# Treatment to Improve Performance of Occupational Tasks

- The occupational therapist's primary role in stroke rehabilitation is to enhance clients' participation and quality of life through occupation.
- Interventions to improve performance of BADL is a major component of therapy for people who have had a stroke. Indeed, levels of independence in BADL are used to measure the success of rehabilitation .
- It is accepted practice to teach patients with significant performance skills deficits compensatory methods for performing important tasks and activities, using the affected limb when possible and, when not, the unaffected limb .
- Many consider that early ADL training focusing on modifying activity demands, contexts, and performance patterns (compensatory techniques) results in faster success and is therefore more cost effective and more satisfying to the patient, who again feels competent .

# Treatment to Improve Performance of Occupational Tasks

- Others contend that, when ADL training focuses on one-handed techniques and use of devices or modifications without working to restore performance skills, the patient fails to relearn bilateral movements and instead develops unilateral habits .
- Skilled OT intervention considers each individual's needs, goals, and motivations and combines both compensatory and remedial treatment strategies and attempts to improve both areas of occupation and performance skills by engaging the patient in meaningful activities.

# Treatment to Improve Performance of Occupational Tasks

- Putting on a front-buttoning shirt, for example, besides helping a patient gain independence in the task of dressing, addresses the following component abilities, capacities, and conditions:
- Joint and soft-tissue integrity (self-stretching or relaxation techniques for involved arm in preparation for dressing, positioning of arm on a surface to prevent stretching of weak shoulder structures)
- Voluntary movement and function of involved upper extremity (abducting shoulder to put on a sleeve, extending elbow to push the hand through the sleeve, pinching one side of the shirt to stabilize while buttoning)

# Treatment to Improve Performance of Occupational Tasks

- Somatosensory perception (the texture of the shirt, the position of the affected arm)
- Postural adaptations (anterior pelvic tilt, trunk rotation, sitting/standing balance, weight shifting)
- Visual-perceptual skills (finding the shirt in the visual field, distinguishing top from bottom, finding the sleeve opening)
- Cognitive skills and emotional reactions (sequencing, attention span, frustration tolerance, motivation)

# Treatment to Improve Performance of Occupational Tasks

- **<u>ADL training with stroke patients begins with simple tasks and gradually increases in difficulty as a patient gains competency</u>**
- Several studies discerned a hierarchy of achievement of self-care skills. Results of one study showed that bathing, dressing, and climbing stairs were the activities for which stroke survivors most often required assistance, with 32% of patients needing help with bathing, 25.5% needing help with dressing, and 32% requiring assistance with stairs 12 months poststroke .
- Aspects of dressing that are particularly difficult for stroke patients are putting a sock and shoe on the affected foot, lacing shoes, and pulling up trousers or pants.

# Treatment to Improve Performance of Occupational Tasks

- A study that investigated the relationship between dressing abilities and cognitive, perceptual, and physical deficits found that, in general, lower extremity dressing correlates more with motor performance, and upper extremity dressing correlates more with cognitive or perceptual performance .
- Adaptive devices should be considered if they increase simplicity, independence, and safety for the patient or caregiver .
- As the patient progresses, occupational performance tasks other than basic self-care should be addressed, particularly if the patient expects to return to independent community living .

# Treatment to Improve Performance of Occupational Tasks

- IADL tasks such as homemaking, home management, and communitymobility involve greater interaction with the physical and social environment and require higher level problemsolving and social skills than BADL tasks .
- Avocational interests, including adapted methods of continuing familiar hobbies, are an important area of treatment.
- Many stroke survivors are faced with increases in leisure time because of the inability to go back to work; however, a reduction in social and leisure participation commonly occurs after stroke.
-
-

# Treatment to Improve Performance of Occupational Tasks

- Performance-component goals are based on the impairments associated with an individual's stroke and are directly linked to occupational performance goals.
- The goals and modalities used to address these component deficits must be purposeful and meaningful from the patient's point of view.
- Therapists use occupation-based interventions, purposeful activity, and preparatory methods to help patients achieve long-term occupational goals

# Treatment to Improve Performance Skills and Client Factors

- Thus, in addition to direct practice of dressing and grooming activities, a patient may be engaged in a floor game to improve sitting balance needed to don socks, or use therapy putty for resistive grasp activities to strengthen muscles needed to squeeze a tube of toothpaste.

- Treatments for stroke deficits are described individually, but most patients in rehabilitation programs have multiple interacting problems requiring efficient, integrated intervention plans that simultaneously address several deficit areas.

# Treatment to Improve Performance Skills and Client Factors

- **Postural Adaptation.**

  The ability to make automatic postural adjustments, including trunk control and the maintenance of balance, is a prerequisite for successful performance of occupational tasks

- Part of the occupational therapist's role in training a patient with stroke in ADL independence poststroke is in understanding each patient's particular strengths and weaknesses regarding stability and mobility.
- For example, some clients may be challenged in maintaining sitting balance on the side of a bed for the duration of eating an entire meal, whereas others may be ready to improve dynamic standing balance in order to cast a fishing line or play golf.

# Treatment to Improve Performance Skills and Client Factors

- **Postural Adaptation.**

  Therapists should teach patients the safest, most effective and efficient “ready” position for engaging in activities as well as strategies for adapting to changes in body position.

- A particularly challenging and poorly understood impairment of postural control is pusher behavior.
- Pusher behavior is clinically defined to describe hemiplegic patients who actively push away from their nonparalyzed side with their stronger limbs and resist attempts to make them more upright.

# Treatment to Improve Performance Skills and Client Factors

- **<u>Postural Adaptation.</u>**

  pusher behavior does not result from disrupted processing of vestibular information but from a higher order disruption in the processing of somesthetic information from the left side of the body, possibly an extinction or neglect phenomenon.

- Because patients with pusher behavior resist hands-on attempts to correct their alignment, therapists should select treatment that manipulates the environment (reaching for objects to encourage weight shift to the strong side) and provides external cues (“bring your right shoulder toward the wall”)

# Treatment to Improve Performance Skills and Client Factors

- **<u>Postural Adaptation.</u>**

  Suggested techniques to enhance postural control during task performance include the following:

✓Provide feedback to help the patient feel the difference between an aligned and misaligned posture (patient views self in mirror or tries to copy therapist's positions/movements).

✓ Use varying postures and incorporate transitional movements into activities (standing rather than sitting to perform grooming; putting away groceries by reaching for items in bag on floor while sitting, then standing and placing on overhead shelf).

# Treatment to Improve Performance Skills and Client Factors

- **Postural Adaptation.**

  Suggested techniques to enhance postural control during task performance include the following:

✓Grade reaching activities to elicit various trunk movements and weight shifts (place clothing needed for dressing in locations requiring forward flexion or trunk rotation; locate items needed for cooking task in upper and lower shelves).

✓Use bilateral upper extremity activities to improve sitting or standing balance without arm support (folding towels; grating cheese at counter using involved hand to stabilize grater).

# Treatment to Improve Performance Skills and Client Factors

- **Upper Extremity Function.**

- Bilateral use of the upper extremities is crucial to efficient and effective occupational performance. Patients recovering from stroke usually place a high priority on regaining function in the involved arm.
- The occupational therapist must determine which deficits most affect a patient's upper extremity performance and plan realistic multilevel, task-oriented treatment to restore function or promote adaptation to the loss of function.

# Treatment to Improve Performance Skills and Client Factors

- **Somatosensory Deficits**.

- It is estimated that 60% of individuals present with some form of sensory deficit poststroke
- Decreased sensory awareness in the hemiparetic side can result in safety concerns, impaired grasp and manipulation skills in the affected hand, reduced ability to regain skilled movements necessary for ADL, and impaired spontaneous use of the affected hand, frequently leading to learned nonuse

# Treatment to Improve Performance Skills and Client Factors

- **Mechanical and Physiological Components of Movement.**
- Techniques for maintaining soft-tissue length and avoiding pain in the involved upper extremity initiated during the acute phase of stroke recovery should be continued and adapted in response to changes in the patient's movement or muscle tone.
- As the patient in a rehabilitation program gains in mobility, measures should be taken to protect weak upper extremity structures from stretching or injury caused by the effects of gravity and improper movement.
- Procedures for Practice 33-2 summarizes handling techniques for an affected upper extremity.

# Treatment to Improve Performance Skills and Client Factors

- **<u>Mechanical and Physiological Components of Movement.</u>**
- Treatment of problems related to the hemiplegic shoulder centers on prevention and management of symptoms and underlying causes.
- the hemiplegic arm should be appropriately supported but that shoulder supports should not be issued uniformly to all patients with shoulder subluxation. If considering a sling, therapists should address the following questions

# Treatment to Improve Performance Skills and Client Factors

- **Mechanical and Physiological Components of Movement.**

## Procedures for Practice 33-2

### Proper Handling of the Hemiparetic Upper Extremity

- Teach the patient as early as possible to be responsible for the positioning of the arm during transfers, bed mobility, and other activities involving change of position.
- Use gait belts or draw sheets, rather than the affected arm, to assist the patient in moving his or her body.
- Avoid shoulder range of motion beyond 90° of flexion and abduction unless there is upward rotation of the scapula and external rotation of the humerus (Gresham et al., 1995).
- Avoid overhead pulley exercises, because they appear to increase the frequency of pain in the shoulder because neither scapular nor humeral rotation occurs, and the force may be excessive (Kumar et al., 1990).

# Treatment to Improve Performance Skills and Client Factors

- **<u>Mechanical and Physiological Components of Movement.</u>**
- A positive response to the following questions might indicate a sling:
  - Does pain or edema increase when the arm hangs down?
  - Is the patient's balance and performance during standing, walking, or transfers improved by the use of a sling?
  - Is the patient unable to attend to and protect the arm during movement?
  - Can the patient or caretaker independently put on and take off a sling correctly?

# Treatment to Improve Performance Skills and Client Factors

- **<u>Mechanical and Physiological Components of Movement.</u>**
- A positive response to the following questions might contraindicate a sling:

  - Would the sling prevent or hinder active movement or function in the arm?
  - Would a sufficiently supportive sling impair circulation or cause excessive pressure on the neck?
  - Would the sling put the patient at risk for contracture as a result of immobilization?
  - Would a sling decrease sensory input and promote unilateral disregard?

# Treatment to Improve Performance Skills and Client Factors

- **<u>Mechanical and Physiological Components of Movement.</u>**

- Alternative positioning methods and devices for shoulder support include taping of the shoulder and scapula wheelchair lapboards and armrest troughs, use of a table while seated or standing, putting the hand in a pocket or under a belt, and using an over-the-shoulder bag while standing .


Figure 33-3 Alternative methods for supporting the hemiplegic arm while standing. **A.** Hand in pocket. **B.** Use of shoulder bag.

# Treatment to Improve Performance Skills and Client Factors

- **Mechanical and Physiological Components of Movement.**
- Functional electrical stimulation (FES) has been used to prevent or improve shoulder subluxation, decrease pain, and improve ROM.
- Studies evaluating the effectiveness of FES showed benefits during treatment but reduction of gains after treatment was discontinued (Walsh, 2001).
- Any patient with shoulder pain that persists and consistently interferes with function or progress in therapy should be referred to specialists best qualified to diagnose and treat specific shoulder problems.
- Along with protection, patients learning to manage their involved arm should know techniques of active, active-assistive, or passive movement designed to maintain ROM, stretch tight tissues, or relax hypertonicity

# Treatment to Improve Performance Skills and Client Factors

- **Mechanical and Physiological Components of Movement.**

- The combination of positioning for comfort and muscle imbalances brought on by spasticity and weakness can lead to the development of stereotyped nonfunctional positioning of the hemiplegic upper extremity with shoulder retraction, adduction, and internal rotation, elbow flexion, forearm pronation, and wrist and finger flexion.
- Therapists should emphasize frequent changes of position to prevent contractures and pain and recognize that if a patient is only moving his affected arm during therapy sessions, then therapy alone may not provide sufficient soft-tissue lengthening to maintain full ROM .

# Treatment to Improve Performance Skills and Client Factors

- **<u>Mechanical and Physiological Components of Movement.</u>**

- Even in the absence of motor recovery, passive and assisted active movement of the affected arm can be incorporated into activities, with the patient experiencing and concentrating on movement in a functional context.

- Methods of teaching self-managed ROM include bilateral activities such as having the patient clasp his or her hands while leaning forward to reach for the floor or pushing both hands forward with arms supported on a towel on a table

# Treatment to Improve Performance Skills and Client Factors

- **<u>Mechanical and Physiological Components of Movement.</u>**

- The advantages of these activities are that they can easily be given a functional context, such as picking up objects off the floor or dusting a table, and the patient can monitor his or her own pain threshold and is therefore not apprehensive about movement of the arm.
- (in a study of persons with hemiplegia, found that using a simple dice game to achieve bilaterally assisted forearm supination brought better results (more ROM, more repetitions) than use of a rote exercise routine. )

# Treatment to Improve Performance Skills and Client Factors

- **Mechanical and Physiological Components of Movement.**

- Self-management of ROM should be closely supervised and may not be appropriate for patients who have decreased awareness of the involved side, who move too quickly, who do not respect pain, or who lack a mobile scapula.

# Treatment to Improve Performance Skills and Client Factors

- **Task-Specific and Task-Oriented Interventions**

- In light of the range and complexity of possible motor impairments and the myriad of treatment strategies available, the occupational therapist should design treatment to fit the patient's level and interests.
- There is growing evidence that intervention strategies providing context-relevant, meaningful engagement in activities are more beneficial for skill acquisition than rote exercise or passive modalities .
- Task-specific training is aimed at improving component skills of selected tasks through goal-directed practice and repetition, such as using hand muscles to practice gripping a fork for feeding .

# Treatment to Improve Performance Skills and Client Factors

- **Task-Specific and Task-Oriented Interventions**

- An example of task-oriented training is a patient simulating a useful or familiar activity such as using a spoon to transfer dried beans from one container to another.
- Occupational engagement, such as a patient using a hemiparetic arm to eat a meal at home, involves the greatest degree of patient selfchoice, motivation, and meaning , although therapists must judge adaptations necessary to allow patients to succeed.

# Treatment to Improve Performance Skills and Client Factors

- **Task-Specific and Task-Oriented Interventions**

- found that providing a meaningful object within a functional context during treatment (e.g., reaching for food on a plate) leads to improved performance over exercise or reaching for a neutral target.
- Similarly, found that, during functional reaching tasks, instructions focused on specific movements (e.g., “straighten your elbow”) resulted in slower, less forceful reach than instructions focused on the task (e.g., “think about the size, shape, and weight of the water bottle you are reaching for”) in samples of adults with and without CVA.

# Treatment to Improve Performance Skills and Client Factors

- **Constraint-Induced Movement Therapy**

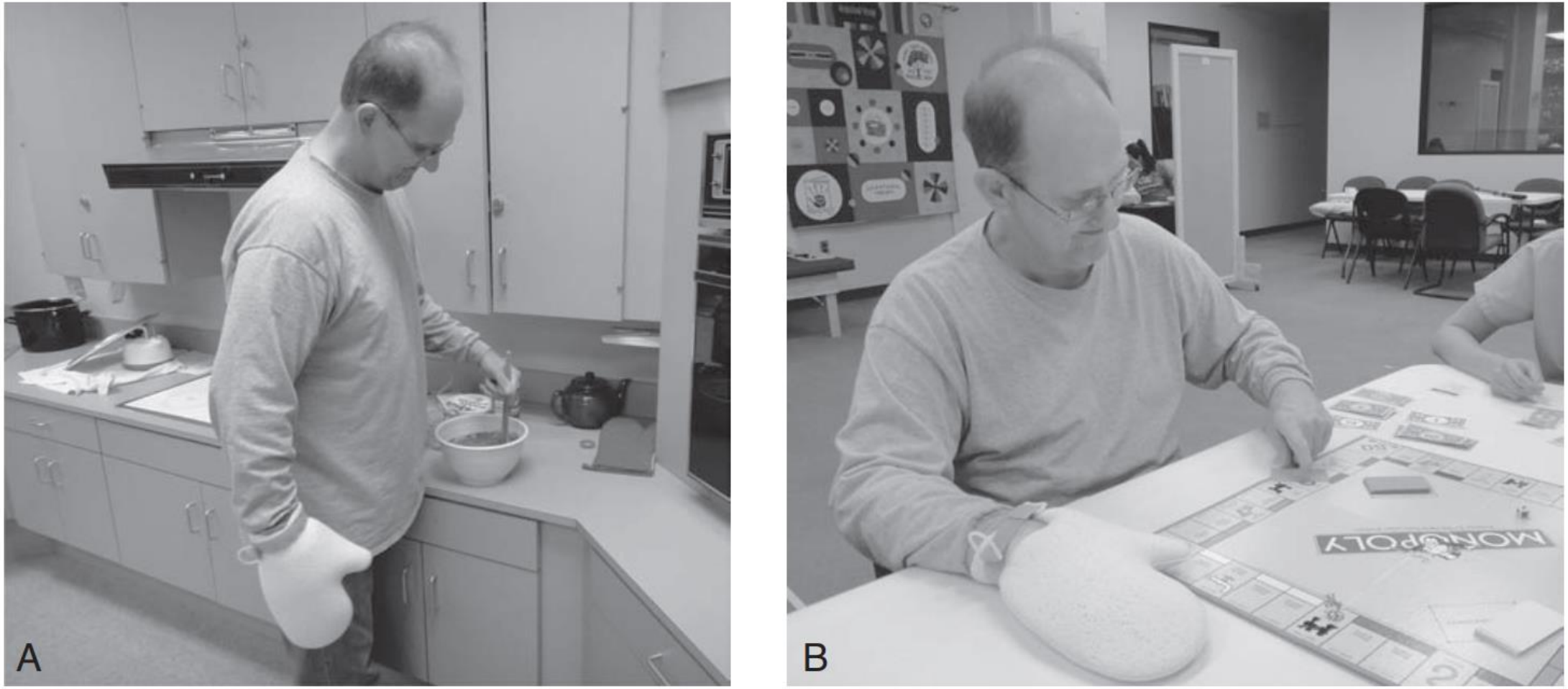


**Figure 33-4** Constraint-induced movement therapy. **A.** Stirring brownie mix. **B.** Playing a board game with involved upper extremity while noninvolved hand is restrained.

# Treatment to Improve Performance Skills and Client Factors

- **Constraint-Induced Movement Therapy**

- It is important to promote functional use of the involved upper extremity early and consistently because patients tend to have difficulty translating limited upper extremity movement into functional use.
- They often report that their arm is “dead” or “useless” despite sufficient arm movement for simple activities.
- Movement may return spontaneously, but it appears that function or purposeful use of the arm is enhanced with therapeutic intervention and practice .

# Treatment to Improve Performance Skills and Client Factors

- **Constraint-Induced Movement Therapy**

- described the phenomenon of learned nonuse: the person with hemiparesis notices negative consequences of efforts to use the affected limb that are reinforced by successful compensatory use of the unaffected limb.
- Constraint-induced movement therapy (CIMT), is a well-studied and evidence-based intervention developed to counteract the effects of learned nonuse in stroke survivors who exhibit specific motor criteria

# Treatment to Improve Performance Skills and Client Factors

- **Constraint-Induced Movement Therapy**

- In order to participate in standard CIMT protocols, patients must meet minimal voluntary movement requirements, including the ability to initiate 20° or more of wrist extension and 10° or more of finger extension.
- As a result, benefits from this treatment are limited to those with less severe motor involvement, or approximately 20%–25% of patients with chronic stroke.

# Treatment to Improve Performance Skills and Client Factors

- **Constraint-Induced Movement Therapy**
- CIMT is difficult to implement in clinical practice because the standard protocol includes 6-hour sessions of functionally oriented task practice with the paretic arm and hand for 5 days a week for 2 weeks.
- In addition, the uninvolved arm is physically restrained in a sling or hand mitt during 90% of waking hours.
- Other problemslimiting the application of CIMT techniques include poor compliance with patient restraint schedules, concerns over safety and limitations on independence caused by the restrictive device, lack of facility resources to provide intensive training sessions, and concerns about reimbursement .

# Treatment to Improve Performance Skills and Client Factors

- **Constraint-Induced Movement Therapy**
- In response to these limitations, described a modified constraint-induced movement therapy (mCIMT) for outpatients that combines involving the affected arm in functional tasks during structured 30-minute sessions three times a week with restraint of the unaffected arm every weekday for 5 hours.
- Subsequent studies have indicated that mCIMT is as effective as CIMT in increasing hemiparetic arm use and function.
- Studies of CIMT efficacy have included other commonly used OT interventions, such as massed practice, shaping, functional activities, client centered approach, home programs, and preparatory modalities without determining the separate effects of each .

# Treatment to Improve Performance Skills and Client Factors

- **Emerging Techniques and Technologies**

- Neuromuscular Electrical Stimulation (NMES)
- Mental Practice/Imagery
- Robot-assisted therapy
- Virtual reality (VR)
- Mirror therapy
- Orthotic-aided therapy

# Treatment to Improve Performance Skills and Client Factors

- **Emerging Techniques and Technologies**

- ***Neuromuscular Electrical Stimulation (NMES)***
- has been used as an adjunct to poststroke upper extremity rehabilitation to reduce shoulder subluxation and pain, and improve movement and function of the arm
- both higher and lower doses of NMES combined with standard inpatient stroke rehabilitation improved motor recovery for subjects with severe motor deficits of the upper extremity
- NMES can be used to improve outcomes of patients with moderate to severe arm deficits and is feasible for home-based use

# Treatment to Improve Performance Skills and Client Factors

- **Emerging Techniques and Technologies**

- ***Mental Practice/Imagery***
- Mental practice is a training method increasingly examined as an adjunct for use in stroke rehabilitation that involves the use of motor imagery to rehearse a motor skill without actual physical movement

# Treatment to Improve Performance Skills and Client Factors

- **Emerging Techniques and Technologies**
- ***Robot-assisted therapy***
- Many robotic devices for use in neurorehabilitation have been developed in both laboratory and clinical settings.
- In general, a patient's hemiparetic arm is placed on a handle or support that allows passive, assisted, or graded task-oriented movement.
- Although currently cost-prohibitive in most clinical settings, robot-assisted therapy allows patients who are unable to independently perform task-specific or task-oriented movements the benefits of intense, repetitive practice greater than possible with one-on-one therapy

# Treatment to Improve Performance Skills and Client Factors

- **Emerging Techniques and Technologies**
- ***Virtual reality (VR)***
- The use of computer technology and “off-the-shelf” gaming consoles (such as Nintendo Wii) to simulate real-world activities and objects is a recent approach to enhance the effects of repetitive task training on stroke upper extremity rehabilitation.
- VR has the advantage of offering an interactive, highly motivating intervention that can be individualized to offer practice of functional tasks at a greater intensity than traditional therapy.
- Research is limited, but preliminary studies suggest that VR has promise as an additional tool for improving upper extremity movement and function poststroke
  .

# Treatment to Improve Performance Skills and Client Factors

- **Emerging Techniques and Technologies**

- ***Mirror therapy***
- In this form of visual feedback, a mirror is placed vertically close to the midline of a patient seated at a table.
- As the involved arm is placed behind the mirror and the noninvolved arm is positioned in front of the mirror, the patient is instructed to watch the noninvolved arm in the mirror while attempting movements with both arms.
- The patient thereby receives the visual impression that the affected limb (the limb in the mirror) is functioning normally

# Treatment to Improve Performance Skills and Client Factors

- **Emerging Techniques and Technologies**
- ***Orthotic-aided therapy***
- Two examples of commercial orthotics used for upper extremity neurorehabilitation in OT clinics are a neuroprosthetic device and a dynamic spring-loaded orthosis.
- The neuroprosthetic device is a forearm-hand molded orthosis providing functional electrical stimulation for muscle retraining, specifically to elicit active grasp and release in the hemiparetic hand.
- Although the high cost of this device limits its use, an advantage is that it allows arm support and facilitation without a therapist's physical assistance.

# Treatment to Improve Performance Skills and Client Factors

- **Emerging Techniques and Technologies**

- ***Orthotic-aided therapy***
- The SaeboFlex is a mechanical dynamic orthosis that positions the hemiparetic hand so that active finger flexion can be used for grasp and then assists release.
- aeboFlex may be an affordable tool for repetitive motor training for individuals with moderate arm movement impairment after stroke who may not be eligible for other treatments such as CIMT

# Treatment to Improve Performance Skills and Client Factors

- **Motor Learning Ability**
- Because occupational therapists mainly teach skills, they must address the learning process to help patients improve occupational performance and participation.
- Even the most familiar tasks, such as dressing, require adapting to a variety of circumstances or contexts.
- Therapists can best assist patients with stroke by helping them develop their own problem-solving techniques and strategies to deal with their environment

# Treatment to Improve Performance Skills and Client Factors

- **Visual Dysfunction**
- In general, therapists can employ either of two basic intervention approaches for patients with visual problems following stroke, determined by the extent of visual impairment and a patient's intact capabilities:

  (1) establish or restore the person's performance skills

  (2) modify the context of the activity and/ or environment

- With the first approach, the goal of therapy might be to improve a patient's visual scanning ability using functional activities to increase the speed and accuracy of visual search to the area of the VFD or by training in the compensatory skill of turning the head to the left.

.

# Treatment to Improve Performance Skills and Client Factors

- **Visual Dysfunction**
- Examples of the second approach include simplifying activity demands, such as locating all items needed for grooming in one drawer; simplifying task sequence, such as installing a speed dial feature on a phone; or altering the built environment to eliminate clutter and obstacles.
- visual-perceptual deficits following stroke must be confronted, and patients must be taught to recognize their deficits for treatment to be effective.
- Sharing results of objective evaluations with the patient and family, giving feedback on the effects of visual deficits on functional performance, and teaching patients to recognize and correct errors in performance have been suggested as techniques for increasing a patient's awareness of his or her deficits.

.

# Treatment to Improve Performance Skills and Client Factors

- **Speech and Language Disorders**
- Occupational therapists should work closely with speech-language pathologists to contribute to a patient's improvement in speech and language functioning.
- Therapists can promote proper posture to aid respiration and eye contact important to speech.
- Therapy sessions also provide a social context supportive of communication and opportunities for practice of speech/language skills.
- Whenever possible, therapists should incorporate speech and language goals into their treatment sessions, such as requiring verbal responses (counting repetitions of an activity or naming objects used) or addressing functional reading and writing tasks (reading signs and recipes or writing checks).

.

# Treatment to Improve Performance Skills and Client Factors

- **Speech and Language Disorders**
- Occupational therapists should work closely with speech-language pathologists to contribute to a patient's improvement in speech and language functioning.
- Therapists can promote proper posture to aid respiration and eye contact important to speech.
- Therapy sessions also provide a social context supportive of communication and opportunities for practice of speech/language skills.
- Whenever possible, therapists should incorporate speech and language goals into their treatment sessions, such as requiring verbal responses (counting repetitions of an activity or naming objects used) or addressing functional reading and writing tasks (reading signs and recipes or writing checks).

.

# Treatment to Improve Performance Skills and Client Factors

- **Speech and Language Disorders**
- Occupational therapists can assist in selecting and adapting a nonverbal form of communication for a patient, such as writing, drawing, use of a communication board, and gestures.
- Suggestions for working with patients with aphasia and their families include the following;

✓Avoid unnecessary noise: turn off the television, find a quiet space.

✓ Do not speak to the patient or request speech when he or she is engaged in a physical activity.

✓ Allow enough time for the patient to respond; do not rush or force communication; do not switch topics quickly.

# Treatment to Improve Performance Skills and Client Factors

- **Speech and Language Disorders**
- Suggestions for working with patients with aphasia and their families include the following;

✓Never assume that the person with aphasia cannot understand what is being said; never allow others to ignore the person with aphasia.

✓Speak slowly and clearly using simple, concise language; do not speak loudly unless hearing is impaired; do not talk down as if to a child.

✓Use demonstration, visual cues, and gestures as needed to help with comprehension

.

# Treatment to Improve Performance Skills and Client Factors

- **Motor Planning Deficits**
- Motor planning deficits, or apraxia, are serious learning disorders and among the most difficult to rehabilitate.
- The emphasis of treatment is on teaching compensatory skills during ADL with focus on which stage(s) of motor planning present the most difficulty for a client: initiation of a task, execution of the plan, or control of activity to achieve adequate result .
- Suggestions for treatment include strategy training for specific ADL, sensory/proprioceptive stimulation, manually guided movement, cueing and prompting, repetitive graded use of objects and contexts to evoke more automatic responses, forward or backward chaining, and practicing activities as closely as possible to the patient's usual context or routin.

.

# Treatment to Improve Performance Skills and Client Factors

- **Cognitive Deficits**.

- As in other areas of dysfunction, treatment for cognitive problems after stroke can include retraining of specific component skills, teaching compensation techniques or substitution of intact abilities, and adaptation of the environment.
- Examples of treatment techniques include using prompts or cues to shape desired behavior; providing feedback on performance with suggestions and strategies for improvement; providing visual aids, such as memory logs, checklists, maps, or diagrams for deficits of memory, sequencing, or organization; and simplifying the environment and grading tasks for patients with attention deficits.

.

# Treatment to Improve Performance Skills and Client Factors

- **Cognitive Deficits**.

- Caregivers must be educated regarding recommended adaptations, safety precautions, and the need for supervision.
- Interventions aimed at the role performance/participation level appear to have a greater impact on an individual's quality of life than approaches stressing only impairment or activity restriction.

# Treatment to Improve Performance Skills and Client Factors

- **Psychosocial Adjustment**.
- Patients and families usually need assistance in making healthy emotional adjustments after stroke.
- It may be unreasonable to expect full participation in treatment programs when patients and their families are coping poorly with the losses associated with stroke.
- Patients typically employ hope and determination to cope with hospitalization, the hard work of rehabilitation, and changes in body image, but many cling to the belief that they will be “normal” again.

# Treatment to Improve Performance Skills and Client Factors

- **Psychosocial Adjustment**.
- Therapists should reinforce the efforts of the rehabilitation team and encourage patients and families to talk about their reactions to stroke and their comprehension of its progression and prognosis.
- In light of the shortening time frames for rehabilitation, therapists should make sure patients and families understand that recovery from stroke does not end with discharge from a hospital or rehabilitation program

.

# Treatment to Improve Performance Skills and Client Factors

- **Psychosocial Adjustment**.
- Therapists should also help patients and families to realize that the ultimate goal of rehabilitation is not complete recovery from physical and intellectual impairments but the ability to resume valued life roles.
- Therapists should recognize the signs and symptoms of depression and inform appropriate team members if treatment has not been initiated.
- For the patient with emotional lability, both patient and family need to be reassured that lability is a symptom of the stroke.

.

# Treatment to Improve Performance Skills and Client Factors

- **Psychosocial Adjustment**.
- Helping patients and families develop coping strategies, including problem-solving strategies, social support, information seeking, and engagement in activities, helps decrease the impact of psychological distress.
- Because community support is reported to buffer the effects of disability on stroke survivors and their caregivers , therapists should strive to provide opportunities for patients to participate in the community.
- Group activities, social interactions, and community outings are important methods for allowing a patient to practice roles from before the stroke and to realize that the patient role is a temporary transition to getting on with life despite residual impairments.

.