

# COMMUNICATION MATTERS



*Focus on...*

## Accessing communication aids and computers



[www.communicationmatters.org.uk](http://www.communicationmatters.org.uk)



## Introduction

Some people who are not able to speak use augmentative and alternative communication (AAC) equipment to help them communicate — this could be a symbol book, a computer or an electronic communication aid. The leaflet *Focus on... What is AAC?* provides useful background information on AAC.

There are different ways of using or 'accessing' AAC equipment and we need to find the most efficient, reliable and least tiring access method for each person. Depending on their physical abilities, it is possible for a person to control a computer or a communication aid using the movement of a body part (hands, feet, head etc.) or even the movement and rest of their eyes. This leaflet describes some common access methods and the process of assessment needed to maximize a person's access to communication.

## Direct Access

Direct access describes any access method where the user indicates directly what they want to select. Examples of this might include pointing at a picture, typing on a keyboard or activating a touchscreen. Some people who need to use an AAC system to communicate may have enough physical ability to use this direct form of access. Others may be able to point or type using a different part of their bodies such as a fist or toes instead of a finger, or maybe use a technique called eye pointing. People with motor disorders may be unable to finger-point accurately or vocalise to give their messages, instead they can use directed gaze to make selections from communication materials in order to give their messages. This is a form of direct selection where fixation (looking) replaces touch. Such use of controlled gaze can be made more meaningful by linking it with looking at a communication partner or confirming the selection with a vocalisation. As people look at things for a variety of reasons, consideration must be given by the communication partner as to whether the looking is deliberately communicative rather than exploratory ('just looking') in nature. Where there is confidence that this selection is intentional it may be called 'eye-pointing'. Directed gaze can be used with objects, photos, symbols and words.



**Trackball**

## Pointing Devices

Most people are familiar with using a mouse or trackpad to point at icons and text on a computer screen. Some people with physical difficulties find a standard mouse difficult to use and a range of alternatives can make this easier. These might include a trackball (sometimes known as a rollerball), a joystick or a single button mouse.



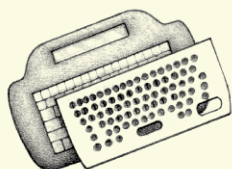
**Lightpointer**

For individuals with good head control but who find other types of movement difficult, a variety of head-pointing devices are available. Worn on the head or mounted on a pair of glasses, these transmit movement to the computer or communication aid via infra-red or by making use of a tilt sensor. The head movement can be translated into mouse movement and selections can be made by 'dwelling' in one place, or by using a switch. These pointers can also be attached to other parts of the body with reliable movements.

Eye-tracking or eye-gaze technology allows a person to access a computer or communication aid using only the movement of their eyes. For individuals with motor impairments who find using other access methods difficult, this technology can provide access to games and activities, communication systems, computer and environmental control. As with head pointers, the movement of the eyes is translated into mouse movement, which can be used for control and selection.

## Adapting the keyboard

Sometimes all that is needed to give a person with a physical disability direct access to their computer or communication aid is to adjust the settings for the keyboard, adapt the keyboard with a keyguard, or to substitute a standard keyboard for an adapted one. A keyguard is a sheet of Perspex or metal with holes drilled in it corresponding to the location of the keys, which can be fixed over the keyboard. These can help prevent accidental key presses, or can allow the user to rest their hand on the guard and 'drop' their finger down to press a target key. Keyguards can be 'off the shelf' or bespoke for the user. Similarly, a 'touchguard' can be fixed over a touchscreen, with holes drilled at the location of onscreen items.



**Keyguard**

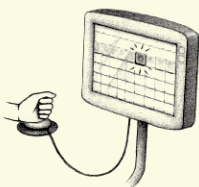
Most computers and many communication aids allow you to adjust the keyboard response time to make it easier for the person to be accurate. Specially designed keyboards are also available, including those which have larger, more widely spaced keys.

Compact keyboards can be suitable for people with a limited range of movement and good fine motor control. There are also ergonomically designed keyboards for people using only one hand. Some devices and computers also offer a range of on-screen keyboards, which can be adapted to individual needs and reduce effort.



**Expanded keyboard**

Word prediction software can reduce the number of keystrokes needed for more literate individuals. If the person has intelligible speech, a speech-to-text or voice control system may be an option. Many computer operating systems have these functions built in, but specialised options are also available.



**Scanning with a single switch**



**Head switch**



**Foot switch**



**Button switch with 'click' feedback**

## Indirect Access

Indirect access methods are those where the user needs to scan through a range of options and choose the one they want. Such access methods may be the best option for some people with severe physical difficulties. The user needs to be able to reliably activate either a single switch or a number of switches connected to the communication aid or computer. The switch should be placed near the part of the body that the person can control voluntarily without too much effort, such as the head, foot, knee or hand. The person selects what they want to say by activating the switch to control a moving cursor on the screen.

Scanning is a difficult skill to learn and most people are not able to use their communication aid or computer immediately without having a period of training and practice. The switch user has to learn when to press the switch, when to release it, what to do if they make a wrong selection, and so on.

## Switches for scanning

There are many different types of switches and finding the right one is vital. Some switches provide the user with feedback when activated (perhaps a click or a beep), which can be helpful to the user, even if only while they are learning. The speed at which the system scans through the options can be adjusted to meet the needs of the user. Different types of scanning (for example scanning by row and then scanning through the items in that row) can also increase access speed, but place higher demands on cognition and memory.

Some switches require only the lightest of touch, or no touch at all in the case of 'proximity' switches, to activate them. These can be useful for people with weak or very restricted movements. Other switches require quite a lot of pressure before they activate and these may be better for someone with uncontrolled, strong movements.

## The Importance of Getting it Right

It is very important to assess the person's needs for 'access' techniques or technology and to review their needs on a regular basis.

A person's method of access may change over time as their physical abilities alter or new technologies are developed. Their position e.g. whether seated or in bed can also impact on the choice of access method.

An assessment is ideally carried out by a multi-disciplinary team which may include professionals such as an Occupational Therapist, Physiotherapist, Teacher, Speech and Language Therapist, Clinical Scientist or Assistive Technologist.

## **Augmentative and Alternative Communication**

**(AAC)** is the term used to describe methods of communication which can be used to supplement the more usual methods of speech and writing when these are impaired.

AAC may include unaided systems such as signing and gesture, as well as aided techniques ranging from picture charts to the most sophisticated computer technology currently available. AAC can be a way to help someone understand, as well as a means of expression.

## **Further Information**

The *Communication Matters* website gives up to date details on regional and national centres that provide information, advice and assessment services on both access and communication.

[www.communicationmatters.org.uk](http://www.communicationmatters.org.uk)

Please contact *Communication Matters* for more information on this topic or to obtain other leaflets in the *Focus on...* series.

- Why not join the AAC Forum to find out more from people who use and work with AAC. Instructions on how to join are available here:  
**[www.communicationmatters.org.uk/page/aac-forum](http://www.communicationmatters.org.uk/page/aac-forum)**
- Communication Matters is also on Facebook:  
**[www.facebook.com/communicationmattersuk](https://www.facebook.com/communicationmattersuk)**  
and Twitter: **@Comm\_Matters**
- The AACknowledge website is for those interested in the latest research, summarised in Plain English:  
**[www.aacknowledge.org.uk/](http://www.aacknowledge.org.uk/)**
- AAC E-Learning is a 20 minute online course on an introduction to AAC:  
**[www.aacelearning.org.uk/](http://www.aacelearning.org.uk/)**



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## Other topics in the ‘Focus on...’ series

Communicating with patients who have  
speech/language difficulties

First steps

Let your hands do the talking

Speaking with someone who uses AAC

Using symbols for communication

What can I say?

What is AAC?

These leaflets are funded by



who swam, ran and cycled  
to fundraise for this CM resource



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