SENSORIMOTOR IMPAIRMENTS AND ACTIVITIES
ADULT STROKE REHABILITATION & RECOVERY GUIDELINES

Sensorimotor deficits affect nutrition, communication, cognition, memory, vision and gross and fine movement and coordination.

Here are key recommendations from AHA/ASA’s stroke rehab & recovery guidelines that provide the best clinical practices for adults recovering from stroke.

The information covered here addresses one of five major recommendation topics within the guidelines:

- The Rehabilitation Program
- Prevention and Medical Management of Comorbidities
- Assessment
- Sensorimotor Impairments and Activities
- Transitions in Care and Community Rehabilitation

NON-PHARMACOLOGICAL THERAPIES FOR COGNITIVE IMPAIRMENT AND MEMORY

- Enriched environments to increase engagement with cognitive activities are recommended. (Class I, LOE A)

- Compensatory strategies may be considered to improve memory functions, including the use of internalized strategies (e.g. visual imagery, semantic organization, spaced practice) and external memory assistive technology (e.g. notebooks, paging systems, computers, other prompting devices). (Class IIb, LOE A)

- Exercise may be considered as adjunctive therapy to improve cognition and memory after stroke. (Class IIb, LOE C)

COGNITIVE-COMMUNICATION DISORDERS

- Interventions for cognitive-communication disorders are reasonable to consider if they are individually tailored and targeted. (Class IIa, LOE B)

DYSPHAGIA MANAGEMENT AND NUTRITIONAL SUPPORT

- Drug therapy, neuromuscular electrical stimulation, pharyngeal electrical stimulation, physical stimulation, transcranial direct current stimulation and transcranial magnetic stimulation are of uncertain benefit and not currently recommended. (Class III, LOE A)
**APHASIA**

- Group treatment may be useful across the continuum of care, including the use of community-based aphasia groups. (Class IIb, LOE B)

**MOTOR SPEECH DISORDER: DYSARTHRIA AND APRAXIA**

- Tele-rehabilitation may be useful when face-to-face treatment is impossible or impractical. (Class IIA, LOE C)
- Activities to facilitate social participation and promote psychosocial wellbeing may be considered. (Class IIb, LOE C)

**SPASTICITY**

- The use of splints and taping are not recommended for prevention of wrist and finger spasticity. (Class III, LOE B)

**BALANCE AND ATAXIA**

- Persons with stroke who have poor balance, low balance confidence, fear of falls and/or are at risk for falls should be provided with a balance-training program. (Class I, LOE A)

**MOBILITY**

- Incorporating cardiovascular exercise and strengthening interventions is reasonable to consider for recovery of gait capacity and gait-related mobility tasks. (Class IIA, LOE A)
- Mechanically assisted walking (treadmill, electromechanical gait trainer, robotic device, servo-motor) with body weight support may be considered for patients who are non-ambulatory or have low ambulatory ability early after stroke. (Class IIb, LOE B)
- The effectiveness of neurophysiologic approaches (i.e. NDT, PNF) in comparison to other treatment approaches for motor retraining following an acute stroke has not been established. (Class IIb, LOE B)
- The use of dextroamphetamine or methylphenidate to facilitate motor recovery is not recommended. (Class III, LOE B)

**EYE MOVEMENT DEFICITS**

- Eye exercises for treatment of convergence insufficiency are recommended. (Class I, LOE A)

**UPPER EXTREMITY ACTIVITY**

- Functional tasks should be practiced, i.e. task-specific training, where the tasks are graded to challenge individual capabilities, practiced repeatedly and are progressed in difficulty on a frequent basis. (Class I, LOE A)
- All persons with stroke should receive ADL training, tailored to individual needs and eventual discharge setting. (Class I, LOE A)
- Neuromuscular electrical stimulation is reasonable to consider for persons with minimal volitional movement within the first few months after stroke or for persons with shoulder subluxation. (Class IIA, LOE A)
- Strengthening exercises are reasonable to consider as an adjunct to functional task practice. (Class IIA, LOE B)
- Bilateral training paradigms may be useful for upper limb therapy. (Class IIb, LOE A)

**DECONDITIONING AND FITNESS**

- Following successful screening, an individually tailored exercise program is indicated to enhance cardiorespiratory fitness and reduce the risk of stroke recurrence. (Class 1, LOE A, for improved fitness; LOE B, for reduction of stroke risk)
- After completion of formal stroke rehabilitation, participation in a program of exercise or physical activity at home and/or in the community is recommended. (Class 1, LOE A)

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.

Communication and coordination among these team members is paramount in maximizing the effectiveness and efficiency of rehabilitation and underlies the entire stroke rehabilitation and recovery guidelines.
### RATING OF THE EVIDENCE:
CLASSIFICATION OF RECOMMENDATIONS AND LEVELS OF EVIDENCE

<table>
<thead>
<tr>
<th>CLASS</th>
<th>LEVEL</th>
<th>BENEFIT &gt; &gt; &gt; RISK</th>
<th>ADDITIONAL STUDIES</th>
<th>SHOULD BE</th>
<th>PROFESSIONAL</th>
<th>TREATMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIA</td>
<td>A</td>
<td>Recommendation in favor of treatment or procedure being useful/effective</td>
<td>Some conflicting evidence from multiple randomized trials or meta-analyses</td>
<td>Resonable to perform procedure/administer treatment</td>
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<tr>
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<td>B</td>
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<tr>
<td>III</td>
<td>C</td>
<td>Recommendation that procedure or treatment is useful/effective</td>
<td>Only diverging expert opinion, case studies or standard of care</td>
<td>Not useful/effective and may be harmful</td>
<td></td>
<td></td>
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### LEVEL A
MULTIPLE POPULATIONS EVALUATED
DATA DERIVED FROM MULTIPLE RANDOMIZED CLINICAL TRIALS OR META-ANALYSES

- Recommendation that procedure or treatment is useful/effective
- Sufficient evidence from multiple randomized trials or meta-analyses

### LEVEL B
LIMITED POPULATIONS EVALUATED
DATA DERIVED FROM A SINGLE RANDOMIZED TRIAL OR NONRANDOMIZED STUDIES

- Recommendation that procedure or treatment is useful/effective
- Evidence from single randomized trial or nonrandomized studies

### LEVEL C
VERY LIMITED POPULATIONS EVALUATED
ONLY CONSENSUS OPINION OF EXPERTS, CASE STUDIES OR STANDARD OF CARE

- Recommendation that procedure or treatment is useful/effective
- Only expert opinion, case studies or standard of care

### SUGGESTED PHRASES FOR WRITING RECOMMENDATIONS

- Should be recommended
- Is indicated
- Is useful/effective/beneficial
- May/might be considered

### COMPARATIVE EFFECTIVENESS PHRASES

- Treatment/strategy A is probably recommended/indicated in preference to treatment B
- Treatment A should be chosen over treatment B

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