

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

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)

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)



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 I, 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 I, 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

SIZE OF THE TREATMENT EFFECT

	CLASS I	CLASS IIA	CLASS IIB	CLASS III NO BENEFIT OR CLASS III HARM									
	BENEFIT >>> RISK PROCEDURE/TREATMENT SHOULD BE PERFORMED/ADMINISTERED	BENEFIT >> RISK ADDITIONAL STUDIES WITH FOCUSED OBJECTIVES NEEDED IT IS REASONABLE TO PERFORM PROCEDURE/ADMINISTER TREATMENT	BENEFIT ≥ RISK ADDITIONAL STUDIES WITH BROAD OBJECTIVES NEEDED; ADDITIONAL REGISTRY DATA WOULD BE HELPFUL PROCEDURE/TREATMENT MAY BE CONSIDERED	<table border="1" style="width: 100%; text-align: center; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="font-size: 0.8em;">PROCEDURE /TEST</th> <th style="font-size: 0.8em;">TREATMENT</th> </tr> </thead> <tbody> <tr> <td style="font-size: 0.7em;">COR III: NO BENEFIT</td> <td style="font-size: 0.7em;">NOT HELPFUL</td> <td style="font-size: 0.7em;">NO PROVEN BENEFIT</td> </tr> <tr> <td style="font-size: 0.7em;">COR III: HARM</td> <td style="font-size: 0.7em;">EXCESS COST W/O BENEFIT OR HARMFUL</td> <td style="font-size: 0.7em;">HARMFUL TO PATIENTS</td> </tr> </tbody> </table>		PROCEDURE /TEST	TREATMENT	COR III: NO BENEFIT	NOT HELPFUL	NO PROVEN BENEFIT	COR III: HARM	EXCESS COST W/O BENEFIT OR HARMFUL	HARMFUL TO PATIENTS
	PROCEDURE /TEST	TREATMENT											
COR III: NO BENEFIT	NOT HELPFUL	NO PROVEN BENEFIT											
COR III: HARM	EXCESS COST W/O BENEFIT OR HARMFUL	HARMFUL TO PATIENTS											
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	Recommendation in favor of treatment or procedure being useful/effective Some conflicting evidence from multiple randomized trials or meta-analyses	Recommendation's usefulness/efficacy less well established Greater conflicting evidence from multiple randomized trials or meta-analyses	Recommendation that procedure or treatment is not useful/effective and may be harmful 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	Recommendation in favor of treatment or procedure being useful/effective Some conflicting evidence from single randomized trial or nonrandomized studies	Recommendation's usefulness/efficacy less well established Greater conflicting evidence from single randomized trial or nonrandomized studies	Recommendation that procedure or treatment is not useful/effective and may be harmful 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	Recommendation in favor of treatment or procedure being useful/effective Only diverging expert opinion, case studies or standard of care	Recommendation's usefulness/efficacy less well established Only diverging expert opinion, case studies or standard of care	Recommendation that procedure or treatment is not useful/effective and may be harmful Only expert opinion, case studies or standard of care									
SUGGESTED PHRASES FOR WRITING RECOMMENDATIONS	Should is recommended is indicated is useful/effective/beneficial	is reasonable can be useful/effective/beneficial is probably recommended or indicated	may/might be considered may/might be reasonable usefulness/effectiveness is unknown/unclear/uncertain or not well established	COR III: No Benefit is not recommended is not indicated should not be performed/administered/other is not useful/beneficial/effective	COR III: Harm potentially harmful causes harm associated with excess morbidity/mortality should not be performed/administered/other								
COMPARATIVE EFFECTIVENESS PHRASES	treatment/strategy A is recommended/indicated in preference to treatment B treatment A should be chosen over treatment B	treatment/strategy A is probably recommended/indicated in preference to treatment B it is reasonable to choose treatment A over treatment B											

ESTIMATE OF CERTAINTY (PRECISION) OF TREATMENT EFFECT