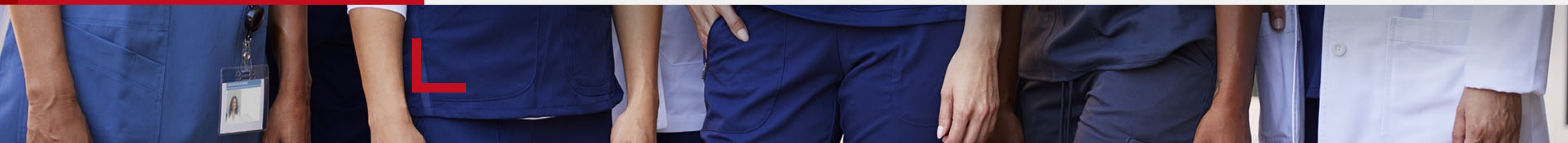




American  
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# Rehabilitation of the Post-Acute Stroke Patient: A Team Approach

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Mission: Lifeline Stroke



# Meet the Speaker

- University of Missouri
  - Bachelors of Health Science
  - Master in Occupational Therapy
- Louisiana State University- Shreveport
  - Masters in Health Administration
- 10 Years at Children's Nebraska
  - Worked in PICU, CICU, neuro, H/O, ortho, and other med/surg units
  - Earned Board Certified in Pediatrics in 2020
- PRN in skilled nursing facilities
  - Post-stroke, post-ortho patients
- Inpatient Rehab
  - Stroke Team





# Disclaimer

“The opinions expressed in this presentation are solely those of the presenter and may not necessarily reflect AHA/ASA’s official positions. This presentation is intended for educational purposes and does not replace independent professional judgment. AHA/ASA does not endorse any product or device.”



# Disclosures

No financials disclosures  
No non-financial disclosures

# Objectives

- Describe strategies for secondary prevention and increasing independence for the post-acute stroke patient
  - Discuss a team approach to stroke rehab
  - Describe the importance of providing therapeutic activity throughout a patient's day
  - Discuss the importance of incorporating caregivers into the rehabilitation process



# Rehabilitation

**A team approach to increase patients' independence**

# Post-Acute Stroke Care/ Stroke Rehabilitation

- **Settings**
  - **An inpatient rehabilitation facility (IRF)**
    - Typically requires 3 hours of therapy per day at least 5 days per week
    - PM&R physician
    - Registered Nurse 24/7
    - May hold a special certification for stroke rehab
  - **A skilled nursing facility (SNF)**
    - Provides skilled nursing care in addition to rehabilitative services
    - Have registered nurses and physicians on staff, but may be onsite at a different frequency than IRFs
    - May be part of a nursing home with separate wing for rehab
    - Medicare is a primary payer
  - **Critical access hospital with swing beds**
    - Beds may be used for rehabilitation
    - Could be for patients transferring from above listed facilities or from acute care in the same hospital
  - **Overarching goal: To return the patient to prior level of function (PLOF)**



# Post-Acute Stroke Care/ Stroke Rehabilitation

## Team Members

- **Physicians**
  - PM&R
  - Neurologist
  - Family Practice
- **Nurses**
- **Advanced Practice Providers**
- **OT/PT/SLP**
- **Dietician**
- **Social Work**
- **Behavioral and Mental Health Providers**
- **And so many more!**





# Eliminate the silos

- Unique skills sets among team members
- Need to understand each others roles
- Strive to incorporate each others goals into sessions



# Creating a culture of rehabilitation

Rehabilitation does not happen in isolation

- 168 hours in a week, typically 15-21 of those are spent in therapy
- Carry over of strategies outside of therapy is crucial!

				X						X						X								
				X						X						X								
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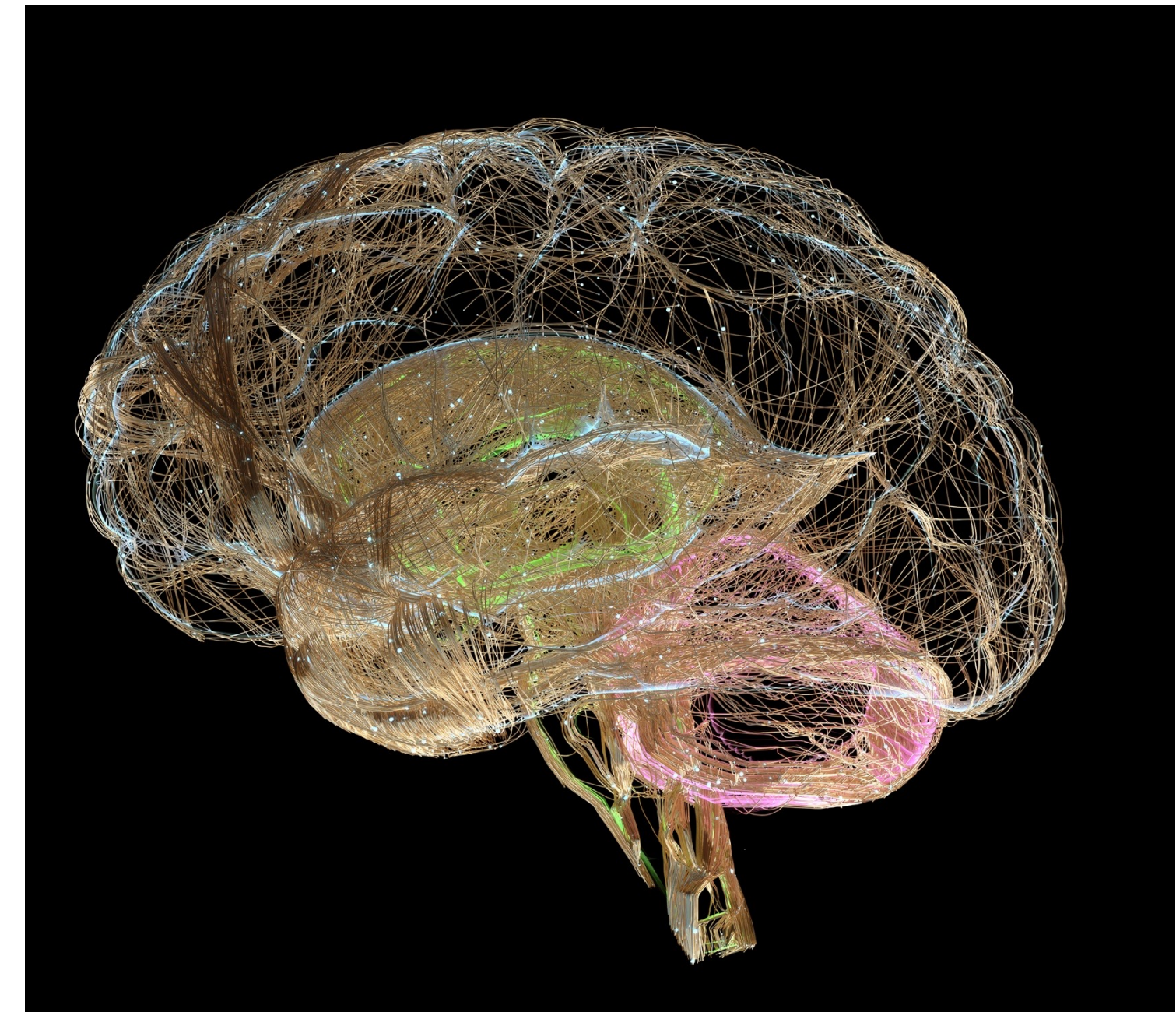
# Neuroplasticity

- **Neuroplasticity**
  - The nervous systems ability to reorganize its structure, function, and connections
  - Repairing injured pathways
  - Creating new pathways

(Cramer, et.al, 2011).

- The faster rehab is started after stroke the better the outcomes for the patient

(Maulden, et. Al, 2005) (Winstein et al., 2016)



# Rehabilitative vs. Compensatory Strategies

- **Rehabilitative**

- Attempting to regain the skills/function lost by retraining those same movements
- Maximizes function
- This takes time!
- Ex. Relearning how to tie their shoes with both hands

- **Compensatory**

- Learning new, alternative ways to accomplish a task
- Quicker independence
- May limit recovery of affected extremities
- Ex. Teaching a patient with right hemiplegia, one (left) handed shoe tying techniques

(Hyllin et al., 2017)



# Occupational Therapy (OT)

Improving participation in daily activities

~~May focus on~~

- **Activities of Daily Living (ADLs)**
  - Dressing, toileting, grooming, bathing, self-feeding
- **Instrumental activities of daily living (IADLs)**
  - Meal preparation, household chores, work tasks, caregiving
- **Cognition**
- **Visual Perceptual Deficits**
- **Upper Extremity Function**
- **And so much more!**

OT assessment should be performed within 24 hours of admission to the post-acute facility



# Use of affected UE during ADLs

## Occupational Therapy

- Attention to affected side
  - Cueing to find objects placed on affected side (or toward affected side)
- Weightbearing through affected arm on support surface
- Engaging affected UE in task with assistance
- Active engaging affected UE in task
- Strengthening while completing task
  
- Functional Upper Extremity Levels (FUEL)

(Widhelm , 2023)

Non-Functional

Dependent Stabilizer

Independent Stabilizer

Gross Assist

Semi Functional

Functional Assist

Fully Functional

- (Van Lew, Geller, Feld-Glazman, Capasso, Dicembri & Zipp, 2015)



# Hemiparesis Techniques for ADLs

## Occupational Therapy

### Dressing

- Make the most of all opportunities to practice!
  - Evening routine, allow the patient to practice
- **Strategies**
  - Place affected arm/leg IN FIRST, Take affected arm/leg OUT LAST
    - Or head first for shirt
  - Start with t-shirts vs zip up/button up clothing
  - Start with looser fitting clothes
  - Be seated for dressing
  - Use adaptive equipment as needed
    - Button hooks, reacher, dressing stick
    - Phase out if possible- will they always have this equipment with them?



# Hemiparesis Techniques for ADLs

## Occupational Therapy

### • Toileting

- Bowel and Bladder Control
  - Set a toileting schedule
    - Ex. Every 2-3 hours, first thing in the morning, directly after meal times
    - Fall Prevention
- Establish best way to transfer to toilet
  - Work with therapy and nursing team
- Hygiene after toileting
  - Seated vs. standing
- Pants Management
  - Start process in seated position
- Adaptive Equipment
  - Bedside commode (what does the room set-up allow for)
    - Safety first!
  - Grab bars
  - Toilet riser
  - "Reacher"/ toilet tongs
  - Foot Stool

- Discuss a schedule with your team!



(Christiansen & Matuska, 2011)





# Hemiparesis Techniques for ADLs

## Occupational Therapy

- **Grooming/Hygiene**
  - Oral Hygiene, brushing hair, make-up, shaving
  - Seated vs. Standing
  - Adaptive equipment
    - Larger handles
    - Universal Cuff
- **Bathing**
  - Seated vs. Standing
  - Adaptive Equipment
    - Shower chair/bench
    - Long handled sponge
    - Consider types of lids on shampoo/soap
    - Hand held shower head
  - Transfers
    - Dress/undress before vs. after transfer



(Christiansen & Matuska, 2011)



# Impairments to consider with ADLs

## Occupational Therapy

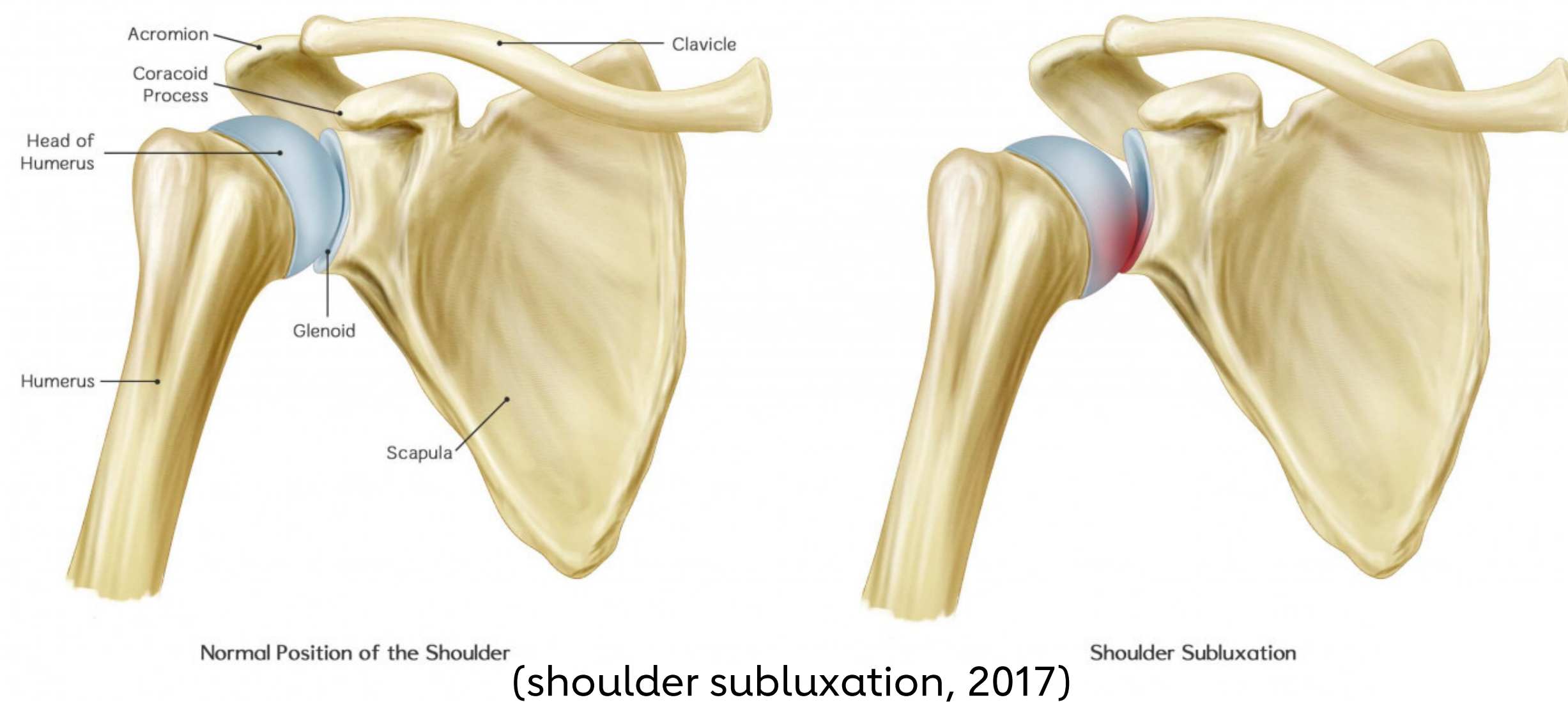
- **Attention to affected side (neglect)**
  - Safety with dressing, bathing, toileting
  - Completing all of task, not just unaffected side
- **Sensory deficits**
  - Water temperature
  - Pressure with toothbrushing, shaving, applying make-up
- **Cognitive deficits**
  - Best way to cue patient
    - Verbal cues
    - Visual Cues
    - Visual aides (visual schedule, signs, pictures, etc)
- **Impulsivity**
- **Communication deficits!**



# Impairments to consider with ADLs

## Occupational Therapy

- Pain/Subluxation of shoulder
  - No active movement, watch for subluxation
  - Positioning with support while seated, supine
  - May consider use of sling
    - Pros and cons



(GivMohr Sling, n.d.)

(Lee et al., 2022)



# Opportunities to practice

## Occupational Therapy

- Best way to relearn task is to practice
- Make the most of each opportunity
  - With therapy, with nursing, with family, etc.
- Just right challenge
- Plan ahead to give patient time they need to complete the activity (patient schedules)
- Practice patience
- Communicate within the team!
  - Make sure all staff are aware of current ADL goals
    - Post signs in room discussing assist levels, adaptive techniques, other tips



# Example of in room communication

## How to Help \_\_\_\_\_ Regain Their Independence

### Self-care:

Please help me dress my RIGHT/LEFT side FIRST and undress my RIGHT/LEFT side LAST.

I need to be SEATED while dressing.

I need to be SEATED/STANDING for grooming activities.

I need to be SEATED/STANDING for bathing.

I use the following adaptive equipment:

REACHER    BUTTON HOOK    SHOES HORN    BEDSIDE COMMODE  
TOILET RISER    TOILET TONGS    LONG HANDLED SPONGE

OTHER:

Please help me use my RIGHT/LEFT arm. I can use this arm to:

BEAR WEIGHT    MOVE SHOULDER    MOVE ELBOW  
GRASP LARGE ITEMS    GRASP SMALL ITEMS

I need MIN/MOD/MAX assist to help me use my RIGHT/LEFT arm to complete my self-care activities.

**Other Tips:**

### Communication/Cognition:

I sometimes have difficulty finding the words I want to use. You can help me by:

Rephrasing not repeating - Using visual cues - Turn off background noise

Keep instructions/questions to 6 words or less - One person talks at a time

**Other Tips:**

### Mobility:

I transfer best to my LEFT/RIGHT side.

I transfer via SLIDEBOARD/STAND-PIVOT/AMBULATION/HOYER LIFT.

I need MIN/MOD/MAX assist for transfers.

I use a CANE/WALKER/HEMI-WALKER to help me walk. I need MIN/MOD/MAX assist to walk.

I would like to walk \_\_\_ times a day outside of therapy sessions.

Please use my gait-helt and make sure I'm wearing shoes or non-slips socks when assisting me.

**Other Tips:**

### Meal Times:

Please help me sit in my chair for meal times.

I need assistance:

OPENING PACKAGES    CUTTING FOOD    FEEDING MYSELF

My liquids need to be thickened to a \_\_\_\_\_ consistency for safety.

Please help me incorporate my RIGHT/LEFT arm into meal times by:

**Other Tips:**



# Example of in room communication

## Self-Care

### Self-care:

Please help me dress my RIGHT/LEFT side FIRST and undress my RIGHT/LEFT side LAST.

I need to be SEATED while dressing.

I need to be SEATED/STANDING for grooming activities.

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GRASP LARGE ITEMS    GRASP SMALL ITEMS

I need MIN/MOD/MAX assist to help me use my RIGHT/LEFT arm to complete my self-care activities.

**Other Tips:**



# Additional resources

Occupational Therapy

Kylie Widhelm, OTD, OTRL  
Professor at Creighton University

<https://www.youtube.com/watch?v=bpl0gfDZo4s>



# Physical Therapy

Improving functional mobility

- **Focus on improving mobility**
  - Regaining movement in affected lower extremity
  - Balance
  - Coordination
  - Sensation
  - Motor Planning
  - Muscle Tone/ Spasticity
  - Also consider
    - Neglect, visual perception, cognition, memory, etc.
  - And so much more!

- **May address**
  - Bed mobility
  - Supine to sit transfer
  - Sit to stand transfers
  - Transfers to wheelchair/commode
  - Prolonged standing
  - Ambulation
  - Stairs
  - Higher level mobility activities

PT assessment should be performed within 24 hours of admission to the post-acute facility

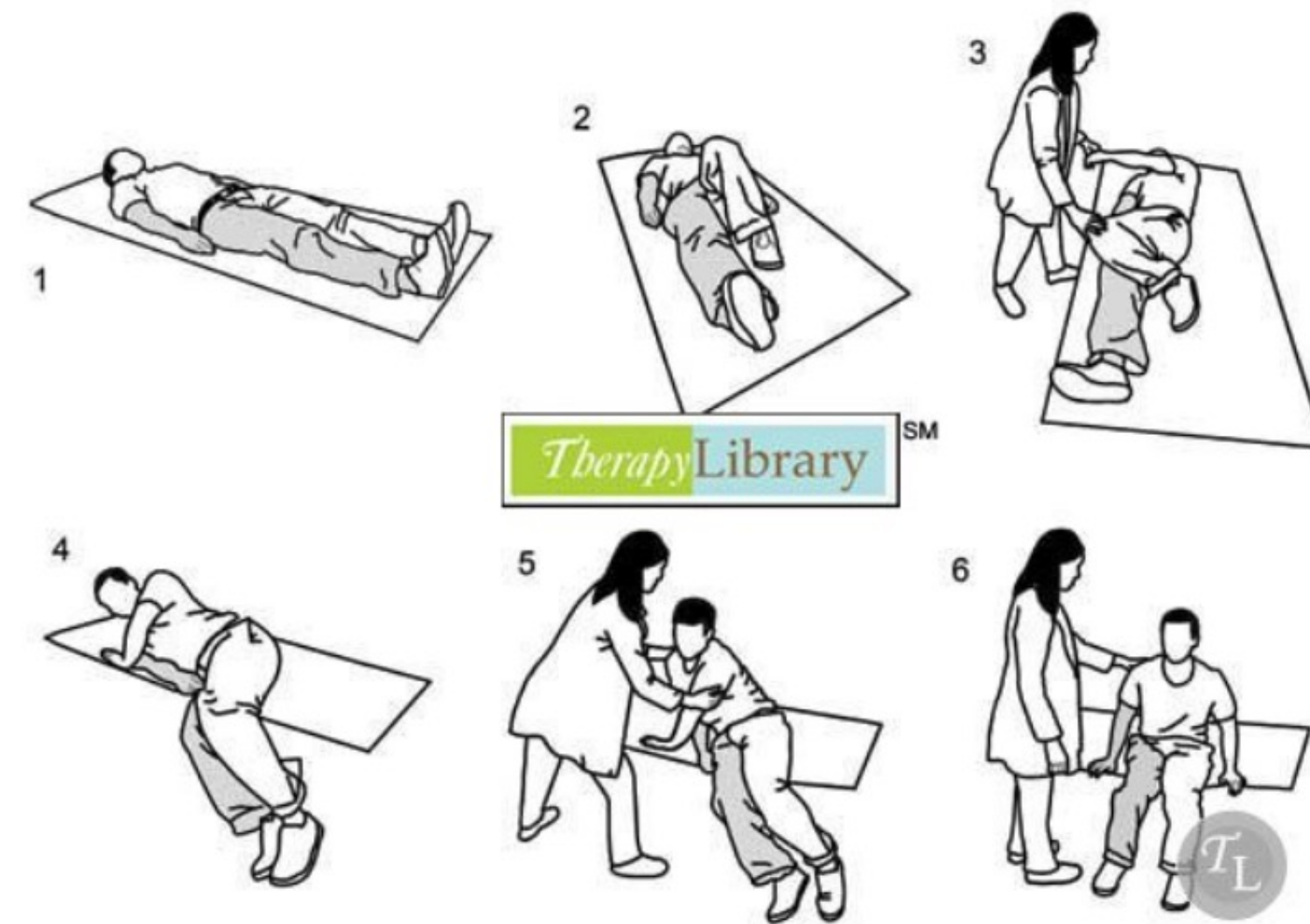




# Physical Therapy

Improving functional mobility

- **Bed mobility**
  - Practice rolling to affected side and away (consider home set-up)
  - Practice with and without bed rails (may not have these at home)
- **Supine to sit transfer**
  - Pushing up with unaffected arm



(CIMT, n.d)

(Christiansen & Matuska, 2011)



# Physical Therapy

Improving functional mobility

- **Types of transfers**
  - Slideboard transfer
  - Stand pivot
  - Standing and taking steps
  - Sit to Stand transfer aide
  - Dependent transfer lift
- ~~Think about equipment set up~~



(Sit to stand lift, 2018)



# Physical Therapy

## Transfers

- **Transfer to wheelchair**
  - Initially practice toward unaffected side if possible
  - Remove arm rest and leg rest from wheelchair
  - Gait belt use
    - Consistency for safety
    - Educate family on how to use
    - Place in same spot in room
  - Nonslip socks
- **Transfer to Chair**
  - Choose a supportive chair
    - No low backs
    - Has arm rests
    - Possibly has an elevated foot rest
    - Add pillows for support if needed
- **Transfer to shower chair**
  - Consider safety risks in this environment



# Physical Therapy

Improving functional mobility

- **Standing**
  - Sustained standing during activity
  - Weight shifting
  - Marching in place
  - Heel raises
- **Ambulation**
  - Consider mobility aid
  - Have a wheelchair or place to rest available
  - Know what to do in case of emergency
    - Ex. Transfer pt back to room vs. treat them in the hallway



(Lee et al., 2022)



# Adaptive Equipment

## Physical Therapy

- **Walker/Platform Walker**
  - Push off of bed/chair
  - Don't pull on walker
- **Quad Cane/Hemi-Cane/Cane**
- **Lift equipment**
  - Hoyer Lift
  - Sit<>stand lift
- **Ankle Foot Orthosis (AFO)**
  - Assist with foot drop
  - Optimal positioning
- **Gait training devices**
  - Hoyer lift with shorts



(Patient Lift, 2021)



# Impairments to consider with Mobility

## Physical Therapy

- **Attention to affected side (neglect)**
  - Safety with ambulation, transfers
  - Navigating around or away from objects
    - Ex. Chairs, doorways, people
- **Sensory deficits**
  - May be unable to feel if shoe is rubbing or they step on something
- **Cognitive deficits**
  - Best way to cue patient
    - Verbal cues
    - Visual Cues
    - Visual aides (signs, pictures, etc)
- **Impulsivity**
- **Communication deficits!**



# Example of in room communication

## Mobility

### Mobility:

I transfer best to my LEFT/RIGHT side.

I transfer via SLIDEBOARD/STAND-PIVOT/AMBULATION/HOYER LIFT.

I need MIN/MOD/MAX assist for transfers.

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I would like to walk \_\_\_ times a day outside of therapy sessions.

Please use my gait-belt and make sure I'm wearing shoes or non-slips socks when assisting me.

### **Other Tips:**



# Additional resources

Physical Therapy

Dr. Stacie Christensen, PT, DPT, NCS  
University of Nebraska Medical Center

<https://www.youtube.com/watch?v=RTZarI9YBBM>





# Speech Language Therapy

## Communication

- ~~Focus on~~
  - **Communication**
    - Aphasia
      - Non-fluent
      - Fluent
  - **Cognition**
    - Processing
    - Sequencing
    - Memory
  - **So much more!!**

SLP assessment should be performed within 72 hours of admission to the post-acute facility



# Tips for working with patients with Aphasia

## Speech Language Therapy

- **Work with your speech language pathologist!**
  - Incorporate therapy into daily routines and observe
    - Ex. SLP present during morning medication administration or explanation of test/procedure

- Use visual aides
- Write down key words while speaking
- Use helpful hand gestures
- Rephrase, don't repeat
- Simple language
- One person talks at a time
- Eliminate background noise



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Used with permission.

(Morris et al, 2015) (Weissling, 2023)



# Example of in room communication Communication/Language

## Communication/Cognition:

I sometimes have difficulty finding the words I want to use. You can help me by:

Rephrasing not repeating - Using visual cues - Turn off background noise

Keep instructions/questions to 6 words or less - One person talks at a time

**Other Tips:**



# Additional resources

Speech Language Therapy

Kristy S.E. Weissling, SLP.D., CCC-SLP  
University of Nebraska – Lincoln

<https://www.youtube.com/watch?v=W2fBt61JbRw>



# Dysphagia

## Speech/Occupational Therapy

- **What is dysphagia?**
  - A swallowing disorder which includes the oral cavity, pharynx, esophagus, or gastroesophageal junction (ASHA, n.d.)
  - **Can lead to**
    - Pneumonia, malnutrition, dependency, and mortality
    - Dehydration, choking, chronic lung disease
  - **Can be caused by**
    - Neurologic changes, trauma to swallowing structures, weakness
- Affects ~55% of acute stroke patients

(Sherman, Greco, & Martino, 2021)



# Dysphagia Screening/Assessment

Speech/Occupational Therapy

- ~~Should be performed within 24 hours of admission to post-acute facility~~
- **Purpose of screening**
  - Look for overt signs of aspiration
    - Coughing, choking, wet voice
  - Determine if further evaluation is needed
- **Who can perform the screening?**
  - Any trained team members (nursing, physicians, etc.)
- **How do I screen the patient?**
  - Acute Screening of Swallow in Stroke/Transient Ischemic Attack
  - Gugging Swallowing Screen
  - Three-Step Swallow Screen protocol
  - Toronto Bedside Swallowing Screening Test
  - Simple Standardized Bedside Swallowing Assessment
  - Yale Swallow Protocol

(ASHA, n.d.) (Sherman, Greco, & Martino, 2021)



# Dysphagia Screening/Assessment

Speech/Occupational Therapy

- **What to do with results?**
  - If concerns, refer to SLP/OT for full evaluation
    - Modified Barium Swallow Study (MBSS)
    - Functional Endoscopic Evaluation of Swallow (FEES)
  - If no concerns, continue to monitor
- If aspiration is occurring, SLP/OT will make recommendations for diet modification, provide intervention and education
- \*Silent aspiration

(ASHA, n.d.) (Sherman, Greco, & Martino, 2021)



# Example of in room communication

## Meal Time Support

### Meal Times:

Please help me sit in my chair for meal times.

I need assistance:

OPENING PACKAGES      CUTTING FOOD      FEEDING MYSELF

My liquids need to be thickened to a \_\_\_\_\_ consistency for safety.

Please help me incorporate my RIGHT/LEFT arm into meal times by :

**Other Tips:**



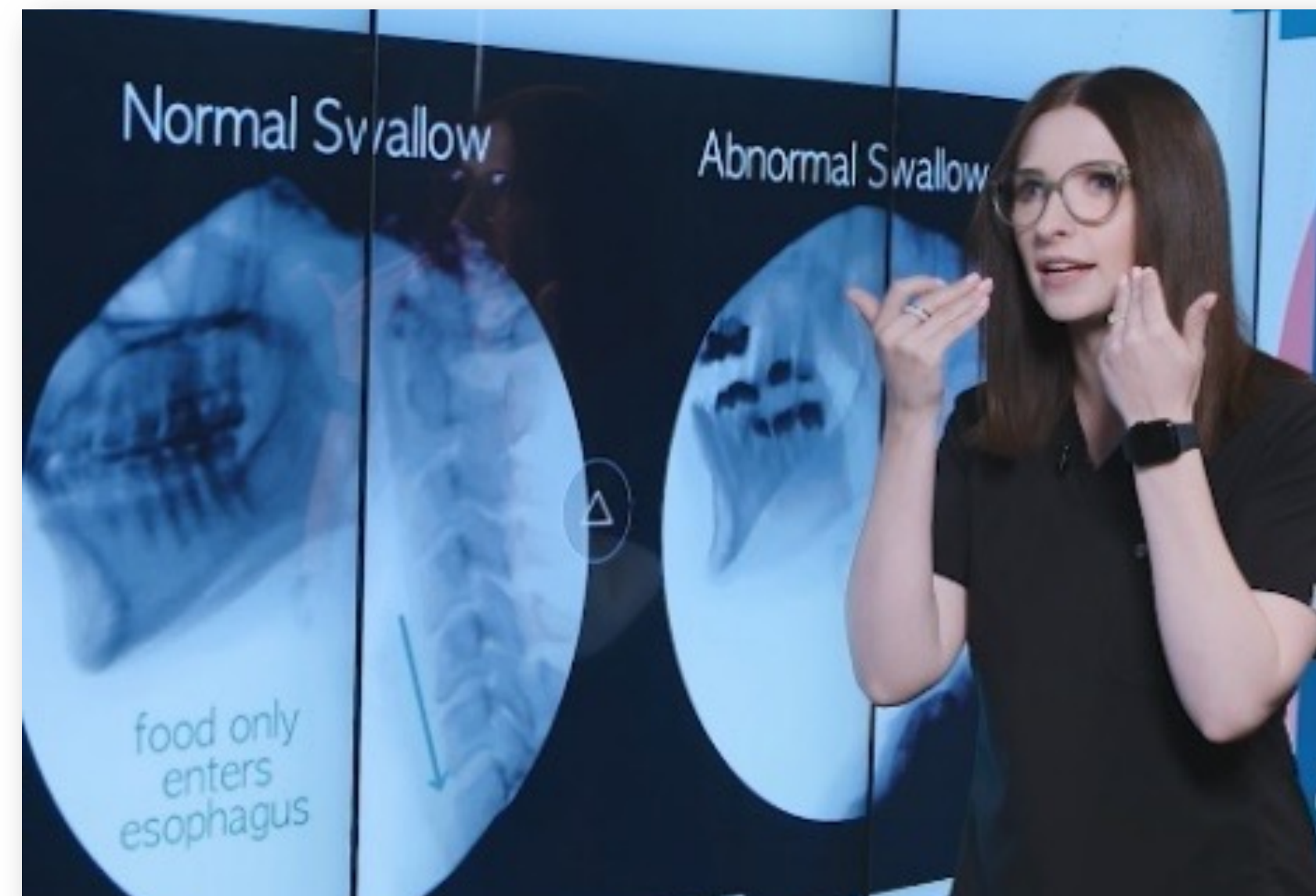


# Additional resources

Speech Language Therapy/ Occupational Therapy

Sara Maul, M.S., CCC-SLP  
Madonna Rehabilitation Hospital

[https://www.youtube.com/watch?v=-Giu\\_waUMlk](https://www.youtube.com/watch?v=-Giu_waUMlk)



# Care Considerations

All team members

- Skin breakdown
  - Contracture prevention
  - Depression
  - Fall Prevention
  - VTE Prophylaxis / Prevention of DVT
  - Pain Management
- ~~Resources~~
    - **2016 Guidelines for Adult Stroke Rehabilitation and Recovery**
      - <https://www.ahajournals.org/doi/full/10.1161/STR.0000000000000098>

(Winstein et al., 2016)





# Incorporating Caregivers into Rehab



# Family Centered Care

## The Challenges

- Stroke has a quick onset, leaving families little time to cope before becoming caregivers (Lutz et al, 2017)
- Previously independent patient has little time to cope with the need to have caregivers.
- Limited time in rehab to educate/train caregivers
- Everyone's comfort level with caregiving and the medical/rehab setting is different

(Lutz et al., 2016)



# Family Centered Care

So what can we do?

- Incorporate families from day one
  - Meet them where they are at
- Assess the families needs
  - Caregiver learning assessments
  - Risk assessments/Social determinants of health
  - Gaps in caregiver readiness assessment



# Family Centered Care

So what can we do?

- Provide education and training
  - Home Readiness
  - Skills to assist with daily tasks
  - “Case management”
  - Hands on training
- Caregiver self-care and support
  - Support groups
  - Respite care
  - Who to call with questions



# Family Centered Care

Putting it into practice.....

- Start small
  - Observing therapy sessions
  - Sitting with them at meal times
  - Helping patient put their jacket on to go sit outside
- Gradually increase the “ask” (involvement)
- Consider giving the family member and patient a specific task to complete
- Find times that family can be present



# Family Centered Care

## Support Group Lesson Modules



## Topic 9: Self-Care for Caregivers

Being a caregiver is one of the most rewarding and challenging jobs. Balancing caregiving with family, work and other commitments often means sacrificing self-care. Our resources aim to address caregiver burnout and provide tips for self-care.

[Presentation](#) >

[Discussion Guide](#) >

[Maintaining Health and Well-Being as a Caregiver Checklist](#) >

[Being a Caregiver for a Stroke Survivor Fact Sheet](#) >

<https://www.stroke.org/en/help-and-support/support-group-leader-resources/lesson-modules>



# References

- American Heart Association . (2023). *Exercise After Stroke*. [www.stroke.org](http://www.stroke.org).  
<https://www.stroke.org/en/life-after-stroke/recovery/exercise>
- American Heart Association . (2018). *Tobacco control, prevention, & cessation*. [www.heart.org](http://www.heart.org).  
<https://www.heart.org/en/get-involved/advocate/federal-priorities/tobacco>
- American Speech-Language-Hearing Association. (n.d.). *Adult Dysphagia*. (Practice Portal). Retrieved month, day, year, from [www.asha.org/Practice-Portal/Clinical-Topics/Adult-Dysphagia/](http://www.asha.org/Practice-Portal/Clinical-Topics/Adult-Dysphagia/).
- Carragher, M., Steel, G., O'Halloran, R., Torabi, T., Johnson, H., Taylor, N. F., & Rose, M. (2020). Aphasia disrupts usual care: the stroke team's perceptions of delivering healthcare to patients with aphasia. *Disability and Rehabilitation*, 43(21), 3003–3014.  
<https://doi.org/10.1080/09638288.2020.1722264>
- Christiansen, C., & Matuska, K. M. (2011). *Ways of living: Intervention strategies to enable participation*. American Occupational Therapy Association.
- Christensen, S. (2023, August). *Mobility Assessment and Treatment in Post Stroke Care . Mission: Lifeline Stroke* . Omaha; iEXCEL.
- CIMT (n.d.) Resources. Retrieved from <https://linaho10.wixsite.com/cimt-3/resources>
- *GivMohr Sling*. (n.d.). Walmart.com. Retrieved September 21, 2023, from [https://www.walmart.com/ip/GivMohr-Sling-Medium-Latex-Free-Made-in-the-USA-by-GivMohr-Corporation-Albuquerque-NM/2609219323?wmlspartner=wlp&selectedSellerId=2246&adid=222222222272609219323\\_2246\\_14069003552\\_202077872&wl0=&wl1=g&wl2=c&wl3=42423897272&wl4=pla-295289030566&wl5=1016367&wl6=&wl7=&wl8=&wl9=pla&wl10=113148692&wl11=online&wl12=2609219323\\_2246&veh=sem&gclid=EAlaIqobChMlt\\_qZw-6-gQMVmTHUAR1ODQOGEAQYAiABEgJRXPd\\_BwE](https://www.walmart.com/ip/GivMohr-Sling-Medium-Latex-Free-Made-in-the-USA-by-GivMohr-Corporation-Albuquerque-NM/2609219323?wmlspartner=wlp&selectedSellerId=2246&adid=222222222272609219323_2246_14069003552_202077872&wl0=&wl1=g&wl2=c&wl3=42423897272&wl4=pla-295289030566&wl5=1016367&wl6=&wl7=&wl8=&wl9=pla&wl10=113148692&wl11=online&wl12=2609219323_2246&veh=sem&gclid=EAlaIqobChMlt_qZw-6-gQMVmTHUAR1ODQOGEAQYAiABEgJRXPd_BwE).
- Hylin, M. J., Kerr, A. L., & Holden, R. (2017). Understanding the mechanisms of recovery and/or compensation following injury. *Neural Plasticity*, 2017, 1–12. <https://doi.org/10.1155/2017/7125057>



# References

- Kleindorfer, D. O., Towfighi, A., Chaturvedi, S., Cockroft, K. M., Gutierrez, J., Lombardi-Hill, D., Kamel, H., Kernan, W. N., Kittner, S. J., Leira, E. C., Lennon, O., Meschia, J. F., Nguyen, T. N., Pollak, P. M., Santangeli, P., Sharrief, A. Z., Smith, S. C., Turan, T. N., & Williams, L. S. (2021). 2021 guideline for the prevention of stroke in patients with stroke and transient ischemic attack: A guideline from the American Heart Association/American Stroke Association. *Stroke*, 52(7). <https://doi.org/10.1161/str.0000000000000375>
- Lee, K. E., Choi, M., & Jeoung, B. (2022). Effectiveness of rehabilitation exercise in improving physical function of stroke patients: A systematic review. *International Journal of Environmental Research and Public Health*, 19(19), 12739. <https://doi.org/10.3390/ijerph191912739>
- Lutz, B. J., Young, M. E., Creasy, K. R., Martz, C., Eisenbrandt, L., Brunny, J. N., & Cook, C. (2016). Improving stroke caregiver readiness for transition from inpatient rehabilitation to home. *The Gerontologist*. <https://doi.org/10.1093/geront/gnw135>
- Maul, S. (2023, August). *Dysphagia After Stroke*. Mission: Lifeline Stroke. Omaha; iEXCEL.
- Maulden, S. A., Gassaway, J., Horn, S. D., Smout, R. J., & DeJong, G. (2005). Timing of initiation of rehabilitation after stroke. *Archives of Physical Medicine and Rehabilitation*, 86(12), 34–40. <https://doi.org/10.1016/j.apmr.2005.08.119>
- Morris, M. A., Clayman, M. L., Peters, K. J., Leppin, A. L., & LeBlanc, A. (2015). Patient-centered communication strategies for patients with aphasia: Discrepancies between what patients want and what physicians do. *Disability and Health Journal*, 8(2), 208–215. <https://doi.org/10.1016/j.dhjo.2014.09.007>
- National Jewish Health. (2023). *Education*. Quitline Iowa. <https://quitlineiowa.org/en-US/Health-Professionals/Education>
- *Patient Lift*. (2021). etac. Retrieved September 27, 2023, from <https://www.etac.com/en-us/us/products/patient-handling/mobile-lifts/molift-mover-300/>.



# References

- Sherman, V., Greco, E., & Martino, R. (2021). The benefit of dysphagia screening in adult patients with stroke: A meta-analysis. *Journal of the American Heart Association*, 10(12). <https://doi.org/10.1161/jaha.120.018753>
- *Shoulder Subluxation* . (2017). REHAB my patient . photograph. Retrieved September 20, 2023, from <https://www.rehabmypatient.com/shoulder/shoulder-subluxation>.
- *Sit to Stand Lift*. (2018). Monroe Medical Supplies, Inc. . Retrieved September 27, 2023, from <https://monroemedicalsupplies.com/index.php/sit-to-stand-hydraulic-patient-lift-by-invacare-model-ghs350.html>.
- Tivity Health . (2023). *Take online classes from home or visit us at the gym with silversneakers, you're free to move*. SilverSneakers. <https://tools.silversneakers.com/>
- Van Lew, S., Geller, D., Feld-Glazman, R., Capasso, N., Dicembri, A., & Zipp, G. P. (2015). Development and Preliminary Reliability of the Functional Upper Extremity Levels (FUEL). *The American journal of occupational therapy : official publication of the American Occupational Therapy Association*, 69(6), 6906350010. <https://doi.org/10.5014/ajot.2015.016006>
- Weissling, K. S. E. (2023, August). *Post Stroke Aphasia: Communication Supports to Promote Optimal Outcomes* . *Mission: Life*. Omaha; iEXCEL.
- Widhelm , K. (2023, August). *Occupational Therapy: Hemiparesis Techniques for ADLs*. *Mission: Lifeline Stroke* . Omaha; iEXCEL.



# References

- Winstein, C. J., Stein, J., Arena, R., Bates, B., Cherney, L. R., Cramer, S. C., Deruyter, F., Eng, J. J., Fisher, B., Harvey, R. L., Lang, C. E., MacKay-Lyons, M., Ottenbacher, K. J., Pugh, S., Reeves, M. J., Richards, L. G., Stiers, W., & Zorowitz, R. D. (2016). Guidelines for adult stroke rehabilitation and recovery. *Stroke*, 47(6). <https://doi.org/10.1161/str.0000000000000098>
- Wong-Baker FACES Foundation (2022). Wong-Baker FACES® Pain Rating Scale. Retrieved [August 1, 2023] with permission from <http://www.WongBakerFACES.org>. Originally published in *Whaley & Wong's Nursing Care of Infants and Children*. © Elsevier Inc.





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