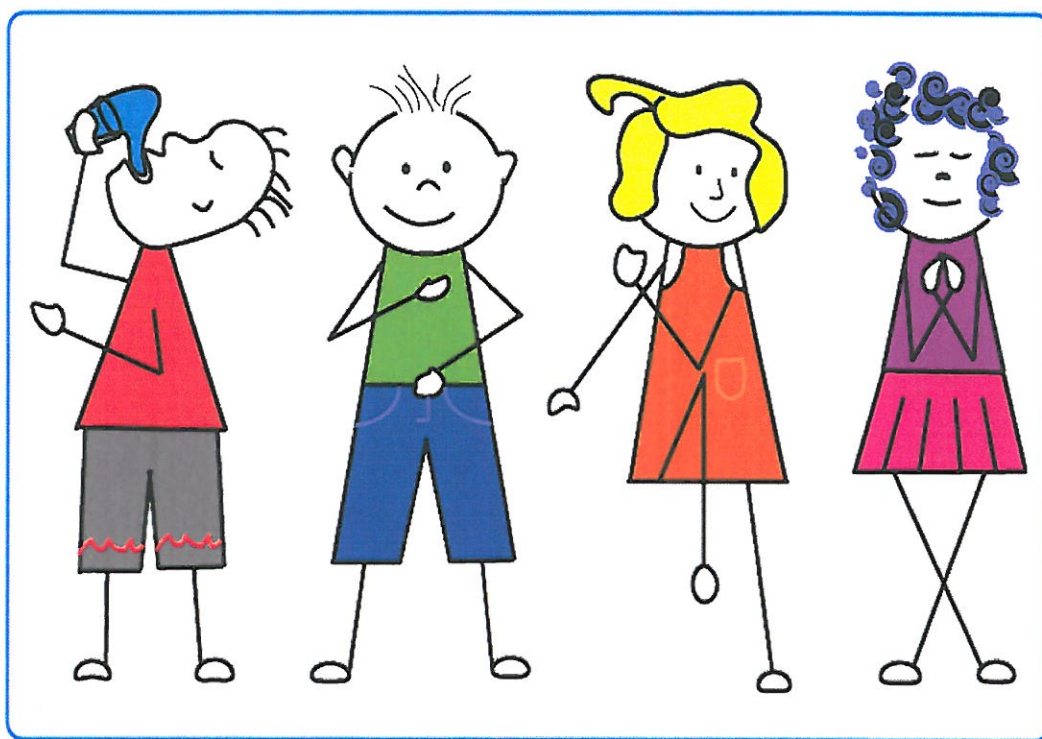
Brain Gym for Whole Brain Learning

Alpha Rho State Convention

May 4, 2013

Zellerbach Room

9:00-9:45 am



Presented by Alpha Rho State's Leadership Committee

Peggy Cowens- Leadership Chair- Omega Chapter

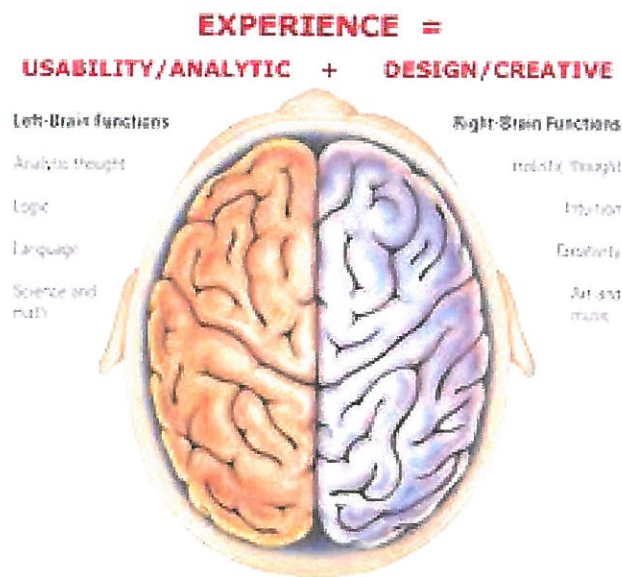
Linda St. Pierre- Committee Member- Nu Chapter

Elaine Hall- Committee Member- Kappa Chapter

Background information on Paul E. Dennison

Paul E. Dennison, creator and founder of Brain Gym International developed the program based on three basic theories:

- 1. Orton's Theory of Cerebral Dominance:** Research developed by Samuel Orton during his studies in the 1930s explored the possibility that reading disabilities were connected to hemispheric indecision in the brain (Hyatt, 2007). *Hemispheric indecision* refers to equal amount of skill in both right and left hemispheres and is often connected to one's handedness (Mayringer & Wimmer, 2002).
- 2. Doman Delacato Theory of Development:** Doman Delacato theory of development uses *neurological repatterning* to rewire the brain in instances where an individual may have missed a fundamental stage of development. The assumption is that by mastering movements that imitate early developmental stages (eg. crawling), one is able to repattern the neurons to leave the child "neurologically intact and ready to acquire academic skills (Hyatt, 2007).
- 3. Perceptual Motor Training:** Perceptual Motor Training suggests that learning problems are the result of the inability to incorporate visual, motor, and auditory skills, and uses physical activities which require coordination of these sensory skills in order to improve cognitive functions (Hyatt, 2007).



Primitive Reflexes

Moro Reflex

Emerges: 9 weeks in utero
Integrated: 2-4 months of age

The Moro reflex is an automatic reaction to sudden stimuli. It is a series of rapid movements in response to threat: The arms move suddenly upward, away from the body and the hands open. There is a momentary freeze and then a return of the arms in a clasping posture across the body. The Moro reflex acts as the earliest form of "fight or flight."

Long Term Effects of Active or "Stuck" Moro Reflex

1. Shyness
2. Motion sickness, poor balance
3. Sensitivity to sound and light
4. Weak immune system, allergies
5. Visual and motor problems
6. Poor stamina



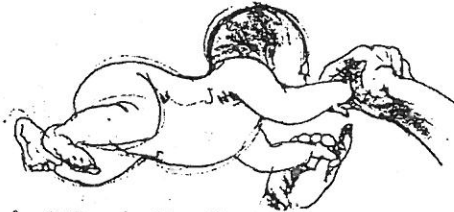
Palmar Reflex

Emerges: 11 weeks in utero
Integrated: 2-3 months of age

The palmar reflex is a grasping reflex. When the palm is lightly touched or pressure is applied to the palm of the hand, the fingers will close. The palmar reflex can also be initiated by sucking movements, which may cause hand kneading to be in sync with the sucking movements. This is called the Babken response

Long Term Effects of Active or "Stuck" Palmar Reflex

1. Speech difficulties
2. Mouth movements when writing
3. Poor manual dexterity
4. Lack of "pincer grip" for handwriting
5. Palm sensitive to stimulation



Asymmetrical Tonic Neck Reflex

Emerges: 18 weeks in utero
Integrated: 6 months of age

The ATNR links head or neck movement to one side movement. When the infant turns its head to one side the arm and leg to that side will automatically extend. It is the first example of eye-hand coordination to take place. If the ATNR remains active it makes it difficult for the infant to crawl with a coordinated, cross-lateral movement.

Long Term Effects of Active or "Stuck" ATNR

1. One-sided versus cross-lateral movement
2. Balance problems
3. Mixed or confused handedness
4. Difficulty crossing the midline
5. Visual problems
6. Handwriting problems



Rooting Reflex

Emerges: 24 weeks in utero
Integrated: 3-4 months of life

The rooting reflex is a combination of searching, sucking and swallowing. The baby will automatically turn its head toward a light touch of the cheek or corner of the mouth. Rooting and suck reflexes insure that the baby turns toward the source of food and opens the mouth wide enough to suck.

Long Term Effects of Active or “Stuck” Rooting Reflex

1. Speech problems
2. Poor manual coordination
3. Sensitivity around mouth
4. Chewing and swallowing problems
5. Drooling



Spinal Galant Reflex

Emerges: 20 weeks in utero
Integrated: 3-9 months of age

When placed in the prone position or on all fours, stimulation to one side of the spine will result in hip rotation toward the stimulus. It takes an active role in the birth process and may also assist in conducting sound in utero.

Long Term Effects of Active or “Stuck” Spinal Galant Reflex

1. Bedwetting
2. Fidgeting
3. Poor short term memory
4. Poor concentration
5. Hip rotation to one side when walking



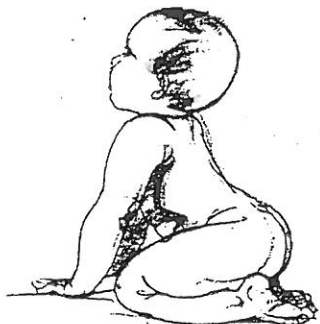
Symmetrical Tonic Neck Reflex

Emerges: Flexion – 6-9 months of age
Integrated: 12-15 months of age
Extension – 6-9 months of age
Integrated: 12-15 months of age

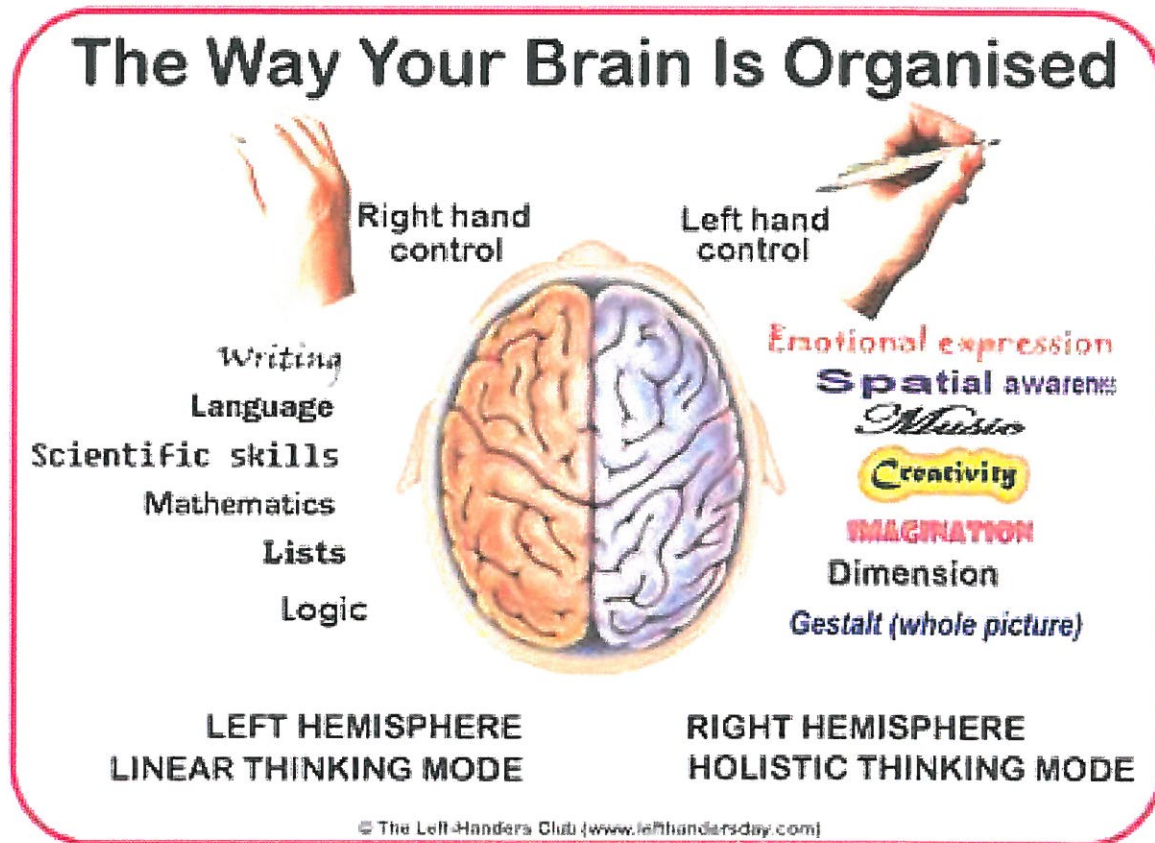
The STNR helps the baby prepare for creeping on hands and knees by raising up from its stomach to all fours. When the baby raises its neck up its arms straighten and the legs bend. The position of the head decides the position of the arms and legs. This also causes the baby to focus at far distance. Not integrating the STNR makes it very uncomfortable to sit in a chair and creates severe challenges for functioning in a traditional school setting.

Long Term Effects of Active or “Stuck” STNR

1. Fidgeting
2. Difficulty getting comfortable sitting
3. Easily distracted
4. Poor posture, slouching
5. Writing difficulties
6. Poor sense of direction
7. Coordination problems
8. Trouble focusing and staying on task
9. Ape like walk



What Happens to the Brain?



We have a tendency to function with one hemisphere being dominant. That's why some people say, "I am a linear thinker" or "I am a holistic or divergent thinker."

Remember the activity where you pat your head and rub a circle on your belly? Is it easier one way than the other? You should try it.

The more you cross your body's meridians in activities, the more whole-brain capabilities will be developed. (See pages 6 and 7)

Noticing the Three Dimensions of the Brain through Whole Body Movement

Activate the energy flow across neural pathways and in the whole brain/body system by moving several times in each direction as follows:

The Left/Right Brain Connection – Laterality Dimension

To notice the energy flow between the left and right brain, stand with feet shoulder width apart and move your body side to side.

An integrated energy flow from the left to the right brain will elicit a fluid movement in the hips, knees will be relaxed, breathing will be deep and easy and the body will move equidistant to each side of the center midline.

The Neo-Cortex/Limbic System/Brain Stem Connection – Centering Dimension

To notice the energy flow between these sub-systems of the brain, stand with feet shoulder width apart, rise to the balls of your feet and reach to touch the ceiling. Then bend your knees with feet flat to touch the floor.

An integrated energy flow from the top to the bottom of the brain will elicit fluid and even movement throughout, balance will be stable and breathing will be deep and relaxed.

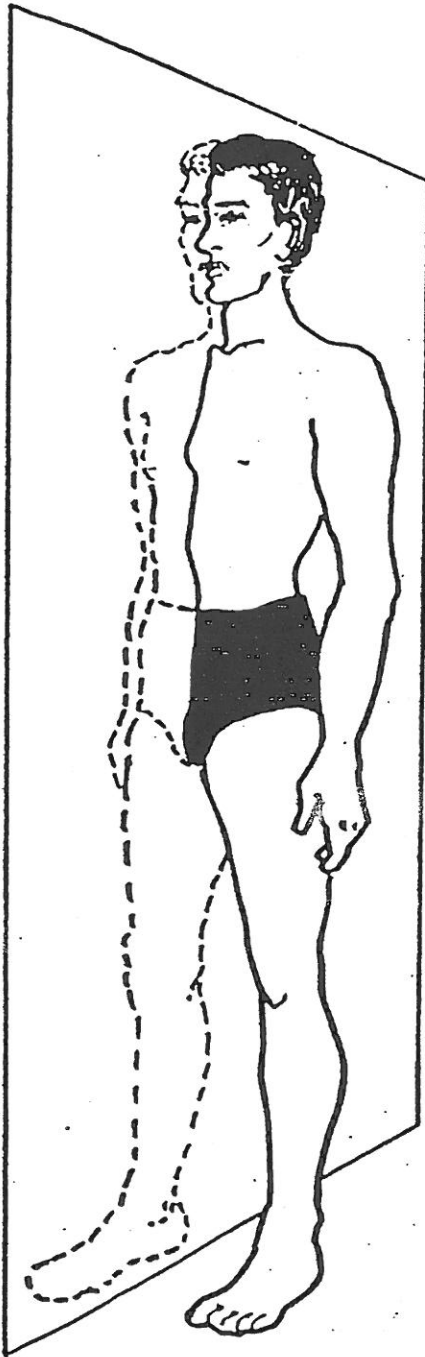
The Hind-Brain/Limbic System/Fore-Brain Connection – Focus Dimension

To notice the energy flow between these sub-systems of the brain, stand with feet shoulder width apart and rock forward and back from the ball to the heel of your foot.

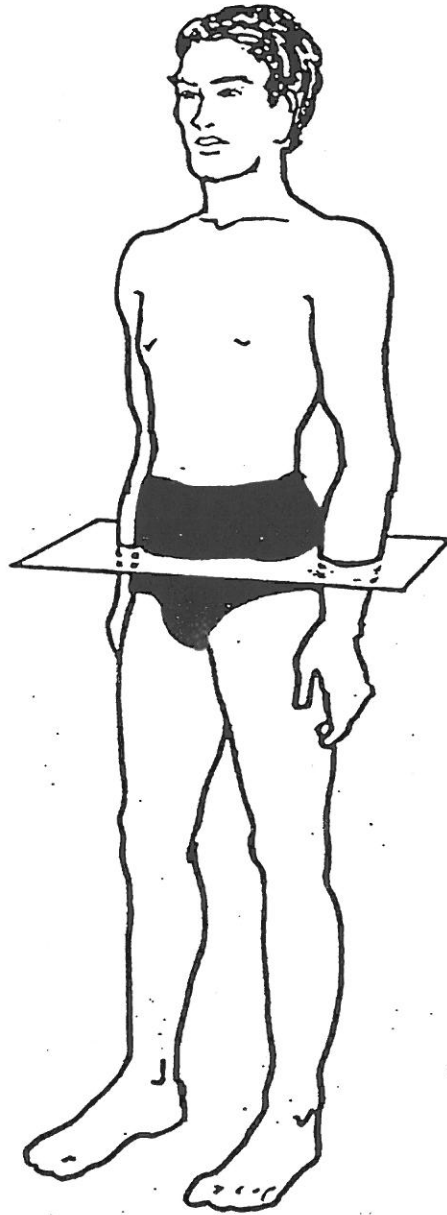
An integrated energy flow from the back to the front brain will elicit a fluid movement in the hips, knees will be relaxed, breathing will be deep and easy, balance will be stable and the body will move equidistant to forward and back of the participation (side of the body) midline.

In any of these movements, consider stress, imbalance, confusion or rigidity an unintegrated brain/body state.

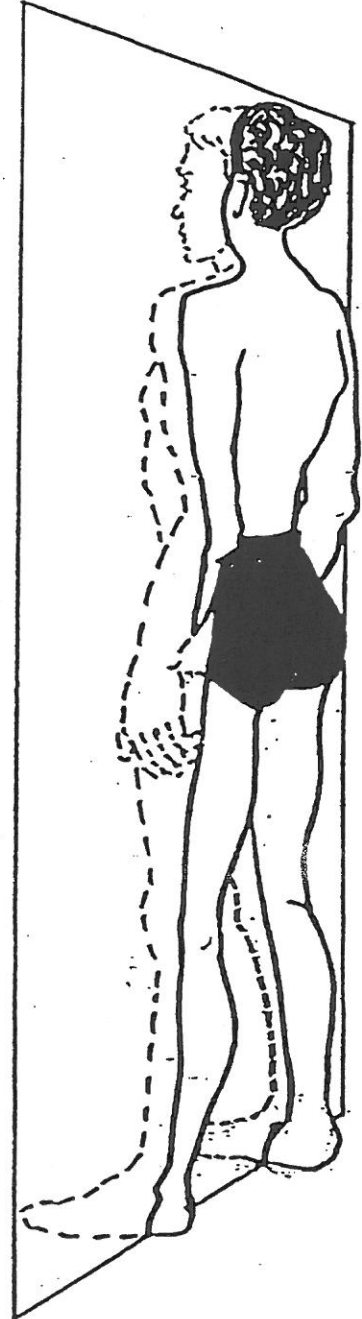
*Noticing the Three Dimensions of the Brain
through Whole-body Movement*



Laterality
(Side to Side)
Communication



Centering
(Top to Bottom)
Organization



Focus
(Back to Front)
Comprehension



The first step in PACE is to drink water. Water is an excellent conductor of electrical energy. Two-thirds of the human body (about 70%) is made up of water. All of the electrical and chemical actions of the brain and central nervous system are dependent on the conductivity of electrical currents between the brain and the sensory organs, facilitated by water. Like rain falling on the ground, water is best absorbed by the body when provided in frequent, small amounts.

Teaching Tips:

1. Psychological or environmental stress depletes the body of water, leaving cells dehydrated.
2. Water is most easily absorbed at room temperature.
3. The traditional way of determining water needs is to figure one ounce of water per day for every 3 pounds of body weight; double that is times of stress. (see box)

Figuring Water Needs by Body Weight

Weight $\div 3 =$ number of ounces

of ounces $\div 8 =$ number of glasses /day

i.e., 144 lbs. $\div 3 = 48$ ounces

48 ounces $\div 8 = 6$ glasses of water per day

Notes: Water intake is vital before test-taking or at other times that possible stress is anticipated.

Adapted from Brain Gym Teacher's Edition, Edu-Kinesthetics, Inc., 1994



Brain Buttons

The second step in PACE is the activity called Brain Buttons. The soft tissue under the clavicle to the left and right of the sternum are massaged deeply with one hand, while the other hand is held over the navel. The eyes look to the front or at a spot on the distant ceiling and tracks an imaginary "Lazy 8." Stimulate these points for 20-30 seconds. You may wish to change hands midway through to activate the brain. This exercise is clearing activity that increases oxygen flow in the body and brain.

Teaching tips:

1. Model intention breathing while doing this to maximize oxygen intake.
2. Explain that Brain Buttons stimulate the carotid arteries.
3. Students' breast tissue may be tender at first, but over a few days to a week, the tenderness subsides.
4. Change hands to activate both hemispheres of the brain.

Notes: Brain Buttons lie directly over and stimulate the carotid arteries that supply freshly oxygenated blood to the brain. The brain, though 1/15 of the body weight, uses 1/5 of its oxygen. Placing a hand on the navel re-establishes the gravitational center of the body, balancing the stimulus to and from the semicircular canals (centers of equilibrium in the inner ear).

Dyslexia and related learning difficulties are associated with misinterpreted directional messages, known in Applied Kinesiology to be caused in part by visual inhibition. Brain Buttons establish a kinesthetic base for visual skills, whereby the child's ability to cross the body's lateral midline is dramatically improved.

Adapted from Brain Gym Teacher's Edition, Edu-Kinesthetics, Inc., 1994



Cross Crawl

The third step in PACE is the *Cross Crawl*, which is a contralateral exercise, similar to walking in place. You alternately move one arm and its opposite leg, then the other arm and its opposite leg. Because Cross Crawl accesses both brain hemispheres simultaneously, this is the ideal warm-up for all skills which require crossing the body's lateral midline.

Teaching Tips:

1. Start with a slow motion Cross Crawl first.
2. Help a student who is using a homolateral movement (same arm to same leg) to repattern the movement by holding his/her hands as you move. He will mirror your movements.
3. To improve balance, cross crawl with your eyes closed.
4. Spinning is a desirable movement for students who suffer with attention deficits.
5. There are many variations to explore with cross crawl actions including: feet touched in front of the body, feet touched behind the body, spinning while performing a variation, using music, etc.

Notes: As the body grows, interweaving of the opposite sides through movement naturally occurs during such activities as crawling, walking, and running. Over the last century, crawling has been used in neurological patterning to maximize learning potential. Experts theorized that contralateral movements worked by activating the speech and language center of the brain. The Cross Crawl movement is effective because it stimulates the receptive as well as expressive hemisphere of the brain, facilitating integrated learning.

Adapted from Brain Gym Teacher's Edition, Edu-Kinesthetics, Inc., 1994



Hook Ups

The fourth step in PACE is called Hook Ups and really has two parts to the activity. This activity connects the electrical circuits in the body, containing and thus focusing both attention and disorganized energy. The mind and body relax as energy circulates through areas blocked by tension. This is very similar to a meditative state of mind and body.

Teaching Tips for Part 1:

1. Sitting, cross the left ankle over the right. Extend your arms in front of you and cross the left wrist over the right (or vice versa for comfort).
2. Interlace the fingers and draw your hands up toward your chest.
3. Close your eyes, breathe deeply, and relax for about a minute.
4. Press your tongue flat against the roof of your mouth on inhalation and relax it on exhalation.

Teaching Tips for Part 2:

1. When you are ready, uncross your legs. Touch your fingertips of both hands together, continuing to breathe deeply for about another minute.
2. It is a good idea to guide students in creating a small goal or intention for the day's learning or to give a visual focus for the day.

Note: Hook Ups shift electrical energy from the survival centers in the hindbrain to the reasoning centers in the midbrain and neocortex, thus activating hemispheric integration, increasing fine-motor coordination, and enhancing formal reasoning. Developmentally, such integration pathways are usually established in infancy through sucking and cross-motor movement. The tongue pressing into the roof of the mouth stimulates the limbic system for emotional processing in concert with more refined reasoning in the frontal lobes. Excessive energy to the right or hind brain can manifest as depression, pain, fatigue, or hyperactivity.

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