

Augmentative and Alternative

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Most girls will benefit from Augmentative and Alternative Communication (AAC), which includes any methods used in place of speech.

Everyone uses AAC through written language, body language and facial expression.

These avenues may be difficult for the girl with RS, so she may need to use eyegaze, head pointing, communication boards, switches and voice output communication devices.

Methods for AAC could be divided into three levels of technology complexity.

- No Tech methods would include signing, using pictures and objects without voice output, facial and body language, and eye gaze.
- Low Tech methods would include devices with voice output, but only one choice or one page recorded on them.
- Higher Tech devices are capable of using a number of pages and a larger vocabulary can be stored. The Highest Tech devices are like computers, allowing for the greatest number of options.

No Tech Methods

Low Tech/Mid Tech Methods

High Tech Methods

No Tech Methods

“No tech” methods include signing, using pictures and objects without voice output, facial and body language, and eye gaze.

Communication Boards

Communication boards can be a very functional and portable way to provide access to choices. They can be made out of anything from a manila folder covered with

contact paper, to a foam board with a velcro strip along its length, to a large piece of cardboard, to the front of your refrigerator. They can hold objects velcroed on or placed in pockets, pictures, words, or any combination. They can be set up so that she can take pictures off and hand them to a receiver, or point with her finger or even her nose, a head pointer or light. They can be stationed anywhere in a classroom and geared to specific activities in that area, placed on a lapboard to go with her, or placed in strategic locations around your house. She can point to them by herself or with someone steadying her arm or head.

Generally, communication boards should be used expressively. A goal is to get her to initiate use of the board without always just responding to questions. A board can also be used to show academic knowledge, holding colors, letters, or words for her to identify when named. Remember that pointing to named pictures or academic information can be a good teaching tactic, but it may quickly become boring for your daughter. She has a great need to express herself, and that should be the main purpose of the boards. Remember to place social language, information about favorite people, etc. on boards whenever possible. When boards are made for specific activities, they should contain conversational words such as "Wow", "Cool", "Uh Oh", or "My turn".

Calendar Boards

Calendar Boards or Boxes are similar to communication boards, but are generally used receptively. They contain pictures or objects which show the activities of the day. One might start with circle time, include therapies which occur that day (maybe a picture of the therapist), lunch, art, bus, etc. Her teacher can use a piece of cardboard with a Velcro strip, and each morning Velcro pictures or words depicting the schedule on the board. This can be discussed with her at the beginning of the day and before each change of activity. When an activity is finished, its picture or name can be placed in an envelope at the end of the board. Calendar boxes can be lined up in a row, with each holding an object which is taken out during the activity and picture symbolizing an activity. Then, when the activity is completed and the object is returned, the box is closed. Daily calendars can be extremely helpful with girls who are upset by changes and transition, since they can anticipate what comes next. They can also help teach sequencing skills.

Head Pointers

A head pointer can be a light attached to a visor or headband. Or an actual pointer can be connected to head straps made to fit firmly on her forehead or chin and angled so that she can touch pictures, words, letters, or a communication device as accurately as possible.

When using a laser light pointer, care must be taken to keep the beam out of others' eyes, as it may be harmful. Some small flashlights and lasers also heat up and care must be taken to protect skin.

A pointer can be very effective for a girl who has relatively accurate head movement, but little hand use. It may be much quicker and easier than gearing up a hand and arm for a controlled movement.

Make sure when using a pointer that the communication device is not held too close for her to see it accurately.

It is also important to make sure the laser or pointer is lined up with her eye gaze or the result can be very confusing.

Eye Pointing and Blinking

Pointing

Eye gaze or eye pointing can be a very good way to communicate, but is sometimes difficult for the girl with RS. It may help to space things far apart or to place them in an up-and-down plane instead of side-to-side. There are a variety of ways to hold or place pictures or objects for eye gaze. Positioning of both the girl and the objects or pictures is important. Make sure she is positioned for maximum stability of her trunk and head so that her gaze can be accurate. Observe the direction she watches the best, down on a table, on a slanting board, up at eye level, mostly to the left, etc., and use this information for placement. If possible, teach her to look around at all the items until she sees what she wants, stares at it, then looks at your face to make it clear she has made a choice.

There are a variety of homemade and commercially made holders for eye gaze pictures or objects. An E-tran is large clear plexiglass board with a hole in the center or made in an open three sided shape for the other person to watch through. Items are attached around the outside, usually by using Velcro. A similar, but more easily portable holder can be homemade out of PVC pipe and velcro. It can be placed on a table or held, and tilted in the best direction. An eye gaze vest is worn by the receiver person, and can have velcro or pockets on the front to contain items.

Blinks

Parents are very creative in finding ways to use their daughter's most available movement for communication. In addition, there are some new computer systems which use a camera to track eye movements and eye blinks to control programs. A few girls have been successful in operating these.

Using Yes and No

Parents have discovered many creative ways to make "yes/no" work for their daughters.

They also suggest a third option of "maybe" or "I don't know" because sometimes the answer is not "yes" or "no".

Make sure your questions are clear and concrete at first. Sometimes it helps to tell her both possibilities first, for example, "Do you want to stay home or go in the car?", then ask each separately to allow her to answer, and be ready to honor her choice.

Generally it is best to keep the "yes" and "no" consistently in the same positions, rather than switching them, though some parents have found switching helpful in clarifying answers.

Flash Cards

Using flash cards can be effective because they are big and have the words printed with the picture too.

PECS

Picture Exchange Communication System (PECS) is a communication system which can be used successfully with children who have a wide range of communicative, cognitive, and physical difficulties. It begins with teaching a student to exchange a picture of a desired item with another person, who immediately honors the request. It is important to note that what is on the picture being exchanged is not relevant at this point in time. What is relevant is that something is given and something is received in a token exchange system. Verbal prompts are not used, in order to build immediate initiation and to avoid dependency on prompting. The system is then used to teach initiation of communication at a distance, and then to teach discrimination of symbols, finally putting them all together in simple sentences. Eventually, the student is taught to comment and answer direct questions.

PECS needs to be done often. Teachers typically begin using it once a day, and once a routine is established, they build in other times during the day. If this system is being used, it is very important that the parent be trained in it as well and use it at home for maximum benefit. However, requesting is only one small part of communication and PECS should be combined with other methods of communication. PECS may not be effective with every child.

Low Tech/Mid Tech Methods

"Low tech/Mid tech" methods include devices with voice output, but only one choice or one page recorded on them.

Switches

Through the use of cause and effect she learns, sometimes accidentally, that "If I do this, something predictable will happen." At first, use the switch to activate something she already enjoys such as a tape recorder with music she loves or a VCR with her favorite movie. When using the switch is rewarding, she will be more willing to do it. She may need help to steady her hand or press harder. To connect a switch to an electrical, rather than a battery run device, you will need an extra piece of equipment to change the current. Explore different switches to see which works best, looking at pressure needed for activation, size, pressing versus swatting, etc.

Single switch talkers come in various sizes and shapes. They can be used alone or in multiples, spread out to get the best accuracy. Pictures or even objects can be velcroed or taped onto switches to show a message which you can record and change as often as needed. Some communication devices come with jacks set up to plug in multiple regular switches, which can be used in place of single switch talkers. The device is then programmed rather than each switch, but pictures can still be placed on them. Switches can be placed at strategic locations at home or in the classroom, so she can indicate bathroom, food, music or whatever she chooses. Some examples of switch talker use at school are; during circle time she can say "I'm here" or she can be the child who asks what the weather is today. She can take messages to another teacher down the hall, going with a friend. She can say "How is it going?" to a cute boy. She can even say the Pledge of Allegiance. Having verbal output is very rewarding itself both to a girl and to recipients of the message.

Switches can be used to operate computers and communication devices, both for simple cause and effect programs and for more complex programs which require scanning. This can be a difficult concept, because a girl must follow a light or box as it moves across a line of pictures and be able to press a switch to stop it as soon as it reaches her choice. Some simple communication scanners called clock scanners can contain several pictures, and a switch is hit to start and stop a dial as it moves around the set of pictures.

Positioning And Switch Placement

Positioning her for maximum hand use and accuracy is important. Her feet should be flat on the floor or on some other supporting surface. To get her to use her hand to activate a switch, place her non-dominant hand in her lap or hold it down gently. This will help break up the hand movements which interfere. Try placing her dominant forearm on a table or desk for support and stability needed to activate a switch. She may need instead to have room to wind-up and use her arm to swat at

the switch. You can use any part of her body which works to activate switches, including cheek, chin, foot, knee, or elbow. Look for where she has the most functional movement.

Beginning Use Of A Switch

To start with her hand, try placing the switch just to the inside (thumb side) of her dominant hand. It should be positioned so that it is as easy as possible to activate. In the beginning, she may press the switch accidentally. Soon she will begin to understand the connection and learn to press it on purpose. If she doesn't attempt to press the switch herself, you can tell her to "press the switch" and wait a few seconds. Then, if needed, help her move her hand onto the switch by gently lifting her arm just under her wrist, telling her again to "press the switch." As she gets better, gently tap under her wrist to "cue" her to move her hand along with your verbal cue. Gradually, as she improves, tap or touch further back on her arm to cue her. Your goal is to fade out both the physical and the verbal cues so that she is initiating switch use herself. This should not be a problem if you have found a movement she can use voluntarily and a resulting action or activity she really likes. Remember that she will probably become bored quickly unless you change the activity frequently, though many girls have certain favorites which they can repeat infinitely.

A variety of talkers are available, ranging from very simple, with just a few message squares, to very complex, computer-like devices with almost infinite vocabulary available. They can be used by touching the message squares (direct selection), attaching switches for messages, or using a switch for scanning. Each device has advantages and disadvantages including memory time, pressure of touch required, size of message squares, ease of changing pages or message screens, and ease of programming. Size and weight of a device may be important for a girl who is ambulatory, while ease of access may be more important for a girl who uses a wheelchair and has less movement.

Some devices have digitized speech which allows you to record your own messages or have a child of similar age record them. Others have synthesized speech, which sounds slightly robotic, but generally allows a variety of voices, and uses less memory per message, which is important in complex devices with many messages. Some devices change from one level or overlay to another, allowing you to place a different topic on each one. The more computer-like devices have a touch screen and the set of messages can be changed at the touch of a programmed symbol or icon. All devices allow you to choose your own messages, how they are displayed, and how many are available at one time. New or improved devices are constantly coming on the market. They are lighter and easier to program, with more options and more flexibility. For our music lovers, you can even record or synthetically program music on devices.

When choosing a device, try to find a speech-language therapist who is trained in AAC and familiar with a variety of devices, their advantages and disadvantages, and can train people to use them. It is best to try out several different devices to see her reaction, and ability to activate messages, and to explore the complexities of their programming. When doing a trial, allow for plenty of time for her to adjust to and learn the system. Try to obtain a device which she can

use effectively now, but which also provides room to grow as her skills improve. It may take awhile for her to realize its usefulness or she may quickly figure it out and use it functionally. It may take a long time before she initiates its use. Many devices are expensive, but you may have insurance coverage that will help. Medicaid pays for devices in almost every state, and schools are required to fund appropriate devices which are needed to work on IEP goals. The law also says that if a student needs assistive technology equipment to complete homework so that she can benefit from her educational program, the device must be available at home. Communication in all settings including home is necessary in order to learn how to communicate at school, so using her talker can be considered her homework.

It is unbelievable how well Laura did with the Alpha Talker. It is easy to use, high quality speech and uses anyone's voice. The Alpha Talker can be configured with either 4-8 or 32 locations. It can be accessed by the keyboard, head pointer or by scanning. It has a lightweight, sleek design and a carrying case is available. It can interface with a computer to save work to disc, and to perform limited computer stuff. It can also be used to load commands to operate environmental controls as well as plug in for a Jelly Bean switch. A remote switch adapter is available to permit up to 8 single switches to be connected to the Alpha Talker.

Voice Output Systems

Use of a voice

output device or VOCA (more easily referred to as a "talker") is attractive for a number of reasons. It gives her a voice, which changes the way people look at her and what they expect from her. People are more likely to speak to her if they realize she can speak back. It also allows a message to be broadcast across the room, when no one is with her. Voice output devices are considered assistive technology equipment, thus they are covered by education regulations.

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Multiple Message Systems

Sequencers

A Sequencer is a one-hit device that sequences messages. For example, the first selection says the first part of a message, and the second selection says the second part of the message and so on. One device is made by AbleNet and is called the Step by Step Sequencer. Another device is made by Abilitations and is called the Sequencer. There are also a number of different styles of sequencers available through Enabling Devices. The device can be used to read a repetitive line in a story in group time, say the Pledge of Allegiance, tell what she did last night or what she did at school, tell a joke, count or recite a recipe. They are an excellent inclusion tool, and excellent for turn taking in a conversation. An excellent way to use them is to record what she did during the day to tell at home, and to record what she did at home to tell her classmates.

Some examples of how one-hit VOCAs are used at school are: during circle time she can say, "I am here" or she can be the child who asks what the weather is today. She can take messages to another teacher down the hall, going with a friend. She can say, "How's it going?" to someone in the hall. Having verbal output is very rewarding both to a girl and to recipients of the message.

[Back to Top](#)

High Tech Methods

"High tech" devices are like computers, allowing for the greatest number of options.

Computer Programs

Computers

Full-sized computers are a great vehicle for learning and play in the classroom, although they are not very portable. While laptops are more portable, their screens are small and their keyboards cannot be moved out of the way if alternative access methods are used. While touch sensitive screens are available, they are harder to find and more expensive on laptops. When used with communications software meant for a communication device, computers respond much more slowly. However, they are very good for cognitive development and interactive games. Computer programs and games can be very motivating, especially those with sound and action. Sound cards, external adaptive devices and software can be easily added to your computer to provide needed input and output methods.

Some external adaptive devices include:

Touch Window

This is a clear plexiglass cover, attached to a full sized computer monitor and it responds to light touch. It can also sometimes be removed from the computer screen and used as a large switch for some cause/effect programs. Manufactured by Edmark.

Intellikeys keyboard

This is a large, flat board which comes with various alphabet and number overlays which are large and easy to access. Software is available from the company, including Intellipics and Overlay maker which can easily be used to create your own overlays. These can be used for learning and some communication. Some software from Intellitools and other companies comes with overlays designed for use with it. Keyguards can be purchased for any of the overlays which come with Intellikeys, and for some other standardized overlays.

Discover Switch, Switch Activated Mouse, Switch Interfaces

The Discover switch is a way to use scanning setups with a student. Scanning can have a high cognitive load for many girls, and requires precise timing of the switch press to coordinate with the screen. The other switch interfaces are generally used more for cause/effect and simpler, but fun software. Several companies put out software which can be activated with a switch. A switch can be activated with any part of the body and any switch will work with any of the interfaces. A switch activated mouse or other interface is needed to connect any switch to the computer.

Eye Tech Digital Systems

Along with several other manufacturers, Digital makes an eyegaze setup for a computer which uses a video camera focused on the user's eyes watching for pupil movement and eye blinks. It requires rather precise eye control, but some girls are able to use it.

New adapted access comes on the market constantly, and adaptations other than those mentioned here may fit a specific girl's needs better, so that it is important to explore several possibilities. She may find that different access methods work best for different purposes.

[Back to Top](#)