

Functional Rehabilitation, Screening and Education

IHS ECHO August 3, 2016

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**UNMH Spine and Pain Consultation and
Treatment Center**

Functional Rehabilitation, Screening and Education

- I have nothing to disclose.

LEARNING OBJECTIVES

1. Explain when and who to refer to Physical Therapy.
2. Employ one screening tool for Residual Disability – Patient Self-Assessment.
3. Recognize the importance of re-assuring patients and encouraging them to continue to stay active and summarize some home exercises and guidelines to give patients with low back pain.

Low Back Pain

- 1/4 of adults in the U.S. report low back pain in the past 3 months and about 1/2 reporting back pain during a given year.
- Chronic LBP > longer than 3 months
- Longer chronicity = more disability
- Younger adults - chronic back pain is associated with disability, unemployment, lost productivity
- Older adults - functional limitations

Low Back Pain and Exercise

- The most effective strategy for improving back pain is an individually designed exercise program that included home-based supervision and a relatively intensive exercise regimen.

Hayden JA, van Tulder MW, Malmivaara AV, Koes BW: Meta-analysis: exercise therapy for nonspecific low back pain. *Annals of Internal Medicine*. 2005, 142 (9): 765-775.

Low Back Pain and Exercise

- Exercise is an integral part of managing chronic back pain but to be effective requires that patients actively participate in the management process.
- A variety of exercise programs including yoga as well as aerobic and strengthening exercises result in both clinically and statistically significant.

Efficiency and costs of medical exercise therapy, conventional physiotherapy, and self-exercise in patients with chronic low back pain. A pragmatic, randomized, single-blinded, controlled trial with 1-year follow-up.

Spine (Phila Pa 1976). 1998 Dec 1;23(23):2616-24. [Torstensen TA](#), [Ljunggren AE](#).

Low Back Pain - Walking

- Review article found only low to moderate evidence supporting walking as an effective intervention for low back pain.
- Paucity of research
- Further research on the role of walking as a primary intervention for managing chronic low back pain is needed.

Hendrick P, Te Wake AM, TikkiSETTY AS, Wulff L, Yap C, Milosavljevic S: The effectiveness of walking as an intervention for low back pain: a systematic review. Eur Spine J. 2010Google

Pain Generators/ Impairments treated by Therapy /Exercise

Chronic joint/ disc mechanical stress, Chronic soft tissue inflammation/ edema/ overuse,
Spinal cord/ nerve compression, inflammation; Ischemia
Decreased spinal/ peripheral joint strength, mobility, stabilization
Gait abnormality/ Decreased proprioception and balance
Postural stress (hypermobility, whiplash syndromes)
Faulty biomechanics/Ergonomics/ Shoulder and pelvic girdle muscle imbalances

Medical/
Surgical Interventions

Patient's total pain

Impairments treated
by PT Functional Rehab

The Art of Referring for Physical Therapy

Therapy encourages:

- Independence
- Education for self-care
- Promotes wellness-oriented lifestyles
- Helps prevent recurrence

Prescription must include:

- 1. Patient Name
- 2. Date
- 3. Diagnosis
- 4. Referring Provider
Signature

The Art of Referring for Physical Therapy

Might also include:

- Precautions or restrictions
- Specific Treatments requested
- Specific Goals of Treatment - preferably not be “pain free”.
- Any findings on exam or anything referring physician and patient agree is limiting and PT can help them do better.

The Art of Referring for Physical Therapy – What Treatment?

- Exercise – Strength/Mobility/Cardio
- Mobilizations/Manipulations
- Myofascial Release
- Trigger Point Dry Needling
- Traction
- Neuromuscular Re-ed/Biofeedback
- Motor Control – Spinal Stabilization
- Ergonomics, Body/lifting mechanics
- Breathing/Relaxation/Pacing
- Balance, gait/A.D. training
- Home TENS trial – electrical stimulation

The Art of Referring for Physical Therapy

For exercise to be effective, it requires that patients actively participate in the process.

Therapy has better outcomes:

1. Pt has specific functional impairments/goals
2. Pt knows why they are being sent
3. Referring physician provides re-assurance

When PT is not an option: Advise the patient to stay active, rest with support as often as needed, walk, and do gentle exercises.

If they prefer exercising in a social setting:

Community Centers, Walking with a friend, classes, exercise and yoga classes on TV YouTube.

The Art of Referring for Physical Therapy- Goals

- Functional Goals, objective, time-limited, relevant
- Required by Medicare
- Outcomes: Oswestry for LBP, Neck Disability Index, etc.
- Value based goals = sustained changes in behavior.
- Referring provider essential to a successful outcome.

Functional Rehabilitation, Screening – Who needs Therapy?

- Screening Tools – patient self-reported functional impairments.
- Your Exam Findings
- Your Observations of Patient's Posture and movement.

Self-Assessment Functional Screen

Benefits

- ▶ 10-item questionnaire serves as a COMMUNICATION TOOL:
 - ▶ Easily given to patient while waiting for their appointment.
 - ▶ Results entered into patient's record by medical OR non-medical staff prior to being seen.
- ▶ Assists medical provider in identifying and assessing:
 - ▶ Presence of major functional deficits-
 - ▶ Preventing safe, independent mobility and independent ADL/IADL.
 - ▶ Which may indicate increasing severity of disease/pathology state, new diagnosis or condition, or decreasing ability to cope with present and stable condition.
 - ▶ Pain and functional improvement following spinal medical/surgical interventions
 - ▶ Indication for PT referral (**Two or more YES answers** to Screen questions).
- ▶ Provides patient opportunity to self-assess their own functional level, then discuss these changes with their medical provider to better understand:
 - ▶ The consequences of their conditions.
 - ▶ Their willingness to change behavior and readiness for participation in functional rehab program.
 - ▶ Information regarding medical/ surgical vs PT functional rehab treatment options.

Self- Assessment Functional Screen

Margy Maira PhD PT Gretchen Swanson MPH PT DPT (1/2016)

Completed by (Circle One): Patient or Family Member/Caregiver
Patient's Name _____ Date Completed _____

Please circle YES or NO to the following statements:

- | | | |
|---|-----|----|
| 1. I have pain greater than 3/10 high (on a scale of 1 to 10 high) most of my day. | YES | NO |
| 2. I have difficulty walking. | YES | NO |
| 3. I have difficulty sleeping. | YES | NO |
| 4. I need assistance to bath, dress, and groom myself. | YES | NO |
| 5. I have a fear of falling or have recently fallen. | YES | NO |
| 6. I am not able to live at home by myself due to my physical limitations. | YES | NO |
| 7. I am not able to work or am working with limitations. | YES | NO |
| 8. I have noticed a decrease in my fitness level or activity level over the past 6 months. | YES | NO |
| 9. I am no longer able to perform pleasurable activities or hobbies. | YES | NO |
| 10. I have had other episodes of pain in my body in addition to my back or neck pain that have never completely resolved. | YES | NO |

Self-Assessment Functional Screen **Summary Recommendations**

- ▶ Can be completed by patient/caregiver for **ALL** patients:
 - ▶ At defined intervals .
 - ▶ When presence of signs and symptoms of functional loss.
 - ▶ When patients report chronic pain and unsatisfactory functional levels.
 - ▶ Prior to and following medical/surgical interventions for assessment of pain and functional improvement from these interventions.
 - ▶ To help medical providers determine indication for PT functional rehab consultation and/ or treatment to help prevent functional loss and risks of permanent but preventable physical disability.
- Finally, the authors of this self-assessment tool give permission for providers to use within their clinical practice as desired.

SCREENING FOR FALL RISK

History of a previous fall, a fall indoors, or unable to get up after a fall.

Unstable in gait, tandem, turning body, turning head, Romberg – eyes closed, standing up from a chair.

Slow Gait - walks 20 feet >5.3 seconds.

Timed up and go (TUG), stand up from a chair, walk 3 meters, return to chair (>12 seconds, ↑ Fall risk

Single Leg Balance < 10 seconds

SCREENING FOR FALL RISK –20 FOOT WALK TEST

- Pt stands at end of hall (20' distance); use a stopwatch. “When I say start, walk as quickly as you can to marked point at end of hallway’.
< 5.3 seconds = fall risk

Gait speed was associated with survival in older adults.
Studenski, et al. *Jama* 2011

Gait as predictor of falls in older adults, Verghese J, *J Gerontol* 2009. > 3.3 feet per second; 28% increase fall risk, > 2.3 feet/second; 54% increased fall risk.



SCREENING - Observations

So, when I touch this muscle that recreates your severe pain?

- During the exam tests palpation and observation of posture and movement, communicate with pt about your observations.



EXAM OBSERVATIONS -POSTURE

- Lumbar – flexed, lordotic, anterior pelvis, lean
- Pelvic – iliac crest even, rotated
- Shoulder/scapula height uneven
- Thorax – increased kyphosis
- Head – forward
- Neck – extended, flattened, sidebent, hypertrophy of the SCM
- Humerus – anterior, rotated, superior

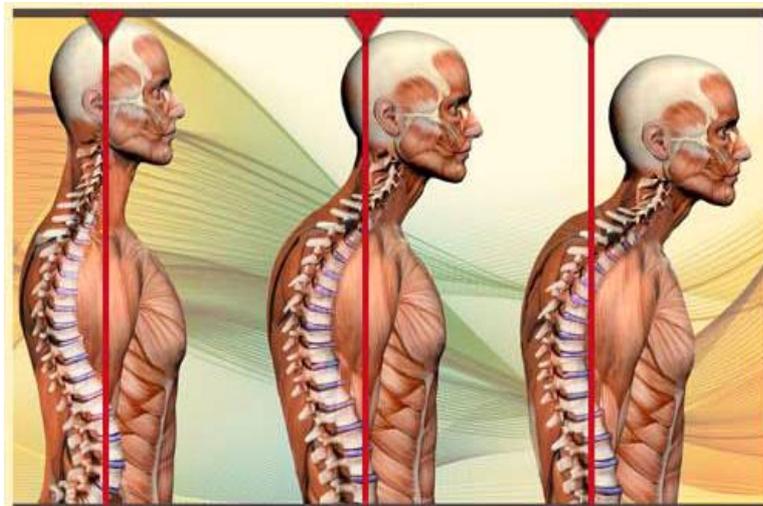


Figure 1

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EXAM OBSERVATIONS- MOVEMENT

- What bends, what doesn't.
Scoliosis, abnormal alignment/movement
- Bias - e.g.pt prefers to stay bent over.
- Kinesiophobia – pt afraid to move in one direction.

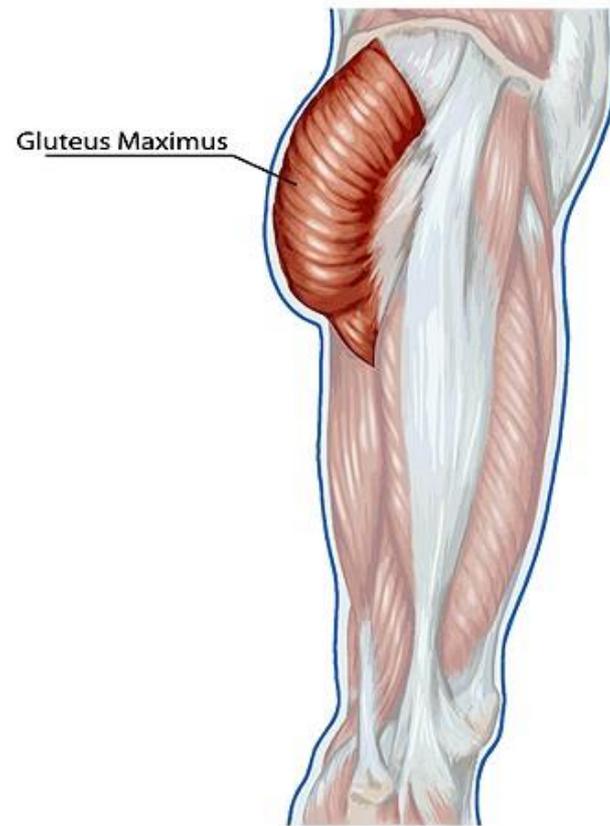
EXAM OBSERVATIONS

- Single Leg Stance
 - balance
 - hip strength
 - ankle/knee
- Sit to Stand Test
 - balance
 - LE strength
- Supine to Sit Test
 - Mechanics/Pain



EDUCATION: YOUR DISC DESSICATION IS NOT CAUSING YOUR GLUTEAL PAIN

- MRI does not point to painful structures.
- Demystify imaging and focus on function and treatable findings v “degenerative disc disease, lumbar spondylosis, osteophyte formation, disc bulge, etc.”



EDUCATE AND RE-ASSURE

- 126 patients in the ED or Urgent Care
- Primary Complaint: H.A.
- Most Common Cause: MVA/whiplash
- Design: RCT
- Treatment: group viewed a cervical strain psychoeducational video via TV on a portable cart.
- Educational video used in the emergency department provides effective treatment for whiplash injuries.
- Oliviera A. Spine, 2006. Education in E.D. for Whiplash Patients

Educational Video 12 minute

- 1) Description of the physiology of a cervical strain
- 2) possible symptoms - first 48 hours
- 3) medical treatment first 48 hours: ice, rest, soft collar (PRN) and medications
- 4) possible symptoms after the first 48 hours, Tx: heat, maintaining preinjury activity gradually
- 5) recovery time period
- 6) animated diagram demonstrating what causes continued muscle pain;
- 7) interview with a recovered cervical strain patient;

Educational Video 12 minute, cont.

- 8) explanation of muscle tension and its physical and emotional triggers
 - 9) muscle tension awareness and reduction techniques: reentering the environment – driving, guarding, immobilization, and exertion can all create tension, exacerbating muscle pain
 - 10) home cervical stretching exercises.
 - 11) breathing relaxation: visual display, which acts to alter the physical
 - Reactions that cause muscle tension.
 - 12) emphasis on diagnosis as muscular.
- Therefore, it is necessary to follow-up with health professionals trained in dealing with muscle pain disorders

EDUCATE & REASSURE

- PATIENTS viewing the video had dramatically lower pain ratings at a 1-month follow (6.09 [10.6] vs. 21.23 [17.4], $P < 0.001$) and this pattern held for the 3- and 6-month follow-up period.
- RESULTS: 4% of video patients were using narcotics at 6 month post ED visit compared with 36% of controls.
- The brief psycho-educational video had a profound effect on subsequent pain and medical utilization.

Exercises - Healing Movement

- See Handouts for LBP exercises
- Moving Frequently will decrease muscle tension
- Muscle Ischemia causes nociceptive pain.
- Supported rest.
- Walking
- Using a Fitbit
- Getting involved in a family or group for support.
- Walking and resting at the mall or park benches (neurogenic claudication).

Thank You!

References: Self-Assessment Functional Screen

Below is a partial list of several evidenced-based self-assessments targeting specific functional status aspects of a patient's total health and well-being:

- The ICF Assessment Sheet: www.icf-casestudies.org/en/introduction/introduction-to-icf-based-documentation-tools-and-rehab-cycle/the-icf-assessment-sheet
- GP's Assessment of Patients' Readiness to Change Diet, Activity and Smoking: Verheijden, Marieke W PhD. www.ncbi.nlm.nih.gov/pmc/articles/PMC1472749/
- Multidisciplinary biopsychosocial rehabilitation for chronic low back pain, Editorial Group: Cochrane Back and Neck Group; Published Online: 2 SEP 2014, DOI 10.1002/14651858.CD000963.pub
- Targeting physical activity promotion in general practice; characteristics of inactive patients and willingness to change. Grandes G, Sanchez A, Torcal J, Sanchez-Pinilla RO, Lizarraga K, Serra J: PEPAF Group. www.ncbi.nlm.nih.gov/pubmed/18498623
- STEADI-self assessment questionnaire: www.edc.gov/steady Centers for Disease Control and Prevention

Additional References:

- ▶ Swanson, GH, Functional Outcome Report: The Next Generation in Physical Therapy Reporting, Documenting Functional Outcomes in Physical Therapy, Stewart DL and Ablen, SH CV Mosby, 1993.
- ▶ "Disability Risk Reduction: Practice Implications for the Elderly- A Primary Care Approach", (Maira,1995), "The Model of Health, PT Outcomes, WHO Outlook Classification System" (Swanson, 1993), "Screen for Presence of Risks for Residual Physical Disability (Signs of Functional Loss)" (Maira, Swanson, 1995) presented at "Strategies to Optimize Managed Care for the Elderly, A Primer for Classification, Prediction, and Functional Outcomes", sponsored by the Section on Geriatrics, APTA, September 15-17, 1995, Orlando Florida.

Self- Assessment Functional Screen

Margy Maira PhD PT Gretchen Swanson MPH PT DPT (1/2016)

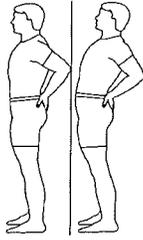
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| 8. I have noticed a decrease in my fitness level or activity level over the past 6 months. | YES | NO |
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| 10. I have had other episodes of pain in my body in addition to my back or neck pain that have never completely resolved. | YES | NO |

AROM lumbar ext standing



- Stand with feet shoulder distance apart. Pull belly in.
- Place hands on hips as shown.
- Arch backwards.
- Return to start position and repeat.

Special Instructions:

Perform at rate of one arch per second.

Perform 1 set of 20 Repetitions, twice a day.

Perform 1 repetition every 4 Seconds.

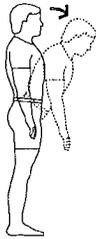
AROM lumbar sidebend standing



- Stand with feet shoulder distance apart, arms at side.
- Bend trunk sideways to left, reaching hand toward knee.
- Return to upright position and repeat to right.

Perform 2 sets of 20 Repetitions, twice a day.

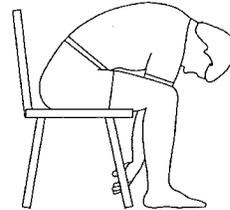
AROM hip flx (lumbar eccentric) stand high level



- Pull the belly in toward the spine. Slowly bend forward, bending only at the hip joint.
- Allow arms to hang in front as you bend.
- Return to standing position by straightening at the hip joint.
- Repeat.

Perform 2 sets of 20 Repetitions, twice a day.

Stretch lumbar flx sit

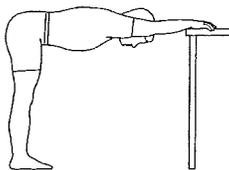


- Sit in chair with knees apart. Pull belly in toward the spine.
- Slowly bend forward and reach between legs.
- Hold stretch and return to sitting position and repeat.

Perform 1 set of 4 Repetitions, twice a day.

Hold exercise for 20 Seconds.

Stretch hamstring bil (stand 90)

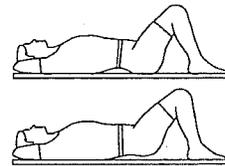


- Stand in front of table with feet shoulder distance apart.
- Place hands on table.
- Bend at hips and tighten the muscles in fronts of thighs, keeping the knees straight.
- Keep low back straight.

Perform 1 set of 3 Repetitions, twice a day.

Hold exercise for 20 Seconds.

AROM lumbar flx/ext supine (pelvic see-saw)



- Lie on back with knees bent.
- Arch low back.
- Slowly flatten the lumbar one segment at a time from hips upward.
- At the end the hips should slightly raise off table.
- Hold hips up for 5 seconds, then reverse sequence.

Perform 5 sets of 1 Minute, once a day.

Rest 1 Minute between sets.

Perform 1 repetition every 4 Seconds.

Issued By: LESLEY

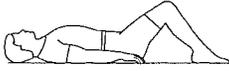
Signature: _____

These exercises are to be used only under the direction of a licensed, qualified professional.

UNMH

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AROM lumbar neutral spine supine

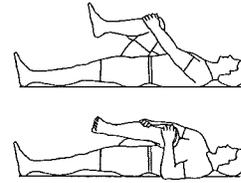


- Lie on back with knees bent.
- Exhale as you pull belly in toward spine and allow the low back to come toward the mat. Release as you inhale. Repeat.

Perform 5 sets of 1 Minute, once a day.

Perform 1 repetition every 4 Seconds.

Stretch Piriformis supine w/hip flx

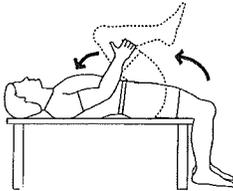


- Lie on back.
- Lift involved leg to chest and grasp knee with opposite hand.
- Grasp lower calf with your other hand.
- Gently pull your leg across chest to opposite shoulder while rotating leg inward until a stretch is felt deep in the buttocks.

Perform 1 set of 4 Repetitions, twice a day.

Hold exercise for 20 Seconds.

Stretch hip flexors supine 1

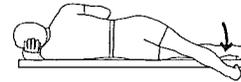


- Lie on back, with knees bent, hanging off edge of bed.
- Pull one knee up to chest.
- Keep other thigh flat on bed.
- Repeat with other leg.

Perform 1 set of 4 Repetitions, twice a day.

Hold exercise for 20 Seconds.

Stretch IT band sidelying

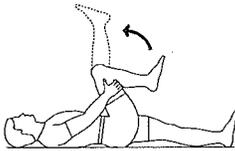


- Lie on uninvolved side.
- Extend involved leg backwards and slowly lower until a gentle stretch is felt in outer side of thigh.
- Keep leg straight and rotated outward.

Perform 1 set of 4 Repetitions, twice a day.

Hold exercise for 20 Seconds.

Stretch hamstrings supine active

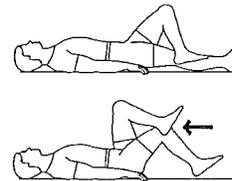


- Lie on back holding knee from behind, as shown.
- Gently straighten leg.
- Repeat with other leg.

Perform 1 set of 2 Repetitions, twice a day.

Hold exercise for 30 Seconds.

Stretch hip/knee figure 4



- Lie on back, knees bent.
- Move left ankle over right knee.
- Gently lift right knee up to chest until stretch is felt.
- Repeat with other leg.

Perform 1 set of 2 Repetitions, twice a day.

Hold exercise for 30 Seconds.