

Addressing Apraxia of Speech in the IEP

The various names “Apraxia of Speech” or “Childhood Apraxia of Speech” are somewhat misleading, as they bring to mind some kind of speech disorder that you can then expect to be “fixed” through speech therapy. Since Apraxia is often referred to by other names, such as “Dyspraxia” or “Developmental Dyspraxia”, getting clear information on it can be confusing and time-consuming. In fact, much of the research on Apraxia actually references the disorder as *Dyspraxia*, making it hard to find for parents who have never heard any other term for Apraxia. And if it was a speech therapist who diagnosed Apraxia, parents may not ever know that there are many other aspects to Apraxia besides just speech.

In fact, Apraxia is not a speech delay, and Apraxic children rarely have educational needs that are just in the area of communication. As a **neurologically-based motor planning disorder**¹, Apraxia can and does affect many other areas that significantly impact a child’s educational performance in the classroom. And yet, many Apraxic children still have IEPs that focus almost exclusively on speech and language development. This narrow focusing on communication in the classroom neglects crucial aspects of a child’s educational needs.

So what else does Apraxia affect in the school setting?

As a motor planning disorder, Apraxia can:

- Delay or alter the coordination of **fine motor movements** related to handwriting, using scissors, opening up a school locker, opening classroom doors, and completing fasteners on clothing – an important component of becoming independent in the restroom.
- Impact **task sequencing** for completing classroom work, developing reading and decoding skills, and making progress in the process of writing (separate from the mechanics of handwriting).
- Make it difficult for children to **generalize a skill** that they have learned in one setting, such as a therapy room, into another setting, such as a classroom or playground.
- Make children struggle with **visual-spatial memory** and specific learning disabilities, as well as working memory².
- Result in **auditory processing difficulties** that affect a child’s ability to follow complex verbal directions or to take in novel verbal information (and what is school if not NEW information presented on a daily basis?).
- Impact the physical process of **eating**, if a child’s oral motor movements are not developed enough for age-appropriate chewing, swallowing, or keeping their food in their mouth, or if their motor coordination skills make using a fork or spoon a challenge³. This obviously makes lunchtime in a school cafeteria a time of stress and difficulty, rather than a relaxing break from classroom instruction.
- Cause any type of **sensory integration dysfunction** that affects classroom behavior, attention, focus, and the ability to transition easily from one activity to another⁴.

In its more severe forms, Apraxia can also:

- Affect **gross motor movements** needed for accessing playground equipment, maintaining balance on classroom chairs, and navigating stairways, especially when there are a large number of other children on the stairs at the same time. Low muscle tone, called hypotonia, is common in Apraxic children, and can affect the quality of motor movements as well as balance and coordination.
- Affect **visual-motor skills** needed for visual tracking and refocusing rapidly from the board to the desk and back again, depth perception, or for using both eyes together to make sense of what they are reading or writing⁵.

¹ Dewey, D. (1995). “What is Developmental Dyspraxia?”. *Brain and Cognition* Volume 29, Issue 3, Pages 254-274

² Alloway, TP; Archibald, L (2008). “Working Memory and Learning in Children with Developmental Coordination Disorder and Specific Language Impairment”. *Journal of Learning Disabilities* 41 (3): 251–62

³ Boon, Maureen. (2001). *Helping Children with Dyspraxia*. Philadelphia, PA: Jessica Kingsley Publishers.

⁴ Boon, Maureen. (2001). *Helping Children with Dyspraxia*. Philadelphia, PA: Jessica Kingsley Publishers.

⁵ Colenbrander, August. (2010). “Assessment of functional vision and its rehabilitation”. *Acta Ophthalmologica*. Volume 88, Issue 2, p. 163-173.

What else can go along with Apraxia?

Like many neurological disorders, Apraxia or Childhood Apraxia of Speech can have what are called **comorbid conditions**. A comorbid condition is one that occurs along with Apraxia, but is not part of the Apraxia itself. Many Apraxic children have such comorbid conditions as:

- ADHD or ADD
- Sensory Integration or Sensory Processing Disorder
- PDD-NOS or Asperger Syndrome
- Dyslexia or other nonverbal learning disability
- Other expressive language disorders that may affect their ability to sequence words in the correct order or recall words spoken to them.

And since Apraxia can be caused by another **neurological problem** such as a prenatal stroke, seizures, or head trauma, there are various issues arising from those causes that also affect the child in the classroom.

So what does that mean for the IEP?

While no one professional can address all of a student's needs related to Apraxia, the IEP team as a whole can put in place a combination of services and supports to help a child succeed in the classroom and throughout the school environment. An ideal IEP addresses all areas of the child's needs, and includes several goals and objectives to focus on all those areas, including communication, fine motor development, sensory integration needs, academics, and gross motor skills if needed. If your child's IEP only includes speech and language goals, look back at his or her Multi-Factored Evaluation to see what other needs were identified, and ask for those to be included in the IEP goals and objectives.

Special Education Services are the actual teaching strategies and techniques provided to your child by a certified special education teacher, for a specified amount of time. This is IN ADDITION to or IN PLACE OF the general education classroom and teacher for your child's grade. For example, if your child struggles with reading, then they have *additional* reading instruction from a special education teacher, *or* they may *replace* their regular classroom reading instruction with separate reading instruction from a special education teacher, often in a separate classroom. Sometimes, they may have both.

Related services are added to an IEP to support the goals and objectives, and should not be completely disconnected from what is happening in the classroom. A child's Speech and Language Therapist, Occupational Therapist, and Physical Therapist should be spending adequate time in the classroom setting as well as in a therapy room, in order to help their student generalize skills outside of the therapy room and back into the classroom to promote classroom success. Therefore, related services should be happening in more than one physical location.

Accommodations are changes made to a child's classroom, teaching methods, schedule, or assignments, that allow them to succeed in the *same general curriculum* as their peers at school. They are NOT services provided to the child. For example, a child who has difficulty reading and processing written information, may have extended time for classroom work and tests as an accommodation in the IEP. A child who takes longer to navigate stairs may have the accommodation of being dismissed from each class 3-5 minutes early in order to have time to safely travel on the stairs to his or her next class. A child who cannot write in an efficient or legible manner may have a scribe for writing assignments, especially tests, as an accommodation. A child with limited attention may have shortened homework assignments, such as completing odd number math problems instead of all of them. (A child who ONLY needs accommodations but no related services or educational needs, does not need an IEP. Instead, they would have a 504 plan.)

Modifications are changes made to the general curriculum itself, so that a child who can't understand the general curriculum can continue to learn. However, the child is NOT learning the same general curriculum as his or her peers, and may eventually experience deficits in their knowledge that cannot be regained. So, modifications should be considered only after the child is not successful in the general curriculum with accommodations and special education services.

How do all of these things get added to the IEP?

Since the IEP stems directly from needs identified in the evaluation, a child's **Multi-Factored Evaluation** is the place to start. The evaluation should target *all* of these areas, in order to identify ALL of a child's educational needs. If those areas are not included as part of that evaluation, then it is much more difficult (if not impossible) to justify an IEP goal to address that area later on. Therefore, it is crucial that the Multi-Factored Evaluation (called an ETR in Ohio) assess fine motor, gross motor, vision, hearing, academics, and speech AND language separately from one another, in order to gain the most comprehensive view of the child's educational needs as possible.

If your child's school does not have someone experienced with Apraxia to complete one or more areas of the evaluation, then ask for an independent evaluation in those specific areas from someone who *is* experienced. For example, if your child uses sign language or an Augmentative Communication Device, then the Speech Language Pathologist who evaluates your child should have experience and knowledge of that communication method. In some areas, schools do not employ staff who are qualified to assess that area. For example, visual-motor skills need to be assessed by a qualified optometrist or ophthalmologist, or by a teacher certified in the area of visual impairment, through a functional vision assessment. It is NOT the same thing as a vision screening completed by a school nurse.

You should also provide evaluations and reports from private therapists who work with your child, as well as from the physician(s) who diagnosed and is monitoring your child's Apraxia, to be included in the Multi-Factored Evaluation. However, it is important to remember that just because you provide these reports, does NOT mean that your school district has to accept them in the evaluation itself. If you and your district disagree on whether or not a private report from a therapist or physician should be part of the Multi-Factored Evaluation, then you have the right to DISAGREE with the results of the evaluation, and to either ask for an independent evaluation at the district's expense, or file for due process. Understanding your parent rights at this stage is very important!

Once you are satisfied with the Multi-Factored Evaluation, you are ready to move forward with the IEP.

Content Areas for IEP goals & objectives

Expressive Communication: Speech AND Language

Communication goals are very individualized, and can be separated into "Speech" and "Language". Many Apraxic children's IEPs focus only on Speech, and don't consider Language as a separate issue. However, if a child can produce a sound or word (speech) but can't use it in a conversation (language) outside of the therapy room, they are not communicating – they're only parroting what they've been taught to say. Thus, BOTH are important in an IEP.

Speech goals are usually developed and monitored by the Speech Language Pathologist (SLP). Speech goals may include specific phonemes that a child needs to work on, which vary from one child to the next. They may include oral motor activities to promote speech, including activities to promote the use of the top of the tongue for certain consonants (t, d), lateralizing the tongue (side to side movement), or using both lips together for bilabial sounds (b, p, m). They may include practicing phonemes in different positions of words (beginning, middle, end), or combining consonants and vowels in different ways to expand on a child's baseline skills. As the child progresses through the phoneme and then the single word level, speech goals should focus on producing sounds in connected speech (several words together), which is usually where Apraxic children's speech breaks down and becomes unintelligible. Speech goals depend on the child's present levels of performance, which the SLP would present in the IEP as the child's baseline.

Language goals aren't usually developed or addressed solely by the SLP, while speech goals typically are. Goals for language should not be neglected, since the foundation for learning depends on the ability to communicate with intent rather than just to repeat random syllables. Communication leads to social interaction, which is a big struggle for so many Apraxic kids. In a program that uses both English and American Sign Language, a language acquisition goal may also include sign language. For example, there may be a goal for a child to spontaneously communicate their wants and needs to an adult, and then later to a peer, in 2-3 word sentences, in voice, sign, or both. Or, a child may have a goal to respond to a request for play from a peer, and later to initiate a request for play from a peer, for a minimum of 2 exchanges, and then later progressing to 3 or even 4 exchanges, again in voice, sign, or both.

Other language goals may focus on labeling common classroom items, both upon request and then spontaneously, which the classroom teacher would monitor rather than the SLP. The therapist and teacher may jointly focus on expanding a child's language usage from 1-2 word phrases to more complex sentences of 3-5 signs or spoken words. Putting words into the correct order in a sentence is also an area of need for some children, as is using appropriate pronouns such as "I" instead of "me".

Caution: Language goals that specify a certain number of words or signs to be added per year can be tricky, especially without a solid documented baseline to start from. In addition, if they are not worded correctly, then a child may get credit for just copying a word or sign, or only producing the word upon request, instead of spontaneously using those words in conversation (which would, again, be the GOAL of communication). Therefore, this kind of a goal statement may be more appropriate as an objective under a larger language acquisition goal, than as a stand-alone goal in and of itself. Apraxic students need to learn to communicate with each other, not just repeat what is signed or spoken to them, so the best IEP goals and objectives in this area focus more specifically on HOW they will use their newly acquired language in the classroom with teachers, peers, and other adults (therapist, cafeteria staff, etc.), rather than just adding a set number of new words.

In light of the importance of both Speech AND Language, Apraxic students should receive speech and language therapy that focuses both on specific *Speech* goals, as well as *Language* goals for communicating their wants, needs, and knowledge of the curriculum, as well as for developing social communication with peers. Again, speech and signs are only communication if the child is able to use them in language, both to interact and to communicate!

Receptive Communication & Hearing

It may seem obvious, but every Apraxic child should have received a hearing test performed by an audiologist prior to being diagnosed with Apraxia. This does not mean a hearing screening performed by the nurse at the pediatrician's office! It should be a full hearing test, in a sound booth, by an audiologist. If the child could not be tested in a sound booth for any reason, then other types of hearing tests, such as an ABR, should be considered. Even a mild hearing loss can affect a child's speech sound production. Even though a child may have passed their newborn hearing screen, they can lose some of their hearing after birth that may go undetected if the child is still reacting to environmental sounds. Speech sounds are much softer and often at a higher frequency than environmental sounds, so a mild hearing loss in the high frequencies can have a significant impact on a child's ability to detect and discriminate speech sounds. If they can't hear a speech sound, they can't be expected to say it themselves without support.

Some Apraxic children have auditory processing disorders, so they do not process spoken language the same way that typical children and adults do. New or complex speech may be difficult for Apraxic children to understand and sequence, so following directions may be a challenge for them, particularly multi-step directions such as a teacher might give in a classroom setting. While there are specific tests that can be given by an audiologist to diagnose an auditory processing disorder, there is a minimum age for this testing, and a child cannot be completely non-verbal or the test is invalid.

Even without such testing, Apraxic children can show delays in receptive language as they get older, and IEP goals should address those delays. For example, an IEP goal may be for the child to follow 2-step or 3-step directions with modeling and repetition, then with fading modeling and repetition, until finally having the child follow them independently. These goals can be monitored by both the teacher and the speech language pathologist.

Fine motor

Fine motor goals for Apraxic children often focus on developing a tripod pencil grip for writing, writing their name (tracing, then copying from a model, then progressing to writing independently), using scissors to cut with in $\frac{1}{4}$ " of a line, and to cut out a circle while using one hand to cut and one hand to rotate the paper. The latter is an example of a bilateral manipulation tasks (using both hands together), which many Apraxic kids struggle with, and should not be ignored in an IEP if the child has this need. A slant board and weighted pencil or pencil grip are often beneficial to an Apraxic child, as they are often better able to write on an inclined or vertical surface than they are on a horizontal surface. These are accommodations that can be added to the IEP, even without having Occupational Therapy as a related service.

Another area of fine motor focus in the classroom is crossing midline, because reading and writing go from left to right and therefore cross the midline of the body. If a child can't cross midline, they will really struggle with learning to write. Since so many Apraxic children have a great deal of difficulty crossing

midline, this is something that always should be assessed in the Multi-Factored Evaluation. While most Apraxic children with fine motor delays receive Occupational Therapy, classroom activities such as Brain Gym and yoga also help with this skill, and can be implemented in the classroom for all children, not just the Apraxic student. As so many fine motor activities take place in the classroom as part of the regular school day, fine motor goals in an IEP are typically set by an occupational therapist and the teacher together, and monitored by both.

Sensory Integration

If the child has sensory needs, adaptations may need to help with this, such as the use of a sensory diet, classroom breaks to use sensory diet stations or to get a drink of water, wedge cushions for floor sitting, chewy items to give them oral motor input, a “fidget” (a small item they can hold to help them focus during circle time or large group activities), or adaptive seating that gives them more proprioceptive input to their bodies (therapy ball seating, a chair with side support and/or foot rest, etc.). Some children may need to be allowed to change classes a few minutes before the other students, so that crowded classroom hallways are not overwhelming for them. These are all accommodations rather than goals, and do not require a student to be receiving Occupational Therapy in order to be included in the IEP.

Some children *do* need IEP goals for their sensory needs, often in order to “pace themselves”, since they may rush through their work and make mistakes. Others need IEP goals to help them improve their focus or attention so that they do not get easily frustrated and give up on a task. Some children become so frustrated or overwhelmed by their sensory needs, that they develop classroom behaviors that are mis-labeled as behavioral problems rather than as a sensory integration dysfunction. An Occupational Therapist (OT) can design strategies and supports to help a child with sensory needs, and both the OT and the teacher should implement those strategies in the classroom and other school settings. As children get older, they often learn to manage their own sensory needs more effectively, and their need for OT may decrease or be eliminated outside of a consultative capacity. Again, sensory strategies to assist Apraxic children can still be continued in the IEP as accommodations, even after direct OT is no longer needed as a related service.

Academic

Academic goals focus on those areas that an Apraxic child struggles with, NOT on what they are supposed to be learning as part of the general curriculum for their grade level. Remember, IEP goals are REACTIVE, not PROACTIVE, so they address specific deficits that already exist, rather than potential problems that may occur in the future. Academic goals can include language arts, both reading and writing, as well as math computation and reasoning. Sometimes they include science and social studies as well.

Early childhood IEP goals may start with letter and number recognition and identification, then writing the uppercase letters and numerals, and then on to writing the lower case letters. Teachers may look at identifying letter sounds, and may also write goals for color and shape recognition and identification if a child is struggling in this area. They look at rote counting and then counting objects with 1-to-1 correspondence, usually 1-10 at first and then progressing to 11-20. Eventually, they move on to recognizing the color words and number words (“seven” instead of just “7”; the word “blue” instead of just showing the color). If a child is doing well in all of these areas compared to their typically-developing peers, than they do NOT need academic goals in these areas.

If a child is more delayed with pre-reading skills and still needs to develop the concept of print, the teacher may write a goal for opening a picture book from the front and right-side-up, and turning the pages appropriately so that they move through the book from left to right. These goals are developed by the teacher and are also very specific to the child - they depend on what kind of baseline academic skills the child already has (identified in the Multi-Factored evaluation at first, and later through curriculum based assessments completed each year).

Older students who have mastered these early academic skills may have IEP goals that target literacy skills, especially as so many Apraxic children have a diagnosed reading disability such as dyslexia⁶. These goals vary widely, but may include using decoding skills and context clues to figure out the meaning of an unknown word when reading; mastering multiple meanings of words or synonyms and

⁶B. C. McNeill^{1†}, G. T. Gillon¹ and B. Dodd² (2009). “Phonological awareness and early reading development in childhood apraxia of speech (CAS)”, *International Journal of Language and Communication Disorders*. Vol. 44, No. 2 , Pages 175-192

antonyms of vocabulary words; answering comprehension questions about a text read at their instructional reading level; or describing the main characters, plot, or other details about a story they have read. Goals for writing may focus on using parts of speech correctly; spelling and punctuating correctly; organizing their writing to include a clear introduction, supporting details, and a conclusion; or writing more complex sentences using a sentence pattern or word bank. Academic goals are developed by the teacher and supported by both the special education teacher and the general education teacher.

Vocational/Work Habits

If a child has some behavior problems that are interfering with learning, those should be addressed also. These are typically tied in with the sensory integration piece, and have OT services attached to them. It's rare to see an Apraxic child whose behavior is not tied at least in part to sensory integration or frustration with communication. Once those issues are addressed, their behavior problems tend to decrease dramatically or disappear altogether. If not, then a child may benefit from a Functional Behavior Assessment by the school psychologist, followed by IEP goals, objectives, and sometimes services (i.e. counseling) to address the needs that are identified through the assessment. These are highly specific to each child.

Functional Vision

Many Apraxic children have difficulties with their functional vision. This is NOT the same as visual acuity, which is what most children have their vision tested for (near-sightedness or farsightedness, or astigmatism). Functional vision is how a child uses their eyes together (binocular vision) and for everyday tasks such as tracking from left to right (used for reading), refocusing rapidly from near to far and then back again (from the paper on their desk to the board and back again), depth perception (stairs, playground equipment, etc.), and locating objects in their field of vision (pencil on their desk, numbers on a page, etc.). In short, functional vision is how the child uses his or her vision to perform routine tasks in different places and with different materials everyday⁷.

So how do you know how your child does this? A functional vision assessment looks at this area. It should be performed by an optometrist or ophthalmologist trained in this area, or by a teacher certified in the area of visual impairment. Glasses may be prescribed, such as prism glasses, to help correct some of these issues. Accommodations can be made, such as limits on the distance between the student and the teacher, enlarged font, contrasting colored paper, and decreased distractions in the child's visual field. The recommendations that the eye doctor makes from this assessment should become part of a child's multi-factored evaluation, and thus be incorporated into the IEP as they apply to a school-based setting.

Conclusion

Any IEP should include any or all of the above components that are applicable to the Apraxic child. If they are not an area of need at the time of the IEP, they should be re-considered every year as the IEP is updated. This can be documented in the present levels and/or profile to establish that there is not a delay or a concern for that area, based on teacher and therapist evaluations. If private therapists make recommendations about school accommodations or services, those should be given to the school immediately, and an IEP team meeting held as soon as possible to incorporate those recommendations into the IEP.

If at any time the parent feels that these areas are not being considered or addressed as needed, they should speak up and tell the district – never assume that the teachers and therapists are the only experts on educating the child. Educators work with children with all kinds of needs, and Apraxia is just one of those needs. They cannot be expected to know everything there is to know about every disability. They rely on information from other sources, including parents, to supplement their own knowledge and experience. The parent is a vital part of the IEP team, knows their child the best, and is generally their child's first and best advocate. If the parent does not speak up on behalf of the child's needs when the child is too young to do so for themselves, then their child may not receive all of the assistance and/or services needed to be successful in school. Apraxic children CAN learn, but they learn best when their IEP looks at the whole child, not just speech.

⁷ Colenbrander, August. (2010). "Assessment of functional vision and its rehabilitation". *Acta Ophthalmologica*. Volume 88, Issue 2, p. 163-173.