

BRAIN TRAINING THE CORPUS CALLOSUM

Easy and Effective Techniques to Strengthen the Bridge Between the Right and Left Hemispheres and Why This is Crucial

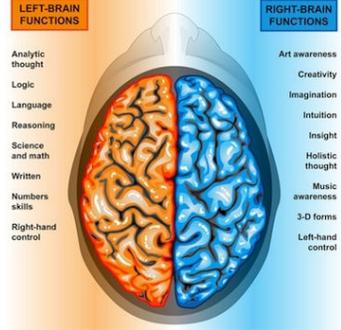
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Basic Brain Science

- There are two hemispheres in the brain - the left and the right
- Each hemisphere has a primary function
- Redundant and secondary systems may exist in the other hemisphere to a certain degree
- The Corpus Callosum is the arched bridge of nervous tissue that connects to the cerebral hemispheres allowing "communication" between the right and left sides of the brain so they can work in unison

Overview of Hemisphere Function



LEFT-BRAIN FUNCTIONS	RIGHT-BRAIN FUNCTIONS
Analytic thought Logic Language Reasoning Science and math Written Numbers skills Right-hand control	Art awareness Creativity Imagination Intuition Insight Holistic thought Music awareness 3-D forms Left-hand control

The Right Hemisphere

- Left side motor control
- Body position (posture)
- Location of objects
- Facial recognition
- Visual Imagery (needed for visual memory)
- Organization of visual information
- Tone of voice (intonation, inflection, cadence)
- Intensity of response
- Stress management
- Big picture outlook
- Intuition

The Left Hemisphere

- Right side motor control
- Awareness of time passage
- Introspection and self awareness
- Rational thinking
- Problem solving through logical assessment
- Sequential thinking
- Auditory processing
- Vocabulary, grammar and syntax
- Focus on the details
- Self initiation

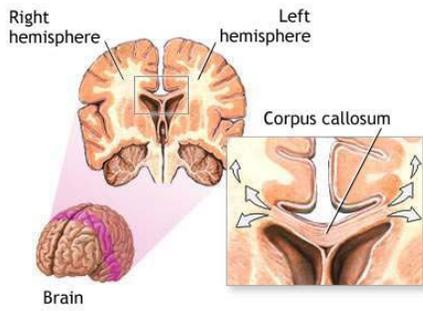
Overview of the Hemispheres

- The left hemisphere is primarily responsible for language expression
- The left brain connects our internal world to our external world allowing us to differentiate one from the another
- The right hemisphere is more focused on analysis of shapes, geometrical shapes and forms
- The right brain allows us to connect with one another.

God Gave Us One Brain

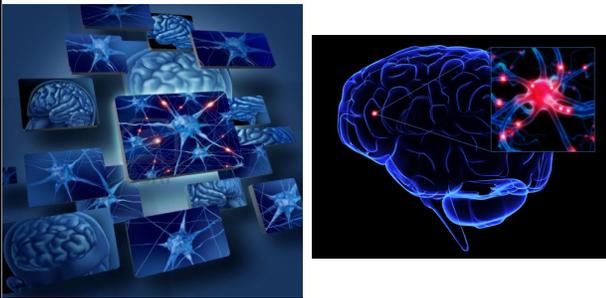
- Based on the preceding information it is clear that the brain works best as a cohesive unit
- If one hemisphere is not “wired” correctly within it self it will limit a person’s function in those skills
- If the two hemispheres do not communicate effectively with one another – both sending and receiving information – there will be limitations
- Each hemisphere must be independently well functioning and the connection must be strong

Location of the Corpus Callosum

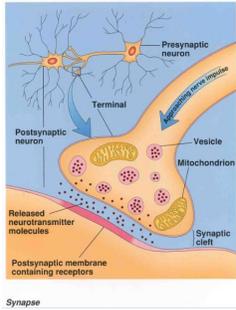


ADAM

Neurons and the Brain



Synapse, Neurotransmitters Oh My!



- Neurotransmitters “jump” the synapse (space) to connect one neuron with another
- This process can be purposefully directed through activity
 - ▣ Increasing Intensity
 - ▣ Increasing Complexity
 - ▣ Duration
 - ▣ Frequency

The Importance of Crossing the Midline

- The Corpus Callosum comprises neurotic tissue and connections may be developed through specific activities
- Since we are trying to have the left and right hemispheres “communicate”, we do this by activities which require such communication
- Activities which require the leg, arm, eye, or head to move from the left side of the body to the right and vice versa do this

Test for Weak Corpus Callosum

- Have individual do jumping jacks
 - ▣ Look for uniformity of left and right arms and left and right legs
 - ▣ Look for consistency of function in upper body vs. lower body
- Have individual draw circles
 - ▣ More informational if a right handed student
 - ▣ Give them a typed page with letters, numbers of objects and ask them to circle a specific item that repeats
 - ▣ Look to see whether they circle clock-wise or counter clock-wise
 - ▣ Look for consistency or inconsistency in motion as well as automaticity
 - ▣ Difficulties with read and/or developing the lower case letters D, B, P and Q.

Games People Play

- Patty cake
- Ball throwing
- Tennis, Baseball, Golf
- Soccer
- Cursive writing
- Cross over stretching
- Reading (left to right with eyes only instead of moving the head)
- Walking or running with the arms pumping such that they cross the front of the body

Items You Can Use

- Balls
- Drumsticks
- Cards
- Hands
- Balance beam
- Mini Tramp
- Anything!

Do the activities to a rhythmic beat – preferably on ever other beat with a metronome set to 120 bpm

- Free metronome on line at www.onlinemetronome.com

Pat-a-Cake

Begin playing the game with both of you crossing hands to meet right hand to right hand then left to left.

After the child gets the gist of things, hold your hands steady and make the child do all the cross over work!



More Hand Play Games

Use any combinations that require the hands to move from left to right increasing the complexity as each new skill is mastered

Couple motions with rhythmic songs, chants, recitation of math facts, verses, or other data to mastered



Cross-over Ball Game

Using your right hand place the ball in the child's right hand on the beat. Alternate saying alphabet and the try doing it with the sounds represented by the alphabet.

Assist the child place the ball in your right hand, using his right hand. Alternate with you saying a letter and them responding with the sound it represents and vice versa.



Walking a Line or Balance Beam

Have the child walk a line and look where they are stepping

As they balance to keep straight, they will sway over the midline



Other Activities

- Use a dry erase board and write letters or numbers from left to write
- Make about 5 rows
- Place the board at eye level with your child when they are on a mini trampoline set in front of the board
- Have the child bounce lightly (no air just the heels up off the bed) while reading out loud the numbers, alphabet names or sounds
- Make sure the child is NOT turning their head, but rather only using their eyes – forcing the eyes to cross the midline

Walking an Infinity Circle

Draw an infinity circle (AKA figure 8). Try to make sure both sides are approximately the same size. Unlike mine!

Stand at the center line and have the student walk the line while keeping their eyes on YOU.



Figure 8's

As they reach the ends (tops and bottoms if you think of it as the number 8) they will keep their eyes on you as long as possible.

When they can no longer keep their eyes on you they will whip their head around switching from looking over one shoulder to the other.



Figure 8's

As they continue on the infinity circle they will repeat this head whip at the other end but in reverse.

Make sure they are trying to look at you while doing this activity and remind them to "switch the shoulder" over which they are looking



Jumping Jacks

- If your child struggles with this, work each piece of the movement separately first in front of a full length mirror with you behind them as a model
- Before starting, trace their feet on a single piece of paper and color the foot prints
- Repeat the tracing on another piece of paper and color those foot prints a different color and cut these foot prints in half so you have separate feet
- Tape the joint foot print to the floor in front of the mirror
- Tape the left and right single prints to either side

Jumping Jacks

- Just like in the dance studios of old have them jump placing their feet together on the joint piece and apart landing on the single foot prints
- Begin with the lower torso and ignore the arms
- Verbalize "together" and "apart" as each movement is made
- Move on to just the arms when this is mastered
- With legs stationary and together have the student hold their arms by their sides then raise them and lower them again

Jumping Jacks

- When both upper and lower motions are mastered separately begin combining them while still in front on the mirror
- Have them place their legs together with their arms down and say "pencil" as they will be straight like a pencil
- If they think it looks like something else let them rename it
- Then have them jump to have their legs apart and their arms up like a "rocket"
- Do the same behind them until they get the hang of it and then stop modeling and see if they get it

ICDF

- Remember to ratchet up the **intensity (I)** as they master a task by simply increasing the speed
- Alternate with increasing the **complexity (C)** which is done by adding in recitation of information on top of the physical activity or by adding in distractions
- Spend about 5 minutes minimum (**duration – D**) on each of the activities and make sure to end on a high note
- Work the Corpus Callosum by rotating through the activities for about 15 minutes total, preferably two times per day, five days a week for **frequency (F)**

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