

Communication Disorders

A Resource for Students, Parents and Professionals

First Edition

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COMMUNICATION DISORDERS

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Supporting individuals with communication disorders and related conditions involves a coordinated team of people that can include family, professionals, educators and other community members. Whether seeking support for adults or children with communication disorders, ensuring everyone involved is as knowledgeable as possible is key to providing support to the individual and their family. This resource serves to be a guide to do just that.

Communication disorders are some of the most common disabilities in the United States, affecting both children and adults. This book came together as part of a project to create a resource for graduate students and speech-language pathologists new to the field on the wide range of communication disorders that exist. We have found that it has become a valued resource for many educators and family members of those with communication disorders as well. In this book, we provide a wealth of information about specific disorders in an easily accessible format. The collaborative efforts of our group of speech-language pathologists over the past three years have grown the project's resources into this book including information on 24 communication disorders and related conditions. Our hope is to inform, educate and aid individuals with communication disorders, their families, and the people who work with them so they may receive impactful support and treatment. Knowledge is power!

Using this communication disorders book:

Within this book, each communication disorder or related condition includes information related to the definition, description, characteristics, causes, implications for treatment, and additional resources, such as support groups, books, websites and additional sources for finding out more about each condition to best support individuals with communication disorders.

Who can benefit from using this book?

Individuals seeking treatment and support for communication disorders and related conditions can use this book to become more informed about their condition and relevant resources. Parents and families supporting those with communication disorders can learn more about a specific condition and share information with those around them to become advocates for their loved ones. When caregivers have the information and education they need, they can more easily develop a positive outlook and provide better support for their family. Speech-language pathologists, educators, medical professionals, school personnel, social workers, and other professionals providing related support can find this book helpful in gaining additional knowledge, not only regarding the condition, but also the implications that communication deficits will have on the clients they serve.

Best Regards, The Bilingualistics Team

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Introduction to Communication Disorders Resources

What is a Communication Disorder?

A communication disorder is any condition that affects an individual's ability to communicate. Communication disorders range from difficulty producing a single sound for speech, to an inability to express wants and needs using either verbal or non-verbal communication. This book includes information on a range of communication disorders that specifically and primarily impact an individual's ability to communicate, as well as a number of related conditions that are often associated with communication deficits, in which the effect on communication may be temporary or longer-lasting.

What is a Speech Disorder?

A speech disorder refers to a problem with the actual production of sounds, whereas a language disorder refers to a difficulty understanding or putting words together to communicate ideas.

Speech disorders include:

- Articulation disorders: difficulties producing sounds in syllables or saying words incorrectly to the point that listeners cannot understand what is being said.
- Fluency disorders: problems such as stuttering, in which the flow of speech is interrupted by abnormal stoppages, repetitions (st-st-stuttering), or prolonging sounds and syllables (sssstuttering).
- Resonance or voice disorders: problems with the pitch, volume, or quality of the voice that distract listeners from what's being said. These types of disorders may also cause pain or discomfort for a child when speaking.
- Dysphagia/oral feeding disorders: these include difficulties with drooling, eating, and swallowing. Language disorders can be either receptive or expressive.
- Receptive disorders: difficulties understanding or processing language.
- Expressive disorders: difficulty putting words together, limited vocabulary, or inability to use language in a socially appropriate way.

What is Speech Therapy?

Speech-language therapy (commonly called "speech therapy") focuses on helping people become more independent in their ability to communicate with others. Speech-language pathologists (SLPs), often

informally known as speech therapists, are professionals educated in the study of human communication, its development, and its disorders. Speech therapists work with individuals who have speech and language disorders. In this book we describe how specific disorders can negatively impact communication skills.

How can I use this book?

Parents and families can use this book to educate themselves regarding their family member's communication difficulties. Each chapter includes definitions and descriptions of the disorders, as well as information on resources and support groups in their community.

Speech-language pathologists and students of communication disorders can use this book to share information with clients in schools and clinics. They can use the resources provided to help clients find additional resources and support. There is also great information to include in reports to familiarize readers with the disorder. SLPs can use the resources and references to improve client services.

Whether you are a parent, teacher or professional, working with children and adults with communication disorders can be challenging. We hope to provide support and resources to guide those who are dealing with communication difficulties and related disorders.

AGENESIS OF THE CORPUS CALLOSUM

Definition:

Agenesis of the Corpus Callosum (ACC) is a birth defect in which the corpus callosum is partially or completely absent. The corpus callosum, the main transverse tract of fibers that connects the two cerebral hemispheres, integrates motor, sensory, and cognitive functions.

Description:

- While rare, ACC is actually one of the more common brain malformations observed in humans
- In this disorder, the corpus callosum may be partially or completely absent
- Incidence is typically identified as 2-3%; however, this is among individuals with cognitive disabilities
- For the general population the incidence is closer to 3-7/10,000 (<1%)

Characteristics:

Studies indicate that some individuals with ACC may have normal intelligence, while others are developmentally delayed. Agenesis of the corpus callosum is usually diagnosed during the first two years of life. The initial manifestation is usually the onset of seizures. The effects of the disorder range from subtle or mild to severe, depending on associated brain abnormalities.

Common characteristics and observed difficulties include:

- Developmental delays
- Poor motor coordination
- Atypical sensory processing with a high tolerance to pain
- Difficulties on multidimensional or multimodality tasks (including auditory integration tasks)
- Challenges with social interactions
- Cognitive and social processing problems
- Limited insight into their own behavior
- Seizures
- Hydrocephalus
- Impairment of mental and physical development

- Mental retardation
- Impaired hand-eye coordination
- Midline facial defects (cleft lip, cleft palate, abnormal reduction of the distance between the eyes, single median maxillary incisor tooth, indistinct philtrum)

Causes:

Defects can occur when the corpus callosum does not develop typically during pregnancy. The corpus callosum develops between the 10th and 20th weeks of gestation. Abnormalities of the corpus callosum have no single cause. Contributing factors or causes can include:

- Maternal rubella
- Trisomy 8, 13 and/or 18
- Andermann syndrome
- Aicardi syndrome
- Fetal Alcohol Syndrome
- Blockage of the growth of the corpus callosum

Due to the limited research on ACC, several theories are speculated to be the cause:

- Inherited X-linked dominant trait or an autosomal recessive trait
- An intrauterine infection during pregnancy
- Intrauterine exposure to alcohol (fetal alcohol syndrome)

Implications for speech and language:

Children with ACC can present with a wide range of speech and language abilities. ACC may co-occur with seizures and/or cognitive impairment, and individuals with ACC may have difficulty with auditory processing. Tasks requiring use of both hemispheres of the brain will be challenging for individuals with ACC. Additionally, these individuals may have difficulty monitoring or self-evaluating their answers and initially need a high degree of support, including modeling and cueing (Brennan, 2006).

Resources:

Books for Children:

- ACC and Me by Kathryn J. Schilmoeller, Lynn K. Paul, and Cindy Mauro Reisenauer.

Books for Parents:

- Your Child's Growing Mind: Brain Development and Learning from Birth to Adolescence by Jane M. Healy.
- Agenesis of the Corpus Callosum: the Beast Within by Dianne M. Porter.
- The Brain That Changes Itself: Stories of Personal Triumph from the Frontiers of Brain Science by Norman Doidge.
- Booklet Series: Disorders of the Corpus Callosum Volume 1- Introduction to the Agenesis of the Corpus Callosum by Lynn Paul Ph.D.

Support Groups:

- The National Organization for Disorders of the Corpus Callosum (NODCC)
- National Organization for Rare Disorders (NORD)
- National Institute of Neurological Disorders and Stroke

Yahoo Groups:

- Agenesis_of_Corpus_Callosum
- ACCKIDS
- Babieswithacc

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- NINDS Agenesis of the Corpus Callosum Information Page. (2011, February 7). In National Institute of Neurological Disorders and Stroke. Retrieved from <http://www.ninds.nih.gov/disorders/agenesis/agenesis.htm>.

APHASIA

Definition:

Aphasia is an acquired communication disorder that impairs a person's ability to use or understand language. It results from damage to portions of the brain (usually in the left hemisphere) that are responsible for language. The disorder impairs the expression and understanding of language as well as reading and writing.

Description:

There are many types of aphasia, depending on the location of the lesion in the brain. It is classified in two general categories: fluent and nonfluent aphasia. Individuals who have fluent aphasia, also known as receptive aphasia, are able to physically hear words and see print but can't make sense of the words. Fluent aphasia is further broken down into Wernicke's, Conduction, Transcortical Sensory, and Anomic. Individuals who have nonfluent aphasia, also known as expressive aphasia, have difficulty saying or writing what they mean, although they know what they want to say. This category can be further broken down into Broca's, Transcortical Motor, and Global. Types of non-fluent and fluent aphasia are further characterized by their ability to understand what is said, and their ability to repeat sentences. Individuals with anomia are able to understand what is said and repeat sentences, but they have trouble using the correct word. Global aphasia is the most severe, and is characterized by having severe impairments in all language functions. The following further describes aphasia types according to abilities:

- Good language comprehension
- Difficulty understanding language
- Able to repeat sentences
- Difficulty repeating sentences

Characteristics:

Characteristics vary depending on the type of aphasia. The severity of aphasia depends on the extent of the area of the brain affected. A person with aphasia may:

- Have slow, effortful speech
- Speak in short or incomplete sentences and omit small words (i.e. "is", "and", "the")
- Have difficulty naming common objects
- Speak in sentences that don't make sense
- Have difficulty writing and spelling

- Have difficulty reading
- Not comprehend other people's conversation
- Interpret figurative language literally
- Write sentences that don't make sense
- Be unable to recite what has been said, or repeat sentences/words
- Have difficulty pronouncing words
- Not speak spontaneously
- Have difficulty answering questions or following directions
- Use nonsense words and not realize that they don't make sense
- Individuals with aphasia may also have physical difficulties related to the lesion in the brain.

Causes:

- Stroke (most common: about 25-40% of stroke survivors acquire aphasia)
- Head injury
- Brain tumor
- Infection
- Dementia
- Other neurological causes (i.e Alzheimer's, Parkinsons)
- Temporary episodes of aphasia may occur from epilepsy, migraine, or transient ischemic attack (TIA)

Diagnosing this disorder:

If a person is suspected of having aphasia, their doctor will often refer them to have an imaging test to identify the cause. The person is then referred to a speech-language pathologist, who performs a comprehensive examination of the person's communication abilities.

Resources:

Books for Parents:

- The Aphasia Handbook: A Guide for Stroke and Brain Injury Survivors and Their Families by Martha Taylor Sarno, MA, MD and Joan F. Peters, Esq.
- Conquering Stroke by Valerie Greene
- More books available on aphasia.org
(http://www.aphasia.org/naa_materials/books_cds_etc.html#children)

Books for Children:

- Josh's Road to Recovery by Kayla Hodgson
- Nana's Stroke by Barbara Baird
- Support Groups: Local chapters are available through:
 - o National Aphasia Association
(http://www.aphasia.org/aphasia_community/aphasia_community_groups.html)
 - o American Stroke Association & American Heart Association
(<http://www.strokeassociation.org/STROKEORG/strokegroup/public/zipFinder.jsp>)
 - o Aphasia Community Groups
(http://www.aphasia.org/aphasia_community/aphasia_community_groups.html)
 - o Daily Strength, an online aphasia support group
(<http://www.dailystrength.org/c/Aphasia/support-group>)
 - o Austin community events (<http://csd.utexas.edu/research/carg/>)
 - o Support groups in Colorado and Florida
(<http://www.strokeafterstroke.com/aphasiasspeechsupportgroups.php>)

Websites:

- The National Aphasia Association (NAA) (<http://www.aphasia.org/>)
- Aphasia Hope Foundation (<http://www.aphasiahope.org/>)
- Stroke Speech solutions for speech therapy challenges affecting stroke survivors
(<http://strokespeech.com/>)
- Stroke After Stroke (<http://www.strokeafterstroke.com/>)

- Aphasia Research Laboratory at Boston University (<http://www.bu.edu/aphasiaresearch/>)
- Communicating with someone with aphasia (<http://www.nlm.nih.gov/medlineplus/ency/patientinstructions/000024.htm>)

Información en español:

- Afasia (http://www.nidcd.nih.gov/health/spanish/pages/aphasia_span.aspx)
- Comunicarse con alguien con afasia (<http://www.nidcd.nih.gov/directory/glossaryopen.asp?term=9><http://www.nlm.nih.gov/medlineplus/spanish/ency/patientinstructions/000024.htm>)

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Aphasia (2012, May 8). Mayo Foundation for Medical Education and Research (MFMER). Retrieved from <http://www.mayoclinic.com/health/aphasia/DS00685>

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APRAXIA OF SPEECH (CHILDHOOD)

Definition:

Childhood apraxia of speech (CAS) is a neurological childhood (pediatric) speech sound disorder in which the precision and consistency of movements underlying speech are impaired in the absence of neuromuscular deficits (e.g., abnormal reflexes, abnormal tone). CAS may occur as a result of known neurological impairment, in association with complex neurobehavioral disorders of known or unknown origin, or as an idiopathic neurogenic speech sound disorder. The core impairment in planning and/or programming spatiotemporal parameters of movement sequences results in errors in speech sound production and prosody.

Description:

- Apraxia of speech is sometimes called verbal apraxia, developmental apraxia of speech, developmental articulatory dyspraxia, or verbal dyspraxia.
- Childhood apraxia of speech is a motor speech disorder.
- There is something in the child's brain not allowing messages to get to the mouth muscles to produce speech correctly.
- Children with apraxia of speech have the capacity to say speech sounds but have a problem with motor planning. They have difficulty voluntarily making the movements needed for speech.
- A child with the diagnosis of apraxia of speech has difficulty programming and planning speech movements.
- It is believed that children with CAS may not be able to form or access speech motor plans and programs or that these plans and programs are faulty for some reason.
- Apraxia can be mild, moderate or severe.

Characteristics:

- CAS is a problem with motor speech planning and programming, with no weakness, paralysis or poor co-ordination of the speech mechanism.
- Children with CAS, if they are able to talk, usually make very variable articulation errors, speak slowly, and may use unusual intonation, pausing and stress patterns.
- A child with CAS may have difficulty speaking, use few words, use more gestures or sound effects, or experience frustration when trying to speak.
- Speech errors affect vowels as well as consonants.
- Inconsistency is evident, with the same word being pronounced in several different ways.

- The child has difficulty imitating speech sounds.
- In many cases, the child’s comprehension of language is more advanced than his or her speaking ability.
- Sounds that are used in some words may be omitted from other words.

Causes:

- In most cases, the cause is unknown. Sometimes it is caused by genetic disorders or syndromes, or stroke or brain injury.

Treatment:

- In CAS, children do not follow typical patterns and will show limited progress without treatment. There is no cure, but with appropriate, intensive intervention, significant progress can be made.
- The focus of intervention for CAS is on improving the planning, sequencing, and coordination of muscle movements for speech production (ASHA, N.D.).
- Multisensory cues (tactile, visual) are often helpful for improving muscle coordination and speech sequencing.
- Some individuals may use an augmentative and alternative communication system, or AAC device (for example, a portable computer that produces speech), if verbal communication is severely limited due to CAS. As speech production improves, the need for the AAC system may be reduced.

Resources:

Books for Parents:

- Here’s How to Treat Childhood Apraxia of Speech by Margaret Fish
- Understanding Childhood Apraxia of Speech for SLPs by Peter Flipsen, Ph.D., CCC-SLP

Books for Children:

- My Brother is Very Special; by May, Amy
- Captain Hammer and Super Sean: The Case of the Missing “G”; O’Toole, Susan
- I Want to Be Your Friend by Angela Baublitz

Websites:

- American Speech-Language Hearing Association (www.asha.org)
- Apraxia-Kids (www.apraxia-kids.org)
- National Institute on Deafness and Other Communication Disorders (www.nidcd.nih.gov)
- Speechville Express (www.speechville.com)

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ARTICULATION AND PHONOLOGICAL DISORDERS

Definition:

Articulation and phonological disorders, also called speech sound disorders, are errors made by children (or adults) in which they have difficulty correctly pronouncing sounds, called phonemes. These errors often result in others having difficulty understanding the individual.

Description:

Speech disorders can be categorized into two primary types: articulation disorders and phonological disorders. A child with an articulation disorder will have difficulty producing a particular sound (e.g., difficulty saying “r” in words or lisping). Phonological disorders refer to the use of a pattern of errors. Often, a child is able to say the sound correctly but may not use it in the correct position in the word, or will modify sounds. This often results in a simplified production of the word. In general, a child with a phonological disorder is often more difficult to understand in conversation. Children with phonological disorders can also have additional difficulties with language and literacy skills, such as phonological awareness. An individual may demonstrate a mixed speech sound disorder, in which they exhibit characteristics of both types.

Adults may also be diagnosed with a speech sound disorder. Some adults continue to produce errors they have made from childhood, while others may develop speech problems after a stroke or head injury.

Characteristics:

- Errors in speech sounds characterized by omissions, distortions, substitutions, additions, or incorrect sequencing of speech sounds
- Speech errors can be expected in typical development as a child’s speech system matures. However, an impairment exists when these errors are seen beyond an age where a child should have learned the correct productions
- Some substitutions and omissions of sounds can be a feature of an accent or dialect, or may be the result of an influence of a second language. These differences in speech would not be considered a disorder.

Causes:

In most cases there is no known cause of an articulation or phonological disorder. Sometimes speech difficulties can be attributed to a physical cause such as cleft lip and palate, cerebral palsy, and/or hearing impairment. They may also result from a traumatic brain injury (TBI) or other conditions or syndromes.

Diagnosing this disorder:

A qualified speech-language pathologist (SLP) is able to evaluate an individual's speech production abilities and determine whether or not a disorder is present.

Treatment:

Based on the results of an assessment or evaluation, a speech-language pathologist can determine the characteristics of the impairment and form an appropriate treatment plan. Therapy may be needed if the sound errors are not appropriate for a child's age or if the errors made are not ones that would occur in typical speech development. Treatment is not warranted for differences due to accents/dialects or non-English language influences.

Resources:

Books for Parents:

- Teach me how to say it right: Helping your child with articulation problems by D. P. Dougherty

Books for kids:

- Speak with me series: Sammy learns to talk by A. Holzer

Websites:

http://en.wikipedia.org/wiki/Speech_sound_disorder<http://www.education.com/reference/article/articulation-disorders-children/>

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Speech Sound Disorders: Articulation and Phonological Processes (2014, February 20). Staskowski, M. (Ed.). (2006). Retrieved from: <http://www.asha.org/public/speech/disorders/speechsounddisorders.htm>.

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ASPERGER SYNDROME

Definition:

Asperger syndrome (AS) is a neurological condition that falls under the larger category of Autism Spectrum Disorders (ASD).

Description:

AS is a developmental disorder that is characterized by impairment in social interactions, repetitive or restrictive patterns of thought and behavior, and uncoordinated motor movements with the preservation of linguistic and cognitive development.

Characteristics:

If a child has AS, parents often identify that there is something unusual about him or her by the time he or she is three years old. Sometimes the characteristics are present as early as infancy. Motor development delays such as crawling or walking late and/or clumsiness are often the first indicators of the disorder. Children with AS do, however, retain their early language skills. The following is a list of typical characteristics of AS:

- Often have a history of developmental delays in motor skills (i.e. pedaling a bike, catching a ball) and often have poor coordination in general
- Intellectual capacity within normal range
- Prefer routine and consistency
- Obsessive interest in a single object or topic to the exclusion of any other (e.g. meteorology, trains, lights, door knobs and handles, coffee etc.)
- High level of vocabulary and formal speech patterns
- Talk incessantly about their favorite topic including a collection of facts and statistics
- Speech pattern is marked by a lack of rhythm, odd inflection or monotone pitch
- Isolation from social settings due to poor social skills and limited interests
- Impaired ability to use or understand non-verbal behavior such as eye gaze, facial expressions or body language
- Highly active in early childhood and develop anxiety or depression in young adulthood
- AS can co-exist with ADHD, tic disorders (such as Tourette syndrome), depression, anxiety disorders and OCD.

Causes:

While the exact cause of AS is unknown, most recent research indicates that there is a genetic component. Due to the genetic component, AS tends to run in families. Most recent research points to brain abnormalities as the cause of AS. Through advanced brain imaging techniques, researchers have found there are structural and functional differences in specific regions of the brains of typical children versus children with AS.

Implications for speech and language:

Since there is no known cure for AS, treatment consists of various rehabilitative services. One of these services is speech/language intervention. Speech/language intervention focuses on the following:

- Non-verbal forms of communication (gaze and gestures)
- Use of non-literal language (metaphor, irony, absurdities, humor)
- Patterns of inflection
- Stress and volume modulation
- Pragmatics (turn-taking and sensitivity to verbal cues)
- Content, clarity and coherence of conversation (If applicable)

Diagnosing this disorder:

Speech-language pathologists do not diagnose AS. Currently there is not a standardized protocol for diagnosing AS, and the diagnostic process and team can depend on the setting (medical/educational). However, the diagnosis consists of a two-stage process. The first stage involves a developmental screening with a family doctor or pediatrician. The second stage involves an interdisciplinary team that could consist of a psychologist, neurologist, psychiatrist, speech therapist and/or additional professionals who have expertise in diagnosing children with AS. The second stage consists of neurologic and genetic assessments, cognitive and language testing to establish IQ and evaluate psychomotor function, evaluation of verbal and non-verbal strengths and weaknesses, identification of style of learning and independent living skills.

Treatment:

There is no cure for AS. Instead, treatment is more rehabilitative in nature. Treatment often targets the core symptoms of AS: poor communication skills, obsessive or repetitive routines, and physical clumsiness. More specifically, treatment addresses:

- Social skills
- Cognitive behavioral therapy
- Medication, for depression and anxiety if present
- Occupational or physical therapy
- Speech/language therapy
- Parent training and support

Resources:

Books for kids:

- All Cats Have Asperger Syndrome by Kathy Hoopman
- This is Asperger Syndrome by Elisa Ganon
- Take Control of Asperger's Syndrome: The Official Strategy Guide for Teens with Asperger's Syndrome and Nonverbal Learning Disorders by Janet Price

Books for Parents:

- Can I Tell you about Asperger Syndrome? A Guide for Friends and Family by Jude Welton
- Asperger Syndrome: A guide for Parents and Professionals by Tony Attwood

Websites:

Information in English

- <http://www.webmd.com/brain/autism/mental-health-aspergers-syndrome>
- <http://www.mayoclinic.com/health/aspergers-syndrome/DS00551>

Información en español

- Síndrome de Asperger: http://espanol.ninds.nih.gov/trastornos/sindrome_de_Asperger.htm

Support for Parents:

Asperger Syndrome Meetup group: <http://www.meetup.com/aspergers-230/>

Autism Society support group: http://support.autismsociety.org/site/Clubs?club_id=1040&pg=main

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ATTENTION DEFICIT/ HYPERACTIVITY DISORDER

Definition:

Children with Attention Deficit/Hyperactivity Disorder (ADHD) have difficulty with executive functioning and/or inhibiting spontaneous behaviors. This is also known as Attention Deficit Disorder (ADD).

Characteristics:

Children with ADHD/ADD often have difficulty interacting socially because they are impulsive and struggle to control these impulses. They often have difficulty completing tasks and demonstrate disorganization in their approaches.

Current research indicates that deficits in response inhibition are the primary characteristics of ADHD (Barkley, 1997). The frontal lobe, basal ganglia, caudate nucleus, cerebellum, as well as other areas of the brain, play a significant role in ADHD because they are involved in complex processes (executive functions) that regulate behavior (Teeter, 1998). Executive functions include such processes as inhibition, working memory, planning, self-monitoring, verbal regulation, motor control, maintaining and changing mental set and emotional regulation. According to a current model of ADHD developed by Dr. Russell Barkley, a problem with response inhibition is the core deficit in ADHD. This has a cascading effect on the other executive functions listed above (Barkley, 1997).

Possible Contributing Factors:

- fetal exposure to toxic substances (e.g., alcohol and tobacco)
- heavy use of anesthetics
- exposure to lead
- heredity

Implications for Speech and Language:

Organization is important for language development. Children who have difficulty organizing pieces of information also have difficulty organizing and sequencing story components. As a result, they often have a hard time getting their point across to others. Additionally, children who have difficulty focusing in the classroom frequently miss important linguistic information, such as vocabulary specific to a lesson.

Children who have ADD/ADHD often present with speech-language testing results that show low receptive skills relative to expressive language skills. This is often a result of difficulty following directions and

maintaining attention during testing tasks. It is important to minimize visual and auditory distractions during testing sessions. Frequent breaks may be necessary, as well as prompts to maintain attention to the tasks.

Diagnosing this disorder:

Speech-language pathologists do not diagnose ADHD but often treat children who have ADHD and language delays and disorders.

No single test can diagnose a child as having ADHD. Instead, a licensed health professional needs to gather information about the child, and his or her behavior and environment. A family may want to first talk with the child's pediatrician. Some pediatricians can assess the child themselves, but many will refer the family to a mental health specialist with experience in childhood disorders such as ADHD. The pediatrician or mental health specialist will often consult with each other to determine if a child has ADHD.

Treatment:

Speech-language pathologists often work with children who have symptoms of or have been diagnosed with ADD/ADHD in conjunction with a communication disorder.

Children with ADHD often benefit from visual structure that supports organization of material.

Routines are important. When activities are consistent, children do not need to use the same level of cognitive resources to get through activities as they do when routines are new.

Clocks and timers with visual and auditory features are useful tools in intervention. Creating and following simple schedules can often be used to help children with ADD/ADHD anticipate what is coming next.

Set clear expectations and rules. Help children organize information visually as they listen. This will then become a process that is automated, allowing them to listen and retain information better.

Resources:

Books:

- Smart but Scattered by Peg Dawson
- Coaching Students with Executive Skills Deficits by Peg Dawson and Richard Guare
- Lost at School by Ross Greene
- Zones of Regulation by Leah Kuypers
- ADHD and the nature of self-control by R.A. Barkley

Websites:

- ADD/ADHD Parenting Tips: Helping Children with Attention Deficit Disorder:
www.helpguide.org/mental/adhd_add_parenting_strategies.htm
- American Speech-Language-Hearing Association:
<http://www.asha.org/public/speech/disorders/ADHD>

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AUDITORY PROCESSING DISORDER

Definition:

Auditory Processing Disorder (APD), also known as Central Auditory Processing Disorder (CAPD), refers to the way the central nervous system uses information. This disorder is not the result of higher order cognitive, language or other related disorders.

Description:

APD refers to a variety of disorders related to the way the brain processes auditory (verbal) information. Difficulties distinguishing and understanding sounds stem from central nervous system dysfunction. It is important to note that children affected by APD typically have normal structure and function of the outer, middle, and inner ear.

Characteristics:

General:

- APD can be developmental or acquired
- Children with APD experience difficulty understanding speech in noisy environments
- Trouble following directions
- Difficulty discriminating between similar-sounding speech sounds
- Frequently request clarification of information
- Struggle with spelling, reading, and comprehending verbal information presented at school
- May behave as children who have hearing loss, although a hearing loss is not present

Behavior at home:

- When given a multi-part instruction, only does first part, then gets distracted or “forgets”
- Family comments include: “Sometimes I think there is a hearing loss;” “Hears what s/he wants to hear;” “Acts like s/he doesn’t hear me sometimes;” “I know s/he has heard me, but s/he just sits there looking at me like s/he didn’t understand”
- Parent reports: “The school thinks there is an attention problem, but s/he can play video games for hours so I don’t see the lack of attention so much at home.”

- Has friends, but often complains that his/her feelings are hurt by playmates
- Often doesn't get humor (jokes) or sarcasm
- Often asks for repetition or clarification
- May not be good at telling where a sound is coming from or who is talking in noisy situation
- Prone to temper tantrums or arguments when in a noisy situation

Behavior at school:

- Experiencing academic problems
- Characterized by teacher as acting “spacey”, “dreamy”, or “on another planet” during class
- Difficulty learning to read or do calculations
- Rarely completes seatwork during school hours, even if time deadline is extended
- Easily distracted by antics of children in near proximity
- Teacher wonders if a hearing loss is present
- Poor at carrying out multi-step instructions
- May do first step, but then cannot say what other parts are
- Has difficulty auditorially discriminating minimal-pairs (like “bed” and “said”)
- Works better in quiet room than in regular classroom
- Does better in classes not dependent on oral language
- Needs more clarification of an oral assignment than other children
- Hardest classes rest on reading for content

Causes:

APD may occur following frequent ear infections, head injuries, neurodevelopmental delays, tumors, degenerative disorders, viruses, oxygen deprivation, or lead poisoning. Sometimes the cause is unknown.

Implications for speech and language:

A speech-language pathologist may focus on communication, speech, and written and oral language skills.

Diagnosing this disorder:

An audiologist makes the formal diagnosis of APD. However, it is common for a multidisciplinary team to fully assess the impairments manifested by children with APD. A teacher or educational diagnostician, psychologist, and speech-language pathologist may all be involved in assessing the needs of the individual child. The goal of the multidisciplinary team is to identify the child's strengths and weaknesses, while the goal of the audiologist is to make the actual diagnosis.

The audiology assessment typically requires that a child is 7 or 8 years old. Due to the nature of the tasks during the assessment, it is important to wait until this age because there is less variability in children's brains by this age, making test results more accurate.

Treatment:

There is not one specific cure for APD. Treatment is highly individualized according to a child's specific strengths and weaknesses. Treatment does, however, typically focus on the following three areas:

- Changing the learning environment – this may include minimizing distractions or changing delivery method of a message
- Compensatory strategies – this may include having the child take control of their understanding of spoken language by utilizing active listening techniques
- Remediation of the auditory disorder itself – this may include computer-assisted techniques or one-on-one therapy

Resources:

Books for Parents:

- When the Brain Can't Hear: Unraveling the Mystery of Auditory Processing Disorder by Teri James Bells, PhD

Websites:

- Blog about living with APD: <http://qw88nb88.wordpress.com/living-with-auditory-processing-disorder/>
- Books and more info: <http://pinterest.com/jbrobbel/auditory-processing-disorder/>
- Quick Facts: http://www.phonak.com/com/b2c/en/hearing/awareness/what_is_apd.html

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http://deafness.about.com/gi/o.htm?zi=1/XJ&zTi=1&sdn=deafness&cdn=health&tm=26&f=00&su=p284.13.342.ip_&tt=2&bt=1&bts=1&zu=http%3A//kidshealth.org/parent/medical/ears/central_auditory.html and <http://www.nwspeechtherapy.com/auditory-processing.html>

Central Auditory Processing Disorder-What is it? (2014, February 20). Retrieved from:

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<http://www.asha.org/public/hearing/Understanding-Auditory-Processing-Disorders-in-Children/>

AUTISM

Definition:

Autism is a developmental disability that manifests in difficulties with social skills and communication. Autism can be mild or severe with great variation among individuals. Autism is also known as autism spectrum disorder.

Description:

- Disorder of neural development characterized by impairment in communication, social development, and interaction with one's environment
- Age of onset usually before 3 years of age; many children follow a typical course of development then enter a period of regression
- It occurs in approximately fifteen out of every 10,000 births and is four times more common in boys than girls.
- It has been found throughout the world in families of all racial, ethnic and social backgrounds

Characteristics:

Children with autism may have problems with communication, social skills, and restricted and repetitive behavior. Not all behaviors will exist in every child. Possible signs and symptoms are outlined below.

Communication:

- Not speaking or very limited speech
- Loss of words the child was previously able to say
- Difficulty expressing basic wants and needs
- Poor vocabulary development
- Problems following directions or finding objects that are named
- Repeating what is said (echolalia)
- Problems answering questions
- Speech that sounds different (e.g., "robotic" speech or speech that is high-pitched)

Social skills:

- Poor eye contact with people or objects
- Poor play skills (pretend or social play)
- Being overly focused on a topic or objects that interest them
- Problems making friends
- Crying, becoming angry, giggling, or laughing for no known reason or at the wrong time
- Disliking being touched or held

Environmental interactions:

- Rocking, hand flapping or other movements (self-stimulating movements)
- Not paying attention to things the child sees or hears
- Problems dealing with changes in routine
- Using objects in unusual ways
- Unusual attachments to objects
- No fear of real dangers
- Being either very sensitive or not sensitive enough to touch, light, or sounds (e.g., disliking loud sounds or only responding when sounds are very loud; also called a sensory integration disorder)
- Feeding difficulties (accepting only select foods, refusing certain food textures)
- Sleep problems

Causes:

- It is generally accepted that it is caused by abnormalities in brain structure or function
- While not one gene has been identified as causing autism, researchers are searching for irregular segments of genetic code that children with autism may have inherited
- It appears that some children are born with a susceptibility to autism, but researchers have not yet identified a single “trigger” that causes autism to develop

Treatment:

- There is no known cure for autism
- In some cases, medications and dietary restrictions may help control symptoms
- Intervention should begin when the child is young; early intervention and preschool programs are very important
- Treatment may include any combination of traditional speech and language approaches, augmentative and alternative communication, and behavioral interventions
- It is also important to have the child's hearing evaluated to rule out hearing loss

Resources:

Books for Parents:

- Ten Things Every Child with Autism Wishes You Knew by Ellen Notbohm
- 1001 Great Ideas for Teaching and Raising Children with Autism or Asperger's by Ellen Notbohm and Veronica Zysk.
- The Way I See It: a Personal Look at Autism & Asperger's by Temple Grandin
- The Autistic Revolution - Children In the Time of Awakening (DVD)

Books for Children:

- The Autism Social Skills Picture Book: Teaching Communication, Play and Emotion by Jed Baker
- Point to Happy by Miriam Smith, Fraser Afton, and Margo Smithwick
- To Know Me Is to Love Me: a Celebration of the Autistic Gifts in All of Us. United States by Lori J. Drube and Lauren Moran.

Support Groups: (Austin area used as an example)

- Autism Society of America – Greater Austin Chapter, (512) 472-6629, http://support.autism-society.org/site/Clubs?club_id=1040&pg=main
- Central Texas Autism Center, Inc., (512) 328-5599, www.ctac1.com
- Teacher's House, (512) 248-2633

- Austin Asperger's Support Group <http://www.meetup.com/aspergers-230/>
- Austin Autism Playdates <http://www.meetup.com/Austin-Autism-Playdates/>

Websites:

- General information on autism <http://www.autism-resources.com/>
- Autism Research Institute <http://www.autism.com/ari>

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CEREBRAL PALSY

Definition:

Cerebral palsy is a term used to describe a group of chronic conditions affecting body movements and muscle coordination. It is caused by damage to one or more specific areas of the brain, usually occurring during fetal development or infancy. It also can occur before, during or shortly following birth.

Description:

- A chronic movement or posture disorder affecting the brain's ability to control the body
- Not contagious or inherited; it is caused by irreversible brain damage
- Non-progressive disorder and there is no known cure
- Most cases occur during pregnancy (75%) although some are caused during birth (5%) and in early childhood (15%)
- Affects both sexes; firstborn children are affected more frequently
- Developmental delays, such as trouble sitting upright, awkward posture, or trouble sucking are the key warning signs; the symptoms appear during the first few years of life

Characteristics:

There are four types of cerebral palsy:

- Spastic is the most common type of CP (70-80%). Neuromuscular condition that includes difficult or stiff movement in one or more areas of the body (i.e. hypertonicity). Classifications: spastic hemiplegia, spastic diplegia, and spastic quadriplegia
- Ataxic is a loss of depth perception and balance and hypotonicity (5-10% not common on its own)
- Athetoid/Dyskinetic mixed muscle tone, involves uncontrolled or involuntary movements and trouble sitting upright (25%)
- Mixed is a combination of two or more types

Causes:

- 80% of causes are unknown
- Some known causes are injury during birth, due to brain damage and brain injury

- Maternal use of drugs and alcohol
- Maternal infection such as Rh incompatibility
- Neonatal infection such as jaundice and rubella
- Premature birth

Implications for speech and language:

Cerebral palsy may affect an individual's ability to communicate in a variety of ways, including:

- Difficulty co-coordinating muscle movements needed for speech
- Difficulty expressing needs and wants
- Difficulty creating cohesive sentences
- Social problems, related to difficulty communicating

Diagnosing this Disorder:

Speech-language pathologists do not diagnose cerebral palsy. Doctors diagnose cerebral palsy by obtaining a complete medical history of development, examining the child and evaluating the child's movements.

Treatment:

In addition to physical and occupational therapy services, speech-language therapy may be used to help control muscles around the mouth and jaw in order to improve speech production. Therapy may also target use of language to express wants and needs and formulating complete sentences, depending on the needs of the individual.

Resources:

Books for kids:

- Shelly, the Hyperactive Turtle by Deborah Moss
- We can do it! by L. Dwight

Books for Parents:

- Approach to treatment of the baby by R. Boehme
- Cerebral Palsy: A Complete Guide for Caregiving (A Johns Hopkins Press Health Book) by Freeman Miller and Steven J. Bachrach
- Coping with cerebral palsy: Answers to questions parents ask often by Austin Schleichkom
- The official parent's source book on: Cerebral palsy by J.N. Parker

Support Groups: (Austin area as an example)

- United Cerebral Palsy of Texas (512) 472-8696.
- United Cerebral Palsy of the Capitol Area, Inc. (512) 834-1827.

Websites:

- United Cerebral Palsy www.ucp.org
- Information on caring for children with cerebral palsy www.caringforcerebralpalsy.com
- Pediatric resources for children with cerebral palsy www.cerebralpalsy.org

References:

Cerebral Palsy (2014, February 20). In MedlinePlus. Retrieved from:
www.nlm.nih.gov/medlineplus/cerebralpalsy.html.

CLEFT LIP/PALATE

Definition:

Cleft lip is characterized by a gap or hole in the lip. Cleft palate is a hole or gap in the upper palate or roof of the mouth.

Description:

The depth and extent of the hole or gap in cleft lip and palate can vary. Sometimes the bones of the upper jaw can be affected. They can occur on one side (unilateral) or both sides (bilateral). The cleft is created during development of the baby during pregnancy. During early pregnancy, the roof of the mouth and palate are expected to fuse together, and when they do not, a cleft is created. Since the palate and lip develop separately, it is possible to have a cleft lip, cleft palate, or both. Sometimes a cleft of the palate is covered by a thin layer of skin and cannot be readily observed (submucosal cleft).

Causes:

Most clefts are thought to be caused by a combination of genetics and environmental factors. Sometimes, they occur as part of a syndrome that may cause other problems as well.

Diagnosing this disorder:

In the case of readily observable clefts, they are often discovered during prenatal ultrasounds (when available) or at birth. In the case of submucosal clefts (below the skin), they may not be discovered until later in infancy or childhood, depending on the symptoms that the individual may have that would prompt a professional to palpate (feel) the upper palate. A submucosal cleft is sometimes, but not always, associated with a bifurcated uvula. The uvula is the fleshy extension that hangs down at the back of the throat. When it is bifurcated, it appears to split into two.

Implications for communication and swallowing:

Children with cleft lip and/or palate may have difficulty with feeding due to problems achieving adequate suction. They may have swallowing problems such as milk going from the mouth into the nose. They may also have difficulty with forming sounds and delays in development of language skills. They sometimes have difficulty with the resonance (sound) of vocal quality and/or velopharyngeal insufficiency or dysfunction (VPI or VPD). If the cleft lip and/or palate is part of a syndrome, there may be more significant language and learning difficulties.

Treatment:

Depending on the exact type of cleft and the type of symptoms, the medical team may recommend surgical repair of the cleft. This sometimes requires more than one surgery. When swallowing and/or communication are affected, the child should be under the care of a speech-language pathologist. Many children with cleft lip and/or palate can gain functional swallowing and communication skills when provided good medical care and therapy.

Resources:

Books for Parents:

- A Parent's Guide to Cleft Lip and Palate by Karlind Moller, Clark Starr and Sylvia Johnson
- Your Cleft-Affected Child: The Complete Book of Information, Resources, and Hope by Carrie T. Gruman-Trinkner and Blaise Winter

Books for kids:

- First Place – A story book helping kids to understand cleft palate & cleft lip by Kate Gaynor and Eva Byrne

Websites/Support:

- Cleft Palate Foundation: <http://www.cleftline.org>
- Cleft Lip and Palate Association: <http://www.clapa.com/parents>
- Mayo Clinic: <http://www.mayoclinic.com/health/cleft-palate/DS00738/DSECTION=coping-and-support>

References:

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<http://www.asha.org/public/speech/disorders/CleftLip.htm>

Cleft Palate Foundation. Parents & Individuals. (2014, February 20). Retrieved from
<http://www.cleftline.org/parents-individuals>

A.D.A.M. Medical Encyclopedia: Cleft Lip and palate. (2014, February 20). Retrieved from
<http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002046>

CLUTTERING

Definition:

Cluttering is a communication disorder resulting in decreased fluency and intelligibility that often coexists with stuttering.

Description:

An exact description of cluttering has not been accepted or agreed upon universally. In general, it is a communication disorder that results in decreased speech intelligibility and may involve one or a combination of the following areas: language, articulation, and fluency, as well as rate and self-monitoring skills.

Characteristics:

The characteristics of cluttering vary among clients, but a consistent characteristic is an excessive speech rate. More than 60 other symptoms are listed in well-known chapters and books on cluttering. Some common characteristics include:

- Monotone voice
- Indistinct, “mumbling” speech involving sound distortions and omissions.
- Errors in connected speech that are not present or less pronounced in single-word production or connected speech that is produced slowly.
- Transpositions of sounds in words, phrases, or sentences (ex: “Many people think so” becomes “Many thinkle peep so”)
- Language deficiencies
- Auditory processing difficulties
- Client may be unaware of his/her speech disorder and surprised when other people do not understand him/her

Stuttering vs. Cluttering:

Stuttering:

1. Disfluencies on units smaller than the word level, such as sound prolongations and sound/syllable repetitions
2. Effort/physiologic tension associated with disfluent moments
3. Typically person has awareness of disfluencies and a sense of loss of control
4. Difficulty making fluent transitions from one sound or syllable to the next.

Cluttering:

1. Disfluencies typically involve units larger than the sound or syllable level, such as word and phrase repetitions, incomplete phrases, and revisions.
2. Little apparent physiologic tension
3. Often demonstrate poor self-monitoring skills and decreased awareness of speech errors
4. Difficulty making smooth transitions from one syntactic unit to another or one lexical choice to the next or sequencing his/her message cohesively and coherently
5. Do not typically produce prolongations or tense pauses
6. Fast and/or spurty speaking rate
7. Linguistic encoding difficulties leading to poor cohesion and coherence of connected speech
8. Reduced speech intelligibility due to articulation errors secondary to fast rate

Causes:

Unknown

Diagnosing this disorder:

Since cluttering affects articulation, language, voice, and fluency, its assessment includes each of these areas. Individuals may not clutter in all situations. Important to examine in several contexts:

- Reading lists of multisyllabic words, Reading passages, Spontaneous speech
- Rate language/speech samples for:

- o Intelligibility
- o Naturalness
- o Overall speech rate
- o Regularity of rate
- o Disfluencies
- o Overall articulation accuracy
- o Pragmatic language appropriateness
- o Interview client regarding perception of speech difficulty and perception of social penalty of speech difficulty
- o Writing sample analysis
- o Short paragraph about vacation, etc.
 - Looking for illegible writing
 - Omissions of letters, syllables, words, as seen in speech

Treatment:

Two fluency-enhancing strategies can be useful in addressing cluttering: prolonged speech and reduced speech rate.

ASHA outlines that therapy should focus on:

Slowing rate (metronome, pacing boards, visuals, etc.)

Heightening monitoring

- Use video or audio-taped conversations and have client identify places where he/she failed to monitor.
- Prepare samples of worst, mediocre and best speech, have them listen/rate daily to assist with ability to monitor on-line.
- Using clear speech
 - o “over-articulate“ multisyllabic words/ discuss what they are feeling
 - o Imagine they are talking to a person with hearing loss
- Using organized language
 - o Example: focusing on one topic at a time
- Interacting with listeners

- turns in conversation at reasonable durations (such as 30 seconds)
- thinking about the listener as you speak
- Reducing excessive disfluencies
 - identifying mazes in his/her speech
- Work with parents on modeling clear speech and organized language

Resources:

Books for Clinicians:

- The Source for Stuttering and Cluttering by David Daly
- feelings and attitudes of adolescents
- Structured word, phrase & sentence tasks
- Addresses Clinician forms for tracking progress
- Self-evaluation forms for client
- Audiotape to model speech patterns
- Techniques for cluttering intervention

Support Groups:

- A Cluttering Yahoo Group by Judith Kuster (Minnesota, USA)
- Cluttering: A Facebook Social Network for Persons Who Clutter by Sr. Carol Mary Nolan (Massachusetts, USA) Questions/comments(online conference)
- NorCal Cluttering Group – A social gathering for PWC by Jonathan Wong (California, USA) Questions/comments (online conference)
- K-12 Academic Cluttering Community is a currently inactive yahoo group with only 5 members. K-12 Academics has a short explanation about cluttering.

Websites:

- Video clip example <http://youtube.com/watch?v=EXtKW0Vyb-Y>
- International Cluttering Association <http://associations.missouristate.edu/ICA/Contact> Kathy Scaler Scott at scalerscott1@earthlink.net

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Ramig, P.R. & Dodge, D.M. (2005). *The child and adolescent stuttering treatment and activity resource guide*. Clifton Park, NY: Delmar Learning.

Shipley, K.G. & McAfee, J.G. (2004). *Assessment in Speech-Language Pathology: A resource manual* (3rd ed.). Clifton Park, NY: Delmar Learning.

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DiGEORGE SYNDROME

Definition:

DiGeorge syndrome is a birth defect that is caused by an abnormality in chromosome 22 which affects the immune system.

Description:

DiGeorge Syndrome is also known as: 22q 11.2 deletion syndrome, Velocardiofacial Syndrome, and Strong Syndrome. It is a congenital developmental anomaly characterized by abnormalities of the immune system and congenital heart defects. The immune system deficiencies are caused by the failure of the thymus gland to develop. Common conditions include heart defects, effects on facial appearance, and lack of or underdeveloped thymus and parathyroid glands.

Characteristics:

- Parathyroid glands (which regulate blood Ca) fail to develop
- Results from abnormality in the development of the 3rd and 4th pharyngeal pouches of the embryo (which forms aorta)
- Infants may exhibit grayish/purple discoloration caused by abnormal amounts of low hemoglobin blood due to cardiac abnormalities
- Congenital heart defects
- Seizures can occur as a result of hypocalcaemia
- Failure to Thrive can result and in many cases infants may risk mortality within a month from severe cardiac abnormalities or infections
- Infants must be isolated once immune deficiency is identified
- Survivors face increased susceptibility to respiratory infections
- Uneven eyes
- Eye slits slanted toward nose
- Uprturned nose
- Palatal abnormalities (such as cleft lip and/or palate)
- Hearing loss or abnormal ear exams (Outer ears may be small, low-set or rotated slightly backward, and malformed)

- Severe immunologic dysfunction (an immune system which does not work properly due to abnormal T -cells, causing frequent infections)
- Psychiatric disorders in adults (e.g., schizophrenia, bipolar disorder)
- Microcephaly (small head)
- Mild to moderate mental retardation
- Genitourinary anomalies (absent or malformed kidney)

Causes (known and speculated):

- In most cases, a deletion in the upper portion of the long arm of chromosome 22 is found
- Believed to be caused by faulty development of the cephalic neural crest
- In about 10% of cases, the disorder is inherited from a parent
- The gene is autosomal dominant which means the parent has a 50% chance of passing down this disorder
- Women who take Accutane once a day in the treatment of severe cystic acne have offspring with features that resemble the DiGeorge syndrome
- Exposure to alcohol in utero may also cause similar features
- May occur in infants of diabetic mothers

Implications for speech and language:

- Delayed development of speech and language skills
- Hypernasal speech (excessively nasal speech) due to velopharyngeal dysfunction (a condition in which the soft palate is unable to consistently elevate to contact the back of the throat; this prevents a speaker from closing off the oral cavity from the nasal cavity during speech)
- Articulation disorders (difficulty producing speech sounds)
- Voice disorders and laryngeal anomalies (e.g., breathy voice, vocal fold paralysis)
- Language impairment (e.g., slow vocabulary growth, difficulties formulating complex sentences)
- Pragmatic and social skills difficulties

Diagnosing this disorder:

(Note: Speech-language pathologists do not diagnose this condition.)

The diagnosis of the DiGeorge Syndrome is usually made on the basis of signs and symptoms that are present at birth or develop soon after birth. Some children may have the facial features that are characteristic of the DiGeorge Syndrome. Affected children may also show signs of low blood calcium levels as a result of their hypoparathyroidism. This may show up as low blood calcium on a routine blood test, or the infant may be “jittery” or have seizures (convulsions) as a result of the low calcium. Affected children may also show signs and symptoms of a heart defect. The severity of heart disease is usually the most important determining factor.

Some children have signs or symptoms at birth or while they are still in the hospital nursery. Others may not show signs or symptoms until they are a few weeks or months older. Some children and adults are diagnosed at a much older age due to speech delay, qualitative speech problems, or feeding problems.

Physical

Coordination and balance issues will begin to emerge after a child is able to walk independently so be consistent with reinforcing your child’s physical skills. Since gross motor skills are more obviously impaired than fine motor skills, encourage your child to develop these skills early.

Language

Children with DiGeorge Syndrome are often very slow in acquiring language skills and most children are nonverbal prior to age 2. Receptive language abilities, such as comprehension, are generally stronger than expressive language abilities. Articulation errors are commonly present in children, so encourage your child to speak as much as possible and help your child enunciate sounds accurately. The speech impairments exhibited are more severe during the younger ages and show a trend of gradual improvement as the child matures.

Cognitive

It is difficult to make broad generalizations about cognitive functioning because children with DiGeorge Syndrome have a tremendous range of neuropsychological abilities. Academically, mathematics is generally a more difficult area whereas reading and spelling abilities are relatively stronger. To enhance your child’s ability to think logically and abstractly, practice simple math skills with your child, such as counting, so that you can avoid these difficulties in the future.

Resources:

Books for Parents

- The Merck Manual of Diagnosis and Therapy by Robert Berkow
- Neonatology: Management, Procedures, On-Call Problems, Diseases and Drugs. By T. Gomella
- 22q11.2 Deletion Syndrome by D. McDonald-McGinnes, D.

Books for Children

- Someone Special, Just Like You by T. Brown
- Tobin Learns to Make Friends by D. Murrell
- My Friend Isabelle by Eliza Woloson and Bryan Gough

Websites

- Immune Deficiency Foundation: www.primaryimmune.org
- The International 22q11.2 Deletion Syndrome Foundation: <http://www.22q.org>
- VCFS Educational Foundation: <http://www.vcfsef.org/index.html>

Support Groups

- Chromosome Deletion Outreach, Inc. (888) 236-6680.
- International DiGeorgeNCF Support Network (607) 753-1250.
- VCF Group – Suzanne Manthei, Austin, TX, Email: manthei4@juno.com

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<http://primaryimmune.org/about-primary-immunodeficiency-diseases/types-of-pidd/digeorge-syndrome>

DOWN SYNDROME

Definition:

Down syndrome is a congenital disorder, caused by the presence of an extra 21st chromosome, in which the affected person has mild to moderate intellectual disability, short stature, and a flattened facial profile.

Description:

Down syndrome is a genetic condition that causes delays in physical and intellectual development. It occurs in approximately one in every 800 live births. Individuals with Down syndrome have an extra copy of the 21st chromosome that affect some or all cells. It is the most frequently occurring chromosomal disorder. Down syndrome is not related to race, nationality, religion or socioeconomic status.

Characteristics:

Common Physical Characteristics:

Down syndrome symptoms vary from person to person and can range from mild to severe. However, children with Down syndrome have a widely recognized appearance.

The head may be smaller than normal and abnormally shaped. For example, the head may be round with a flat area on the back. The inner corner of the eyes may be rounded instead of pointed.

Common physical signs include:

- Decreased muscle tone at birth
- Excess skin at the nape of the neck
- Flattened nose
- Separated joints between the bones of the skull (sutures)
- Single crease in the palm of the hand
- Small ears
- Small mouth
- Upward slanting eyes
- Wide, short hands with short fingers
- White spots on the colored part of the eye (Brushfield spots)

Physical development is often slower than normal. Children with Down syndrome may never reach an average adult height.

Children may also have delayed mental and social development. Common problems may include:

- Impulsive behavior
- Poor judgment
- Short attention span
- Slow learning

As children with Down syndrome grow and become aware of their limitations, they may also feel frustration and anger.

Medical Conditions

Many different medical conditions are seen in people with Down syndrome, including:

- Birth defects involving the heart, such as an atrial septal defect or ventricular septal defect
- Dementia may be seen
- Eye problems, such as cataracts (most children with Down syndrome need glasses)
- Early and massive vomiting, which may be a sign of a gastrointestinal blockage, such as esophageal atresia and duodenal atresia
- Hearing problems, probably caused by regular ear infections
- Hip problems and risk of dislocation
- Long-term (chronic) constipation problems
- Sleep apnea (because the mouth, throat, and airway are narrowed in children with Down syndrome)
- Teeth that appear later than normal and in a location that may cause problems with chewing
- Underactive thyroid (hypothyroidism)

Children with Down syndrome have a higher incidence of infection, respiratory, vision and hearing problems as well as thyroid and other medical conditions. However, with appropriate medical care most children and adults with Down syndrome can lead healthy lives. The average life expectancy of individuals with Down syndrome is 55 years, with many living into their sixties and seventies.

Learning and Development:

It is important to remember that while children and adults with Down syndrome experience developmental delays, they also have many talents and gifts and should be given the opportunity and encouragement to develop them.

Most children with Down syndrome have mild to moderate cognitive impairments, but it is important to note that they are more like other children than they are different. Early Intervention services should be provided shortly after birth. These services should include physical, speech and developmental therapies. Most children attend their neighborhood schools, some in regular classes and others in special education classes. Some children have more significant needs and require a more specialized program.

Some high school graduates with Down syndrome participate in post-secondary education. Many adults with Down syndrome are capable of working in the community, but some require a more structured environment.

Implications for speech and language:

Although individuals with Down syndrome tend to be good communicators from a young age and usually have strengths in non-verbal communication skills such as gesture and sign, speech and language skills are an area of particular difficulty. Spoken language skills are usually delayed relative to the children's non-verbal ability and this suggests a profile of specific language impairment. This should be a focus for targeted and intensive intervention throughout infancy and childhood, as it is in other language impaired children who show a gap between verbal and non-verbal abilities.

Causes:

Down syndrome is usually caused by an error in cell division called non-disjunction. It is not known why this occurs. However, it is known that the error occurs at conception and is not related to anything the mother did during pregnancy. Statistically the incidence of Down syndrome increases with advancing maternal age. However, 80% of children with Down syndrome are born to women under 35 years of age.

Diagnosing this disorder:

Speech-Language pathologists cannot diagnose this condition. Down syndrome is usually identified at birth or shortly thereafter. Initially the diagnosis is based on physical characteristics that are commonly seen in babies with Down syndrome. These include low muscle tone, a single crease across the palm of the hand, a slightly flattened facial profile and an upward slant to the eyes. The diagnosis must be confirmed by a chromosome study known as a karyotype.

Two types of procedures are available to pregnant women: screening tests and diagnostic tests. The screening tests estimate the risk of the baby having Down syndrome. Diagnostic tests tell whether or not the baby actually has Down syndrome.

Screening Tests

- At this time the most commonly used screening test is “The Triple Screen.” This is a combination of three tests that measure quantities of various substances in the blood. These tests are usually done between 15 and 20 weeks of gestation.
- Sonograms (ultrasounds) are usually performed in conjunction with other screenings. These can show some physical traits that are helpful in calculating the risk of Down syndrome.
- Screening tests do not accurately confirm the diagnosis of Down syndrome. In fact, false positives and false negatives frequently occur.

Diagnostic Tests

Three diagnostic tests are currently available:

- Amniocentesis which is performed between 12 and 20 weeks gestation
- Chorionic Villus Sampling (CVS) which is conducted between 8 and 12 weeks gestation
- Percutaneous Umbilical Blood Sampling (PUBS) which is performed after 20 weeks gestation

Resources:

Books for Parents:

- A Parent’s Guide to Down Syndrome, Toward a Brighter Future by Siegfried M. Pueschel, M.D., Ph.D., M.P.H.
- Common Threads, Celebrating Life with Down Syndrome by Cynthia S. Kidder and Brian Skotko
- Angel Behind the Rocking Chair by Pam Vredevelt
- Choosing Naia by Mitchell Zuckoff
- Expecting Adam: A True Story about Birth, Rebirth and Everyday Magic by Martha Beck
- Angel Unaware by Dale Evans
- A Promising Future Together – A guide for new parents of children with Down Syndrome, NDSS (video)
- Down Syndrome – The First 18 Months by Will Schermerhorn (video)
- Precious Lives Painful Choices – a Prenatal Decision-making Guide by Sherokee Ilse
- Count Us In by Jason Kingsley and Mitchell Levitz.

- The Memory Keeper's Daughter by Kim Edwards
- Your Baby Has Down Syndrome (video); Down Syndrome Center, Children's Hospital of Pittsburgh. Phone: 412-692-7963, Fax: 412-692-7428, Email: cannons@chplink.chp.edu
- Bebes con Síndrome de Down – una guía para padres por Karen Stray-Gunderson (en español)

Support Groups:

- DSACT- Down Syndrome Association of Central Texas:
- DSACT offers year-round programs for children with Down syndrome and their families. Programs include social and recreational classes for children such as sign language, swimming, cooking, yoga and martial arts. Young adults may attend a specialized class at UT. Social groups for children ages 0-5, 6-12 and teenagers meet monthly.
- The Learning Program offers a research-based curriculum improving early literacy and math skills for students with Down syndrome ages 2-11. Parents attend class simultaneously learning best practices to teach their child at home. For more information on the Learning Program contact our office.
- Emotional support workshops are held throughout the year offering parents a safe place to discuss their experiences and feelings. Professionals provide strategies and methods to achieve and maintain emotional health. For more information about emotional support workshops contact our office.
- Comité Latino
- Parent group which meets every two months at someone's home. Provides food, social time, will look for information parents are in need of, provide access to resources, usually present on a topic related to Down Syndrome. Contacts are: Deborah Trejo 586-2552 or Rebecca Tobias 447-6974.
- El Comité Latino de DSACT se dedica a servir a la comunidad hispanohablante en el área. Se espera incluir a toda la comunidad hispanohablante con hijos o familiares con el SD para que tenga el mismo acceso a información, servicios y recursos. Tenemos pláticas sobre temas importantes y nos ayudaremos uno al otro. Comuníquese con Rebecca Tobias (512) 447-6974 o Deborah Trejo (512) 586-2552 o quintosol@sbcglobal.net

Websites:

In English and Spanish:

- Down Syndrome Association of Central Texas (DSACT En Español) (2014, February 20). Retrieved from: <http://www.dsact.com/DSACTspanish.html>
- National Down Syndrome Congress (Congreso Nacional de Síndrome de Down) (2014, February 20). Retrieved from: <http://www.ndsccenter.org/>

- National Down Syndrome Society (Sociedad Nacional de Síndrome de Down) (2014, February 20). Retrieved from: <http://www.ndss.org>
- National Association for Down Syndrome (Asociación Nacional para el Síndrome de Down) (2014, February 20). Retrieved from: http://www.nads.org/pages_new/new_parents/support_spanish.html
- Light at the End of the Tunnel (Luz al Final del Túnel) (2014, February 20). Retrieved from: <http://www.dsaoc.org/espanol/tunnelSpn.pdf>
- Welcome to Holland, by Emily Perl Kingsley (Bienvenido a Holanda, por Emily Perl Kingsley) (2014, February 20). Retrieved from: <http://www.ensenemasamemas.org/SpecialNeedsDetails.asp?id=32#55>

In English:

- “A Future and A Hope” by Carlene Mattson (2014, February 20). Retrieved from: <http://www.dsaoc.org/./programs/heart.asp>
- Band of Angels inspirational materials (2014, February 20). Retrieved from: <http://www.bandofangelsfoundation.com>
- Mother Stories from Chicago, Illinois (2014, February 20). Retrieved from: http://www.gigisplayhouse.com/mother_stories.asp
- Gifts: How Children with Down Syndrome have Enriched our Lives (2014, February 20). Retrieved from: <http://giftsds.segullah.org/>
- Clinical research related to cognitive treatments (2014, February 20). Retrieved from: <http://dsresearch.stanford.edu>

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- Down Syndrome Facts. Down Syndrome Association of Central Texas. (2014, February 20). Retrieved from: <http://dsact.com/about/down-syndrome-facts/>
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DYSLEXIA

Definition:

According to the U.S. National Institutes of Health, dyslexia is a learning disability that can hinder a person's ability to read, write, spell, and sometimes speak.

Description:

- Dyslexia is the most common learning disability in children and persists throughout life.
- The severity of dyslexia can vary from mild to severe.
- The sooner dyslexia is treated, the more favorable the outcome; however, it is never too late for people with dyslexia to learn to improve their language skills.
- Children with dyslexia have difficulty in learning to read despite traditional instruction, at least average intelligence, and an adequate opportunity to learn.
- Dyslexia is caused by impairment in the brain's ability to translate images received from the eyes or ears into understandable language.
- Dyslexia can go undetected in the early grades of schooling. The child can become frustrated by difficulty in learning to read, and other problems can arise that disguise dyslexia.

Characteristics:

Dyslexia may affect several different functions:

- Visual dyslexia is characterized by number and letter reversals and the inability to write symbols in the correct sequence.
- Auditory dyslexia involves difficulty with sounds of letters or groups of letters. The sounds are not perceived correctly.
- "Dysgraphia" refers to the child's difficulty holding and controlling a pencil so that the correct markings can be made on the paper.
- Letter and number reversals are the most common warning sign. Such reversals are fairly common up to the age of 7 or 8 and usually diminish by that time. If they do not, it may be appropriate to test for dyslexia or other learning problems.
- Difficulty copying from the board or a book can also suggest problems. There may be a general disorganization of written work. A child may not be able to remember content, even if it involves a favorite video or storybook.

- Problems with spatial relationships can extend beyond the classroom and be observed on the playground. The child may appear to be uncoordinated and have difficulty with organized sports or games.
- Difficulty with left and right is common, and often dominance for either hand has not been established.
- In the early grades, music and dance are often used to enhance academic learning. Children with dyslexia can have difficulty moving to the rhythm of the music.
- Auditory problems in dyslexia encompass a variety of functions. Commonly, a child may have difficulty remembering or understanding what he hears. Recalling sequences of things or more than one command at a time can be difficult. Parts of words or parts of whole sentences may be missed, and words can come out sounding funny. The wrong word or a similar word may be used instead. Children struggling with this problem may know what they want to say but have trouble finding the actual words to express their thoughts.

Many subtle signs can be observed in children with dyslexia.

- Children may become withdrawn and appear to be depressed.
- They may act out to draw attention away from their difficulty.
- Problems with self-esteem can arise, and peer and sibling interactions can become strained. These children may lose their interest in school-related activities and appear to be unmotivated or lazy. The emotional symptoms and signs are just as important as the academic and require equal attention.

Causes:

There are several types of dyslexia that can affect the child's ability to spell as well as read.

- Trauma dyslexia usually occurs after some form of brain trauma or injury to the area of the brain that controls reading and writing.
- Primary dyslexia is a dysfunction of, rather than damage to, the left side of the brain (cerebral cortex) and does not change with age. Individuals with this type are rarely able to read above a fourth-grade level and may struggle with reading, spelling, and writing as adults. Primary dyslexia is passed in family lines through their genes (hereditary). It is found more often in boys than in girls.
- Secondary or developmental dyslexia is felt to be caused by hormonal development during the early stages of fetal development. Developmental dyslexia diminishes as the child matures. It is also more common in boys.

Resources:

Books for Parents:

- The Everything Parent's Guide to Children with Dyslexia: All You Need to Ensure Your Child's Success by Abigail Marshall
- Overcoming Dyslexia: a New and Complete Science-based Program for Reading Problems at Any Level by Sally E. Shaywitz
- The Gift of Dyslexia: Why Some of the Smartest People Can't Read— and How They Can by Ronald D. Davis, and Eldon M. Braun.
- The Dyslexic Advantage Unlocking the Hidden Potential of the Dyslexic Brain by Brock L. Eide M.D. M.A. and Fernette F. Eide M.D

Books for Kids:

- The Twits by Roald Dahl and Quentin Blake.
- The Legend of Spud Murphy by Eoin Colfer, and Tony Ross.
- Horrid Henry Robs the Bank by Francesca Simon, and Tony Ross
- Josh: a Boy with Dyslexia by Caroline Janover and Edward Epstein.
- The Worst Speller in Jr. High by Caroline Janover and Rosemary Wallner.

Support Groups (Using Austin as an Example)

- Austin Area Branch of The International Dyslexia Association, 512-452-7658
- The International Dyslexia Association (IDA) <http://www.interdys.org/index.htm>
- SchwabLearning <http://www.greatschools.org/special-education.topic?content=1541>
- Dyslexia Texas <http://www.dyslexia-parent.com/texas.html>

References:

Perlstein, David. "Dyslexia Symptoms, Signs, Causes, Types, Diagnosis and Treatment on MedicineNet.com." Web. 04 Jan. 2012. Retrieved from: <http://www.medicinenet.com/dyslexia/article.htm>.

EPILEPSY

Definition:

Epilepsy is a common and diverse set of chronic neurological disorders characterized by seizures.

Description:

- Epilepsy is characterized by a long term risk of recurrent seizures. These seizures may present in a number of different ways.
- Epileptic seizures result from abnormal, excessive or hyper synchronous neuronal activity in the brain.

Characteristics:

- There are two types of seizures: Focal seizures, when seizures appear to result from abnormal activity in just one part of the brain, and Generalized seizures, seizures that seem to involve all of the brain.
- A seizure can produce: Temporary confusion, a staring spell, uncontrollable jerking movements of the arms and legs, loss of consciousness or awareness
- Seizures may be fragmented or broken into small bursts
- In infants, most seizures will continue for less than five minutes
- Some infants experience involuntary jerks simultaneously with staring spells

Causes:

- Genetic influence. Some types of epilepsy, which are categorized by your type of seizure, run in families, making it likely that there is a genetic influence. For most people, genes are only part of the cause, perhaps by making a person more susceptible to environmental conditions that trigger seizures.
- Head trauma may cause epilepsy.
- Medical disorders. Events like strokes or heart attacks that result in damage to the brain also can cause epilepsy. Stroke is responsible for up to one-half of epilepsy cases in those over age 35.
- Dementia is a leading cause of epilepsy among older adults.
- Diseases such as meningitis, AIDS and viral encephalitis can cause epilepsy.

- Prenatal injury. Before birth, babies are susceptible to brain damage caused by an infection in the mother, poor nutrition or oxygen deficiencies. This can lead to cerebral palsy in the child. About 20 percent of seizures in children are associated with cerebral palsy or other neurological abnormalities.
- Developmental disorders. Epilepsy can sometimes be associated with other developmental disorders, such as autism and Down syndrome.

Implications for Speech and Language:

Epilepsy may co-occur with speech and language disorders, and it may be the cause of differences in language development. The presence of epilepsy during childhood may impact brain development, affecting areas such as executive function, attention, and language. This may result in difficulties with language learning, as well as with reading and writing.

Diagnosing this disorder:

Speech-language pathologists do not diagnose epilepsy. At least two unprovoked seizures are generally required for an epilepsy diagnosis.

Treatment:

Epilepsy may be managed in a variety of ways, through medications, diet, and surgery. Consult with a medical professional for information about appropriate treatment options.

Resources:

Books for Parents:

- Does Your Child Have Epilepsy? 2nd Edition. Austin, TX: Pro-ed, Inc.
- Seizures and epilepsy in childhood: A Guide by J.M. Freeman
- A Guide to Understanding and Living with Epilepsy by O. Devinsky

Books for Kids:

- Lee, The Rabbit with Epilepsy by D. Moss
- Dotty the Dalmatian has Epilepsy by NJ Gladstone

Support Groups (Using Austin as an Example):

- Epilepsy Foundation Central & South Texas, North Austin Medical Center, 12221 Mopac 3rd Floor Atrium Conference Room, Austin, TX 78758
- Epilepsy Foundation Central & South Texas, 10615 Perrin Beitel Rd Ste 602, San Antonio, TX 78217-3142, (210) 653-5353, (888) 606-5353

Websites:

- Epilepsy Advocate <http://www.epilepsyadvocate.com/default.aspx>
- Growing Up With Epilepsy- Learning from Massachusetts General Hospital. <http://www2.massgeneral.org/childhoodepilepsy/child/index.htm>. Nationwide website for those with epilepsy and their caregivers with links to local seminars and events
- Epilepsy Foundation of Central and South Texas <http://old.epilepsyfoundation.org/local/efcst/groups.cfm>

References:

- Barr, William. (2003). Types of Language Problems in Epilepsy (2014, February 20). Retrieved from: http://www.epilepsy.com/articles/ar_1063657589.
- Epilepsy. (2011, April 28). In Mayo Clinic Health Information (2014, February 20). Retrieved from: <http://www.mayoclinic.com/health/epilepsy/DS00342>.
- Epilepsy Guide. In WebMD (2014, February 20). Retrieved from: <http://www.webmd.com/epilepsy/guide/default.htm>.

EXPRESSIVE LANGUAGE DISORDER

Definition:

An expressive language disorder is a type of specific language disorder associated with difficulty speaking, writing, and/or using other symbol systems (i.e. sign language).

Description:

Expressive language disorders may be developmental, appearing as the child is learning to talk, or acquired due to damage to the brain. Individuals with an expressive language disorder are able to understand language easier than they are able to express it.

Characteristics:

- Limited vocabulary use
- Use of non-specific vocabulary (i.e. thing, stuff)
- Difficulty defining or describing
- Unable to recall the appropriate word to use
- Poor grammar
- Short or incomplete sentences
- Difficulty telling stories
- Unable to clearly convey a concept or idea
- Problems putting sentences together coherently

Causes:

Developmental expressive language disorder has no known cause. However, hearing loss or fluctuating hearing loss (due to reoccurring ear infections) may contribute to a delay in language development. Acquired expressive language disorder is caused by damage to the brain, such as a stroke, traumatic head injury, seizures, or other medical conditions.

Diagnosing this disorder:

Expressive language disorder is diagnosed by a speech-language pathologist. Developmental disorders are often suspected by the child's pediatrician or teacher, when they exhibit language skills below what is expected for their age. The pediatrician or teacher will then refer them to the speech-language pathologist who will conduct a full diagnostic evaluation of the child's receptive and expressive language skills, using standardized tests and informal measures. They will also evaluate other measures of communication to rule out other issues. The child's vision and hearing must be screened prior to testing as well to achieve valid test results. Children exposed to multiple languages should be screened in all languages and tested in their primary language. This multilingual assessment framework is referred to as a "difference vs. disorder" approach. Assessment data is obtained in all languages of exposure. Any noted errors or differences in communication skills are then analyzed and assigned to three main categories: 1) errors appropriate for the child's age (developmental errors); 2) errors attributed to the interaction between the two languages spoken (cross-linguistic influence); and 3) atypical errors.

Acquired expressive language disorder is often suspected by the physician treating the individual for the brain injury, who then refers the patient to a speech-language pathologist. An example of an acquired expressive language disorder is expressive aphasia <http://bilingualism.com/disorders/aphasia/>.

Expressive language disorder is diagnosed when the individual demonstrates the ability to understand material appropriate for his/her age, but is unable to express that comprehension. This differs from receptive-expressive language disorder, which is more common and involves difficulty understanding and using language), and receptive language disorder, a rare occurrence, which involves age-appropriate language use with difficulties understanding language. Careful diagnosis is also important to distinguish expressive language disorder from other communication disorders, intellectual disability, environmental deprivation, and/or other physical and developmental problems which may first manifest as language problems.

Treatment:

Individuals will benefit from a regular schedule of speech therapy with a speech pathologist. Parent and teacher involvement with therapy, in following through and reinforcing language strategies, provides maximum benefit.

Resources:**Books for parents:**

- Childhood Speech, Language & Listening Problems: What Every Parent Should Know by Patricia McAleer Hamaguchi
- Expressive Language Disorder by Fredric P. Miller, Agnes F. Vandromme and John McBruster (Ed.)

- SMILE for Young Children: A Program for Improving Communication Skills in English and Spanish by Bilingualistics, Inc. (to be used with the guidance of a speech-language pathologist)
<http://bilingualistics.com/smile-program/>
- The New Language of Toys: Teaching Communication Skills to Children With Special Needs, a Guide for Parents and Teachers by Sue Schwartz
- The Parent's Guide to Speech and Language Problems by Debbie Feit.

Books for kids:

Reading to your child will help with their language development, especially receptive books. (<http://www.apraxia-kids.org/site/apps/nlnet/content3.aspx?c=chKMI0PIIsE&b=699375&ct=3545757>) with pictures and basic concepts. Here are a few examples:

- Jump, Frog, Jump! by Kalan R.
- Brown Bear, Brown Bear by E. Carl
- It Looked Like Spilt Milk by C.B. Shaw
- The Napping House by A. Wood
- Goodnight Moon by M. Brown
- I Went Walking by S. William
- Froggie Gets Dressed by J. London
- The Hungry Caterpillar by E. Carl

Support Groups:

- Inspire Communication Disorders Online Support Group (<https://www.inspire.com/groups/communication-disorders/topics/speech-and-language-disorders/>)
- Meet-Up group in San Diego (<http://www.meetup.com/kidswithsensorydisorders/>)

Websites:

- Voice Nation (<http://www.voicenation.com/resources/article-library/a-childhood-language-and-communication-disorder-guide-for-parents-and-teachers.shtml>), A Childhood Language and Communication Disorder Guide for Parents and Teachers

- Communicating Partners (<http://jamesdmacdonald.org/Articles/MacDonaldStart.html>)
- Late talkers (<http://health.groups.yahoo.com/group/Latetalkers/>) discussion board online
- Children's disabilities Information (<http://www.childrensdisabilities.info/>)
- Bridges 4 Kids (<http://www.bridges4kids.org/Disabilities/SLI.html>)
- National Dissemination Center for Children with Disabilities (<http://nichcy.org/disability/specific/speechlanguage#parents>)
- Language Delay Network (<http://languagedelaynetwork.com/speech-talk-specialist-articles/help-my-child-has-a-language-disorder>)
- Información en español (<http://nichcy.org/espanol/discapacidades/especificas/lenguaje>)

References:

- American Speech-Language-Hearing Association. (1993). Definitions of communication disorders and variations [Relevant Paper]. Available from www.asha.org/policy.
- Encyclopedia of Mental Disorders (2012). Expressive Language Disorder. Retrieved from <http://www.minddisorders.com/Del-Fi/Expressive-language-disorder.html>
- McLaughlin, MR. (2011). Speech and language delay in children. *American Family Physician*, 83(10), 1183-1188.
- Morales, S. (2012) Expressive Language Disorder. Children's Speech Care Center. Retrieved from http://www.childspeech.net/u_iv_h.html

FETAL ALCOHOL SYNDROME

Definition:

Fetal alcohol syndrome is a congenital syndrome caused by excessive consumption of alcohol by the mother during pregnancy, characterized by retardation of mental development and of physical growth, particularly of the skull and face of the infant.

Description:

- A condition or birth defect that results from prenatal alcohol exposure. The defects are irreversible and can include serious physical, mental and behavioral problems though they vary from one child to another.
- Both sexes affected and onset at birth.
- Developing brain cells and structures are underdeveloped or malformed by prenatal alcohol exposure, often creating an array of primary cognitive and functional disabilities.
- Also includes secondary disabilities such as mental health problems and drug addiction.
- There are as many as 40,000 babies that are born with some type of alcohol-related damage each year in the United States. FAS affects an estimated one or two out of 1,000 births in the U.S.

Characteristics:

- Distinctive facial features: small eyes, thin upper lip, short upturned nose, a smooth skin surface between the nose and upper lip.
- Poor sucking reflexes.
- Heart defects.
- Deformities of joints, limbs and fingers.
- Slow physical growth before and after birth: below average height and weight.
- Vision difficulties or hearing problems.
- Small head circumference and brain size.
- Mild to moderate mental retardation and delayed development.
- Abnormal behavior: short attention span, hyperactivity, poor impulse control, extreme nervousness and anxiety.

- Functional disabilities include poor memory, attention deficits, impulsive behavior, and poor cause-effect reasoning.

Causes:

- Drinking alcohol during pregnancy. It is unknown whether amount, frequency or timing of alcohol consumption during pregnancy causes a difference in amount of damage done to the fetus.
- Alcohol crosses the placental barrier and can stunt fetal growth or weight, create distinctive facial stigmata, damage neurons and brain structures, and cause other physical, mental, or behavioral problems.
- Major risk: 90 mL of absolute alcohol or more per day.

Implications for Speech and Language:

- Receptive and expressive language delays that involve hearing and cognitive functions.
- Speech disorders such as deficits in fluency, voice, intonation and articulation.
- Verbal learning and memory deficits.
- Hearing impairment that can lead to speech/language impairment: (a) delayed maturation of the auditory system, (b) sensorineural hearing loss, (c) intermittent conductive hearing loss secondary to recurrent ear infections, and (d) central hearing loss.
- Cognitive deficits and behavioral disorders such as ADHD can become more apparent in school-aged children with F.A.S.

Diagnosing and treating this disorder:

Although there is no cure for FAS, there are several treatment models available to treat the predominant symptoms based on medical interventions, behavioral interventions, developmental framework, advocacy model and the neurobehavioral approach. Depending on the severity of symptoms certain steps can be taken: physical facial defects can't be changed, but heart abnormalities can be monitored and may require surgery and speech and cognitive deficiencies can be helped by special services in school, and behavioral problems can be helped by counseling. Studies have shown that some protective factors can help reduce the effects of FAS and help people with these conditions reach their full potential. Protective factors include:

- Early diagnosis. A child who is diagnosed at a young age can be placed in appropriate educational classes and get the social services needed to help the child and his or her family. Early diagnosis also

helps families and school staff to understand why the child might act or react differently from other children sometimes.

- Involvement in special education and social services. Children who receive special education geared towards their specific needs and learning style are more likely to reach their full potential. Children with FAS have a wide range of behaviors and challenges that might need to be addressed. Special education programs can better meet each child's needs. In addition, families of children with FAS who receive social services, such as counseling or respite care have more positive experiences than families who do not receive such services.
- Loving, nurturing, and stable home environment. Children with FAS can be more sensitive than other children to disruptions, changes in lifestyle or routines, and harmful relationships. Therefore, having a loving, stable home life is very important for a child with an FASD. In addition, community and family support can help prevent secondary conditions, such as criminal behavior, unemployment, and incomplete education.
- Absence of violence. People with FAS who live in stable, non-abusive households or who do not become involved in youth violence are much less likely to develop secondary conditions than children who have been exposed to violence in their lives. Children with FAS need to be taught other ways of showing their anger or frustration.

Resources:

Books for Parents:

- Finding Perspective—: Raising Successful Children Affected by Fetal Alcohol Disorder by Liz Lawryk
- 9 Lives, I Will Survive by Jan Crossen 9 Lives,
- Forfeiting All Sanity: A Mother's Story of Raising a Child with Fetal Alcohol Syndrome. Jennifer Poss Taylor
- Recognizing and Managing Children with Fetal Alcohol Syndrome/fetal Alcohol Effects: A Guidebook by Brenda McCreight

Books for Children:

- An Elephant in the Living Room by Jill M. Hastings, and Marion H. Typpo
- Kyleah's Tree by Janet Muirhead Hill and Herb Leonhard.
- The Best I Can Be: Living with Fetal Alcohol Syndrome/effects by Liz Kulp and Jodee Kulp.

- Little Tree: A Story for Children with Serious Medical Problems by Joyce C. Mills and Michael Chesworth.

Support Groups:

- FASD Awareness: A Parent's Experience <http://come-over.to/FAS/LinksSuccess.htm>
- Texas: The Arc in Dallas (214)-317-1206, Austin (512)-707-0008

Websites:

- Fetal Alcohol Syndrome Community Resource Center: <http://www.come-over.to/FASCRC/>

References:

Castrogiovanni, Andrea. Communication Facts: Special Populations: Craniofacial Syndromes – 2008 Edition. (2014, February 20). Retrieved from: <http://www.asha.org/research/reports/craniofacial/>.

Fetal Alcohol Spectrum Disorders (2012, August 3). Retrieved from: <http://www.cdc.gov/ncbddd/fasd/index.html>.

INTELLECTUAL DISABILITY

Definition:

Intellectual disability is a disability characterized by significant limitations both in intellectual functioning and in adaptive behavior, which covers many everyday social and practical skills. These limitations will cause a child to learn and develop more slowly than a typical child. This disability originates before the age of 18.

Intellectual functioning—also called intelligence—refers to general mental capacity, such as learning, reasoning, and problem solving.

Adaptive behavior comprises three skill types:

- Conceptual skills—language and literacy; money, time, and number concepts; and self-direction.
- Social skills—interpersonal skills, social responsibility, self-esteem, gullibility, naïveté (i.e., wariness), social problem solving, and the ability to follow rules/obey laws and to avoid being victimized.
- Practical skills—activities of daily living (personal care), occupational skills, healthcare, travel/transportation, schedules/routines, safety, use of money, use of the telephone.

Description:

Children with an intellectual disability may:

- sit up, crawl, or walk later than other children
- learn to talk later, or have trouble speaking
- find it hard to remember things
- not understand how to pay for things
- have trouble understanding social rules
- have trouble seeing the consequences of their actions
- have trouble solving problems
- have trouble thinking logically

Causes:

Doctors have found many causes of intellectual disabilities. The most common are:

- Genetic conditions. Sometimes an intellectual disability is caused by abnormal genes inherited from parents, errors when genes combine, or other reasons. Examples of genetic conditions are Down syndrome, fragile X syndrome, and phenylketonuria (PKU).
- Problems during pregnancy. An intellectual disability can result when the baby does not develop inside the mother properly. For example, there may be a problem with the way the baby's cells divide as it grows. A woman who drinks alcohol or gets an infection like rubella during pregnancy may also have a baby with an intellectual disability.
- Problems at birth. If a baby has problems during labor and birth, such as not getting enough oxygen, he or she may have an intellectual disability.
- Health problems. Diseases like whooping cough, the measles, or meningitis can cause intellectual disabilities. They can also be caused by extreme malnutrition (not eating right), not getting enough medical care, or by being exposed to poisons like lead or mercury.

Implications for Speech and Language:

Children with an intellectual disability exhibit delays in language development.

Children and adults with an intellectual disability may need assistance with:

- following and understanding directions
- using and understanding spoken and written language
- learning new information
- understanding detailed information
- completing tasks/documents

Communication strategies can be used to facilitate communication with a person with an intellectual disability. When communicating with a person with an intellectual disability, it is important to acknowledge that each person is an individual and should be approached as such. Speak clearly, using simple language. Check for understanding by asking them to repeat instructions several times. Break each task into steps and illustrate each step. Don't assume they will transfer knowledge gained in one task or another. Use visual cues (pictures or graphics) where possible. If there is a support person, address the person with a disability and not the support person. Provide a lot of encouragement and monitor on a regular basis.

Diagnosing this disorder:

Speech Pathologists do not diagnose an intellectual disability. One criterion to measure intellectual functioning is an IQ test. Generally, an IQ test score of around 70 or as high as 75 indicates a limitation in intellectual functioning. Standardized tests may be used to determine limitations in adaptive skills. On the basis of such many-sided evaluations, professionals can determine whether an individual has an intellectual disability and can tailor a support plan for each individual. But in defining and assessing intellectual disability, professionals must take additional factors into account, such as the community environment typical of the individual's peers and culture. Professionals should also consider linguistic diversity and cultural differences in the way people communicate, move, and behave. Finally, assessments must also assume that limitations in individuals often coexist with strengths, and that a person's level of life functioning will improve if appropriate personalized supports are provided over a sustained period.

Resources:**Books for kids:**

- I Can, Can You? by Marjorie W. Pitzer
- Kids Like Me...Learn ABCs or Kids Like Me...Learn Colors by Laura Ronay
- Families or Eating the Rainbow by Rena D. Grossman
- Dr. Seuss's ABC
- Feelings by Susan Canizares
- The Feelings Book by Todd Parr
- Hugs and Kisses by Roberta Grobel Intrater
- My Very First Book of Colors, My Very First Book of Numbers, My Very First Book of Shapes by Eric Carle

Books for children about intellectual disabilities:

- Hi, I'm Ben and...I've Got a Secret by Julie A. Bouwkamp (Ages 3–8)
- My Friend Isabelle by Eliza Woloson (Ages 4–8)
- Susan Laughs by Jeanne Willis (Ages 4–8)

Books for Parents:

- Babies with Down Syndrome: A New Parent's Guide edited by Susan Skallerup
- Children with Mental Retardation: A Parents' Guide edited by Romayne Smith
- Early Communication Skills for Children with Down Syndrome: A Guide for Parents and Professionals by Libby Kumin, Ph.D.

Websites:

- American Association of Intellectual and Developmental Disabilities: <http://www.aidd.org> (800) 424-3688
- National Dissemination Center for Children with Disabilities: <http://nichcy.org> (800) 695-0285
- The ARC: www.thearc.org (800) 433-5255
- Centers for Disease Control and Prevention: www.cdc.gov (800) CDC-INFO

Support Groups:

- Type "intellectual disabilities" and search by state: <http://www.nichcy.org/state-organization-search-by-state>
- Search by disability: <http://www.childrensdisabilities.info/parenting/groups>

References:

- Gibbins, B. & McLennan, D. National Disability Coordination Officer Program. Retrieved from http://www.ndco.stepscs.net.au/documents/NDCO_DisabilityFactSheets.pdf
- FAQ on Intellectual Disability. 2010. American Association of Intellectual and Developmental Disabilities. Retrieved from: http://aidd.org/content_104.cfm
- Intellectual Disability. NICHCY Disability Fact Sheet 8. January 2011. National Dissemination Center for Children with Disabilities. Retrieved from: <http://nichcy.org/disability/specific/intellectual#def>

PREMATURITY

Definition:

An infant is considered premature when born before 37 weeks gestation. Late preterm infants are those born between 35 and 37 weeks.

Description:

Signs of prematurity include:

- Abnormal breathing patterns
- Less body fat
- Lower muscle tone and less activity than full-term infants
- Feeding difficulties due to trouble sucking or coordinating swallowing and breathing
- Soft, flexible ear cartilage
- Thin, smooth, shiny skin that is often transparent (can see veins under skin)
- Body hair
- Enlarged clitoris (in female infants)
- Small scrotum that is smooth and has no ridges, and undescended testicles (in male infants)

Characteristics:

Premature infants are at risk for long-term medical, developmental, or behavioral problems that may continue into childhood or may be permanent. Although the risk of complications increases with a lower birth weight and the more premature the infant is, it is not possible to predict long-term outcomes based on prematurity or birth weight.

Long-term difficulties in premature infants can include:

- Broncho pulmonary dysplasia (BPD)
- Delayed growth and development
- Mental or physical disability or delay
- Retinopathy of prematurity, vision loss, or blindness

Causes:

A variety of pregnancy-related problems increase the risk of preterm labor or early delivery:

- A weakened cervix that begins to open (dilate) early, also called cervical incompetence
- Birth defects of the uterus
- History of preterm delivery
- Infection (such as a urinary tract infection or infection of the amniotic membrane)
- Poor nutrition right before or during pregnancy
- Preeclampsia — high blood pressure and protein in the urine that develop after the 20th week of pregnancy
- Premature rupture of the membranes (placenta previa)

Implications for Speech and Language:

Premature birth may result in developmental delays, including speech and language delays. Children with delayed speech and language skills may benefit from early intervention to help develop age-appropriate communication skills. For more information on speech-language delays and prematurity, please see: <http://www.prematurity.org/child/language.html>.

Resources:

Books for kids:

- Born Early: A Premature Baby's Story by L. Lafferty
- Watching Bradley Grow: A Story About Premature Birth by GA Marietta.

Books for Parents:

- The Premature Baby Book: A Parents' Guide to Coping and Caring in the First Years by H. Harrison.
- Caring for Your Premature Baby: A Complete Resource for Parents by A.H. Klein and S.A. Ganson

Support Groups (Using Austin as an Example):

- Online forum and support group: <http://www.prematurity.org/>
- Any Baby Can: <http://www.abcaus.org/>
- Easter Seals Central Texas: www.centraltx.easterseals.com

Websites:

- A Primer on Premies: <http://kidshealth.org/parent/growth/growing/preemies.html>
- In Spanish: http://kidshealth.org/parent/en_espanol/crecimiento/preemies_esp.html

References:

Premature Infant. In Medline Plus. Retrieved from:

<http://www.nlm.nih.gov/medlineplus/ency/article/001562.htm>.

Premature Birth. In CDC Features. (2014, February 20). Retrieved from:

<http://www.cdc.gov/Features/PrematureBirth/>.

Prematurity. (2012, January 24). In Medscape Reference. (2014, February 20). Retrieved from:

<http://emedicine.medscape.com/article/975909-overview>.

RECEPTIVE LANGUAGE DISORDER

Definition:

A receptive language disorder is an impairment in the comprehension of a spoken, written, gestural and/or other symbol system.

Description:

When a child has receptive language disorder, he or she exhibits significant deficits in the level of development of comprehension of language. These deficits affect how the child functions socially or academically.

Children with receptive language problems can have great difficulty understanding what is said to them. Most children with a receptive language disorder will also have an expressive language disorder (difficulty using language to express ideas).

Children with a receptive language disorder can have difficulty with any of the following:

- Understanding meaning of gestures
- Following directions
- Understanding questions
- Identifying objects and pictures
- Taking turns when talking with others
- Understanding the order of words in a sentence
- Understanding plurals and verb tenses
- Understanding age-appropriate vocabulary and knowledge about objects and sequence of events
- Knowledge of the goals or functions of language (e.g. to obtain a desired object, tell a story, ask questions, comment)
- Knowledge of how to use language to achieve goals (e.g. appropriately using language to get a desired object,)
- Carrying out cooperative conversations (e.g. perspective-taking and turn-taking)

Causes:

The cause of a Receptive Language Disorder is often unknown, though it may be related to genetic factors, amount of exposure to speech and language and/or delays in general development. Receptive Language Disorders may also exist in children with developmental disorders such as Autism and Down Syndrome or medical problems such as a brain injury or brain tumor.

Diagnosing this disorder:

Speech language pathologists diagnose this disorder. When children exhibit language skills below what is expected for their age, developmental disorders are often suspected by the child's parent, pediatrician or teacher. The child is then referred to the speech-language pathologist who will conduct a full diagnostic evaluation of the child's receptive and expressive language skills, using standardized tests and informal measures. The speech-language pathologist will also evaluate other measures of communication to rule out other issues. The child's vision and hearing must be screened prior to testing as well to achieve valid test results. Children exposed to multiple languages should be screened in all languages and tested in their primary language. This multilingual assessment framework is referred to as a "difference vs. disorder" approach. Assessment data is obtained in all languages of exposure. Any noted errors or differences in communication skills are then analyzed and assigned to three main categories: 1) errors appropriate for the child's age (developmental errors); 2) errors attributed to the interaction between the two languages spoken (cross-linguistic influence); and 3) atypical errors.

Receptive language disorder is diagnosed when an individual does not demonstrate the ability to comprehend age-appropriate vocabulary, follow instructions or understand foundational communication skills such as turn-taking and perspective-taking during conversation. Careful diagnosis is important to distinguish receptive language disorder from other communication disorders and other diagnoses such as intellectual disability, autism and/or other physical and developmental problems which may first manifest as language problems.

Treatment:

Individuals benefit from a regular schedule of speech therapy with a speech-language pathologist. Parent and teacher involvement in the use of strategies learned in therapy provides maximum benefit. Treatment for a receptive language disorder is tailored to each child's needs.

Areas of treatment can include:

- Strategies to improve the child's ability to follow directions
- Techniques to improve receptive comprehension of questions (e.g. who, what, where, when), age-appropriate vocabulary, and sequencing
- Strategies for practice using language appropriately in social situations, such as taking turns in conversation.

- Helping the child use other ways to communicate when needed. This may include simple gestures, picture boards, or computers that say words out loud. This is also called augmentative and alternative communication, or AAC.

Resources:

Books for Kids:

Reading to your child will help with their language development, especially repetitive books with pictures and basic concepts. Here are a few examples:

- Jump, Frog, Jump! by Kalan R.
- Brown Bear, Brown Bear by E. Carl
- It Looked Like Spilt Milk by C.B. Shaw
- The Napping House by A. Wood
- Goodnight Moon by M. Brown
- I Went Walking by S. William
- Froggie Gets Dressed by J. London
- The Hungry Caterpillar by E. Carl

Books for Parents:

- Childhood Speech, Language & Listening Problems: What Every Parent Should Know by Patricia McAleerHamaguchi
- The New Language of Toys: Teaching Communication Skills to Children With Special Needs, a Guide for Parents and
- Teachers by Sue Schwartz
- The Parent's Guide to Speech and Language Problems by Debbie Feit
- SMILE for Young Children: A Program for Improving Communication Skills in English and Spanish by Bilingualistics, Inc. (to be used with the guidance of a speech-language pathologist)
<http://bilingualistics.com>

Support Groups:

- Growing Roots: <http://growingrootsaustin.com/>
- Inspire Communication Disorders Online Support Group
<https://www.inspire.com/groups/communication-disorders/topics/speech-and-language-disorders/>

Websites:

- American Speech and Hearing Association: <http://www.asha.org/public/speech/disorders/>
- Voice Nation: <http://www.voicenation.com/resources/article-library/a-childhood-language-and-communication-disorder-guide-for-parents-and-teachers.shtml>
- Communicating Partners: <http://jamesdmacdonald.org/Articles/MacDonaldStart.html>
- Late talkers: <http://health.groups.yahoo.com/group/Latetalkers/>) discussion board online
- Children's disabilities Information: <http://www.childrensdisabilities.info/>
- Bridges 4 Kids: <http://www.bridges4kids.org/Disabilities/SLI.html>
- National Dissemination Center for Children with Disabilities:
<http://nichcy.org/disability/specific/speechlanguage#parents>
- Language Delay Network: <http://languagedelaynetwork.com/speech-talk-specialist-articles/help-my-child-has-a-language-disorder>
- Apraxia Kids: <http://www.apraxia-kids.org/site/apps/nlnet/content3.aspx?c=chKMI0PIIsE&b=699375&ct=3545757>
- Información en español: <http://nichcy.org/espanol/discapacidades/especificas/lenguaje>

References:

- Kaderavek, J.N. (2011) *Language Disorders in Children: Fundamental Concepts of Assessment and Intervention*, Allyn & Bacon.
- Morrisey, B. (2012, May 18). Receptive Language Disorders. Retrieved from <http://www.speechdisorder.co.uk/receptive-language-disorders.html>
- Paul, R. (2006) *Language Disorders from Infancy through Adolescence. Assessment and Intervention*. Mosby.

SELECTIVE MUTISM

Definition:

Selective mutism (SM) is a psychiatric condition often caused by extreme shyness or anxiety of speaking in certain speaking situations. Children with SM are capable of talking, and often talk at home and around familiar people.

Description:

Individuals with SM are capable of speaking, but their shyness/anxiety of speaking in certain situations stops them from talking (e.g., at school, around unfamiliar people). Many people are shy at times; however, those with SM demonstrate extreme shyness. Many children with SM will talk at home when around family members or around familiar people. Sometimes SM co-exists with an expressive language disorder or bilingual language background which may cause a child to be anxious of speaking and embarrassment of speaking.

Characteristics:

- Extreme shyness with unknown people and in situations where the individual is expected to speak.
- Requires more time to warm up to people than most children
- Will often speak at home around family and around familiar people
- Makes limited eye contact

Causes:

- SM is thought to be caused by extreme shyness or anxiety in speaking situations. Shyness is considered to be a genetic trait.
- SM can be caused by anxiety related to an expressive language disorder or a bilingual language background

Diagnosing and Treating This Disorder:

A trained professional who has experience working with selective mutism (such as a psychologist or a counselor) can diagnose selective mutism. This professional will collect information about the individual's developmental history, family history, behavioral concerns, medical history, and potential stressors in the individual's environment. Treatment of SM works on getting to the root of the individual's anxiety and works on changing behaviors. If the individual's anxiety is thought to be caused by a communication impairment

(speech or language impairment), he or she should also be evaluated by a speech-language pathologist. Although a speech-language pathologist may be involved in the treatment of SM, the individual should be seen by the proper professional to address psychological causes of SM. Sometimes medicine to treat anxiety is used. The earlier a child is diagnosed with and treated for SM, the easier it is to change avoidance behaviors.

Resources:

Websites:

- Selective Mutism Group: <http://www.selectivemutism.org/>
- PubMed Health: <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002513/>

References:

Frequently Asked Questions about Selective Mutism. (n.d.). Selective Mutism Group. (2014, February 20). Retrieved from: <http://www.selectivemutism.org/faq>

Selective Mutism (n.d.). In A.D.A.M. Medical Encyclopedia online. (2014, February 20). Retrieved from: <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0002513/>

SENSORY PROCESSING DISORDER

Definition:

Sensory Processing Disorder (also known as Sensory Integration Disorder) is the inability to respond “appropriately” to ordinary experiences. A person with SPD has difficulty integrating information from the five classic senses (vision, auditory, touch, smell, and taste), the sense of movement (vestibular system), and/or the awareness of the body’s position in space (proprioception).

Description:

Sensory processing is the procedure in which we take in messages from our bodies and our surroundings. When sensory processing is typical, we interpret these messages and organize our purposeful responses. For example, think about what occurs when you climb a ladder. Your brain processes sensations such as your body moving upward and changing positions, you can feel your clothes touching your skin and your hands and feet touching the ladder. We integrate this information and then make adaptive responses such as moving our feet up the ladder rungs, lifting our own weight against gravity, and maintaining our balance.

Individuals with sensory processing disorder have difficulty interpreting these sensory messages. Individuals with SPD may sense information normally, but the information is perceived abnormally and may cause discomfort, pain or confusion.

Characteristics:

A person with SPD finds it difficult to process and act upon information received through the senses, which creates challenges in performing everyday tasks. An individual with sensory processing disorder may exhibit one, many or all of the following characteristics:

- Hypersensitivity: Overly sensitive to touch, movement, sights, or sounds
- Hyposensitivity: Under reactive to touch, movement, sights, or sounds
- Difficulty self-regulating state: Activity level that is unusually high or unusually low
- Decreased proprioceptive awareness: Difficulty knowing where one’s body is in space

Other characteristics can include:

- Easily distracted
- Physical clumsiness or apparent carelessness
- Impulsive

- Difficulty making transitions from one situation to another
- Poor self-concept
- Lacking in self control
- Social and/or emotional problems
- Inability to unwind or calm self
- Delays in speech, language motor skills or academic achievement

Causes:

Although a direct cause of SPD is unclear, we know that a discrepancy in the sensory integration process is the root of this disorder. The mid-brain and brainstem regions of the central nervous system are early centers in the processing pathway for sensory integration. Preliminary research suggests that SPD could be inherited. Prenatal and birth complications and environmental factors may also contribute to SPD. SPD often co-occurs with other disorders, such as autism, but not always.

Implications for speech and language:

Individuals with SPD often have speech and language impairments. Speech and language development requires several foundational processes including, but not limited to, the integration of auditory and visual stimuli, motor planning and proprioceptive knowledge of the body in space. Difficulties in these and other areas of sensory processing can negatively affect speech and language development.

Diagnosing this disorder:

Speech-language pathologists do not diagnosis SPD, but pediatricians and developmental specialists can diagnose SPD. SPD is not yet recognized in the Diagnostic and Statistical Manual of Mental Disorders-4 (DSM-4), but research is currently being completed to gather more information on the disorder.

Treatment:

Treatment for SPD is usually provided by occupational therapists. Treatment focuses on integrating a variety of senses including sight, sounds, smell, touch (tactile sense), proprioceptive sense, and vestibular senses. Goals for sensory integration therapy are unique to each child and vary greatly depending on the child's specific difficulties and challenges.

Areas of treatment may address:

- Gross motor skills
- Fine motor skills
- Motor planning/praxis
- Postural control
- Coordination
- Balance
- Strength

Resources:

Books for kids:

- Squirmy Wormy: How I Learned to Help Myself by Lynda Farrington Wilson
- Why Does Izzy Cover Her Ears? Dealing with Sensory Overload by Jennifer Veenendall
- Ellie Bean the Drama Queen: A Children's Book about Sensory Processing Disorder by Jennie Harding

Books for Parents:

- The Out of Sync Child by Carol Stock Kranowitz
- Sensational Kids: Hope and Help for Children with Sensory Processing Disorder by Carol Stock Kranowitz
- Raising a Sensory Smart Child by Lindsey Biel and Nancy Peske

Support Groups (Using Austin as an Example):

- The Austin Area Alliance: SPD <http://austinspd.net/>

Websites:

- Sensory Processing Disorder Foundation: <http://www.sinetwork.org/>
- Sensory Processing Disorder Resource Center: <http://www.sensory-processing-disorder.com/>

References:

- Miller, L. J., & Fuller, D.A. (2006). *Sensational Kids: Hope and Help for Children With Sensory Processing Disorder*. New York: Perigee.
- Stock Kranowitz, Carol. (2005). *The Out of Sync Child*. New York: Penguin Group.
- Wiley, S. & Moeller, M. Red Flags for Disabilities in Children who are Deaf/Hard of Hearing. (2014, February 20). Retrieved from:
<http://www.asha.org/Publications/leader/2007/070123/f070123b.htm#6>

SPECIFIC LANGUAGE IMPAIRMENT

Definition:

Specific Language Disorder (SLI) is a language disorder not caused by any other known underlying neurological, cognitive, emotional or sensory disorder, such as Down Syndrome, Autism or Hearing Impairment. Also referred to as: speech delay, language delay, developmental language disorder, persistent language impairment.

Description:

SLI is an impairment of either receptive (language comprehension) language impairment and/or expressive (language expression), not caused by any other underlying condition, that affects an individual's underlying abilities in the areas of vocabulary, morphology (word structure) or syntax (sentence structure). It is one of the most common learning disabilities, affecting 7-8% of children in Kindergarten.

Characteristics:

- Limited vocabulary
- Incorrect use of morphemes (word structures). For example, a child may omit plural endings or appropriate verb endings (e.g., "He eat" instead of "He eats.")
- Short utterance/sentence length
- Grammatical errors that are not appropriate for a child's age or linguistic background
- SLI is not a reading disability; however, 50-75% of individuals with SLI have reading disabilities
- Language abilities are lower than cognitive abilities
- Many individuals with SLI are thought as as intelligent and bright
- Often labeled as "smart but unmotivated"

Causes:

The cause of SLI is unknown; however, studies show that there is a strong genetic link to the impairment. 50-70% of children with SLI have at least one parent with SLI.

Diagnosing this disorder:

SLI is often not given the label of “SLI”, however individuals with SLI often carry a diagnosis of “Mixed Expressive/Receptive Language Impairment” or “Expressive Language Impairment.” Language Impairment is diagnosed by a Speech-Language Pathologist.

Resources:

Websites:

- ASHA: www.asha.org
- National Institutes of Health (NIH): National Institute on Deafness and Other Communication Disorders: <http://www.nidcd.nih.gov/health/voice/pages/specific-language-impairment.aspx>

References:

SLI – What We Know and Why It Matters. The ASHA Leader. Ervin, M. (2014, February 20). Retrieved from: <http://www.asha.org/Publications/leader/2001/010626/sli.htm>

Specific Language Impairment. National Institutes of Health: National Institute on Deafness and Other Communication Disorders: (2014, February 20). Retrieved from: <http://www.nidcd.nih.gov/health/voice/pages/specific-language-impairment.aspx>

STUTTERING/DISFLUENCY

Definition:

Stuttering is a communication disorder characterized by disruptions in the production of speech sounds, also called “disfluencies.” It begins during childhood and, in some cases, lasts throughout life.

Description:

Stuttering affects an individual’s fluency of speech. Most people produce brief disfluencies from time to time. For instance, some words are repeated and others are preceded by “um” or “uh”; however, producing more frequent (greater than 3%) or prolonged disfluencies, can impede an individual’s communication, resulting in interrupted and/or halted-sounding speech.

Characteristics:

Stuttering is characterized by an abnormally high number of disfluencies, abnormally long disfluencies, and physical tension that is often evident during speech. Stuttered speech often includes:

- Repetitions of words or parts of words. An example of a part-word repetition would be ” W- W- W- Where are you going?” The person is having difficulty moving from the “w” in “where” to the remaining sounds in the word. On the fourth attempt, he successfully completes the word.
- Prolongations of speech sounds. For example, ” SSSS ave me a seat.” The person is having difficulty moving from the “s” in “save” to the remaining sounds in the word. He continues to say the “s” sound until he is able to complete the word.

Note: The above mentioned disfluencies occur more often in persons who stutter than they do in the general population.

Stuttered speech may also include:

- Blocks/stops in the airflow of speech. A block is when the mouth is positioned to say a sound, sometimes for several seconds, with little or no sound forthcoming. After some effort, the person may complete the word. Some people who stutter appear very tense or “out of breath” when talking.
- Interjections such as “um” or “like” can occur, as well, particularly when they contain repeated (“u-um- um”) or prolonged (“uuuum”) speech sounds or when they are used intentionally to delay the initiation of a word the speaker expects to “get stuck on.” An example of this is: “I’ll meet you – um um you know like – around six o’clock.” The person expects to have difficulty smoothly joining the word “you” with the word “around.” In response to the anticipated difficulty, he produces several interjections until he is able to say the word “around” smoothly.

Causes:

The exact cause of stuttering is unknown. Recent studies suggest that genetics plays a role in the disorder. It is thought that many, if not most, individuals who stutter inherit traits that put them at risk to develop stuttering. The exact nature of these traits is presently unclear. Whatever the traits are, they impair the individual's ability to string together the various muscle movements that are necessary to produce sentences fluently.

Not everyone who is predisposed to stutter will develop the disorder. For many, certain life events are thought to “trigger” fluency difficulty. One of the triggers for developmental stuttering may be the development of grammar skills. Between the ages of 2 and 5 years, children learn many of the grammatical rules of language. These rules allow children to change immature messages (“Mommy candy”) into longer sentences that require coordination to produce fluently (“Mommy put the candy in my backpack”). A child who is predisposed to stutter may have no difficulty speaking fluently when sentences are only one or two words long. However, when the child tries to produce more complex sentences, he may find himself not quite up to the challenge-and disfluent speech results.

After stuttering has started, other factors may cause more disfluency. For example, a child who is easily frustrated may be more likely to tighten or tense speech muscles when disfluencies occur. Such tension may increase how long a disfluency lasts. Listeners' responses to stuttering (e.g., teasing) can aggravate fluency difficulties as well. People who stutter vary widely in how they react to the disfluencies in their speech. Some appear to be minimally concerned. Others-especially those who have encountered unfavorable reactions from listeners-may develop emotional responses to stuttering that hinder speech production further. Examples of these emotions include shame, embarrassment, and anxiety.

Implications for Speech and Language:

Stuttering may have an impact on some daily activities, specifically those that a person finds challenging to perform. For some people, talking on the telephone or talking before large groups may result in communication difficulties. For most others, however, communication difficulties occur across activities at home, school, or work. Some people may limit their participation in certain activities. Such “participation restrictions” often occur because the person is concerned about how others might react to disfluent speech. Other people may try to hide their disfluent speech by rearranging the words in their sentence (circumlocution), pretending to forget what they wanted to say, or declining to speak. Other people may find that they are excluded from participating in certain activities because of stuttering. Clearly, the impact of stuttering on daily life can be affected by how the person and others react to the disorder.

Communicate more effectively with someone who stutters:

Often times, people are unsure of how to communicate with people who stutter. When talking with people who stutter, the best thing to do is give them the time they need to say what they want to say. Look them in the eye and try not to finish sentences or fill in words for them. Doing so only increases the person's sense of time pressure. Also, suggestions like "slow down," "relax," or "take a deep breath" can make the person feel even more uncomfortable because these comments suggest that stuttering should be simple to overcome, but it's not!

Keep in mind that different people who stutter will have different ways of handling their speaking difficulties. Some will be comfortable talking about it with you, while others will not. In general, however, it can be quite helpful to simply ask the person what would be the most helpful way to respond to his or her stuttering. You might say something like, "I noticed that you stutter. Can you tell me how you prefer for people to respond when you stutter?" Often, people will appreciate your interest. You certainly don't want to talk down to them or treat them differently just because they stutter. However, you can still try to find a matter-of-fact, supportive way to let them know that you are interested in what they are saying, rather than how they're saying it. This can go a long way toward reducing awkwardness, uncertainty, or tension in the situation and make it easier for both parties to communicate effectively.

Diagnosing this disorder:

Diagnosing stuttering requires the skills of a certified speech-language pathologist (SLP).

During an evaluation, an SLP will note the number and types of speech disfluencies a person produces in various situations. The SLP will also assess the ways in which the person reacts to and copes with disfluencies. The SLP may also gather information about factors such as teasing that may make the problem worse. A variety of other assessments (e.g., speech rate, language skills) may be completed as well, depending upon the person's age and history. Information about the person is then analyzed to determine whether a fluency disorder exists. If so, the extent to which it affects the ability to perform and participate in daily activities is determined.

For young children, it is important to predict whether the stuttering is likely to continue. An evaluation consists of a series of tests, observations, and interviews designed to estimate the child's risk for continuing to stutter. Factors that are noted by many specialists include the following:

- a family history of stuttering
- stuttering that has continued for 6 months or longer
- presence of other speech or language disorders
- strong fears or concerns about stuttering on the part of the child or the family

No single factor can be used to predict whether a child will continue to stutter. The combination of these factors can help SLPs determine whether treatment is indicated.

For older children and adults, the question of whether stuttering is likely to continue is somewhat less important, because the stuttering has continued at least long enough for it to become a problem in the person's daily life. For these individuals, an evaluation consists of tests, observations, and interviews that are designed to assess the overall severity of the disorder. In addition, the impact the disorder has on the person's ability to communicate and participate appropriately in daily activities is evaluated.

Treatment:

SLPs work to help people who stutter lessen the impact or severity of disfluency when it occurs. The goal is not so much to eliminate disruptions in fluency-which many people find difficult to do-but to minimize their impact upon communication when they do occur. People may be taught to identify how they react to or cope with breaks in speech fluency. They learn other reactions that will lead to fluent speech and effective communication. As people become better at managing fluency in therapy, they practice the newly learned skills in real-life situations.

In addition to treatment provided by SLPs, some people who stutter have found help dealing with their stuttering through stuttering self-help and support groups. In general, stuttering support groups are not therapy groups. Instead, they are groups of individuals who are facing similar problems. These individuals work together to help themselves cope with the everyday difficulties of stuttering.

Many support group members report that their experiences in the support group improve their ability to use techniques learned in therapy. Thus, many people benefit from participating in treatment provided by an SLP and a stuttering support group. Indeed, most support groups have developed strong partnerships with the speech-language pathology community to promote and expand treatment options for people who stutter.

Resources:

Books for Kids:

- Sometimes I Just Stutter (“Je begaie”) by Eelco de Geus
- Jeremy and the Hippo by Gail Wilson Lew
- Jason's Secret by Ellen-Marie Silverman

Books for Parents:

- If Your Child Stutters: A Guide for Parents 8th edition. The Stuttering Foundation Online Store.

Support Groups:

- Stuttering Home Page Chat Room www.mnsu.edu/comdis/kuster/chat/chatroom.html

Websites:

- National Stuttering Association: www.nsastutter.org/
- Stuttering Foundation of America: www.stutteringhelp.org/
- American Speech and Language Hearing Association: www.asha.org
- International Stuttering Association: www.isastutter.org/
- Fundación Americana de la Tartamudez: www.tartamudez.org
- Stuttering Homepage: <http://www.mnsu.edu/comdis/kuster/>

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ABOUT THE AUTHORS

Bilingualistics is a team of bilingual speech language pathologists based in Austin, Texas U.S.A. Every small act at Bilingualistics honors our commitment to each other, to improving the lives of our families, and to providing speech pathologists with research-based information that is immediately applicable, and user-friendly.

There is a cultural or linguistic component to many of our resources and continuing education courses. Our caseloads, like most nationally, are culturally and linguistically diverse. The success that we have had with our clients has translated into an expansion of our services, research, and presentations that we give nationally and internationally. Visit us at www.bilingualistics.com.