



## **Recovery from Stroke: Learning to Talk Again**

*by Joy Simpson*

### **Part 1: Aphasia and Rehabilitation**

So it happened to your father. A brain attack. That's what they call a stroke. He survived, but he has trouble speaking and understanding what people say to him. It's a condition called aphasia. What are his chances of full recovery?

The National Aphasia Association says more than half the people with symptoms of aphasia recover in the first few days. But there are many factors to consider if recovery takes longer.

#### **What is aphasia?**

Aphasia can be caused by a health crisis like stroke or a brain tumor, or it can be the result of a head injury from an accident. It's probably the left hemisphere of the brain that has been injured – the language control center.

Aphasia has different forms. It can affect the brain's ability to comprehend language and it can also limit the ability to talk. Sometimes the person can speak, but he doesn't make much sense.

Learning to communicate again is one of the important functions of rehabilitation therapy. "The desire to connect with another person through language – that's the essence of our humanity," said Susan Jackson, a speech-language pathologist and faculty member at the University of Kansas Medical Center.

#### **Factors to consider in recovery**

If your father is fortunate enough to be in the right place at the right time, he'll get the new clot-busting drug that reverses the damage caused by stroke. It is called t-PA or tissue plasminogen activator. You must get to the Emergency Room within three hours for it to be effective. Be aware that the kind of treatment he'll be offered depends on the kind of stroke. If a clot caused it, then t-PA will help. But this is not the right course of action if the stroke was caused by a brain hemorrhage.

"Everyone should know the signs of stroke and be ready to get to the hospital," said Jackson. The National Institutes of Health has been educating the public on this point in their campaign called *Know Stroke: Know the Signs. Act in Time*.

Stroke symptoms are:

- Sudden numbness or weakness of the face, arm, or leg (especially on one side of the body)
- Sudden confusion or trouble speaking or understanding speech
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, or loss of balance or coordination
- Sudden severe headache with no known cause

(NIH news release: [www.nih.gov/news/pr/may2001/ninds-08.htm](http://www.nih.gov/news/pr/may2001/ninds-08.htm) )

When you talk with the doctor, three pieces of information will help you know more about the chances of recovery: the type of stroke, the part of the brain that was affected, and the size of the injury. If the stroke was caused by a blockage of the blood vessels, recovery can take place rapidly in the first few months. If it was caused by blood vessels that burst, healing will take longer. Knowing the location of the injury in the brain gives the medical team information about skills that will likely be affected. The size of the injury is also important. “In general, the larger the lesion, the less recovery,” said Jackson.

Age is a factor in recovery. If your father is younger than 80, he’ll have a better chance. Most people in the last decades of life have a precarious medical profile that complicates everything else.

Regardless of his age, the body will initiate a healing process. But rehabilitation therapy can take him the extra mile. With the help of a speech-language pathologist he can recover his ability to talk, or learn ways to compensate. “Every patient should have a shot at rehab,” says Susan Jackson.

### **Policy issues**

In a landmark study of more than 100 stroke patients with aphasia, the Veterans Administration recorded significant gains when patients had intensive, individualized sessions with a trained professional for at least 12 weeks. Patients who were not in treatment improved, but the folks in therapy made greater strides. “The brain does heal itself over time, but intervention makes for a better recovery,” said Jackson.

Despite evidence that rehabilitation is beneficial, the National Institute of Neurological Disorders and Stroke stated in their report *Stroke Priorities for the Twenty-first Century*: “Many stroke survivors receive limited therapy and are then discharged to the community, where they often remain chronically disabled, socially isolated, and at risk for common post-stroke rehabilitation complications...” (Stroke Progress Review Group, 2002, p. 86).

“The reason stroke survivors receive limited therapy,” said Jackson, “is in part because insurance companies make decisions about discharge instead of the professional in charge of their care.” Therapists say it takes time to assess a person’s potential and rebuild their skills. Discharge from the hospital or outpatient services may cut this short.

## **Part 2: What is Speech-Language Therapy Like?**

A speech-language pathologist will work individually with your father to develop a plan for improved communication. She may also encourage him to join a support group in the community that meets regularly. The first goal is to shore up his language skills. This could mean speaking more words in longer phrases, or the therapist might focus on understanding – strengthening his ability to grasp complex statements.

Coming out of the stroke, he may have only one word to express himself. The key is to tap into his cognitive storehouse, and help him use his own resources to re-enter the world of communication. This happens during strategic practice with the therapist or the group. If his limitations can't be overcome with time, the therapist will help him use other ways to communicate, such as expressive gestures.

Jackson said she has witnessed some eloquent stories that were told in just a few words. "One gentleman made a powerful impact on me. He was a former prisoner of war and told his story to our group. He could only produce single words like 'skinny,' but his gestures got the point across. We understood how cold he was in the camp when he crossed his hands over his chest and shook."

The other task of therapy is to help the family make adjustments. A therapist can explain how hard it is to produce a word out of thin air, especially if there is memory loss. Instead of asking your father to name his favorite food, you could give him a short list to select from, saying for example – "Dad, which do you want, a hamburger or fried chicken?"

"What I teach my student clinicians is to downplay weaknesses and allow the participants to do what they can do. We make them look good," said Jackson.

## **Part 3: New Research on Hidden Deficits from Stroke**

### **Dual tasking is an energy drain**

The human brain has only so much capacity for multiple power demands. This is particularly true for stroke survivors. It's like living in a beautiful old house. You just can't run the vacuum cleaner and a window air conditioner at the same time – or you'll blow a fuse.

"Our patients tell us they can't focus on driving and listen to the radio – they have to turn the radio off," said Jackson. This is a classic dual-tasking dilemma. There just aren't enough amps.

Scientists at the University of Kansas recently documented that older adults who've had a stroke can't effectively dual-task. "When they try to talk and walk at the same time, we are seeing problems with coherence. They can't finish their sentences," said Susan Kemper, a distinguished professor of psychology and gerontology. Screening out TV noise, walking, using their hands – these "tasks" all affected their ability to sort through ideas and talk.

The study by Susan Kemper and Ruth Herman from the KU Gerontology Center and Joan McDowd, Patricia Pohl and Susan Jackson at the KU Medical Center will be published in the journal *Aging, Neuropsychology and Cognition* in 2004.

The findings of this study – funded by the National Institute on Aging – came as a surprise. All the participants had been given a clean bill of health. They were two or more years into recovery and had sailed through the standard tests for stroke. “But when they were faced with dual tasks,” said Kemper, “they looked like they had aphasia and motor impairment.” “Functional competency measures tend to test one activity at a time,” explained Susan Jackson, “but the changes in a stroke patient’s cognitive reserve capacity is apparent when he does two things at once.”

In other words, a patient may not be considered aphasic, but under certain conditions he may struggle with the symptoms. Because communication is so important to quality of life, this study makes the case for rehab services regardless of the diagnosis.

### **What is cognitive reserve capacity?**

Walking and talking seem like natural companions – something we do so routinely we can hardly believe it’s a power drain. But no matter our age or health, something has to go when we do two things at once, says Susan Kemper. “Can you rub your tummy and pat your head in perfect rhythm? Of course not. What is surprising is some people can in fact do multiple things at once – without costs – like airplane pilots.”

It is our cognitive reserve capacity that powers complex tasks like reasoning and problem solving. It enables a good pilot to focus on a stream of visual and auditory inputs while steering a complicated machine. It holds all the pieces of information in the mind, sorts and prioritizes for coordinated action.

With advancing age, accompanied by changes in eyesight, balance, and attention, there are just too many demands on our cognitive resources. And individuals who survive a stroke will find they have surprising limitations when they try to do two things at once.

Simple awareness of the challenges can help. “Don’t just assume your father isn’t hearing you,” said Kemper. “Try turning off the TV so he can focus on your conversation.”

**“Recovery from Stroke” is based on interviews with Susan Jackson and Susan Kemper – scientists at the Schiefelbusch Institute for Life Span Studies at the University of Kansas. Joy Simpson is a member of the National Association of Science Writers.**

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## Online Resources

American Speech-Language-Hearing Association

Information on Aphasia [www.asha.org/public/speech/disorders/Aphasia\\_info.htm](http://www.asha.org/public/speech/disorders/Aphasia_info.htm)

National Aphasia Association [www.aphasia.org](http://www.aphasia.org)

National Institute on Deafness and Other Communication Disorders – NIH

Research on adult aphasia [www.nidcd.nih.gov/health/voice/adultaphasia.asp](http://www.nidcd.nih.gov/health/voice/adultaphasia.asp)

National Institute of Neurological Disorders and Stroke – NIH [www.ninds.nih.gov](http://www.ninds.nih.gov)

Kansas Speech-Language-Hearing Association [www.ksha.org](http://www.ksha.org)

U.S. Department of Health and Human Services. *Patient and Family Guide to Stroke Recovery*, an online brochure provided by the Landon Center on Aging, University of Kansas Medical Center

[www2.kumc.edu/coa/Info\\_OlderAdultFam/DiseaseMgmt/Stroke/Stroke\\_Guide.htm](http://www2.kumc.edu/coa/Info_OlderAdultFam/DiseaseMgmt/Stroke/Stroke_Guide.htm)