



# VA/DoD CLINICAL PRACTICE GUIDELINE FOR THE MANAGEMENT OF STROKE REHABILITATION

Department of Veterans Affairs  
Department of Defense

## Patient Summary

### I. What is a Stroke or Transient Ischemic Attack (TIA)?

A stroke is sometimes called a “brain attack.” It occurs when blood flow to part of the brain is blocked or reduced. Less oxygen reaches the brain and brain cells get damaged. A stroke is an emergency because a delay in medical treatment can result in permanent brain damage or death. 1.9 million brain cells die off every minute a stroke goes untreated.<sup>(1)</sup> It is very important to catch and treat stroke as early as possible.

A transient ischemic attack (TIA), sometimes called a “mini-stroke,” is when people experience temporary neurologic symptoms because of reduced blood flow to the brain, but not enough for brain cells to be permanently damaged. This is a medical emergency that requires immediate medical care to stop a stroke in the future. Even if the neurologic symptoms resolve, people should seek immediate medical attention. People who have experienced a TIA or stroke are at higher risk of having a TIA or stroke in the future.

Some potential factors and behaviors may increase your risk for stroke. Some of these cannot be modified. Some may be modified and lowered with treatment or changes in your behavior and lifestyle, or both. You should make routine appointments with your primary care providers to screen for known risk factors. You should follow treatments from your providers.

Modifiable Risk Factors		Non-Modifiable Risk Factors
<ul style="list-style-type: none"><li>• Alcohol use</li><li>• Diabetes mellitus</li><li>• Heart problems</li><li>• High blood pressure</li><li>• High cholesterol</li></ul>	<ul style="list-style-type: none"><li>• Illicit substances (e.g., cocaine)</li><li>• Obesity</li><li>• Physical inactivity</li><li>• Sleep problems</li><li>• Smoking</li></ul>	<ul style="list-style-type: none"><li>• Age</li><li>• Family History</li><li>• Sex</li><li>• Race and ethnicity</li></ul>

## II. Common Symptoms that may Happen with a Stroke or TIA

Common symptoms you may experience with stroke or TIA are listed below.<sup>(2)</sup> One or more of these symptoms can occur suddenly at the time of a stroke or TIA. Symptoms can range from mild to severe. There may be one symptom or several symptoms. Some symptoms may get better over time, but others may not. You should talk with your healthcare team about your condition and what you can expect during recovery.

- Weakness or paralysis of the face, arm, or leg
- Trouble speaking or understanding what others are saying
- Numbness of the face, arm, or leg
- Trouble walking or loss of balance or coordination
- Difficulties swallowing foods, liquids, or medications
- Trouble seeing in one or both eyes
- Severe headache of unknown cause

Recognizing the signs and symptoms of a stroke can be challenging, especially when someone you care about is going through it. There is a simple mnemonic that can help you remember the signs and symptoms of a stroke and act quickly - BE FAST.

- B: Sudden loss of balance or dizziness
- E: Acute changes to the eyes or vision
- F: Facial drooping
- A: Arm or leg weakness
- S: Changes in speech
- T: Time to call 911 and activate emergency services for immediate transport to the hospital

You can make a big impact on survival by quickly identifying stroke signs and symptoms and ensuring that the person receives timely medical attention.<sup>(3)</sup>

### **III. Depression after Stroke**

Depression is common after a stroke. Many people feel overwhelmed and frustrated. They can feel down, isolated, or hopeless. This can impact what they do every day and the quality of their lives. Anyone can develop depression after a stroke; even those who never had depression before. Here are some warning signs:

- Not being interested in doing anything
- Feeling helpless, hopeless, or worthless
- Low energy
- Change in appetite
- Weight gain or loss
- No appetite or weight loss
- Feeling blue or irritable
- Problems sleeping or feeling tired
- Thoughts that you would be better off dead (if you are in need of support, please call the Veterans Crisis Line at 988)

If you have any or all of these signs, please discuss them with your doctor.

### **IV. Stroke Rehabilitation Goals**

Rehabilitation after stroke helps to recover confidence and function. The rehabilitation team will work with you to set personalized goals. The goals will focus on reducing the negative impact stroke could have on your physical and mental health. Your treatment plan may include different types of treatments.

The goal of recovery after stroke is to boost your independence and participation in life activities. Stroke rehabilitation works better when it addresses both your physical and emotional needs. You may feel that these programs help you become more independent and live a better life.

Many professionals can be part of your rehabilitation team like physicians, nurses, physical therapists, occupational therapists, speech therapists, psychologists, social workers, and others. You and your caregivers are the most important members of this team.

### Frequent Goals of Stroke Rehabilitation

- Improve and maintain your physical function (your ability to move, eat, speak, and participate in life activities)
- Improve communication and language skills
- Improve skills like attention, memory, and problem solving
- Improve your emotional function (mood and satisfaction with life)
- Improve your social function (activities and connections with others)
- Improve your quality of life
- Maintain a healthy lifestyle
- Gain understanding of the nature of your stroke
- Take care of other health issues that can prevent another stroke (quitting smoking; managing high blood pressure, blood sugar, and/or cholesterol; improving diet; and/or improving fitness level)

## V. Treatments During Stroke Rehabilitation

There are many rehabilitation services available to you after a stroke, such as physical therapy, occupational therapy, speech therapy, or other services. Each treatment program is unique and tailored to your goals and abilities. In general, treatment is aimed at improving your quality of life. All providers will work with you to meet your therapy goals.

- **A *physiatrist*** provides medical care to patients with stroke and manages the rehabilitation team
- **Physical therapy** helps with muscle control, balance, coordination, and strength. It can improve your ability to move, walk, and participate in life. Sometimes, using equipment can improve mobility.
- **Occupational therapy** helps those who have had a stroke do everyday activities they need or want to do. These may include, for example, how to use the bathroom, bathe, dress, pay bills, prepare meals, clean, and drive. Occupational therapy also helps you to concentrate, understand, and get around safely. Your occupational therapist may also provide equipment to help with these tasks.
- **Speech therapy** helps you re-learn how to communicate, speak, listen, read, and write. It also helps with thinking, attention, concentration, memory, and problem-solving. Additionally, speech therapy helps you with swallowing foods and liquids after stroke.
- **Behavioral and mental health treatment** helps you adjust to life after stroke. It can help you cope with emotions or changes in behavior following stroke. It can also help you participate in rehabilitation.
- **Social work or nurse case management** helps to coordinate your treatments, appointments, and resources. They also help plan your discharge.
- **Nurses** evaluate changes in your condition, give medications, care for skin and wounds, and provide support and education.

- **Primary care providers and neurologists** help treat your risk factors for stroke, including high blood pressure, high blood sugar, high cholesterol, and tobacco use. They will also determine the best medications that will help lower your risk of stroke or TIA in the future. They will order any additional tests you may need.
- Additional services may include dietetics, recreation therapy, optometry/visual rehabilitation, ophthalmology, clinical pharmacy, vocational rehabilitation, and driver rehabilitation.

Active participation in therapies and self-care is important for recovery. Self-care means actively working to maintain or improve your health. This can include eating a balanced diet, getting adequate rest, exercising, and reducing stress. It can also mean stopping smoking or drinking less alcohol. Talk with your providers about ways you can practice self-care.

## VI. Treatment Settings

You can receive therapy in different places, such as a hospital, a rehabilitation facility, a long-term care facility, or an outpatient program. You could also receive therapy in your home in person or through a computer or a smartphone. Where you receive care depends on the severity of your stroke and your individual needs.

Stroke affects each person differently. Therefore, progress and improvement are not the same for all patients. As you progress, you may move from one setting to another to help you be as independent as possible. You should discuss with your doctor when it is the right time to move to a new place for treatment.

## VII. Use of New Technologies

There are many new technologies to help you recover from stroke. However, research has not shown that these technologies help patients recover more than they would without using them. Ask your providers what technology may be helpful for you.

## VIII. Questions to Ask Your Care Team

You should discuss any questions you may have with your healthcare providers. Ask about anything that seems unclear to you. Some examples may include:

### Shortly after a stroke:

- What caused my stroke?
- How can I reduce my risk of another stroke?
- What resources are available to help me recover from my stroke?
- How can I regain the function, quality of life, and independence that I had before my stroke?

- How can my family or caregiver be involved in my treatment after stroke?
- What resources are available to my family or caregiver to help me understand what going home may involve?

**In the weeks after a stroke:**

- When should I expect to transition to a less intensive treatment setting?
- What will be my next treatment setting?
- What can I do to help improve my recovery?
- How active should I be? Are there particular activities that I should engage in or avoid?
- What will change in the way I live when I go back home?
- What help will I need to go home? How long will I need it?
- What can I do to improve my ability to return to work?
- Is it safe for me to drive?
- Can patients fully recover from stroke?

**In the months after a stroke:**

- What treatments will continue to help me with my recovery?
- What can I do at home to help me recover?
- Are there resources available for my family? Are resources available that could help provide more support?

**IX. More information for patients with stroke and their caregivers can be found here:**

- Centers for Disease Control and Prevention – Stroke Resources for Individuals and Patients: [https://www.cdc.gov/stroke/communications\\_kit.htm#patients](https://www.cdc.gov/stroke/communications_kit.htm#patients)
- American Stroke Association (part of the American Heart Association): <https://www.stroke.org/>
- American Heart Association – “Life’s Essential 8” measures for improving and maintaining cardiovascular health: <https://www.heart.org/en/healthy-living/healthy-lifestyle/lifes-essential-8>
- Department of Veterans Affairs Resources and Education for Stroke Caregivers’ Understanding and Empowerment: <https://www.cidrr8.research.va.gov/rescue/library.cfm>

## References

1. Saver JL. Time is brain--quantified. *Stroke*. 2006;37(1):263-6. Epub 2005/12/13. doi: 10.1161/01.STR.0000196957.55928.ab. PubMed PMID: 16339467.
2. American Stroke Association. Stroke Symptoms and Warning Signs 2024. Available from: <https://www.stroke.org/en/about-stroke/stroke-symptoms>.
3. Chen X, Zhao X, Xu F, Guo M, Yang Y, Zhong L, et al. A Systematic Review and Meta-Analysis Comparing FAST and BEFAST in Acute Stroke Patients. *Front Neurol*. 2021;12:765069. Epub 2022/02/15. doi: 10.3389/fneur.2021.765069. PubMed PMID: 35153975.