



Augmentative/Alternative Communications

When a person is being considered for an augmentative or alternative communication system, many factors must be considered. The factors presented here are the main ones, but certainly not the only ones.

- 1) It is very important to determine the person's ability to relate to different levels of representation before developing a communication system in order to reduce frustration and maximize success. The communication system needs to be developed around the person's needs and abilities.
- 2) The person's physical abilities also need to be considered. Is the person mobile enough to get to a static system independently, or require a system that is within his reach without moving? Does the person need a portable system that goes wherever he does? Also to be considered are the person's range of motion and the size of area required for accurate, clear responses (e.g., 1 inch square for someone with a good 1-finger response vs. 10 inch square for someone who can only use a fist to point). For those who are unable to use conventional pointing responses, other options such as eye gaze or adaptive switches should be explored.
- 3) The vocabulary of the system, if constructable, should represent the person's interests as much as possible. The important thing to remember is that vocabulary items are relevant.
- 4) Cost of the system is often a major factor a person has to consider.
- 5) Motivation! No matter how high-functioning the person is or how elaborate the system is, if there is no motivation, the system will not be used. A Speech and Language Pathologist can ensure that the vocabulary is relevant and the equipment is well suited to the person's abilities, then provide as many opportunities in which positive, reinforcing communication can take place.

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(The following article was written by Colleen Core, a Speech Pathologist from SEVTC, Norfolk, Virginia. It appeared in THE COMMUNICATOR, Volume I, Issue III, August, 1986.)

What Does It Mean?

The term "augmentative/alternative communication" refers to any mode of communication other than speech. This includes systems such as sign language, symbol or picture boards, electronic devices and synthesized speech. Although the same systems can be used for either augmentative communication or alternative communication, there is a difference between the two. Augmentative systems are used by people who already have some speech but are either unintelligible or have limited abilities to use their speech (for example: cerebral palsy, stroke patients, brain damage). In such case, other modes of communication are used to supplement what the person is able to say verbally. Alternative communication is the term used when a person has no speech. These people must completely rely on another method to make all of their ideas, wants, or needs known.





For most people who use augmentative systems, the most efficient, reliable means with which to communicate becomes a combination of speech, gesturing and the augmentative system; therefore, they continue to use their speech too. For those an alternative system may or may not facilitate the acquisition of speech. In these cases, much depends on the cause of their lack of speech.

(The following article was taken from the newsletter of the North Carolina Augmentative Communication Association, Volume 4, Number 2, May, 1986.)

Communication Systems

1. Low Cost Communication Boards

- a) Double Plexiglas (sandwich) board fastened with Velcro or sealed with electrician's tape makes a good communication board. There are various sizes, ranging from approximately 9" x 9" for a small board, all the way up to a lap board designed for wheelchair usage.
- b) Portable waterproof communication boards are often needed during transfers from house to car or in the bathroom area. A plastic envelope (9" x 12" or so) can be purchased for under a dollar from any office supply.
- c) Clear contact paper (used on both sides) can be used for the same purpose as (a) & (b).
- d) A secretarial magnetic page holder is ideal for small bedside communication board.
- e) Children's "magic slate" is excellent for those who can still write. It's portable, lightweight, and easy to use.
- f) Frequently in a hospital or skilled care facility, communication boards are moved out of the way and often out of the patient's reach. If the system is small enough, it can be strapped or tethered to the patient's hand making it readily available.

2. Communication Systems

- a) A simple folder or binder can house a communication notebook arranged by categories, with a table of contents. This notebook can be very effective. One of the easiest ways to begin is just to keep a list of request and gradually categorize them. The notebook can be easily updated and revised as needs change.
- b) **Eyeball Movement Utilization for Communication:**
Eyeball movement is usually the last voluntary control a severely paralyzed ALS patient has. Different communication techniques have been developed to utilize this control methodology, both with and without equipment. These control methods are briefly summarized below to help individuals in the development of their own communication methodology.





Eyeball Movement without Equipment

Visual cues such as the ALS person (sender) moving his eyes up, down, left or right, when following the moving finger of the person with whom they are communicating (receiver), can be used to develop certain responses. For example, moving the eyeball up might mean yes, down might mean no, to the right might mean the letters on the first half of the alphabet, movement to the left might mean letters in the second half of the alphabet. So, the person moving his finger to the right will also say “First half of the alphabet?” If the answer is yes, then the eyeball movement will be up. Then, the question is asked “What is the first letter?” Taking the letters in sequence, the person gives no response until the proper letter is mentioned by indicating up or down motions if that was the correct letter. The letters spell out the word.

Change of words or letters can be added as the sender and the receiver become more adept. This eliminates the tediousness of spelling out each word letter by letter. Some common question such as “Do you want something to drink?” might be assigned a number, such as number 1. The receiver mentions a number and the sender responds yes or no. Numerous adaptations are possible.

Eyeball Movement with Equipment

Different methods using a square, like a TV screen or poster board, have been devised. Groupings of numbers or letters for words can be put in logical order in the four corners of the square and the center of the screen. The sender can indicate which corner of the square the word or letter is in by moving his eyes up and to the right, up and to the left, to the center, etc. The value of following the moving finger of the receiver is that it conditions the control of the eyeball movement in that they track or follow the moving finger when they may not be able to move their eyeball without this visual cue.

Following are instructions for making a simple eyeball movement communication board.

Directions for Making and Using the Speakingboard

Obtain: One sheet of heavy poster or foam-core board
 One heavy black felt-tip pen
 Two-way stick tape

Hand-written messages, photographs, or illustrations from magazines, etc. can be used to personalize the board. One suggestion is to use personalized information with names of family and friends, medications used, and anything else that would be helpful (itch, pain, back rub, bed pan, etc.).

Side one of the board contains 64 squares outlined with a black felt-tip pen. Each square contains one written message. Across the top of the board are the letters “A” through “H”, one letter corresponding to each column. Down the left side of the board are the numbers “1” through “8”, one number corresponding to each row. This is not a standard board, so people can write whichever messages are right for them and put them in any order they choose.

The board is used as follows: the sender (patient) determines the letter and number of the box in which the desired message is contained. For example, if the sender wants to be suctioned, the message would be





“A-4” on her board. The sender blinks his/her eyes once to tell the receiver (person receiving the message) they are ready to begin. The receiver then begins reciting the letter across the top of the board, keeping their eyes on sender. When the receiver gets to the desired row, the sender blinks once. So in this example, the sender would blink when the receiver says “A” and then blink again when the receiver says “4”. The receiver would then look at “A-4” and note that it contains the message “suction”. A standard system of one blink means “yes”, two blinks means “no”, or the sender could look upward for “yes” and downward for “no”. This way the receiver can confirm the message with the sender.

Eye-Blink Utilization for Communication

The “eye-blink” is usually not affected in ALS, therefore, the application of eye-blink communication techniques is often very effective. Three approaches using this method follow.

1. Eye-Blink Method Without Equipment

Dividing the alphabet in half, the caregiver (receiver) speaks to the ALS patient (sender) –“Is the first letter in the first half?” The ALS patient (sender) responds with one blink for “yes” and two blinks for “no”. The receiver then references the appropriate portion of the alphabet and words are spelled out in the back and forth, question and answer method. Groupings for words can be developed as they relate to specific needs. Each family modifies this method to best meet their needs.

2. Eye-Blink Method Using Alphabet Board

This method is the same as above, but the alphabet is displayed on a board which the receiver points to as they ask questions. Here visual clues are added to the spoken question by the receiver. This system is easier for a casual visitor (receiver) instead of asking questions in a random manner.

3. Eye-Blink Method Using Picture Cards

Cardboard cards are used (7” x 9” works well). Pictures of items or activities are cut out of magazines and pasted on the cards. The word describing the item or activity is printed on the back of the card in large block letters for easy reading. Now you have verbal questions and visual clues to describe what is being communicated. The cards can be grouped in different categories, such as: eating activities, breathing activities, bathroom activities, recreational activities, etc. As each “yes or no” question is asked, the category is selected, then the activity, and each responded to by the “eye-blink”, “yes or no” answer.

Questions People Should Ask When Choosing a Communication Device

As my physical abilities deteriorate, will this device be appropriate?

What are the options for voice output? How does the voice sound? Can I change the voice? Are voices gender and age specific? Can I sing with this device?

Is this device user programmable or does someone else program the vocabulary that I will use?





Are there software programs for this device that could give me a place to start and architecture for vocabulary structure and personalization?

Does the company providing this device offer support or training of any kind? Is there a charge for this assistance? Is there a 24-hour 800 service number for me to call if I need help?

What happens if the device needs repair? Can I repair it or replace parts “in-the-field”, or do I have to send it back to the company? Does it operate on batteries? How long do they last? How do I replace them? How much do they cost?

What is the turn-around time for repair of my device? Does the company offer service loaners? Is there a charge for service loaners?

What are the credentials of the company’s representative? Is the company representative on commission?

Can I save the vocabulary in my device? If my device “crashes”, do I have to start all over again with programming in my vocabulary? How about saving vocabulary when my machine needs repair and I need to use a loaner? Is the device’s memory lost during the repair process?

How long will my device last for me? Can this device be updated or upgraded if new features are created by the manufacturer?

How long has the company that sells this device been in business? How is the device distributed? Where is the home office? Is there a mission statement from this company? What other products does this company manufacture?

Are there peripherals for this device? Does it interface with or operate with any other technology like computers or environmental control systems? If it interfaces with computers, what kind of computers? Can I use this device for keyboard and mouse emulation with standard software available on the computer system with which it is compatible?

Can I use the device’s vocabulary when I am interfaced with the computer or do I only have access to the letters on my communication device?

How will this device help me in an educational setting? Can I load educational information (like a textbook) from a computer into the device? Is there a way to save information in a topic files or notebooks? Can I print or transfer to a computer information that is stored in these file?

What is the configuration of the keyboard for directly selecting a location if the person using it can touch the memory locations? Can I change the size of the locations? Do all locations need to be the same size? Can I move an icon/letter from one location to another? When I move a location, does the accompanying vocabulary move too?

Is there a built-in-printer? Can I print text generated from this device on an external printer?





If the person using the device does not have the ability to use his hands for access (pointing), how else can I retrieve information? What are the variations of scanning? What kind of switches work with the device? Can the parameters of scanning be adjusted? Speed? Flashing lamps? Repeat activation? Timing for switch activations?

What accommodations does this device provide for visually impaired individuals? Are there auditory prompts? Are there helps for visually impaired scanners?

How do people get trained on this device? Are there training seminars? Who provides them? Where? How often? How much does training cost? How many people can be trained? After training, am I on my own or are there on-going training opportunities? What if my child's classroom teacher needs to learn how to use the device to help out at school?

Who prescribes a device? How do I get to see a device? How many devices should I look at before I make a decision? Is there a trial policy? How much does rental cost? Does the rental fee apply to the purchase of the device?

Who pays for the device? Who can help me seek third party funding? If my insurance won't pay, what are some other options available to me?

If I want a portable device, how much does one weigh and is there an easy way to carry it? How does it mount to my wheelchair?

What is the length of the warranty and what does it cover?

Is this the latest model of this device? If the manufacturer changes the device within the next year, can I exchange mine for a newer model, or is there a reduction in cost for updating my present device within a certain time frame?

Telephone Devices for Handicapped

The Telephone Pioneers of America are working in a variety of areas, developing and providing devices for handicapped persons. Their book, entitled "Helping the Handicapped" contains brief descriptions of assistive devices for visual, speech, mental, motion, and hearing challenges. This book is used by chapter offices of the Telephone Pioneers as a reference guide. The following is an example of some of the devices available.

-Hands-off-telephone—operated by a wheelchair which rolls over a floor switch to activate the telephone

-Recreational, exercise, communication and therapy items

-Breath-operated switches for summoning caregiver or operating household items

There are currently 104 chapters of the Telephone Pioneers throughout the United States and Canada. To inquire about a particular need or to obtain further information, consult your telephone directory for the





chapter number nearest you. There may be only one chapter in the smaller states. If you are unable to obtain a local number, contact the national headquarters at:

The Telephone Pioneers of America
Association Headquarters Office
American Telephone and Telegraph
P.O. Box 13888
Denver, CO 80201-3888
(303) 571-9260

Telephone Companies

Most telephone companies have a “handicapped services” division which supplies devices for the speech and hearing impaired. One such product is the TDD (Telecommunications Device for the Deaf). This device is like a typewriter and is operated by typing the message on the machine. The message arrives via phone lines, as a read-out on the other end, which is also equipped with a TDD.

General Telephone and Pacific Bell supply these devices free of charge upon the completion of an application containing a doctor’s certification that the person has a disability. Other telephone companies may have this same device. The toll-free number for General Telephone is (800) 352-7437. If they do not service your area, contact your local phone company to see what services they may provide.

To receive additional information on TDDs and other telephone communications devices, please write or call:

AT&T National Special Needs Center
2001 Route 46
Parsippany, NJ 07054-1313
(800) 233-1222
(800) 833-3232 (TDD)



The ALS Association, 27001 Agoura Road, Suite 250, Calabasas Hills, CA 91301-5104,
Phone: (800) 782-4747 / alsinfo@alsa-national.org / www.alsa.org