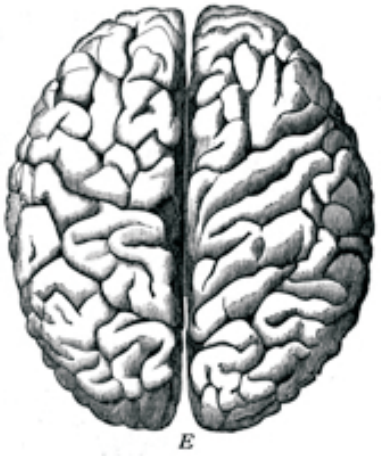
A stroke or cerebro-vascular accident (CVA) can be a very debilitating event in an individual's life. Some people are able to make a complete recovery, others only have minor difficulties and their communication is generally unaffected. However, for some, their speech and language skills will be severely affected and they will never recover their previous functioning prior to the stroke.

A stroke occurs when either there is a blockage of an artery in the brain (cerebral ischaemia or infarction), or a haemorrhage, where an artery in the brain bursts. When there is blockage, a certain area in the brain will go without blood, and the cells in that area will die because they are not receiving sufficient oxygen. With an artery burst, blood leaks into the brain, or onto the brains surface and causes a build up of pressure, damaging cells. These nerve cells (neurons) help transmit information around the brain and body, but when they are damaged in an adult brain there is very little regeneration and so permanent damage generally occurs.



Spontaneous recovery (the brain's own ability to recover) usually occurs most in the first 2-3 months following the stroke, and then slows over the next 3 - 4 months. However, many people report progress beyond this time period and for several years afterwards, although the rate and amount of progress is likely to reduce over time. There is some debate about the effectiveness of speech and language therapy for individuals who have had a stroke. This debate has occurred because it is hard to define whether the progress an individual makes in the first few months following a stroke, is due to the therapy, or the naturally occurring spontaneous recovery. Some studies appear to show that therapy does work if administered frequently and with the right intensity. However, there are many variables that need to be taken into account in these studies and success will depend on the type of therapy, the motivation of the patient, the extent and area of the brain injury, and the resources of the treatment centre. Many of these studies were able to administer a high frequency and intensity of therapy, and this was much higher than most individuals would normally get from their publicly funded health systems. Unfortunately, most hospitals just do not have the resources to administer high frequency, high intensity therapy.

Relatives and carer's of individuals recovering from a stroke, must also recognize that if it is severe, the individual may have long term difficulties with communication, cognitive tasks and motor function. Therefore, the intensity and frequency of therapy may have some positive effects following a severe stroke, but the individual is unlikely to regain his previous skills, and is likely to have some serious difficulties. In these cases it may be necessary to try and provide compensatory strategies to aid communication.

There are a number of different types of therapies and schools of thought on therapy. Any assessment and therapy should be carried out by a suitably qualified Speech and Language Therapist/Pathologist. The therapist can give lots of ideas and programs to the individual and their family. The family too, can help an individual with a stroke by being more aware of their own communication and the communication environment. See www.icommunicatetherapy.com for ideas to facilitate communication with individuals with stroke.

The effects on communication

The brain is an exceedingly complex mechanism and is made up of many different working parts. When one or more of these parts stops operating efficiently there will often be an impact on the individuals speech and language apparatus.

Speech
Damage to the speech area in the brain can cause dysarthria and / or dysphonia which occur because the brain damage has caused a paralyses or weakness of the muscles of speech.

Dysarthria this is a mechanical problem causing defective movement of the lips, tongue, palate, pharynx, larynx and muscles of the face. This can cause speech to be slow, slurred, laboured, indistinct, low in volume.

Dysphonia this occurs when there is a weakness of the chest muscles, or weakness and/or nerve palsy of the vocal folds (chords). Voice production is achieved by the lungs pushing air up through the larynx where the vocal folds come together at many times per second to produce voice. Problems with this system can cause voice to be hoarse or breathy.

Some individuals loose the power of speech altogether, whereas others have speech, but they do not have the language skills they had previously.

Language disorders and types of Aphasia
Language skills can also be affected by a stroke. Many patients who experience stroke have aphasia (sometimes called dysphasia). Aphasia is a disorder of language and it can affect both the understanding of language, and/or expression. Aphasia occurs when areas in the brain involved with language are damaged.

Global Aphasia - with global aphasia there is a more general deficit across many cognitive functions and speech, language and literacy skills are all affected to some extent. Speech may consist of a few single words or syllables, understanding, reading and writing are all impaired.

Broca's Aphasia - when only the Broca's area of the brain is affected the individual can understand most spoken words and language, but has difficulties expressing language. The individual may have word finding difficulties (anomia), non-fluent and reduced ungrammatical speech. The word finding difficulties may be particularly prominent, and the individual may often use the wrong words, such as “spoon” instead of “fork”. Others may get “stuck” on a particular word and keep repeating it, or they may just use key words e.g. "arrive 9 o'clock station pick-up".

Wernicke's Aphasia - when only the Wernicke's area is damaged the patient’s understanding of language is effected, and he may also be unable to monitor his own language. A lack of self-monitoring means that he will not be able to make sure that what he says makes sense or is in context. Speech will be fluent, but the individual will use a lot of the wrong words. Writing will also be impaired.

A lesion in either the Broca’s or Wernicke’s area of the brain can cause severe communication difficulties, and when both these areas of the brain are affected communication with the patient may be extremely difficult.

Conduction Aphasia - this type of aphasia produces fluent speech, but the speech is often interrupted with frequent variations of particular words which are produced as self corrections. Repetition of words is often difficult with different variations of the same word are produced. Comprehension is generally well preserved.

Transcortical Motor Aphasia - with this aphasia, naming is good, but spontaneous speech is rare. These individuals do not speak much or initiate conversation.

Transcortical Sensory Aphasia - with this type of aphasia the individual has fluent speech, but it is often jargon or repetitions of what others are saying. There is also a severe impairment of oral and written comprehension.

Anomic Aphasia - word finding difficulties in spontaneous speech or naming tasks is very evident with this aphasia. However comprehension is usually good, as is repetition.

Reading and Writing

Reading and writing skills are often affected by stroke as well, which further complicates rehabilitation because these modalities cannot be used as compensatory strategies.

Dyslexia and dysgraphia - these are difficulties with reading written words and difficulties writing and spelling words. Writing may be made more difficult when the patient is also suffering from fine motor difficulties. See www.icommunicatetherapy.com for more ideas

Swallowing

Many individuals with stroke experience swallowing problems (dysphagia) and it is vital that a suitably qualified speech and language pathologist / therapist assess a person's swallowing before they begin to eat again. Following a stroke an individual may not be allowed to eat at all because of the dangers of aspiration (food going into the lungs). Problems occur because the muscles used for chewing, managing and swallowing food are not working efficiently. Aspiration is the major concern, but other difficulties also occur such as not being able to keep food in the mouth, drooling, difficulty chewing, and difficulty initiating the swallow reflex. The speech and language pathologist / therapists can assess and work on techniques to help individuals swallow safely, and along with a dietician, can offer advice about food and food textures.

Therapy Approaches

There are a number of therapy approaches for Stroke and CVA. These include trying to stimulate the patient to facilitate a communicative response, or using shaping or fading techniques to train the individual to develop an appropriate response. Another approach is reorganizing the function of the brain, so the undamaged parts compensate for the damaged. The Pragmatic approach looks to restore communicative competence by using any modalities available, such as gesture, drawing, writing etc. Other approaches really breakdown the different areas of function of the brain (using a cognitive neuropsychological model), pinpoint areas of difficulty/impairment and then perform a hierarchy of therapeutic processes to try and increase language and communicative competence. For instance, naming disorders are often worked on by doing a variety of picture naming tasks to facilitate word retrieval or refine strategies to aid word retrieval.

The success of these approaches may very well depend on the severity of the stroke, the area of brain damage, and the frequency and intensity of therapy. Some therapists may use a combination of approaches. Unfortunately, if the stroke is severe, it is unlikely that any of these approaches will be able to allow an individual to return to normal, full cognitive and communicative functioning. However, therapy may help an individual make some progress back towards normal functioning and/or give them other compensatory strategies to help with cognitive tasks and communication.

Issues that need to be taken into account following a stroke
Stroke can produce many different difficulties of varying severity depending on the areas of the brain that are damaged. When planning intervention, the severity of the injury must be taken into account, as well as the aspects of communication that have been compromised and to what extent. The communication program itself, may depend on where the patient is living, the amount of specialist or family support that is available and many other factors.

Time since stroke and rate of recovery - as mentioned above, spontaneous recovery (the brain's own ability to recover) usually occurs most in the first 2 - 3 months following the stroke, and then slows over the next 3 - 4 months. If the individual makes slow progress in the first few weeks of recovery, this can be a sign that they will have continuing longer term problems. However, this statement is rather subjective as we do not give any measurements of progress, but if we take communication in isolation, then it is likely that if an individual still has severe communication difficulties after 2-3 months of spontaneous recovery, they are likely to continue to have these difficulties to some extent.

Ongoing health issues - the health of an individual will also have an impact on recovery. The after effects of a stroke and other ongoing health problems can make intervention difficult and effect general recovery.

Motivation - many individuals will suffer from low mood, frustration, and possibly depression following a stroke. This may affect progress and a willingness to take part in therapy.

Environment - when the individual returns home there will be a number of factors that might facilitate or hinder progress. For example, if they live alone, if the home is adapted to facilitate communication, the communicative competence of those around the individual. See www.icommunicatetherapy.com for strategies to enhance communication in the home environment.

Severity of stroke - obviously the severity of the stroke is likely to have an impact on the severity of the communication difficulty and the amount of recovery.

Area of brain damage - the area of brain damage will have an impact on the type of communication difficulty.

Level of understanding, memory and attention skills - the level of understanding of the individual following the stroke will also impact on therapy intervention. If the individual cannot understand why you are doing therapy, or what you want them to achieve, therapy progress may be slow.

Expectations of those around the individual - some relatives have high expectations of a full recovery from a stroke, and although it is important to want the best outcome for your relative, you must understand the nature of the injury and the possible severe, long lasting effects that it may have on the individual's communication and motor functions.

To learn more about Stroke/CVA, aids and strategies to enhance communication, speech and cognition, you can read about and purchase books on our website www.icommunicatetherapy.com. Click this link to see our online Resource Centre.

Suggested Reading

Suggested reading:

Living With Stroke: A Guide for Families by Richard C Senelick and Karla Dougherty

Brain, Heal Thyself: A Caregiver's New Approach to Recovery from Stroke, Aneurysm, And Traumatic Brain Injuries by Madonna Siles and Lawrence J. Beuret

Peeling the Onion: Reversing the Ravages of Stroke by Robin Robinson

The Stroke Recovery Book: A Guide for Patients and Families by Kip Burkman, Bob Hoganmiller, and David Jenkins

Life After Stroke: The Guide to Recovering Your Health and Preventing Another Stroke by Joel Stein, Julie K. Silver, and Elizabeth Pegg Frates

After Stroke by David M. Hinds

Family Guide to Surviving Stroke & Communications Disorders by Dennis C. Tanner

Stronger After Stroke: Your Roadmap to Recovery by Peter G. Levine

Rewire Your Brain, Rewire Your Life: A Handbook for Stroke Survivors & Their Caregivers by Bob Guns

Stroke Recovery and Rehabilitation by Joel Stein

My Stroke of Insight: A Brain Scientist's Personal Journey by Jill Bolte Taylor

Talking About Aphasia: Living With Loss of Language After Stroke by Susie Parr, Sally Byng, Sue Gilpin, and Chris Ireland

Aphasia Inside Out by Susie Parr, Judith Duchan, and Carole Pound

Aphasiology: Disorders and Clinical Practice (2nd Edition) by G. Albyn Davis

Aphasia Therapy Workshop: Current Approaches to Aphasia Therapy--Principles and Applications by Jacqueline Stark, Nadine Martin, and Ruth Fink

Beyond Aphasia: Therapies For Living With Communication Disability by Carole Pound, Susie Parr, Jayne Lindsay, and Celia Woolf