LEAP: An Innovative Acupressure Approach to Resolving Learning Difficulties

Presented by Dr. Charles T. Krebs Founder & Developer of LEAP The Learning Enhancement Acupressure Program The Lydian Center for Innovative Medicine 777 Concord Avenue, Suite 301 Cambridge, MA 02138 www.lydiancenter.com

What is Learning?

Learning can be defined as the <u>ability to acquire</u> <u>knowledge</u> or a <u>skill through</u> <u>instruction or</u> <u>experience</u>, or simply modification of behaviour in response to experience.

Memory can be defined as the <u>capacity of</u> <u>storing, retrieving and acting upon knowledge,</u> or the ability to recall thoughts.



Learning is both Conscious and Subsconcious

What is 4 + 4 = ?

> Answer = 8

> How did you do this?

> Where in your Brain did you do this?



Little of Thinking is Conscious!

80% of Brain Function is totally Subconscious

with Consciousness only appearing at the Highest Levels of Processing!



Learning is a Widely Distributed System

- Initial sensory processing is Subconscious & Subcortical
- Later sensory processing is Subconscious & Cortical
- Subconscious Cortical processing is distributed over each primary sensory cortex
- Components of each sensation are processed in different parts of the each sensory cortex at different speeds
- Integration of these different Subcortical & Cortical processes results in conscious sensory perception
- Each conscious sensory perception must then be integrated with all other perceptions
- Only then can you begin higher level thinking





YOUR BRAIN IS THE MOST **COMPLEX CREATION IN THE**





It contains over 10 trillion living cells (10,000,000,000,000)



The LEAP Model of Learning Old Model of Learning: Right (Cortex) Brain – Gestalt Functions & Left (Cortex) Brain – Logic Functions Processing largely done in the Cortex **LEAP Model of Learning:** Logic Lead Functions & Gestalt Lead Functions Processing is Cortical, Limbic & Brainstem & dependent upon Integration of Neural Flows at both Conscious & Subconscious Levels



GESTALT & LOGIC TOWER ANALOGY





Brain Integration & the Corpus Callosum

Frontal Lobes



Interhemispheric Commissural Fibres

Right Hemisphere

Occipital Lobes

Loss of Corpus Callosum Flow = Loss of Brain Integration!





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GESTALT HEMISPHERE (BRAIN) (Typically Right)





Cortical Lead Function = Cortical Column





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Brain Integration is Essential for Learning Brain Integration is:

Maintaining Precise Synchrony and Timing of all Brain Functions needed to effectively Process Information and make effective, timely decisions

Brain is Time-Bound – Thinking is the result of precise Integration of all Neural Flows required for each Function, Thus when Timing is lost, Integration and Function is lost. **Loss of Brain Integration:** As Thinking results from precise Integration of Neural Flows required for each Function

Loss of Timing = Loss of Brain Integration

Loss of Brain Integration = Loss of Specific Mental Function

But what would *cause* this Loss of Timing leading to Loss of Brain Integration & therefore loss of Mental Functions?



STRESS

Causes the Brain Activity to shift from Cortical Thinking to Activation of the Fight or Flight Reactions of the Brainstem Survival System.

The Fight - Flight Reaction is the Primary Cause of Stress!



Stress is the "Problem" facing many People in their Lives today!

- However what is generally not understood is the, Relationship between Stress & Brain Integration.
- The Signs & Symptoms of Stress are actually the signal that you have Lost Brain Integration.
- Loss of Brain Integration is the Loss of Synchrony & Timing of Neural Flows in your Brain underlying your Creative Thinking & Problem-Solving Skills – your Solutions to Life's Problems!

Solving Life's Problems eliminates Stress!

Brain lintegration is a Continuum Not You have it or You don't

Dis- Stressed		Acutely Stressed		Significantly Stressed	Mildly Stressed	Fu	nctional Problem Solving	ln Zc	the me
	∢	Stressed Ra Survival Emo Strongly Activ		n ge: tions Wha ated!	Persona ere You Operate	Range: e most of the Time!			
(0%	2	25%	Ę	<mark>0%</mark>	7	'5%	1()0°%

Environmental Factors & your response to them determine where you are on this Continuum at any point in time, and thus sets your Personal Range



Symptoms of Learning Difficulties

- Difficulty with Concentration
- Demonstrate Hyperactivity constantly Moving
- Poor Impulse Control
- Limited understanding of Cause & Effect
- Often display Inappropriate Social Behaviours

Often display Learning Problems:
 Difficulty with Reading, especially Reading Comprehension
 Difficulty with Abstraction & Mathematics
 Difficulty with Short-term Memory
 Difficulty following Directions

The Stress Avoidance Cycle generated by Loss of Brain Integration



Attention & the Brain

There are two(2) Primary Control Systems in the Brain

Subconscious Control System:

- Reticular Activating System: Keeps you Awake, Provides Awareness & Filters relevant from non-relevant Stimuli
- Cerebellar Vermis: modulates Primary Survival Emotions

Conscious Control System:

- Orbitofrontal Cortex Selects emotionally Relevant Stimuli
- Anterior Cingulate Gyrus Appraises Social Relevance
- Dorsolateral Frontal Cortex & Prefrontal Cortex Analyzes Stimuli for their Relevance to the Task at hand & allows you to stay focused on this Task

Control of Behaviour: Cortical/Mental Level Cortical System: Conscious Control Dorsolateral Frontal Cortex: Permits Self-monitoring of Behaviour > Orbito-Frontal Cortex: Major Impulse Control center inhibiting Behaviour allows you to stop Impulsive Reaction.
Prefrontal Cortex: Allows you to Understand & Follow Rules & choose one behaviour over another behaviour based upon the preferred *Future* outcome

What to do?

LDs are a Complex Multi-Factorial Problem & therefore require a Mutli-factorial Approach

- Diet & Nutrition need to be assessed & addressed
- Environmental Factors need to be Evaluated
- Genetic Factors need to be Evaluated
- Pyscho-Emotional Factors need to be assessed, but since many of these have deep subconscious components often of childhood origin - How do you access these Factors?
- Resynchronization of Brain Functions must be addressed.
 But how is this best accomplished?

Two Tools to Understand the New Paradigm of Brain Integration:

- 1. Accessing Memory of Past Experience, Traumas or Stress –
- ✓ Actually activates much of the same Neurology activated by the Original Experience!
- When you "Remember" an Argument, you often become Angry again!
- Remembering Strong Emotions often changes our Posture!
- 2. Direct Muscle Feedback Muscle Monitoring or Muscle Testing –
- ✓ Most of Muscle Function is Totally Subconscious.
- ✓ Provides Subconscious Feedback that can be Consciously Observed & Felt!
- ✓ Most of Stressors activate Subconscious Survival System!
- Activation of Subconscious Survival System may "Inhibit" Muscle Function!
- Change of Muscle from Locked (Strong) to Unlocked (Weak) can thus Indicate Subconscious Stresses acting on our Body & Mindl

Using muscle monitoring to assess Brain Integration



Its Functional Consequences



Even Gifted Children (& Adults) can have Problems.





How Do You Know Where You Are on the BI Continuum?

By using direct Muscle Biofeedback you can know if you have More than 50% or Less than 50% Access to Neural Flow Across the Corpus Callosum.

Dis- Stressed	Acutely Stressed 0% 3		Significantly Stressed 0%	Mildly Stressed 7	Functional Problem - Solving 0% 9	In the Zone 5%	
0%		25%	5	0%	75%	100%	

The Corpus Callosum is the largest Integrative Pathway in the Brain consisting of between 200 to 800 million Interhemispheric fibers connecting the Right Hemisphere & the Left Hemisphere.

Loss of synchronized Neural Flows across the Corpus Callosum is the basis of Loss of Brain Integration.

LEAP Acupressure Formatting

- Acupressure Formatting: Technique developed by Richard Utt, Founder of Applied Physiology.
- An Acupressure Format is a combination of Hand Mode or Mudras held at the same time pressure is applied to an Acupoint or sequence of Acupoints creating a complex energetic interference pattern.

This interference pattern then interacts with the resonance frequency of a specific brain area (e.g. the Amygdala), & can display "Stress" in this area via changes in muscle biofeedback.



Neuro-Integration & the LEAP Program

- Using direct Muscle Biofeedback in combination with Acupressure Formatting to access stress in Neurological Structures & Functions.
- Muscle Biofeedback then provides direct information about which brain areas and functions are stressed.
- Muscle Biofeedback also provides information about the nature or domain of the "stress" causing the loss of Brain Integration.



Neuro-Integration

For instance whether the primary factor creating stress underlying the loss of integration results from Nutritional, Structural, or Psycho-emotional Factors.

Acupressure Formatting can identify brain functions that have been de-synchronized due to "stress".

Acupressure techniques can then be applied to re-sychronise brain functions, or to "defuse" the emotional issues that caused this loss of integration.



Neuro-Integration

Neuro-Integration techniques can detect & resolve the stressors creating situational or on-going loss of Brain Integration.

Once these underlying stressors have been defused, the brain automatically returns to an integrated state of function.

When confronted with Stressors that had previously triggered loss of Brain Integration, the person can now hold integrated brain function and continue normal function and problem-solving!





Figure 1. *SSVEP Maps of typical subjects Before and After LEAP treatment. Degree of stippling indicates degree of activity. Before treatment subjects with learning difficulties showed the most activity in the occipital lobes when performing attentional and decision-making tasks. After treatment the cortical activity now switched to the frontal lobes on the same attentional and decisionmaking tasks, the same areas active when normal subjects perform these tasks.*





Before LEAP Treatment

After LEAP Treatment



Figure 2. Digit Span scores for subjects before and after LEAP treatment. In all cases the forwards and backwards Digit Span increased significantly following the LEAP treatment.





Figure 2a. *Digit Span Scores for the Non-Treatment Group at the Pre-test (B) and Post-test (A) of the Study.* * Zero backwards - as subject could not understand concept of reversing digits.



Figure 2b. *Digit Span Scores for the Treatment Group at the Pre-test (B) and Post-test (A) of the Study.* B = Before A = After Treatment





Figure 1a. Inspection Time Scores for the Non Treatment Group at the Pre-test and Post-test of the Study.



Figure 1b. Inspection Time Scores for the Treatment Group at the Pre-test and Post-test times of the Study.





Figure 3a. *Reading Comprehension Scores for the Non Treatment Group at the Pre-test* and Post-test of the Study. * Six year old subject unable to read.



Figure 3b. *Reading Comprehension Scores for the Treatment Group at the Pre- & Post-tests.* * 16 year old unable to read # 11 year old only able to read a few small words





Learning Enhancement Acupresure Program - LEAP

- LEAP is the application of Neuro-Integration to Assess the causes underlying Learning Problems including Dyslexia, ADD & ADHD
- Application of LEAP Acupressure Techniques can re-synchronize brain functions resolving underlying Learning, Behaviour & Performance Problems

LEAP can be combined with effective programs for Behaviour Modification, Tutoring & Nutritional Support to change the Lives of Children & Adults with LDs



Thank You for your

Attention!



Pre-LEAP Training: Fluency in Basic Muscle Monitoring Techniques: Module 1: Basic Muscle Monitoring, Hand Modes,

Pause Lock and Acupressure Formatting

Module 2: Powers of Stress, Stress Indicator Point System, Core Emotional Balancing, Introduction to Acupressure Formatting

Module 3: Law of Five Elements of Acupressure, a Core Energetic Balancing Technique



LEAP Brain Integration 1: Amygdala, Location of Logic and Visuo-spatial Processing and Handedess, Survival Switching & Deep Survival Switching, and Commissures & Brain Integration

LEAP Brain Integration 2: Brainstem & learning Reticular Activating System, Vestibular System & Cerebellum – Vestibular, Emotional & Mental Circuits



LEAP Brain Integration 3: Visual & Auditory Systems, and Eye-Hand & Body Co-ordination & Exercises to maintain Brain Integration

LEAP Brain Integration 4:Memory Systems of the Brain Short-term Memory & Long-term Memory Implicit and Explicit Memory Working Memory

LEAP Brain Integration 5: LEAP Learning -Understanding Specific Learning Difficulties.

- Reading Problems: Dyslexia,
- Reading Problems: Scotopic Vision
- Reading Problems: Phonological Decoding
- Spelling Problems: Lack of Visualization
- Writing Problems: Retained ATNR and/or Hand, Wrist & Arm Muscle imbalances



- LEAP Brain Integration 5: LEAP Learning -Understanding Specific Learning Difficulties.
- Mathematics Problems Just thinking of Maths can "shut-down many people's Brain Integration!
- Problems with Arithmetic Often Times Tables
- Problems with Abstraction Fractions
- Problems with Higher Maths Algebra, etc.
- Defusing Negative Attitudes with regard to School, Teachers, Subjects, etc.