

Down Syndrome - A Christian Neurodevelopmental Approach

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The first purpose of this paper is to give you hope for a bright future for your child with Down Syndrome. A diagnosis of Down Syndrome typically comes with specific lists of what to expect and what the future holds. Don't believe them. What the future holds is not something that is predetermined or preset. Future abilities are based upon the opportunities that are presented to the individual specific to his needs. Far too often, learning opportunities are not given to a child when the diagnosis gives such dismal predictions. As the parent or relative of a child with Down Syndrome, you have already heard the negatives: slow development, language impairment, mental retardation and possible health problems. You know that the cause is a genetic anomaly, either trisomy 21, translocation or mosaicism. You have been recommended to put the child in special services with early intervention. You have been told to lower your expectations for this precious child. You do not have to settle for this dismal future vision for your child. With the proper intervention, the future can be very bright and promising for your child.

Nothing in creation can compare to the amazing capacity and adaptability of the human brain. Traditional thinking has believed that there are limits to the brain's capacity. Research into neural plasticity of the brain (the brain's ability to change and adapt) is greatly changing how we work with individuals with injuries, learning inefficiencies, sensory problems and genetic syndromes. While traditional thinking is catching up with the concept of neural plasticity, it is something that neurodevelopmentalists have been working with since its pioneering days in the 1940's.

METABOLIC ISSUES

The extra 21st chromosome causes metabolic imbalances, which result in many of the characteristics associated with Down Syndrome. Without intervention, it can be looked on as an anomaly with a degenerative process. The good news is that with specific metabolic and nutritional intervention, this cycle of degeneration can be broken and more normal growth and function can be achieved. Addressing the nutritional and metabolic needs of the child with Down Syndrome is critically important in helping the child grow and develop normally. The effects can be profound and should be investigated as soon as possible.

NEURODEVELOPMENTAL ISSUES

Often, expectations for children with Down syndrome are lowered and therefore they are not offered opportunities for normal development, both mentally and physically. Typically, learning is slowed down in order for the child to be able to develop at his own pace. Also, children with problems are put into a specialized setting with other children with major learning and physical challenges. Experience has shown that the reverse should be happening. Using an accelerated, specific stimulation program, great progress can be achieved. Because of the brain's neuroplasticity, function determines structure. How one uses his brain actually changes its physical structure. With a specific stimulation program in a normal environment, normal structure (mental and physical function) can emerge. It is impossible to achieve normal development in an abnormal environment. Children should live, learn and work in a normal environment.

MOTOR DEVELOPMENT

One of the first and most important issues that must be addressed with a child with Down Syndrome is that of low muscle tone. This can be seen in the child with floppy joints, slow development in mobility (crawling, creeping and walking) and generally weak muscles. It is important that the proper developmental steps are followed and at the appropriate time. It is often tempting to have a child sit up before the child is able to put himself in and out of that position. Until a child is able to do so, he is not developmentally ready to sit. He has not developed the muscle tone necessary for properly supporting his spine. Putting a child in a

standing position prematurely can cause hyperextension of the knees and other structural concerns. Both activities, done prematurely, will limit the appropriate developmental activities the child should be doing, such as developing a cross pattern crawl and creep down on the floor. With appropriate stimulation, weak areas can be improved and corrected and normal structure and function can be achieved.

SPEECH AND LANGUAGE PROBLEMS

Breathing problems, especially congestion and mouth breathing are a common concern of children with Down Syndrome. Mouth breathing is very inefficient and shallow breathing and does not develop proper sinus structure, does not get as much oxygen to the body, especially the brain (a baby's brain uses about 50% of the oxygen taken in, so it is very important). Mouth breathing also desensitizes and thickens the tongue, resulting in oral motor problems with speech and eating. Often, mouth tactility in a child with Down syndrome is low, and special attention must be paid to stimulating the mouth, tongue and lips. Attention should be paid to how well the child chews and whether he has a normal sense of taste and smell. All of these issues can be addressed with proper stimulation and therapy to normalize function and structure.

Because of the tendency toward congestion, special attention should be paid to the hearing. Chronic congestion may result in fluid in the ears that can severely retard development of the auditory pathways to the brain. If a child cannot hear well, a child cannot develop good speech. The vestibular system (the system of balance) is also part of the inner ear structure. Fluid in the inner ear can also delay mobility. Because a child with Down Syndrome may have a high pain tolerance, that child may have an ear infection or fluid in the ears without the parent being aware of it, because the child does not feel the pain appropriately. So, it is important to have the ears checked regularly for fluid with a simple test called a tympanogram. If fluid is present, it is recommended that it be aggressively treated. Tubes are often needed to keep the ears clear.

Little children are "wired" to learn language and the child with Down syndrome is no different. Neurodevelopmentalists do not recommend teaching the young child with Down syndrome sign language. The reason for this is that the child will learn to sign very, very well. And if a child can sign very well, then that child will not need to talk to communicate. If it is hard for the child to talk because of congestion and hearing problems or oral motor problems, and it is easy for the child to sign to get what he wants, guess what the child will do? The child will sign and not talk. Neurodevelopmentalists seek to achieve normal function. Having to undo the teaching of sign language is frustrating parents trying to get the little children to talk. Parents whose children have been taught to sign have had to go through long periods of time ignoring the signs and demanding language in order to shift the mode of communication the child uses. Better to not start on that path in the first place.

How a child processes information auditorily will be a direct reflection of the amount of language a child acquires and uses. Auditory sequential processing is the ability to hold pieces of information in short term memory. Auditory tonal processing is the ability of the brain to correctly process tones. There needs to be good, clear auditory input of specific quality and interest to develop these processing abilities and good language.

ACADEMICS

One of the greatest delights of this work is seeing children defy labels. Knowing how to teach academic material in a developmentally appropriate fashion has helped children with Down Syndrome learn to read and do mathematics and do them well. The child's strengths and weaknesses must be assessed and an individualized learning program is the most efficient way to help each individual learn at the fastest rate.

SENSORY ISSUES

A child with Down syndrome can have a wide range of problems with sensory issues. Often a child will have many different tactility issues. The skin surface can be too sensitive or not sensitive enough.

The deep sensors may not sense pain appropriately. The child may not sense temperature appropriately. These tactility issues may vary on different parts of the body, such as, hands may be too sensitive, the face and head may have low sensitivity and so forth. Each child must be assessed individually to design an appropriate stimulation program to remediate any problem areas.

Many children have vision problems. The visual system of the young child is very plastic and changeable. Looking at the developmental levels of vision and providing appropriate stimulation opportunities for normal function is preferable to resorting to artificial means of vision enhancement. It is preferable to try to achieve normal vision and convergence (the ability of the eyes to work together) before the looking at artificial means of glasses or surgical intervention.

Problems are sometimes see with eye contact and central detail vision. Sadly, some children with Down syndrome are getting an additional label of autistic or "autistic-like" symptoms. This is a symptomatic label simply describing an individual with many sensory dysfunction issues. By treating the root cause of the problems rather than treating the symptoms, sensory dysfunction can be improved and often resolved with appropriate stimulation.

CONCLUSION

Though your child was born with Down Syndrome, there is much joy and hope. The future can be bright and the parents need to be supported and equipped with information and techniques to help their child reach his full potential. With knowledge and information appropriate to their child, parents can have the joy of helping their child defy labels and achieve his full, God-given potential.

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