

The Intervention Series presents:

## Performing Evidence-Based Therapeutic Exercise (Therex), And Documenting to Get Reimbursed For It

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THE REHAB DOCUMENTATION GURU



IN CONJUNCTION WITH ALLIED HEALTH EDUCATION

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### Bio

BSc PT from Northeastern University, Boston, MA 1991  
MDiv Southern Seminary, Louisville, KY 2006  
APTA Board Certified Geriatric Clinical Specialist (GCS) 2015  
6+ years area management as Clinical Specialist  
Currently Clinical & Compliance Specialist (12/2016)  
Multiple setting/populations experience  
Documentation auditing experience since 2009  
Father of 9 children (soon to be 12)

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## Objectives

*By the end of this training, you will be able to*

- Define Evidence-based
- Define Therapeutic Exercise
- Identify testing options to determine need for Therapeutic Exercise
- Utilize appropriate treatment strategies that are evidence-based to support skill of Therapeutic Exercise
- Document each component of evaluations/progress notes/daily notes to demonstrate skilled nature of Therapeutic Exercise

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## Course Outline

- Definition of Evidence-Based Practice
- Definition of Therapeutic Exercise
- Areas of impact
  - ICD codes proving need for Therapeutic Exercise
  - Standardized Tests and Measures for determining Therapeutic Exercise necessity
  - Treatment options for Therapeutic Exercise
  - Documentation of Therapeutic Exercise

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## Evidence-based

"EBP is traditionally defined in terms of a **"three legged stool"** integrating three basic principles: **(1)** the best available research evidence bearing on whether and why a treatment works, **(2)** clinical expertise (*clinical judgment and experience*) to rapidly identify each patient's *unique* health state and diagnosis, their individual risks and benefits of potential interventions, and **(3)** client preferences and values."

Wikipedia

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<http://guides.mclibrary.duke.edu/c.php?g=158201&p=1036021>

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## Best Research Evidence

3 groups of researchers:

- People with more initials after their name than letters in their name
- 3<sup>rd</sup> party payers:
  - Definitions of CPT codes- evidence-based application of techniques
  - Specific ICD-10 Diagnostic Codes that have responded to certain interventions
  - Databases that determine average frequency/intensity/duration of treatments for certain diagnoses against clinical outcomes (example, Functional Limitation Reporting, or G-coding)
- You!
  - Your documentation of the individual patient is your research.

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## Clinical Experience

- Education
- Practical experience
  - Working with different diagnoses
  - Utilizing different treatments
  - Determining patient outcomes
  - Addressing patient expectations/wishes
  - Incorporating latest research
  - Working within constraints of 3<sup>rd</sup> party payers

Determined, along with othe EBP legs, by documentation

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## What is skill?

- Complexity
- Safety
- Effectiveness
- “Sophistication”

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## Definition of Therapeutic Exercise



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## Disclaimer

- 97110 Therapeutic Exercises is the property of the American Medical Association.
- The content of this course is an exposition of the definition of 97110 Therapeutic Exercises, with direct quotes from the AMA definition, as well as Medicare's expansion of the coverage criteria of the definition.
- Furthermore, the documentation requirements are based upon Medicare regulations, as well as the author's experience with claim denials and claims that get paid.
- Please see resources at end of course.

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### Therapeutic Exercise is...

- “Therapeutic exercises to develop **strength** and **endurance**, **range of motion**, and **flexibility**.”
  - AMA
- This is the **short** definition

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### Components Parts of Therapeutic Exercises:

- Strength
- ROM
- Flexibility
- Endurance

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### The Hierarchy of Our Relationship to Medicare

## Medicare

Medicare Administrative Contractor (MAC)

you

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### First Coast Local Coverage Determination (LCD)

•“Therapeutic exercise is considered **medically necessary** if at least one of the following conditions is present and documented:

- the patient having weakness, contracture, **stiffness secondary to spasm, spasticity, decreased range of motion, gait problem, balance and/or coordination deficits, abnormal posture, muscle imbalance, or**
- the patient needing to improve mobility, stretching, strengthening, coordination, control of extremities, dexterity, range of motion, or endurance as part of activities of daily living training, or re-education.”

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### National Government Services

“CPT 97110 - Therapeutic Exercises to develop strength and endurance, range of motion and flexibility (one or more areas, each 15 minutes)

Therapeutic exercises are used for the purpose of restoring **strength, endurance, range of motion and flexibility** where loss or restriction is a result of a **specific disease or injury** and has resulted in a **functional limitation**. Therapeutic exercises may require active, active-assisted, or passive participation by the patient (e.g., isokinetic exercise, lumbar stabilization, stretching and strengthening)”

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### **WARNING** - NGS (continued)

“Exercises to promote overall fitness, flexibility, endurance (in absence of a complicated patient condition), aerobic conditioning, or weight reduction, are not covered.

Maintenance exercises to maintain range of motion and/or strength may only be covered when all criteria above for skilled maintenance therapy are met. In addition, exercises that do not require, or no longer require, the skilled assessment and intervention of a qualified professional/ auxiliary personnel are non-covered.”

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NGS continued

“Documentation must clearly support the need for continued therapeutic exercise greater than **12-18** visits.

For many patients a *passive-only exercise program* **should not** be used more than **2-4 visits** to develop and train the patient or caregiver in performing PROM. “



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NGS (continued)

“**Repetitive type exercises** often can be taught to the patient or a caregiver as part of a self management, caregiver or nursing program.”



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Strength



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## Defining Strength

•The amount of **force** generated by **MUSCLE CONTRACTION**. Muscle strength can be measured during *isometric*, *isotonic*, or *isokinetic* contraction, either manually or using a device such as a **MUSCLE STRENGTH DYNAMOMETER**.

• Reference MD "Muscle Strength"



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## Types of Muscular Contraction

- Isometric - same length, with variation in resistance
  - MMT generally tested; dynamometer
  - Utilize AROM measures
    - Gravity eliminated strength <2/5
    - Gravity resisted strength <3/5
- Concentric – a muscle contraction in which the muscle shortens
  - Could have variable speed and resistance, therefore neither truly isotonic and isokinetic
- Eccentric – a muscle contraction in which the muscle lengthens
  - Same variables possible as concentric
- Isokinetic – fancy, \$\$\$\$\$ equipment

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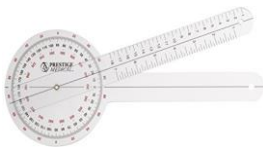
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## ROM



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## Defining ROM

- The extent of movement of a joint, measured in degrees of a circle.
  - Mosby's Medical Dictionary, 9th edition. © 2009, Elsevier.
- Generally measured by a goniometer
  - Proximal or Stationary arm
  - Distal or Movement arm
  - Axis of rotation
    - <http://www.physicaltherapynotes.com/2011/01/goniometer-what-is-goniometer.html>

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## Flexibility



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## Defining Flexibility

- Capable of being bent, usually without breaking; easily bent: a *flexible ruler*.
  - <http://www.dictionary.com/browse/flexibility>
- Antonyms:
  - Stiffness, inflexibility, resistance, rigidity
    - <http://www.thesaurus.com/browse/flexibility>
- "No general test is available that provides representative values of total body flexibility; **tests are specific to each joint and muscle group and area of connective tissue**. Because flexibility is joint specific, determining the range of motion of a few joints does not necessarily provide an indicator of flexibility in other joints."
  - <http://www.humankinetics.com/excerpts/excerpts/the-importance-of-assessing-flexibility>

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## Flexibility – Spasticity vs Rigidity

• **Spasticity** is characterized by abnormally **high muscle tone**, which often **asymmetrically** affects **antagonistic** muscle groups. It is both **amplitude and velocity dependent** and is therefore best assessed using rapid movements of the relevant joint to effect abrupt stretching of the muscle group involved.

• **Rigidity** differs from spasticity in that the **increased tone** remains **constant throughout the range** of movement of the joint. It is **independent of velocity** and should even be detectable with very slow movements. It is **present in flexors and extensor muscle groups equally**, giving rise to a uniform quality in all directions often described as "lead pipe" rigidity.

◦ <https://www.movementdisorders.org/MDS/Journals/Clinical-Practice-E-Journal-Overview/Clinical-Practice--Volume-2-Issue-2/How-Do-I-Examine-Rigidity-and-Spasticity.htm>

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## Flexibility – Spasticity vs Rigidity

• While the problems of spasticity and rigidity are **neuromuscular** in nature, it would be appropriate, per the definition of **Therapeutic Exercise**, to address their impact on overall flexibility.

• Rigidity:

- Unified Parkinson's Disease Rating Scale

• Spasticity

- Ashworth/modified Ashworth – some question over validity

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## Endurance



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## Defining “Endurance”

- General “endurance” training is not a skilled service.
- Other terms related to endurance (that are not skilled) include:
  - Activity tolerance
  - Functional endurance
  - Functional activity tolerance
- Should be defined in terms of **cardio-pulmonary** measurements:
  - Use terminology defining normal vs. abnormal parameters of performance in your documentation:
    - HR- normal ranges, aerobic ranges, arrhythmias, tachy/bradycardic, etc
    - BP- normal ranges, hypertensive responses, orthostatic hypotension, etc
    - Respiratory- rate, depth, asymmetry, paradoxical diaphragmatic movements, use of accessory muscles, perceived exertion, etc.
    - Pulse oximetry- safe vs. unsafe ranges

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## Defining Muscular “Endurance”

- “Muscular endurance is the ability of a muscle or group of muscles to repeatedly exert force against resistance.”
  - <https://www.livestrong.com/article/392246-what-is-the-definition-of-muscular-endurance/>
- Training still occurs to fatigue of the muscle, but with lower resistance, and key is training muscle to be able to complete a functional task:
  - “Improved right quads muscular endurance demonstrated by patient’s ability to ambulate 110 ft front door->mailbox without right knee buckling or c/o muscular fatigue.”
  - “Increased right UE muscular endurance as evidenced by ability to complete eating meal without resorting to use of left UE due to R UE fatigue.”

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## Testing

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## Testing for Strength

- The problem with MMT
  - Can have good-excellent inter-tester reliability, *if performed by well-trained individuals*
  - Poor correlation between MMT and functionality
- Standardized strength assessment
  - Hand dynamometer – correlation with function
  - LE and UE functional tests

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## Testing for Strength – Standardized Tests

- LE
  - 5-Repetition Sit-<Stand
  - 30-Second Chair Rise
  - Timed Up and Go (TUG)
  - Lower Extremity Functional Scale (LEFS)
- UE
  - Closed Kinetic Chain Upper Extremity Stability Test (not for the frail, elderly)
  - Capabilities of Upper Extremity Instrument (good for multiple groups, originally designed for those with tetraplegia)
  - The Upper Extremity Functional Index (self-administered by patient; would need fairly high cognition)
- Core
  - It is hard to find good standardized measures for this area – utilize standardized assessment of stomach and back
  - Standardized test- unilateral hip bridge endurance test (UHBE) – videos on how to perform on YouTube

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## Testing for ROM

- Knowing the terms
  - Stationary arm- The part of the goniometer that is aligned with the bone that is fixed in position
  - Movement arm- The part of the goniometer that is aligned with the bone that is being moved
  - Axis of rotation- the center of the goniometer that must be aligned with

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## Testing for Flexibility

- ROM measures joint mobility
- Flexibility, however, generally measures either isolated muscles and soft-tissue movements, and therefore it is important to note that we must be careful of the positions we place people in for testing individual muscles/groups/joints, etc.

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## Testing for “Endurance”

- Cardiac
  - 2 or 6 minute walk test
  - Chair Step Test- performed seated
  - HR parameters
    - 60-80% predicted max
    - Karvonen formula for determining training range
  - BP ranges – determining safe ranges and benefits of exercise
    - APTA/AOTA have safe parameter guidelines (so does Google)
    - BP can lower systolic 10-15 mmHg and 5-10 mmHg with regular exercise
  - Arrhythmia assessment- does exercise cause?

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## Testing for Endurance- continued

- Pulmonary
  - Rate of Perceived Exertion Scale (RPE, AKA modified Borg)
  - Visual Analog Perceived exertion (same number as RPE, using 10 mm ruler)
  - Rate of breathing

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## Testing for Endurance - continued

- Muscular Endurance
  - There are tests related to calisthenics (ie., how many push-ups/sit-ups, etc., can be done in a given time frame)
  - Likely not going to work in our given population.
  - May be best described in terms of the patient's ability to carry out a submaximal activity without evident signs of muscular fatigue:
    - The patient presently can ambulate 10-12 steps before knees start buckling
    - The patient can only wash hair for about 15-20 seconds before reporting that shoulders are fatigued

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# Treatment

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## Treatment of Strength Deficits

- A whole lot of factors go into actual strength gains:
  - Myofilament packing density
  - Antagonist co-activation
  - Coordination
  - Tendon stiffness
  - Muscle cross-sectional area
  - Muscle moment arm length
  - Muscle fiber type and mix
  - Etc...

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## The Goal of Treatment

- Recognize that the goal of treatment in this area is to get stronger, *not necessarily* build muscle
- Strength training will often result in hypertrophy, but hypertrophy takes time, perhaps longer than you can keep a patient on caseload
- Neuro-muscular adaptations occur much more quickly than actual growth of the muscle

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## Treatment for Strength Deficits

- Isometric
  - Studies show:
    - Greater & of motor fiber recruitment than concentric and eccentric
    - Excellent strength gains
  - "The mean activation levels during maximal eccentric and maximal concentric contractions were 88.3 and 89.7%, respectively, and were significantly lower with respect to maximal isometric contractions (95.2%)." study by Nicholas Babault et al.
  - Positive transfer of 20 to 50% of the strength gained in a 20-degree range (working angle +/- 20 degrees)
- Concentric/Eccentric
  - Movements functionally incorporate both
  - Similar strength gains occur with both
  - Eccentric exercise has the advantage of
    - Allowing greater loads to be applied
    - Less energy demand on a person
    - Perhaps inducing more soreness than concentric - requiring greater recovery time

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## Treatment for Strength Deficits

- How to do isometrics for strength:
  - Static-dynamic isometric training: 3-6-second isometric hold and then right after doing a dynamic full range of motion set.
    - Have been proven to be more effective than doing only dynamic effort lifts.
  - 2-3 times/week per body part **maximum** – very taxing on CNS
  - Total hold time for training for strength and muscle growth will be approximately 60 seconds
  - **Most people will be able to attain up to 5 seconds max contraction.** If you perform at this level, then you would be looking at up to 20 "sets," which might be too taxing for many patients

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## Training Intensity – Concentric/Eccentric

- Moderate-high intensities of weight (65-80% 1 Rep Max) found to be best in recent meta-analysis
- Cardiac patients – start at 30% 1 RM range
  - No resistance training at <35% EF
  - Watch carefully for signs of cardiac compromise
- Time under tension- does it matter?
  - Longer total time under tension (TUT of 60-90 seconds)- greater hypertrophy of Type 1 (oxidative) muscle fibers, vs short TUT 9-12 seconds with high loads/power-lifting protocols (which we may not be using with our patients) may target Type 2 (glycolytic and oxidative-glycolytic)
- Fatigue- studies have shown that you do not need to totally fatigue a muscle to get strength gains

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## Treatment of Strength Deficits

- Studies have shown that treatment of muscle strength also has positive effects on muscle endurance, as well as reducing workload over time (thus giving apparent increase in C-P endurance without influencing V02 Max significantly)
- Strength gains can occur in as little as a few visits, depending on the intensity- high intensity creates *neurological changes before tissue changes occur*
- Slow speed/high resistance causes both improvement in slow and fast speed movements, versus fast speed training causes only improvements in fast speed

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## The bottom lines on strength training...

- You are likely way **under-exercising** your patients! And, you may be way **over-exercising** them as well (next slide)
  - "We recommend that appreciably the same muscular strength and endurance adaptations can be attained by performing a single set of ~8-12 repetitions to momentary muscular failure, at a repetition duration that maintains muscular tension throughout the entire range of motion, for most major muscle groups once or twice each week. All resistance types (e.g. free-weights, resistance machines, bodyweight, etc.) show potential for increases in strength, with no significant difference between them, although resistance machines appear to pose a lower risk of injury." J Fisher et al.
- There is a lot of research on strength training! (more than we can cover in this course)

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## The bottom lines on strength training...

• "We recommend that appreciably the same muscular strength and endurance adaptations can be attained by performing **a single set** of ~8-12 repetitions to momentary muscular failure, at a repetition duration that maintains muscular tension throughout the entire range of motion, for most major muscle groups **once or twice each week**. All resistance types (e.g. free-weights, resistance machines, bodyweight, etc.) show potential for increases in strength, with no significant difference between them, although resistance machines appear to pose a lower risk of injury."

• "There is a lack of evidence to suggest that balance from free weights or use of unstable surfaces shows any transference to sporting improvement, and explosive movements are also not recommended as they present a high injury risk and no greater benefit than slow, controlled weight training."

• J Fisher et al.

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## Treatment for ROM/Flexibility deficits

• Essential to determine "end feel!"

◦ Hard, soft, empty, firm

• Need for stretch:

◦ Muscle tightness- active or passive?

◦ Active:

- Spasms
- Contraction

◦ Passive:

- Postural changes causing shortening
- Scarring

◦ Joint capsular tightness

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## Three Types of Muscle Stretches

1) Static

- a) Passive stretch done by patient or caregiver for prolonged period
- b) Least "skilled"

2) Dynamic

- a) Active – repeated active movement to end range
- b) Ballistic – bouncing stretch at end range (not recommended)

3) Pre-Contraction stretches – the most skilled

- a) Contraction of the agonist being stretched or the antagonist
- b) Most common type is PNF
  - a) Contract-Relax
  - b) Hold-Relax
  - c) Contract-Relax Agonist Contraction
  - d) Post-Isometric Relaxation – 25% contraction followed by stretch- studies show 20%-60% effort is sufficient
  - e) Actually has a bilateral effect

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## Treatment for ROM/Flexibility deficits

- Most authors suggest that 10 to 30 seconds is sufficient for increasing flexibility – no need for “prolonged low-load”
- One study suggests that muscle length increases with 8 weeks of consistent stretching; others have suggested the muscles “tolerate” stretch better rather than lengthen
- Static stretching as part of a warm-up immediately prior to exercise has been shown detrimental to dynamometer-measured muscle strength- “stretch-induced strength loss”
- Most studies show that regardless of the type of stretching, they are *equally effective*. **However**- all patients are different!



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## Treatment for Muscular “Endurance”

- Reference previous discussion of how strength improves muscular endurance
- Longer TUT (60-90 seconds) improves size, strength, and endurance of type 1 oxidative fibers
- Studies have shown positive effects on all endurance related standardized tests when only muscle strengthening was the focus



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## Treatment for Cardio-pulmonary “Endurance”

- Inactivity or a sedentary lifestyle is associated with increased cardiovascular events and premature death.
- Generally recommended 30 minutes/day of moderate intensity activity.
- Any exercise that does the following for 30 minutes is “in the zone...”
  - HR between 60-80% of predicted max
  - Karvonen Formula -  $220 - \text{age} - \text{RHR}$  (resting heart rate) x desired intensity (60-80%) + RHR = THR
  - “Karvonen Formula Calculator” by HIOX Softwares – FREE



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## Treatment for Cardio-vascular “Endurance” (cont)

- Modified Borg Scale- 0 – 10
- Generally keeping to the 3-5/10 level of intensity for most patients would be ideal
- Studies show a high correlation/reliability of using RPE in place of HR
- Works well for patients on Beta-blockers or other HR blunting meds
- Respiratory frequency- strong correlation with RPE
- Resting limits:
  - <12/minute – bradypnea
  - >20/minute – tachypnea
- Upper range for exercise generally appears to be 40-50 – working hard
- Could use clinical judgment to determine effective rate
- Can exercise voluntary control over – monitor without cuing patient
- If someone at rest is already at  $\geq 40$ /minute, will likely not tolerate additional workload



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### When is it not safe to exercise:

- A number of parameters to consider – think co-morbidities
- Link to APTA guide for values for safe exercise parameters:
  - [http://www.apta.org/uploadedFiles/APTAorg/Practice\\_and\\_Patient\\_Care/Patient\\_Care/Physical\\_Fitness/Members\\_Only/PocketGuide\\_PostStroke.pdf#search=%22cardiac%20precautions%20to%20exercise%22](http://www.apta.org/uploadedFiles/APTAorg/Practice_and_Patient_Care/Patient_Care/Physical_Fitness/Members_Only/PocketGuide_PostStroke.pdf#search=%22cardiac%20precautions%20to%20exercise%22)



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## Documentation



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## ICD-10s that prove Medical Necessity of Therex

- R06.02 - Shortness of Breath
- M62.4 – Contracture (be more specific)
- M62.83 – Muscle Spasm (be more specific)
- R29.3 – Abnormal Posture
- I69.--- – Sequelae from cerebrovascular disease
- Various functional related codes:
  - R26.2 Difficulty walking
  - R63.3 Feeding Difficulty

### •M62.81 Generalized Muscle Weakness

•Stay away from R53.1 Weakness/asthenia – usually associated with disease state

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## Documentation of Therex

- Diagnoses are first defense- make sure to have medical and/or treatment dx that proves need.
- Reason for Referral/Initial Assessment Statement- discuss key, objective deficits in **underlying impairments** in the areas of the definition- strength, ROM, flexibility, and/or endurance loss.
- Objective measures:
  - If you do not measure it, you cannot treat it.
  - If you do not **keep** measuring it, you cannot justify ongoing treatment of it.

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## Documentation - Goals

- Goals
  - **Correlate** functional deficit area with underlying impairment(s) fitting Therex definition.
  - Ensure **measurability** of each component.
  - Make sure goals are **attainable** by patient:
    - **Improvement** goals for underlying impairments (strength, ROM, flexibility, and endurance) that can improve
    - Teach patient to **Compensate** for strength, ROM, flexibility, and endurance that he/she cannot improve – this **may not** directly correlate with billing of Therex
    - Perform **Environmental adaptations** to assist patient in areas that he/she cannot improve or compensate for- this **may not** directly correlate with billing of Therex

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## Documentation - Analysis

- Analysis-
  - **Weave** narrative analysis that **combines** the **functional issues** with the measured **underlying impairments** (strength, ROM, flexibility, endurance).
  - Discuss **progress** made in each component of each special test- be sure to **objectify**.
  - **Explain** lack of progress in any area of measurement- answer why?
  - **If no progress** in a given measurement associated with Therex, **justify** why continued treatment needed (see continuing skilled services)
  - **Discuss** observations made by non-skilled caregivers/patient that demonstrates **impact** upon underlying impairment and functionality.

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## Documentation – Skilled Interventions

- Skilled Services- When documenting what you did to justify billing, **include**:
  - State the **specific interventions**: “Therapeutic Exercises including...”
  - An **action word** to describe what you were doing- examples:
    - Analyzed, assessed, facilitated, modified, progressed, adjusted, incorporated, etc.
  - **Target of the action**-
    - Strength, ROM, flexibility, and/or endurance- the definition is part of the target.
    - Anatomical region treated- especially important to address target joints/ muscle groups/ cardio-pulmonary structures being addressed
  - **Special techniques** incorporated that demonstrate skill:
    - Example- 1 Rep Max, incorporating s/sx of cardiac sufficiency during activity, etc.
  - **Evolving nature of care** over time- avoid repetition of the same techniques

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## Documentation – Justification of Continued Care

- Tie into **remaining objective measures** of according to definition
- Tie into **functional impact** of the remaining deficit according to the definition
- Discuss **positive responses** to care of this area (ties back to analysis/assessment)
- Discuss rationale for **inability of non-skilled person** to do the activity that you are doing:
  - **Complex** nature of the task
  - **Safety** concerns with someone else attempting
  - **Inability** of non-skilled person being **effective** in carrying out activity
  - Necessity for **evolving/progressing** nature of treatment

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## Documentation Samples – RFR/Initial Analysis

### •RFR/Initial Analysis Statement:

- "Patient is a 79 y/o female with recent diagnosis, and hospital admission \_\_\_\_\_ (date) of **right THA due to OA of the right hip, referred by orthopedic MD with significant post-surgical right hip weakness, loss of ROM, and decreased muscular endurance**, impacting the patient's ability and safety to perform bed mobility, transfers to->from bed and chair, and level surface ambulation."
- "Patient is a 67 y/o male with **AMI** on \_\_\_\_\_, with resultant **CHF** and **EF of 45%**, who experienced a significant loss of **cardiac endurance** for out of bed activities and ADLs due to 11 day hospitalization during (dates), and remaining bed bound during that time."

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## Documentation Samples – Objective Measures

- "**Strength** right shoulder was 3-/5 scapular abduction measured at 105 degrees AROM, **unable to complete \_\_\_\_\_ (functional task) without min assist.**"
- "Patient's **HR** is \_\_\_\_\_ during (functional task), indicating >95% predicted max HR, **which places the patient at risk for cardiac compromise during this activity.**"
- "Patient lacks sufficient **flexibility** to reach down to put shoes on self, lacking **12 inches** reach from **lateral malleolus with finger tips.**" (this would benefit from joint specific assessment, along with other parameters)

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## Documentation Samples - Goals

- "Patient will ambulate 150 ft from room to dining room with HR remaining  $\leq$ 80% predicted training max (determined by Kevornen formula) by \_\_\_\_\_ (date)."
- "Patient will improve to \_\_\_\_\_ reps 30 sec chair rise, corresponding with age normative capability for community dwelling man of his age, to allow for safe transfers independently with reduced fall risk."

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## In Summary...

- Make sure to use ICD-10 coding that suggests the necessity of 97110 Therapeutic Exercises.
- Remember that in some instances, there is overlap between 97110 Therapeutic Exercises and 97112 Neuromuscular Reeducation.
- It is necessary that documentation contain objective measurements that support the need to address deficiencies in strength, endurance, ROM, or flexibility.
- The basis for treatment must always be evidence-based.
- Documentation should flow from one section to the next in support of the medical necessity of 97110 Therapeutic Exercises.

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## Thank you!

For follow-up:

[Adamsonenterprises1@gmail.com](mailto:Adamsonenterprises1@gmail.com)

“The Rehab Documentation Guru” YouTube channel

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## Sources

- WebPT. “Physical Therapists’ Guide to CPT Codes.” Retrieved from <https://www.webpt.com/cpt-codes/>. (December 2017)
- Reference.MD. “Muscle Strength.” Retrieved from <http://www.reference.md/files/D0537mD053580.html>. (December 2017)
- Labrada. “Three Kinds of Strength.” Retrieved from <https://www.labrada.com/blog/workouts/types-of-strength-bodybuilding/>. (December 2017)
- “Isometric Training: What It Is And How To Do It Correctly.” Retrieved from <https://breakingmuscle.com/fitness/isometric-training-what-it-is-and-how-to-do-it-correctly>
- “Isometrics: The Secret to Gaining Strength — Without Moving a Muscle.” Retrieved from <https://greatist.com/move/isometric-exercises>
- “Isometric exercise induces analgesia and reduces inhibition in patellar tendinopathy.” Retrieved from [http://bism.bmj.com/content/early/2015/05/15/bism-2014-094386?utm\\_source=TrendMD&utm\\_medium=scp&utm\\_campaign=BISM\\_TrendMD-0](http://bism.bmj.com/content/early/2015/05/15/bism-2014-094386?utm_source=TrendMD&utm_medium=scp&utm_campaign=BISM_TrendMD-0)

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## Sources

- SJ Atkins, et al. Electromyographic Response of Global Abdominal Stabilizers in Response to Stable and Unstable-Base Isometric Exercise. *The Journal of Strength & Conditioning Research*: (June 2015) Vol. 29 - Issue 6 - p 1609–1615.
- JD Inter, et al. Isometric exercise training for blood pressure management: a systematic review and meta-analysis to optimize benefit. *Hypertension Research*: (2016) volume 39, pages 88–94.
- J. E. Hurst and R. H. Fitts. Hindlimb unloading-induced muscle atrophy and loss of function: protective effect of isometric exercise. *J Appl Physiol* 95: 1405–1417, 2003.
- Cadore, E. L., Pinto, R. S., Bottaro, M., & Izquierdo, M. (2014). Strength and Endurance Training Prescription in Healthy and Frail Elderly. *Aging and Disease*, 5(3), 183–195. <http://doi.org/10.14336/AD.2014.0500183>.
- Folland JP, Irish CS, Roberts JC, Tarr JE, Jones DA. Fatigue is not a necessary stimulus for strength gains during resistance training. *Br J Sports Med*. 2002 Oct;36(5):370-3; discussion 374.

## Sources

- Krieger, JW. Single vs. multiple sets of resistance exercise for muscle hypertrophy: a meta-analysis. *J. Strength Cond Res*. 24: 1150-1159, 2010.
- Mangine, GT, Hoffman, JR, Gonzalez, AM, Townsend, JR, Wells, AJ, Jajtner, AR, Beyer, KS, Boone, CH, Miramonti, AA, Wang, R, LaMonica, MB, Fukuda, DH, Ratamess, NA, and Stout, JR. The effect of training volume and intensity on improvements in muscular strength and size in resistance-trained men. *Physiol. Rep*. 3: 10.14814/phy2.12472, 2015.
- Page, P. (2012). CURRENT CONCEPTS IN MUSCLE STRETCHING FOR EXERCISE AND REHABILITATION. *International Journal of Sports Physical Therapy*, 7(1), 109–119.

## Sources

- J Fisher, J Steele, S Bruce-Low, D Smith. EVIDENCE-BASED RESISTANCE TRAINING RECOMMENDATIONS. *Med Sport* 15 (3): 147-162, 2011.
- C Foster, JA Florhaug, J Franklin, L Gottschall, LA Hrovatin, S Parker, P Doleshal, C Dodge. A New Approach to Monitoring Exercise Training. *Journal of Strength and Conditioning Research*, 2001, 15(1), 109–115
- Nicolò, A., Massaroni, C., & Passfield, L. (2017). Respiratory Frequency during Exercise: The Neglected Physiological Measure. *Frontiers in Physiology*, 8, 922. <http://doi.org/10.3389/fphys.2017.00922>



## Sources

- E Brown. "What is the Definition of Muscular Endurance?" Retrieved from <https://www.livestrong.com/article/392246-what-is-the-definition-of-muscular-endurance/>
- DP Leong, et. al. Prognostic value of grip strength: findings from the Prospective Urban Rural Epidemiology (PURE) study. *The Lancet*, Volume 386, Issue 9990, 18–24 July 2015, Pages 266–273.
- R Bohannon. Muscle strength: clinical and prognostic value of hand-grip dynamometry. *Current Opinion in Clinical Nutrition and Metabolic Care*: September 2015 - Volume 18 - Issue 5 - p 465–470.
- N Steilber. Strong or Weak Handgrip? Normative Reference Values for the German Population across the Life Course Stratified by Sex, Age, and Body Height. Retrieved on <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0163917>.
- Perlmutter, J. S. (2009). Assessment of Parkinson Disease Manifestations. *Current Protocols in Neuroscience* / Editorial Board, Jacqueline N. Crawley... [et Al.], CHAPTER, Unit10.1. <http://doi.org/10.1002/0471142301.ns1001s49>

## Sources

- Schmitt WH, Cuthbert SC. Common errors and clinical guidelines for manual muscle testing: "the arm test" and other inaccurate procedures. *Chiropractic & Osteopathy*, 2008;16:16. doi:10.1186/1746-1340-16-16.
- Delayed-onset muscle soreness does not reflect the magnitude of eccentric exercise-induced muscle damage Kazunori Nosaka Mike Newton Paul Sacco First published: 09 December 2002 *Scandinavian Journal of Medicine & Science in Sports*
- C Beardsley. "What is the relationship between muscle growth and strength gains?" Retrieved from <https://medium.com/@SandCRResearch/what-is-the-relationship-between-muscle-growth-and-strength-gains-8f8adba8e8a>.

## Sources

- Effects of Resistance Training on Muscle Strength, Endurance, and Motor Unit According to Ciliary Neurotrophic Factor Polymorphism in Male College Students; *J Sports Sci Med*. 2014 Sep; 13(3): 680–688. Published online 2014 Sep 1.
- K. HÄKKINEN, M. ALÉN, P. V. KOMI. "Changes in isometric force- and relaxation-time, electromyographic and muscle fibre characteristics of human skeletal muscle during strength training and detraining." <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1748-1716.1985.tb07759.x>.

## Sources

- \*Aagaard, P., Simonsen, E. B., Trolle, M., Bangsbo, J., & Klausen, K. (1994). Effects of different strength training regimes on moment and power generation during dynamic knee extensions. *European Journal of Applied Physiology and Occupational Physiology*, 69(5), 382.
- \*Alegre, L. M., Jiménez, F., Gonzalo-Orden, J. M., Martín-Acero, R., & Aguado, X. (2006). Effects of dynamic resistance training on fascicle length and isometric strength. *Journal of Sports Sciences*, 24(5), 501.
- \*Bohm, S., Mersmann, F., & Arampatzis, A. (2015). Human tendon adaptation in response to mechanical loading: a systematic review and meta-analysis of exercise intervention studies on healthy adults. *Sports Med Open*, 1(1), 7.

## Sources

- \*Coburn, J. W., Housh, T. J., Malek, M. H., Weir, J. P., Cramer, J. T., Beck, T. W., & Johnson, G. O. (2006). Neuromuscular responses to three days of velocity-specific isokinetic training. *The Journal of Strength & Conditioning Research*, 20(4), 892-898.
- \*Del Balso, C., & Cafarelli, E. (2007). Adaptations in the activation of human skeletal muscle induced by short-term isometric resistance training. *Journal of Applied Physiology*, 103(1), 402.  
<https://www.iospt.org/doi/pdf/10.2519/iospt.1994.20.2.103> (isometric strength carryover)
- \*N Bryant. "GOING ISOMETRIC FOR STRENGTH: Get stronger without moving a muscle using isometric work in your routine." Retrieved from <https://www.muscleandfitness.com/workouts/workout-tips/going-isometric-strength>
- \*R Marks. "The Effects of 16 Months of Angle-Specific Isometric Strengthening Exercises in Midrange on Torque of the Knee Extensor Muscles in Osteoarthritis of the Knee: A Case Study." *JOSPT*, Volume 20, Number 2 .August 1994.

## Sources

- \*MV Franchi, ND Reeves, MV Narici. Skeletal Muscle Remodeling in Response to Eccentric vs. Concentric Loading: Morphological, Molecular, and Metabolic Adaptations. *Front Physiol*. 2017 Jul 4;8:447. doi: 10.3389/fphys.2017.00447. eCollection 2017.