

Communication aids and computer-based therapy after stroke

Many people have communication problems after a stroke. Speech and language therapists use a variety of approaches to help, including aids and computer-based therapy. This resource sheet offers guidance for family members and carers of people with communication problems. It also lists sources of further information and advice, including suppliers.

Communication problems affect about a third of all people who have a stroke. Although many people recover, about half of people with aphasia (difficulty speaking or understanding what is said), are likely to have some communication problems in the long term.

Anyone with communication problems should have a thorough assessment from a speech and language therapist.

The therapist will work with them to improve their skills and find alternative ways of communicating. This might involve face-to-face therapy sessions, using a communication aid, or computer-based therapy. You may also like to read our factsheets *F3, Communication problems after stroke* and *F14, Speech and language therapy after stroke*.

Everyone is different and so **different tools and techniques may be used** depending on how severe someone's communication problems are, how much recovery they have made, and their individual needs.

Communication aids and computer-based therapy are not suitable for everyone. After a stroke, confusion, memory loss or

tiredness may make following instructions on a computer too challenging. Physical effects of stroke can cause problems with holding an aid or using the computer mouse, and visual problems can make it harder to read the screen.

However, there are a number of **adaptations** available to help people with disabilities use a computer or communication aid. These include adapted keyboards, specialised switches, pointing devices and scanning technologies. They can allow someone to use a computer or communication aid using any movement they are able to control, such as their eye. Some communication aids can also be mounted onto a bed or wheelchair.

In this resource sheet, you'll find information about:

- communication aids
- computer-based therapy
- where to go for a specialist assessment
- contact details of useful organisations.

Communication aids

A communication aid can be anything that makes communicating quicker and easier. They range from simple charts with words and pictures to portable electronic devices.

Simple communication aids include **alphabet boards, communication charts and books**.

These aids display large letters or words, as well as sets of colour pictures, photos or symbols. For example, an aid might have a grid of pictures to represent feelings and moods such as 'hungry', 'thirsty', 'happy' and 'sad.' Each picture is usually labelled with the word, too. The person can then point to an image on the board to indicate what they want to say. Our communication chart is a good example – see page 6 for details.

An **E-Tran Frame** is a specialised chart that can be used when someone cannot use their hands to point, for example if they have locked-in syndrome and can only move their eyes. They can use their eye gaze to indicate a letter, word or symbol that is attached to this large frame, which is held in front of them by a trained carer.

A **communication passport** is used as a record to communicate with health and social care providers so that the stroke survivor's needs, likes and dislikes can be properly heard and taken into account. A ready-made medical passport is available from Speakability, and templates to create your own are available on many websites. See the *Useful organisations* section.

Electronic aids

Specially designed electronic devices to aid communication are available, such as **Voice Output Communication Aids (VOCAs)**.

VOCAs use a computer-generated voice to play messages aloud. Some can be operated simply with one finger to select pre-recorded messages. Others have a keyboard so typed text can be converted into speech. This may help if someone has difficulty speaking, but can still write or type.

Symbol sets

If someone has difficulty reading or spelling after a stroke, there are a number of symbol sets available. Sets of picture symbols represent a range of vocabulary and subject matter. There are different sets for different communication needs and abilities. Someone can select and group the symbols to form personalised messages and communicate with others. One example of a symbol set is Talking Mats (see *Useful organisations*).

Apps

Apps are software applications for smartphones, hand-held computers or other mobile devices. Once they are downloaded to the device, apps provide specific functions – for example there are apps for games and music. Some apps are available free, but you need to pay for others.

Apps for communication work in a variety of ways. Many of them allow you to pick symbols, and add text and sound to them. Some will let you choose a pre-recorded voice or record your own voice saying the words. See page 9 for a list of apps (*Useful organisations*).

How do electronic aids and apps help?

Electronic aids and apps allow the user to communicate in a variety of ways. Many allow the user to combine different forms of media such as symbol sets, personal photos, video and audio voice recordings.

They can include functions to:

- group words, pictures or symbols together on a screen to represent meaningful phrases or messages
- store standard messages or responses to access later by pressing a single key
- upload personal photos, videos or voice recordings to include as part of a message
- flash messages to the screen or play them aloud through the device's speakers.

There are also specialised electronic communication aids that are larger than hand-held devices. These may offer other computer functions such as access to the internet and email.

If someone has aphasia and their speech continues to improve, there is no reason why they can't keep using communication aids for additional support.

When are communication aids used after stroke?

If someone has not significantly recovered from aphasia two weeks after their stroke, then a speech and language therapist should assess them for all alternative means of communication possible. This can involve using gestures and facial expressions, drawing, writing, or communication aids.

These alternatives may help the stroke survivor to communicate more easily and may be used alongside ongoing therapy to help them to recover.

People with dysarthria or dyspraxia have problems co-ordinating the correct muscles in their mouth and throat to speak. If these problems continue in the long term, a communication aid may be suitable.

Assessments for communication aids

If someone has not been assessed for communication aids in hospital, their GP can refer them to a local **speech and language therapist**. The therapist can then refer them on to a specialist communication aid centre if necessary.

The NHS has a small number of **specialist centres** where someone can be assessed for a communication aid. At these centres, they will see a speech and language therapist and other professionals who have specialist knowledge and training in technologies for communication. They will aim to identify the most helpful aids for someone. Carers and family members can all be involved in the assessment. If someone's needs are more complex, they may need to see other professionals, such as a physiotherapist or a vision specialist.

People usually need to be referred to a communication aid centre by an NHS or private speech and language therapist, but this can vary. Ask the speech and language therapist for advice and see the *Useful organisations* section for contact details of the main centres. **Communication Matters** is a charity that has a full list of these services.

The assessment services may also offer general advice on the communication aids available from independent suppliers, as well as on related technology, including apps. Many NHS assessment services provide trial loans of equipment, as well as training and support.

Training

Using a communication aid can help improve someone's quality of life after a stroke. When considering what type of aid may be helpful, it is essential to **think about the needs of everyone involved**, including family members and carers. Using a communication aid can be a big adjustment for families and carers to make and training and support should be offered. The whole family may need ideas to help them to bring alternative ways of communicating into everyday situations. They may also need to adapt how they hold conversations. Ask the speech and language therapist for advice.

Buying communication aids

If you are considering buying a communication aid privately from a specialised supplier for someone with aphasia, speak to a speech and language therapist first. You can request a free trial of any equipment, and many commercial suppliers offer an initial assessment, advice, training and ongoing support. Ask about what backup systems are needed if the electronic device malfunctions or loses power.

Electronic aids may have many features that can be personalised according to someone's needs. For example they could be multilingual. Making sure an aid is personal and providing training and support are great ways to make it a success.

Computer-based therapy

This type of therapy involves **doing practical exercises using a computer**. It includes specific exercises for the different communication problems someone may experience after stroke. These programmes are designed to be user-friendly, interesting and interactive to encourage people to use them regularly.

Computer-based therapy programmes may have:

- pictures or symbols next to words on screen, to help with reading difficulties
- visual or spoken cues to prompt the user to answer questions by typing or speaking into a microphone
- spoken commentary to give feedback
- videos, with a speech and language therapist showing mouth movements, to help the user form different sounds or words
- different levels of difficulty depending on the answers that have already been given.

The exercises **focus on particular types of skills**. For example, someone with aphasia may need to practise saying single sounds or words.

Here are some examples of exercises for people with aphasia:

- matching pictures with words displayed on the computer screen
- saying aloud the names of objects shown when prompted

- repeating aloud syllables, words, phrases or sentences displayed on screen, or heard through earphones.

There are also specific exercises designed to help with writing, using numbers and for people with dysarthria or dyspraxia.

How useful is computer-based therapy?

Research shows that this type of therapy can help improve a person's communication skills after stroke if it is **tailored to their specific needs**. How useful this approach is will differ from person to person. The specific nature of their speech and language difficulties, their overall health, their motivation to persist at the exercises, and how much therapist support is available will all have an effect.

People with aphasia often feel they benefit from using computer-based therapy. Even if it doesn't guarantee improvement in everyday conversation, computer-based therapy can help improve a number of language skills. For example, exercises designed to help someone find words can also help them understand their meanings. Information linking words and their meanings is stored in the same areas of the brain. Similarly, exercises designed to help someone say whole sentences can also help them understand sentences heard in conversation. This type of therapy may also **help someone feel more confident about their overall communication**.

Some people find that having both computer-based therapy and face-to-face therapy sessions helps them to recover more quickly. It also provides more **intensive treatment**. Research shows that, in general, this can result in better recovery.

How do you access computer-based therapy?

Computer-based therapy works best with the support and guidance of a speech and language therapist who can assess the person's strengths and weaknesses. The exercises can then be tailored to their specific needs.

The therapy may be given as part of face-to-face sessions with the therapist, or carers and family members can be trained to use the software so that therapy can continue at home between sessions.

You can also **buy software packages from commercial suppliers**. It is a good idea to ask a speech and language therapist for advice first though. Some NHS assessment centres for communication aids can make recommendations or support someone with computer-based therapy. They can also assess whether someone needs computer adaptations.

Commercial suppliers usually offer **free trials** of their programmes. They may be available on CD, DVD, or as free downloads from websites. Costs can be high, but some suppliers offer an option to subscribe and pay on a monthly basis.

See below for details of assessment centres and commercial suppliers.

Useful organisations

All organisations are UK wide unless otherwise stated.

Please note that technology in this area advances quickly, particularly with apps, and so this list may not be exhaustive.

Stroke Association

Stroke Helpline: 0303 3033 100

Email: info@stroke.org.uk

Website: stroke.org.uk

Contact us for information about stroke, emotional support and details of local services and support groups. Our **Communication Support Services** are available in some areas of England, Northern Ireland and Wales.

Our resources

Communication card: states "I have had a stroke and find it difficult to speak, read or write. Please give me time to communicate. Speak clearly, taking your time and write down key words. Your help and patience would be appreciated." Also has room for name, address and emergency contact details. (credit card size)

Communication chart: An aid to communication consisting of four sides of A4 with the alphabet, numbers, a clock and pictures for common words such as 'hungry', 'thirsty', 'hot' and 'cold'. (Price £1)

Assessment services for communication aids

The following organisations are key NHS services and charities which provide information and assessments for communication aids. There are many more regional services. Communication Matters (see page 8) has a list of all NHS and private communication aid centres in the UK.

England

ACE Centre

92 Windmill Road, Headington, **Oxford**
OX3 7DR

Tel: 01865 759 800

Hollinwood Business Centre, Albert Street,
Hollinwood, **Oldham** OL8 3QL

Tel: 0161 358 0151

Website: www.acecentre.org.uk

This charity can assess children's and adults' needs for communication aids. They also provide training and ongoing support. People can refer themselves to this service. Their website provides clear explanations, useful links and resources on communications aids. The Oxford centre takes referrals from the south of England and Wales. The Oldham centre covers the north of England. They have a separate website with a list and information about the apps available for the iPod, iPhone and iPad: www.appsforaac.net

Communication Aid Centre and Computer Assessment Training

Speech and Language Therapy Department,
Frenchay Hospital, **Bristol** BS16 1LE

Tel: 0117 340 3946

Website: www.cacfrenchay.nhs.uk

Leading NHS centre serving the south west of England. Offers specialist assessments for communication aids, computer adaptations and for mounting of equipment on wheelchairs. Provides training, equipment on loan and follow-up reviews.

Royal Hospital for Neuro-disability

West Hill, Wandsworth, **London** SW15 3SW

Tel: 020 8780 4513

Website: www.rhn.org.uk

Specialist centre for people with neurological conditions including stroke. Offers assessments for severely disabled people who are, for example, minimally-conscious or who have locked-in syndrome.

Communication, Learning and Technology Service

Wolfson Neurodisability Service, Level 10,

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Main Nurses Home, Great Ormond Street
Hospital, Great Ormond St,
London WC1N 3JH
Tel: 020 7405 9200, Ext 1144
Service for children only.

Northern Ireland

Communication Advice Centre

Belfast Health and Social Care Trust
Musgrove Park Hospital, RDS Building,
Stockman's Lane, **Belfast** BT9 7JB
Tel: 028 9090 2905
Website: www.belfasttrust.hscni.net

Scotland

AAC Resource

NHS Ayrshire and Arran, Ayrshire Central
Hospital, Room 156, Admin Block, Kilwinning
Road, Irvine KA12 8SS
Tel: 01294 274 191

Call Scotland

University of Edinburgh, Moray House,
Paterson's Land, Holyrood Road,
Edinburgh EH8 8AQ
Tel: 0131 651 6235 / 6236
Website: www.callscotland.org.uk
Website has a list of communication apps for
iPhone, iPod Touch and iPad.

Technological Assessment and Support Service for Children and the Curriculum (TASSCC)

Aberdeen Exhibition & Conference Centre,
Balgownie One, Conference Way, Bridge of
Don, **Aberdeen** AB23 8AQ
Tel: 01224 814 775
Website:
www.aberdeen-education.org.uk/tasscc
For children and young people only.

Wales

ACE Centre

92 Windmill Road, Headington, **Oxford**
OX3 7DR
Tel: 01865 759 800

Website: www.acecentre.org.uk

This charity can assess children's and
adults' needs for communications aids.
They also provide training and ongoing
support. People can refer themselves to
this service. The website provides clear
explanation and useful links and resources
on communications aids. The Oxford centre
takes referrals from Wales. They have a
separate website with a list and information
about the apps available for the iPod, iPhone
and iPad: www.appsforaac.net

Charities offering resources or information and advice

Some of the following charities refer
to 'augmentative and alternative
communication' (AAC). This term covers all
forms of communication (other than speech)
that are used to express thoughts, needs,
wants, and ideas. Examples include writing
or using symbols, pictures, or electronic aids.

The term assistive technology means any
device that helps someone to perform a
task. It includes communication aids.

1Voice: Communicating together

Website: www.1voice.info

This organisation supports children and
teenagers using AAC and their families to
overcome the isolation that being unable
to speak can cause. Provides regular
events and has an online support group and
discussion forum.

Aidis Trust

Helpline: 0808 800 0009

Website: www.aidis.org

This charity provides advice on communication aids and computers to help people with disabilities to communicate. They can arrange assessments and they provide a technical support helpline for all sorts of computer queries.

Aphasia Corner

Website: <http://aphasiacorner.com/blog>

This is a blog for people with communication difficulties after stroke, their carers and others concerned for the needs of this community.

Aphasia Now

Website: www.aphasianow.org

Website maintained by the charity Connect and run by and for people with aphasia. Explore their resources section for information on aphasia therapy. This includes reviews by a speech and language therapist of well known computer-based therapy, including **Revivo**, **React2** and **StepbyStep**, as well as **Co-Writer** for predicting words when typing.

Aphasia Software Finder

Website: www.aphasiasoftwarefinder.org

Independent resource from the Tavistock Trust for Aphasia. Provides a database of computer-based therapy.

AppsForAAC

Website: www.appsforaac.net

Independent resource from the ACE Centre charity. Provides a database of apps for AAC for the iPod, iPhone and iPad. Explains each app and has a tool for comparing features.

Augmentative Communication in Practice: Scotland

Website: www.acipscotland.org.uk

This working group represents professionals, users and carers involved with AAC in Scotland. The website provides links to communication aid centres in Scotland. They hold regular events and have a range of publications.

Communication Matters

Tel: 0845 456 8211

Website: www.communicationmatters.org.uk

This charity supports people who find communication difficult. Provides publications and online information on AAC and lists NHS and private communication aids centres in the UK. Runs regular events, including some where AAC products are demonstrated.

Connect

Tel: 020 7367 0840

Website: www.ukconnect.org

This charity provides services and support to people with aphasia in London and Bristol. Publishes a wide range of tools, resources and publications to aid communication.

Disability Action – Northern Ireland

Tel: 028 9029 7880

Website: www.disabilityaction.org

Works with people who have disabilities and aims to improve their quality of life. Provides information, employment and training support, mobility assessments and help with transport. Their Digital Inclusion service has assistive technology available to try.

Empowering Technology

Website: www.emptech.info

An independent online database of products, manufacturers, suppliers and

services for assistive technology, including communication aids.

ICAN

Tel: 0845 225 4073

Website: www.ican.org.uk

This charity provides independent assessments of special educational needs for children with communication difficulties and runs two specialist schools. Offers training to professionals and an expert enquiry service for parents and professionals.

Personal Communication Passports

Website: www.communicationpassports.org.uk

Provides templates for producing a personalised communication passport.

Speakability

Helpline: 0808 808 9572

Website: www.speakability.org.uk

This charity supports and campaigns for people affected by aphasia. Publishes a wide range of aids, resources and publications to help communication, including **Medical Communication Passports**.

Speechbubble

Website: www.speechbubble.org.uk

This website from the ACE Centre charity is an independent resource with a database of voice communication aids including information on software, symbol set vocabularies, the devices they run on and commercial suppliers. Gives detailed descriptions of individual products and how they work.

Talking Point

Website: www.talkingpoint.org.uk

This website from the charity ICAN provides information and resources for children and young people with speech, language and communication needs. Has information for young people, parents and professionals.

Apps for communication problems caused by stroke

There are over 100 different apps for communication problems available for the iPhone, iPod or iPad. The website www.appsforaac.net from the ACE Centre charity has a list of the apps available with an easy comparison tool so you can see which device they can be used on, the symbols they use and their prices. Apps can be downloaded to your device from itunes.apple.com.

Fewer apps are available for android devices. The following is a list of apps available. Some have their own websites with more information. They can be downloaded from play.google.com.

- Box of words
- DAF
- Droidspeaker
- Communication helper
- Mobile 112
- My voice
- Small Talk **Website:** www.aphasia.com
- Speech assistant
- Speak it **Website:** www.future-apps.net
- Taptotalk **Website:** www.taptotalk.com
- Voice4u **Website:** <http://voice4uac.com>

Suppliers of communication aids

This list includes many commercial suppliers of well-known communication aids.

Ability World Ltd

Tel: 0845 47 47 245

Website: www.ability-world.com

Sells a wide range of communication aids, from simple aids like alphabet boards, to specialist electronic aids.

Dynavox Mayer-Johnson

Tel: 01926 516 250

Website: www.dynavox.co.uk

A leading provider of communication aids providing specialist advice, training, loans and support. Their website has a guide to its communication solutions for aphasia and guidance on UK statutory funding sources. Electronic aids to support people with aphasia include **Maestro**, **Xpress** and **Dynawrite 2.0**.

Inclusive Technology Ltd

Tel: 01457 819 790

Website: www.inclusive.co.uk

Supplier of software and hardware for special educational needs, including a range of communication aids and communication software. They produce **Boardmaker**, a software package used to personalise and print your own communication boards based on Picture Communication Symbols and other pictures and graphics. Provides online and telephone technical support. There are also helpful articles on choosing communication aids on their website.

Liberator

Tel: 01733 370 470

Website: www.liberator.co.uk

Provides a range of communication aids and assistive technology products and services.

They can arrange assessments, evaluate products, and give training and support. Products available include the **ChatPC** range of text-to-speech devices and **E-Tran Frames**.

Malvern Scientific

Tel: 01886 884 741

Website: www.malvernscientific.com

Provides computer-based assistive technology for people with disabilities.

MegaBee

Tel: 01600 714 856

Website: www.megabee.net

Produces and sells the **MegaBee** portable, writing tablet for people who are unable to speak and to write clearly. The tablet responds to eye movements and blinking as the user selects letters that are displayed on a screen, or relayed to a computer screen using a wireless connection.

Possum

Tel: 01296 461 000

Website: www.possum.co.uk

Manufactures, sells and distributes a range of electronic assistive technology, including communication aids such as the **Jive!** hand-held text-to-speech device and the **Sero** phone with communication aid functions. Provides product servicing and a range of other specialist services.

QED – Quality Enabling Devices Ltd

Tel: 023 9258 0600

Website: www.qedltd.com

Sells and distributes a range of products for people with special needs, including communication software and simpler electronic communication aids, like the **AMDi** range which can play back recorded messages.

Smartbox Assistive Technology

Tel: 01684 578 868

Website: www.smartboxat.com

Supplier of communication aids, eye gaze systems, and communication software such as **Sensory Software's Grid 2** for both communication and computer accessibility. Advice, assessment, loans, training and ongoing support are provided.

Talking Mats Centre

Tel: 01786 479 511

Website: www.talkingmats.com

Talking Mats is a communication aid that uses a mat with picture symbols attached as an aid to expressing thoughts and feelings. *Talking Mats and Aphasia* package available.

TechReady

Tel: 0208 532 6138

Website: www.techready.co.uk

Sells and distributes assistive technology products, including a range of communication aids and communication software and the **Dragon NaturallySpeaking** voice recognition software range.

Toby Churchill Ltd

Tel: 01223 281 210

Website: www.toby-churchill.com

Manufactures, develops, sells and services digital recording aids, voice amplifiers and the **Lightwriter** range of text-to-speech communication aids.

Suppliers of computer-based therapy software

Bungalow Software

Website: www.bungalowsoftware.com

Develops and sells a range of interactive therapy software for people with communication or cognitive disabilities due to stroke or brain injury. Includes the

Aphasia Tutor programs, with 'Out Loud' versions available that speak cues and answers. Can be used independently or tailored by a speech and language therapist according to someone's needs and progress. Their UK distributor is Propeller Multimedia Ltd (see page 13).

Communication Partner

Website: www.communicationpartner.com

Sells a series of six DVDs for aphasia therapy. They are designed to help someone with aphasia find single words and put words together to form phrases. Video samples of the therapy exercises are available online. Please note this is a US website, so check you would be able to play the DVDs on your player. They offer a 30-day money back guarantee.

Parrot Software

Website: www.parrotsoftware.com

Develops and sells over 100 software programmes that provide computer-supported therapy for speech and language problems, memory loss and other cognitive problems after stroke or brain injury. They are available to buy individually on CD, or by monthly subscription for use online on their website. Their website offers free trial versions of their programmes.

Propeller Multimedia Ltd

Tel: 01721 725 875

Website: www.propeller.net

Sells a wide range of speech and language software. Includes **React2** for aphasia, Bungalow's suite of **Aphasia Tutor** software, **Lexion**, **Speech Sounds on Cue**, and **Sword** for people with dyspraxia and aphasia. You can buy them on CD-ROM or take out a monthly subscription to use on the internet. Low cost demonstration CDs are available, or you can download free trials of full

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packages for a limited number of days.

Steps Consulting Ltd

Tel: 01454 218 436

Website: www.aphasia-software.com

Sells the **StepByStep Aphasia Therapy** computer-based programme designed to help people with aphasia after stroke who have difficulties finding words. It is designed to be used independently, tailored to the individual's needs by a speech and language therapist. A free 30-day trial is available. There is also an option on the website for tutorials to be set up that allow a speech and language therapist to monitor a person's progress remotely over the internet.

Financial assistance

Full or part funding for communication aids may be provided by:

- local health and social services
- the Access to Work programme available through JobcentrePlus
- the Disabled Students' Allowances for higher educational needs
- the Access to Learning Fund for those in further education.

Talk to the speech and language therapist for more information.

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For sources used, visit stroke.org.uk

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Sequel Trust

Tel: 01691 624 222

Website: www.thesequaltrust.org.uk

National charity that aims to provide help to children and adults who are severely disabled and depend on electronic communication aids and adaptations.

The Tavistock Trust for Aphasia

Tel: 01525 290 002

Website: www.aphasiatavistocktrust.org

Grant-making trust that focuses solely on aphasia. They work towards making effective therapy available to all who have aphasia.

Disclaimer: The Stroke Association provides the details of other organisations for information only. Inclusion in this factsheet does not constitute a recommendation or endorsement.



The Stroke Association is registered as a charity in England and Wales (No 211015) and in Scotland (SC037789). Also registered in Northern Ireland (XT33805) Isle of Man (No 945) and Jersey (NPO 369).