

New Applications of High Intensity Rehab and Gait Speed in PALTC

When Failure Isn't a Bad Thing: **Improving SNF Outcomes with Progressive Rehabilitation**



Jennifer Stevens-Lapsley, PT, PhD, FAPTA
 Professor
 Director, Rehabilitation Science PhD Program
 PT Program Section Director, Research and Development
 University of Colorado

Associate Director of Research
 Geriatric Research, Education and Clinical Center
 VA Eastern Colorado Health Care System



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www.movement4everyone.org
Jennifer.Stevens-Lapsley@cuanschutz.edu




RESTORE TEAM AT UNIVERSITY OF COLORADO

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Disclosures

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- National Institutes of Health (NIH)
- Agency for Healthcare Research and Quality (AHRQ)
- Veterans Affairs (VA)




Rehabilitation Training for CEUs



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Objectives





- 1) Appreciate how medical **deconditioning** in older adults **impairs functional mobility** and **increases rehospitalization** risk.
- 2) Recognize the practical application of **walking speed** in **predicting hospitalization** risk, **mortality**, and **discharge location**.
- 3) Understand how SNF clinical teams could **use progressive rehabilitation and mobility targets** to improve patient outcomes and optimize value.



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Impaired Function in Older Adults Following Hospitalization

-  Patients walk only 7 minutes per day in hospital ¹
-  68% of discharged are below pre-hospitalization function²
-  No improvement in outcomes compared to past ³
-  SNF residents only walk 849 steps a day ⁴

1. Villumsen et al. 2015; 2. Gill TM 2009; 3. Loyd 2020; 4. Skutzbach 2021

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Archives of Physical Medicine and Rehabilitation
ELSEVIER
Volume 94, Issue 10, October 2013, Pages 1951–1958

Original article

Functional Status Impairment Is Associated With Unplanned Inpatient Rehabilitation Among Aged Medicare Fee-for-Service Beneficiaries.
Middleton A¹, Graham JE², Ottenbacher KP²

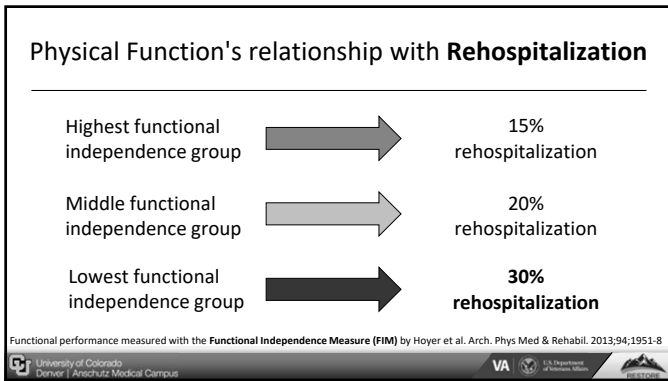
Functional Status Predicts Acute Care Readmissions After Inpatient Rehabilitation in the Stroke Population

Functional Status Outperforms Comorbidity in Predicting Acute Care Readmissions in Medically Complex Patients

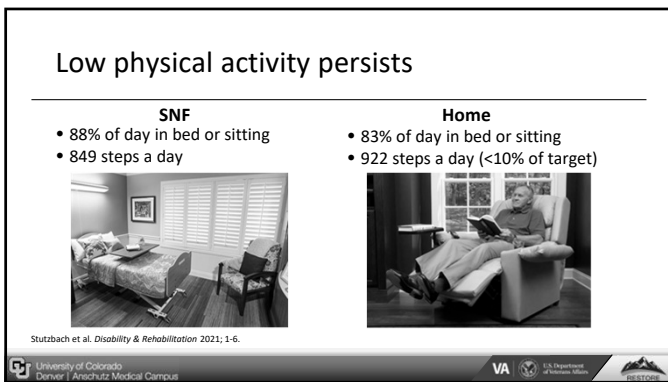
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RESEARCH ARTICLE

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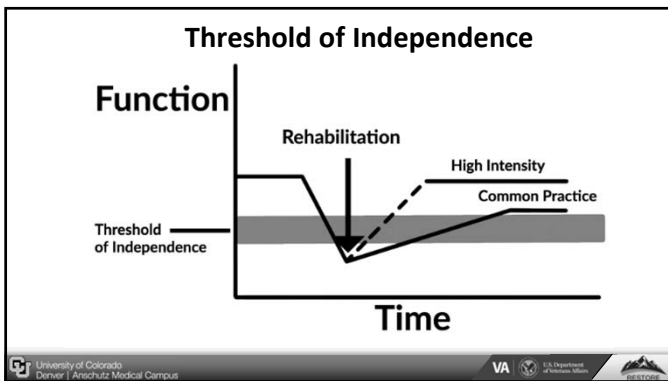
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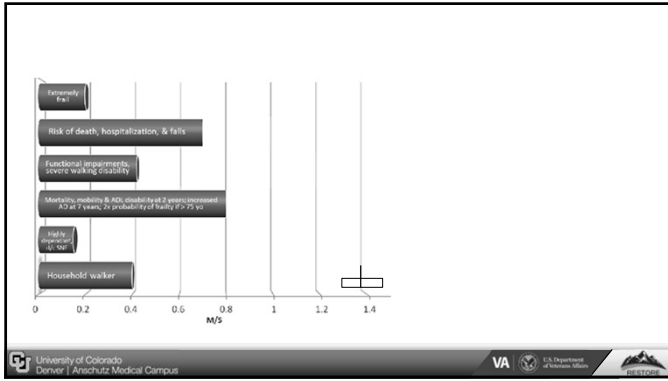
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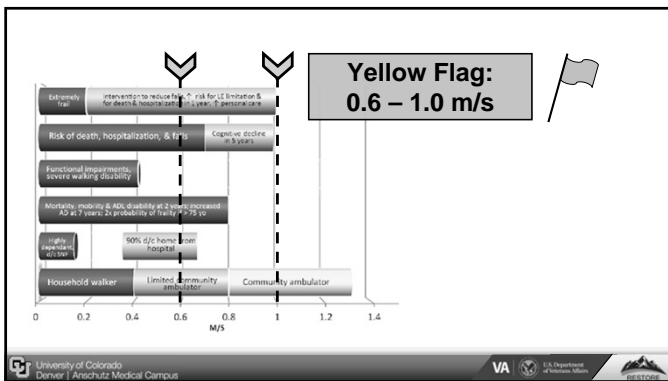
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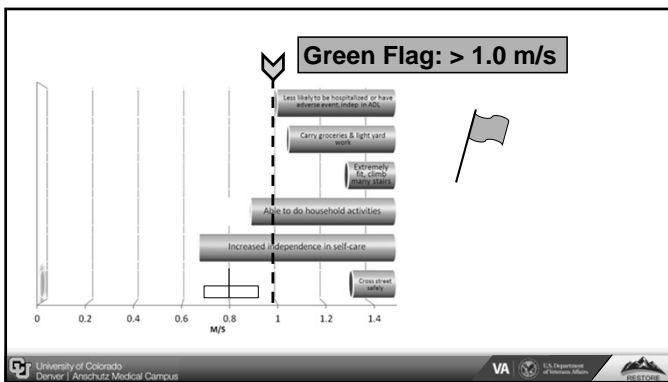
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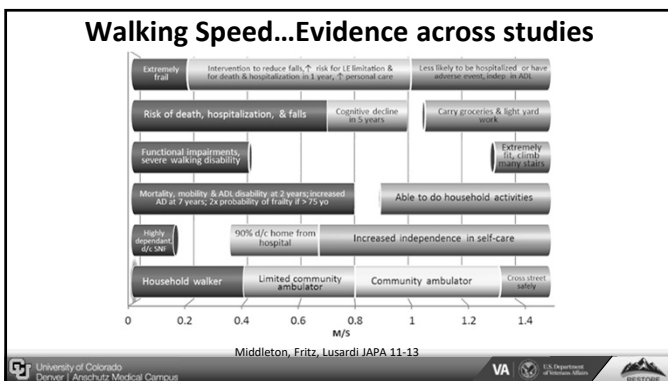
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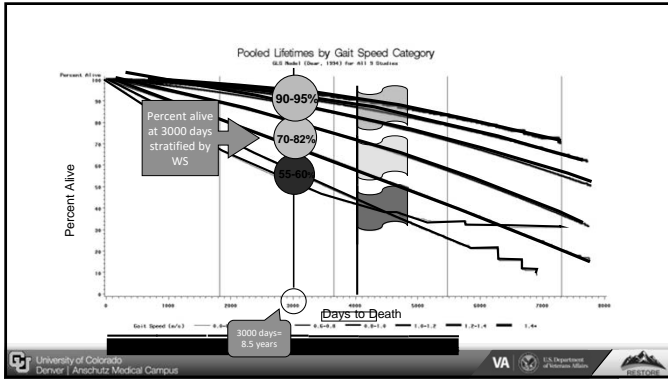
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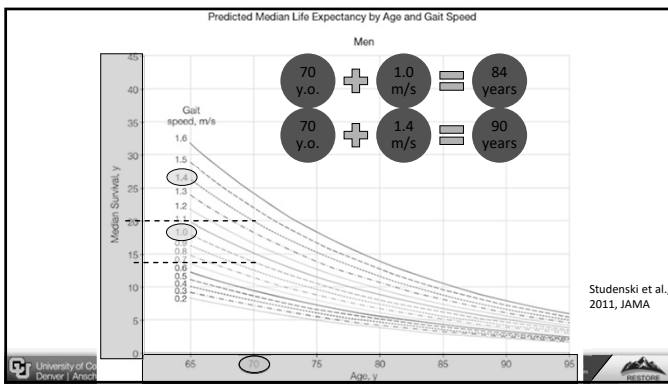
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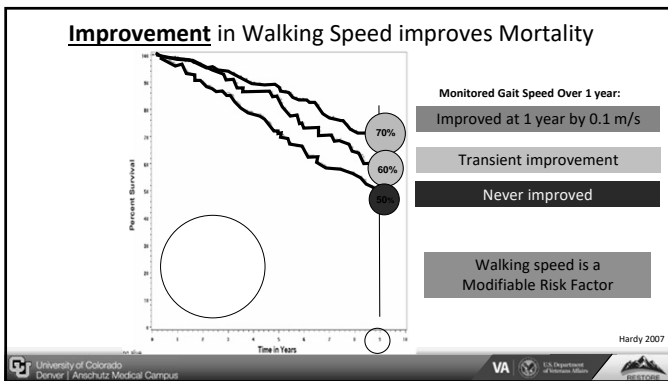
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How do we improve walking speed?

Aiming for "Failure" using progressive strengthening



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Choosing Wisely

An initiative of the ABIM Foundation

Don't let older adults lay in bed or only get up to a chair during their hospital stay.

Don't prescribe under-dosed strength training programs for older adults. Instead, match the frequency, intensity and duration of exercise to the individual's abilities and goals.

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Barriers for implementation of optimal practice patterns

- Fear of adverse events, penalties, or litigation
- Practice of "negative defensive medicine"





"I don't want a fall on my shift."

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Fear of Litigation

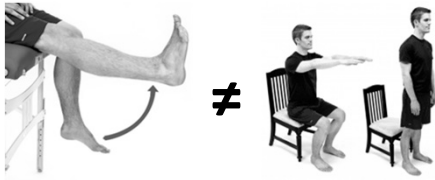
- Have we taken the “above all else...do no harm principle” to an extreme?
- Would more evidence-based guidelines help decrease litigation fear?

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Do Light Weights Generate Forces Equivalent to Daily Functional Activities?



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Current Rehabilitation



Low-Physiologic Intensity

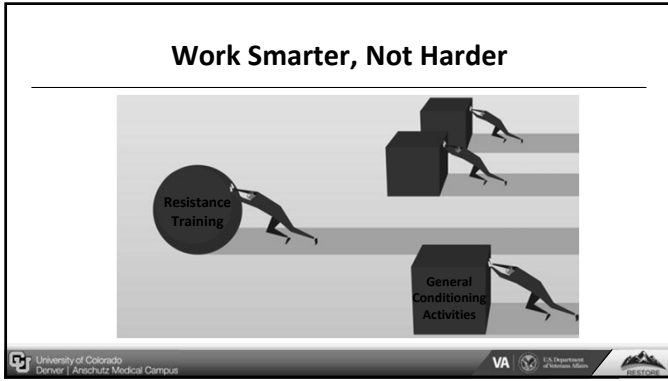
Progressive Rehabilitation



High-Physiologic Intensity

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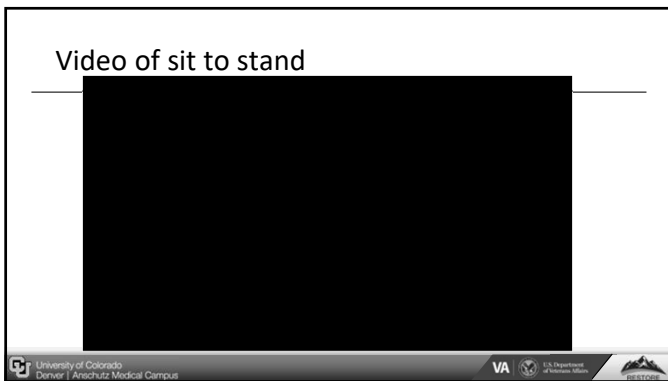
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RPE SCALE

1	Nothing
2	Very Easy
3	Easy
4	Comfortable
5	Somewhat Difficult
6	Difficult
7	Hard
8	Very Hard
9	Extremely Hard
10	Maximal/Exhaustion



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Journal of the American Geriatrics Society

Implementation of a rehabilitation model in a Program of All-Inclusive Care for the Elderly (PACE): Preliminary data

2022

Allison M. Gustavson DPT, PhD^{1,2} | Cherie V. LeDoux DPT, PhD¹ | Michael Himawan DPT¹ | Jennifer E. Stevens-Lapsley MPT, PhD^{1,3} | Kathryn A. Nearing PhD^{3,4,5}


innovAge
Life on Your Terms

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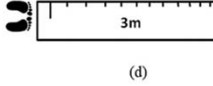
6 weeks of high-intensity training

Balance test




(a) (b) (c)

Gait speed test



(d)

Five chair stand test



5x (e)

2x the Clinical meaningful change seen after 6 weeks

Gustavson et. al. 2022 J of American Geriatrics Society

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> Phys Ther. 2020 Sep 28;100(10):1746-1758. doi: 10.1093/ptj/pzaa126.

Application of High-Intensity Functional Resistance Training in a Skilled Nursing Facility: An Implementation Study

Allison M Gustavson¹, Daniel J Malone², Rebecca S Boxer³, Jeri E Forster⁴, Jennifer E Stevens-Lapsley⁵



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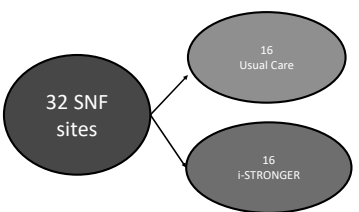
High-Intensity is Feasible and Effective in the SNF

	High-Intensity vs Usual Care
Short Physical Performance Battery (SPPB)	↑0.64 points
Walking/Gait Speed	↑0.13 meters/second
Community Discharge Rate	↑20%
SNF Length of Stay Estimated Cost Savings	↓3.5 days ~\$1500 per patient

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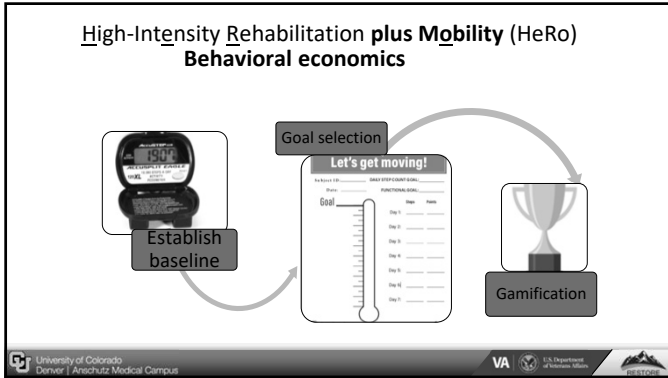
Pragmatic Clinical Trial (NIH R01 AG072693)



Target: 3840 patients

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Improving the Lives of Older Adults by Aiming for Failure **i-STRONGER**

- **High-Intensity Rehabilitation = better lives**
- Value of measuring **gait speed & physical function**

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Next steps....

- **The RESTORE team can assist** to overcome barriers to implementing high intensity rehab
 - Offer CEU educational opportunities
 - Access to an **educational platform** with a robust follow-up and ongoing support
- **www.movement4everyone.org**
- APTA: Certified Exercise Expert for Aging Adults (**CEEAA**)

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 VA RR&D I01 RX001978
 NIH R01 NR016209
 NIH R01 AG054366

Funding Research to Optimize Movement and Health

Foundation for Physical Therapy

U.S. Department of Veterans Affairs


Foundation for Physical Therapy
 CoHSTAR

NIH Eunice Kennedy Shriver National Institute of Child Health and Human Development
 Healthy pregnancies. Healthy children. Healthy and optimal lives.

Rehabilitation Research & Development Service (RR&D)

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Cynthia Huang, DPT	Allison Gustavson, PT, DPT, PhD	Bob Burke, MD	Bob Schwartz, MD	Ethan Cumber, MD	Jason Fairley, PT, DPT, CCS	Jeri Foster, PhD
Jeff Wallace, MD	Katie Butera, PT, DPT	Wendy Kohrt, PhD	Carl Levy, MD, PhD	Dan Malone, PT, PhD, CCS	Michelle Rauzi, PT, DPT, ATC	Amy Nordon-Craft, PT, DSc
Lauren Herricks, PT, DPT, CCS	Christine Jones, MD	Katie Seidler, MS, DPT	Kristine Erlundson, MD	Lauren Abbate, MD, PhD	Hilary Lum, MD, PhD	Kady Nearing, PhD

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www.movement4everyone.org
 Jennifer.Stevens-Lapsley@cuanschutz.edu



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