



American
Stroke
Association.
A division of the
American Heart Association.

Adult Stroke Rehabilitation & Recovery Guideline

SENSORIMOTOR IMPAIRMENTS AND ACTIVITIES



Sensorimotor impairments are among the most common and disabling consequences of stroke, affecting movement, sensation, communication, cognition, balance and participation in everyday activities.

Stroke survivors may experience weakness, impaired coordination, difficulty walking, reduced hand and arm function, motor planning deficits, sensory changes and communication disorders such as aphasia, dysarthria or apraxia of speech. These impairments can significantly limit independence and quality of life.

Current recommendations emphasize individualized, task-specific and intensive interventions that encourage meaningful participation. Effective strategies include gait and balance training, strengthening, upper extremity practice, communication therapies, environmental modifications and supportive technologies while addressing cognitive, social and emotional needs.

Here are key recommendations from the American Heart Association and American Stroke Association's 2026 Guideline for Adult Stroke Rehabilitation and Recovery. The comprehensive guideline details the best clinical practices in providing care for adults recovering from stroke. For more information about these recommendations, please refer to the full guideline at [Heart.org/StrokeRehabGuideline](https://heart.org/stroke-rehab-guideline).

The recommendations highlighted here address one of six major topics covered within the guideline:

- ☐ The Rehabilitation Program
- ☐ Prevention and Medical Management of Comorbidities
- ☐ Assessment
- ☒ **Sensorimotor Impairments and Activities**
- ☐ Cognition and Communication
- ☐ Transitions in Care and Community Rehabilitation

PHYSICAL ACTIVITY

- An individually tailored exercise program, including aerobic and resistance training, is recommended to optimize physical health, mobility, cardiovascular fitness and management of modifiable stroke risk factors, and to reduce the risk of future vascular events.
- Participation in a program of exercise or physical activity commencing in rehabilitation and continuing at home or in the community is recommended to optimize cognitive health.
- Exercise should be prescribed and progressed gradually, with consideration of the individual's functional status, comorbidities, safety, motivation and rehabilitation goals. For patients who are unable to achieve recommended activity levels, any amount of physical activity provides greater health benefit than none.
- It is recommended that clinicians work collaboratively with stroke survivors, while keeping exercise guidelines and the person's preferences in mind, to determine an appropriate and achievable physical activity program.

MANAGEMENT OF SPASTICITY

- For stroke-related upper extremity spasticity, targeted injection of botulinum toxin into localized upper limb muscles is recommended to reduce spasticity, improve passive range of motion and limb positioning, and improve dressing and hygiene.
- For stroke-related lower extremity spasticity, targeted injection of botulinum toxin into lower limb muscles is recommended to reduce spasticity that interferes with gait.
- For stroke-related limb spasticity, instrumented guidance for targeting muscles for botulinum injection using ultrasound, electrical stimulation or electromyography is recommended to improve the efficacy of the injection.
- For severe spasticity, intrathecal baclofen therapy is reasonable for reducing spasticity that does not respond to other interventions, to improve spasticity and limb positioning during care.
- The use of splints and taping is not recommended for prevention of wrist and finger spasticity.

BALANCE AND ATAXIA

- If applicable, stroke survivors should be prescribed and fitted with an assistive device or orthosis to improve balance and decrease fall risk.
- To establish an appropriate treatment plan, stroke survivors should be evaluated for balance, balance confidence and fall risk.
- Balance-focused interventions such as Tai Chi, virtual reality-based balance training and core stabilization exercises may be useful in improving balance.

GAIT AND MOBILITY

- An evidence-based, goal-oriented, multidisciplinary physical rehabilitation program is recommended.
- Task-specific training focused on overground walking, stepping and balance is recommended to improve gait and mobility.
- Resistance training of both the more-affected and less-affected leg, though not the less-affected leg alone, can be effective in improving walking endurance, balance and mobility.
- For stroke survivors who are ambulatory, robot-assisted gait training is not recommended over task-specific overground gait training.
- For survivors who are ambulatory, light- to moderate-intensity gait training on a treadmill (with or without body-weight support) is not recommended over task-specific overground gait training.

UPPER EXTREMITY ACTIVITY (including ADLs, IADLs, touch and proprioception)

- For survivors with post-stroke hemiparesis, activities of daily living (ADL) training tailored to individual needs and eventual discharge setting is useful to achieve an optimal level of independence.
- Survivors should receive individualized ADL (IADL) training based on their needs and planned discharge setting.
- Repetitive, progressively graded practice of functional tasks, including task-specific training approaches such as constraint-induced movement therapy and its modified versions, is recommended to improve ADL performance and motor function.

ADAPTIVE EQUIPMENT, DURABLE MEDICAL DEVICES, ORTHOTICS AND WHEELCHAIRS

- For stroke survivors who have activity limitations or participation restrictions, adaptive and assistive devices should be used to improve engagement in activities and participation.
- For those who have gait or balance impairments, ambulatory assistive devices (e.g., cane, walker) should be used to improve mobility efficiency and safety as needed.
- Wheelchairs should be used to support household and community mobility for stroke survivors who are non-ambulatory or have limited walking ability.
- For stroke survivors with post-stroke hemiplegia, using an ankle-foot orthosis or functional electrical stimulation is recommended to improve balance and mobility.

LIFESTYLE MODIFICATIONS AND MANAGEMENT

- For stroke survivors who are physically able, engaging in at least moderate-intensity aerobic activity for a minimum of 10 minutes four times per week or vigorous-intensity aerobic activity for a minimum of 20 minutes twice per week is indicated to lower the risk of recurrent stroke and the composite cardiovascular endpoint of recurrent stroke, myocardial infarction or vascular death.
- Engaging in exercise classes that include counseling to improve physical activity behavior can be beneficial for reducing cardiometabolic risk factors and increasing leisure-time physical activity participation.
- In survivors with deficits after stroke that impair their ability to exercise, supervision of an exercise program by a healthcare professional, in addition to routine rehabilitation, can be beneficial for secondary stroke prevention.
- A Mediterranean diet is reasonable to reduce the risk of recurrent stroke.

TREATMENT AND INTERVENTIONS FOR VISUAL IMPAIRMENTS

- Eye exercises are recommended to improve ocular convergence for stroke survivors with convergence insufficiency.
- To improve visual scanning, audio-visual spatial exploration training, in comparison with visual spatial exploration training alone, is recommended for patients with visual-spatial/perceptual deficits.

DYSPHAGIA MANAGEMENT AND NUTRITIONAL SUPPORT

- Dysphagia screening should be performed as soon as possible (within 24 hours of admission) and before a stroke survivor begins eating, drinking or receiving oral medications, to identify need for a full evaluation.
- Dysphagia screening should be performed using a formal, validated tool that, at minimum, includes observing attempts to swallow liquids of different volumes to identify those at risk for dysphagia.
- For stroke survivors with suspected dysphagia, instrumented swallow studies should be chosen over non-instrumented or “bedside” swallow studies to verify the presence/absence of aspiration, to determine the biomechanical reasons for dysphagia, to identify the least restrictive oral diet and to guide the treatment plan with greater precision.
- For stroke-associated dysphagia, behavioral swallowing treatment is effective for improving swallowing function, increasing tolerance of food textures, reducing the risk of negative health outcomes and improving quality of life.
- For survivors with dysphagia in the acute phase, early nutrition support is recommended to improve nutritional status, improve functional outcomes and reduce adverse events.

Stroke rehabilitation requires a sustained and coordinated effort from a large team, with the patient and the patient’s goals at the center. In addition to the patient, the team includes family and friends, other caregivers (e.g., personal care attendants), physicians, nurses, physical and occupational therapists, speech-language pathologists, recreation therapists, psychologists, nutritionists, social workers and others.

Among these team members, communication and coordination are paramount in maximizing the effectiveness and efficiency of rehabilitation and underlie the entire stroke rehabilitation and recovery guideline.