

## Solutions for Dyslexia

Copyright 2008, Craig Stellpflug

### Symptoms of Dyslexia:

**Dyslexia is an information storage and retrieval issue in the brain.**

*The word dyslexia is derived from the Greek "dys" (meaning poor or inadequate) and "lexis" (words or language). Dyslexia is a learning disability characterized by problems in expressive or receptive, oral or written language. Problems may emerge in reading, spelling, writing, speaking, or listening.*

Few dyslexics exhibit all the signs of the disorder. Some common signs are:

- Lack of awareness of sounds in words, sound order, rhymes, or sequence of syllables
- Difficulty decoding words - single word identification
- Difficulty encoding words - spelling
- Poor sequencing of numbers, of letters in words, when read or written, e.g.: b-d; sing-sign; left-felt; soiled-solid; 12-21
- Difficulty in mathematics - often related to sequencing of steps or directionality or the language of mathematics
- Problems with reading comprehension
- Difficulty expressing thoughts in written form
- Difficulty with handwriting
- Stuttering
- Delayed spoken language
- Imprecise or incomplete interpretation of language that is heard
- Difficulty in expressing thoughts orally
- Confusion about directions in space or time (right and left, up and down, early and late, yesterday and tomorrow, months and days)
- Confusion about right or left handedness
- Emotionality
- Similar problems among relatives

### Hemisphere control in the brain

The brain is naturally divided into right and left hemispheres. The left side of the brain predominantly controls the right side of the body and the right side of the brain predominantly controls the left side of the body. So, neurologically, the right side of the brain controls the left eye, ear, hand, and foot and conversely, the left side of the brain controls the right eye, ear, hand and foot. In the *right-handed person*, the left hemisphere of the brain is normally the dominant hemisphere containing fine motor skills functions that are usually indicated by right handed eating, writing, throwing, hair brushing, and etc. In the *left-handed person*, the right hemisphere will normally control the dominant left side of the body and fine motor skills.

A classic example of hemispheric storage can be found in the stroke victim. A stroke in the dominant hemisphere of the brain resulting in a loss of the dominant speech function can render a stroke victim unable to talk. They can usually understand language but cannot articulate answers. If the left hemisphere was affected by the stroke the right side motor functions of the body are negatively affected. Because the stroke occurred in the dominant hemisphere this stroke victim can often still sing as singing is usually a sub-dominant function of the brain.

## Mixed Dominance in the brain

Neurological disorganization develops when there is mixed dominance between the dominant hemisphere of the brain and what is supposed to be the dominant eye, ear, hand or foot. Mixed dominance and neurological disorganization occurs when for instance: a child eats, throws, and writes with the right hand, kicks with the right foot, sights a telescope with the right eye, but listens and takes in information with the left ear. This child will accomplish other tasks with the dominant right side of the body but will listen to the phone with the left ear or may turn their head to the right to favor the left ear when listening intently. This mixed dominance is not limited to just the ear but can occur in the eye, ear, hand or foot in any combination.

## Why Mixed Dominance is a problem

The problems caused by mixed dominance are brain disorganization and neurological processing inefficiencies.

Mixed dominance can be found at the root of many problems such as dyslexia, emotionality, slow thinking, poor judgment, poor sense of time, distractibility, poor coordination and control of motor function, academic shortfalls, stuttering, bad judge of distance, and a host of other inefficiencies of the brain.

***You cannot achieve organized function in a brain that is disorganized!***

## Explaining Dyslexia:

The brain is partitioned into two hemispheres. These hemispheres are right and left and are tied together with a small bundle of nerves called the corpus callosum. Information is transferred between the hemispheres via the corpus callosum. One of the brain's hemispheres will be dominant and the other subdominant. A few dominant hemisphere functions are fine motor skills, language, math, logics. Some subdominant functions are art, music, trivia and emotions. Remember what I said earlier, that Dyslexia is an information storage and retrieval issue in the brain. When the brain stores information in the subdominant hemisphere that should be stored in the dominant hemisphere of the brain it then has to retrieve the information across the corpus callosum.

For instance, let's say that a math equation is viewed by the eyes but rather than storing the equation in the dominant hemisphere under "math logics" the equation is stored in the subdominant hemisphere under "trivia". The difficulty arises as the brain requires logics to solve a math problem but math logics are in the dominant hemisphere and the information for this math problem is in the subdominant hemisphere filed under trivia. The information needed now has to travel across the corpus callosum for processing but in its journey across the corpus callosum the information turns into a mirror image that is upside down and backwards. The dominant hemisphere then has to transpose this information back into the correct form for solving this math problem but the information is backward and upside down. Herein is our problem identified; the brain is not storing the information in the correct place and the information is being confused in the process of retrieval. This same processing problem can arise in reading skills, listening, speech and other brain storage and retrieval functions.

A great example of neuro-inefficiency and sub-dominant storage is the reciting of the ABC's. If the information was stored using the ABC song then it went to the music center of the brain which is normally in a sub-dominant area of the brain. When the person who learned the ABC's via this song is asked "What letter comes before the letter K?" They will have to sing the ABC

song or at least a portion of the song to answer the question. When the ABC's are stored appropriately they can be retrieved almost instantly without singing the song.

**In dyslexia, storage and retrieval of information does not happen efficiently thereby producing reversals and garbled information.**

At best, most Learning Disability Programs offered for Dyslexia are teaching coping skills rather than addressing and fixing the storage and retrieval problem in the brain. The better the brain is organized the more efficiently it can function and take in, process, store, and relay information.

The solution to this dilemma of Dyslexia is to retrain the brain to store the dominant hemisphere information in its proper place, and the subdominant information in its proper place.

### Testing for eye and ear dominance:

Observe and note which hand is preferred for skilled activities like eating, writing, throwing and fine motor skills. This hand preference will normally indicate which hemisphere of the brain is the dominant hemisphere. Once you have established which hemisphere of the brain is dominant and which one is subdominant you should observe which eye and ear are dominant. The eye and the ear should follow the dominant hand. For instance, if the subject is right handed then they should be right eye and right ear dominant. If the subject is right handed then looking through a cardboard tube like a spyglass the subject should use the right eye. When pointing a finger at an object with the arm extended the right eye should lead down the arm and straight to the object.

To test for the dominant eye of the subject have them point at an object both near and far. Then have the subject close the right eye and leave the left eye open. If the object moves in the subject's field of vision and they have to re-align the pointing finger and arm then the right eye was dominant. If the object stays still and there is no re-alignment of the pointing finger then the left eye is dominant and the subject is mixed-dominant. **If the subject is right hand dominant then the right eye should be dominant. If the subject is left handed then the left eye should be dominant.**

Using observation determine which ear is dominant. Which ear is used for listening to the telephone? If the subject is handed a wind-up watch and asked to listen to the ticking the subject should prefer the appropriate ear by holding the watch up to the dominant ear. **If the subject is right handed then the ear preference should be the right ear also. If the subject is left handed then the left ear should be dominant.**

### Solutions for Dyslexia:

If the subject is mixed dominant in the eyes then the errant dominant eye can be simply occluded with an eye patch for several hours a day and especially during reading, math and other academic functions. For instance; if the subject is right handed but left eye dominant then patching the left eye for occlusion will allow the information to enter the right eye and thereby be properly stored in the dominant hemisphere of the brain. Conversely, if the subject is left hand dominant but right eye dominant then occluding the right eye with a patch will bring about the desired results. *(It may take several weeks or even months of occluding to establish the appropriate eye dominance.)*

If the subject is mixed dominant in the ears then the errant dominant ear can be simply occluded with an ear plug for several hours a day and especially during listening activities, reading, math and other academic functions. For instance; if the subject is right handed but left ear dominant then plugging the left ear for occlusion will allow the information to enter the right ear and thereby be properly stored in the dominant hemisphere of the brain. Conversely, if the subject is

left hand dominant but right ear dominant then occluding the right ear with a plug will bring about the desired results. *(It may take several weeks or even months of occluding to establish the appropriate eye dominance.)*

Occluding the appropriate eye or ear can bring amazing academic results in short order. As you occlude the errant eye or ear function you provide specific and intense opportunity for the brain to build and establish the desired neuro-pathways. These pathways may start out like a small ant trail but the more traffic you send down the ant trail the bigger the trail becomes. So it is with the brain and with neuro-development. The more neuro signals you send to an area of the brain the bigger the connection becomes and the more efficient the information traverses the neuro-pathway. If the brain has a bigger pathway built to the wrong part of the brain as in mixed dominance than limiting the traffic on that pathway via occlusion will allow that pathway to decline while you effectively build the new pathway to the desired area of the brain by sending all the traffic in that road.

NEW YORK NEWSDAY

Friday, January 7, 2000

REUTERS

(London) - Dyslexic children could stand a greater chance of learning to read if they used just one eye, scientists said yesterday.

"Patching one eye can improve eye control and reading in dyslexic children with poor eye control," said Professor John Stein of Oxford University in announcing the results of the study.

"It should be considered in all 8- to 10-year-old dyslexics who complain of visual problems when reading," Stein said.

Developmental dyslexia strikes nearly 20 percent of boys and 5 percent of girls, making it difficult for them to learn to read. It is frequently associated with mild visual impairments and unstable eye control.

Stein and his team gave spectacles to 144 severely dyslexic children with unstable eye control. Opaque tape covered the left eye of half of them.

At the end of a nine-month study, the reading of those who wore the patch was eight months ahead of those who did not.

"If the two eyes do not point steadily at print, letters can seem to dance around and change order, so the child becomes very confused," Stein said.