



# Updates in Physical Therapy

Chairperson:

Maria DelMuto, PT, CCM  
Mass General Brigham

Monday, March 27<sup>th</sup>, 2023

2:55-3:30pm

## Program:

- Understanding the Educational Requirements for Physical Therapists (Courtney McKenzie, PT, DPT)
- Work Conditioning vs Work Hardening And When Is an FCE Needed (Colleen Medlin, PT, DPT, CEAS, CIPS)
- AI & Predictive Analytics in Physical Therapy (Shirah Burgey, PT, DPT)
- Q & A



# Understanding Educational Requirements for Physical Therapists

Courtney McKenzie PT,DPT  
Boston Medical Center  
Outpatient Rehabilitation, Hyde  
Park

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# Physical Therapy

## Introduction into the Profession

- Movement experts who improve quality of life through prescribed exercise, hands on care, and patient education
- **Evaluate**
- **Assess**
  - **Plan**
  - **Treat**

# Educational Requirements

## PT School

- Bachelor's degree pre-requisite
- Average 3-4 years of schooling
  - Anatomy and Physiology
  - Kinesiology
  - Pathology
  - Neuroscience
  - Diagnostic Imaging
  - Pharmacology
- Clinical Rotations
- Graduate with Doctoral Degree

## Post-Graduate Requirements

- NPTE Exam
  - Licensing
- Continuing Education
  - Biennial renewal requirement
  - State Dependent
  - Credit System
  - Courses for further professional development



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# Thank you

## Questions?



# **Work Conditioning vs. Work Hardening & When Is An FCE Needed**

Colleen Medlin, PT, DPT, CEAS,  
CIPS  
Director of Workers  
Compensation,  
Professional Physical Therapy

# Work Conditioning/Work Hardening

- Bridges the gap between acute therapy and return to work
- Allows the patient to return to their highest functional level
- Focus on essential job function and conditioning
- Goal is to restore physical capacity and function to enable the patient/client to return to work



# Work Conditioning vs Work Hardening

Work Conditioning	Work Hardening
Appropriate for patients with medium to heavy PDL	Appropriate for patients with medium to heavy PDL
Frequency 3-5x week, 2-6 hours a day depending on goals and objectives	Frequency is typically daily for up to 8 hours a day
Includes exercise, with focus on conditioning, and work simulation	Includes exercise from a WC program but increased focus on job-related activities and simulation
	Multi-disciplinary approach

## When is an FCE needed?

- Return-to-work (Job Specific)
- Baseline
- Disability

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# The Future of Physical Therapy and Artificial Intelligence

Shirah Burgey, PT, DPT



## What is AI?

Computers Exhibiting Human-Like Intelligence and Reason

Making decisions, identifying objects, and having voice recognition



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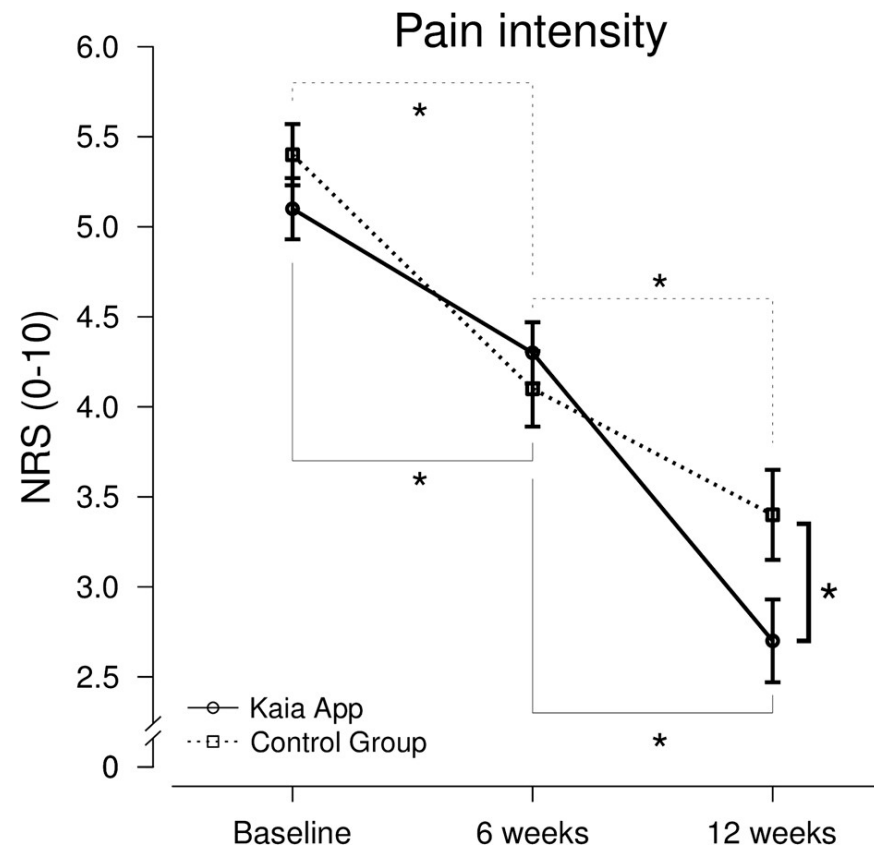
## What AI Can Currently Do In PT?

1. Measure ROM with more accuracy
2. Give patient feedback about their home exercise program and guide the patient to correct form
3. Roughly diagnose pain as musculoskeletal disorders
4. Gather and simplify data
5. Share data between patient and PT

# Mhealth Back Pain (KAIA APP)

## INTERVENTION GROUP

The Kaia APP was  
provided for 3  
months



## CONTROL GROUP

6 individual  
therapy sessions  
over 6 weeks

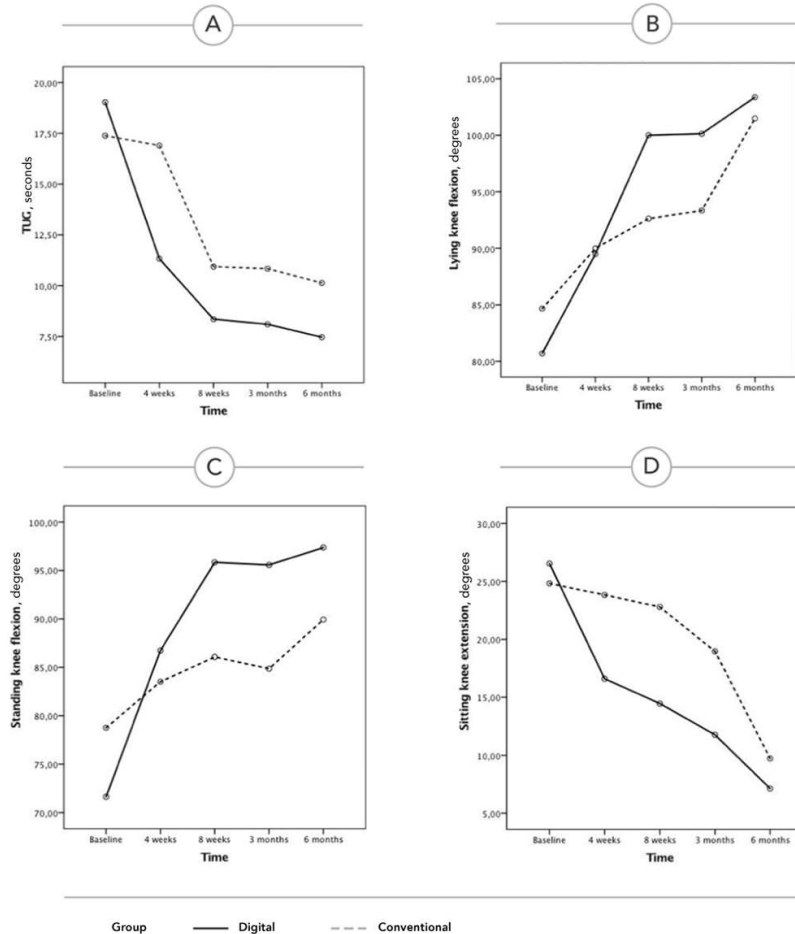
# Outcomes of Digital versus Conventional Home-Based Rehab

## Conventional rehabilitation

Home-based supervised program provided by a physiotherapist

## Digital intervention

Onboarding visit from the assigned physical therapist



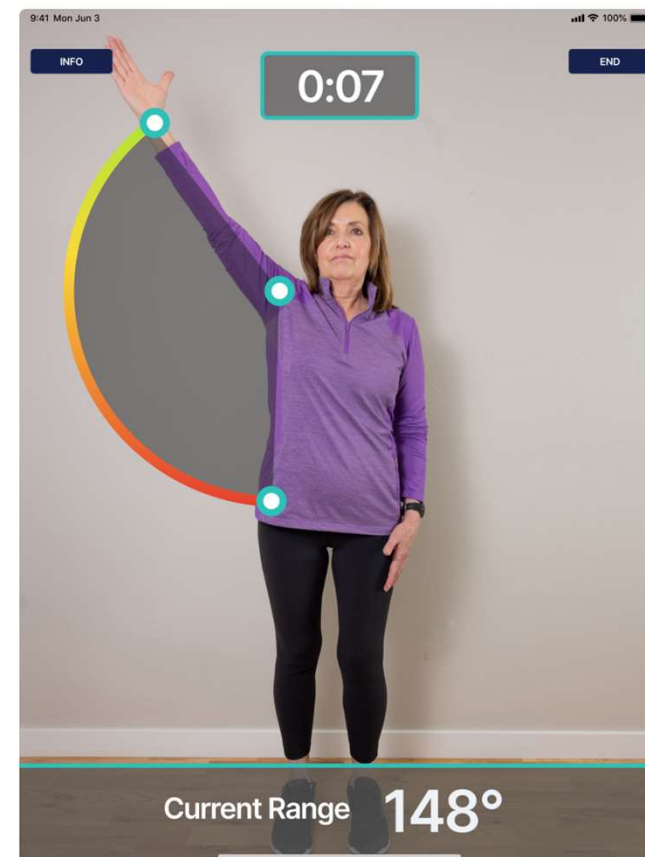


# Analyzing Motion

Exer- a digital health company

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# THIS COULD BE THE FUTURE OF OUR REHABILITATION WORLD

## What role *should* AI play in physical therapy?

- Improve recovery outcomes for patients
- Gather accurate, reliable data regarding patient progress
- Reduce burnout among PTs by removing monotonous tasks from their day-to-day lives
- Cut back the frequency with which patients need to physically come to the clinic for appointments (assuming the technology is accessible to patients at home)

A partnership between Artificial intelligence and the Physical  
Therapist

# References

Toelle, T.R., Utpadel-Fischler, D.A., Haas, KK. *et al.* App-based multidisciplinary back pain treatment versus combined physiotherapy plus online education: a randomized controlled trial. *npj Digit. Med.* **2**, 34 (2019). <https://doi.org/10.1038/s41746-019-0109-x>

Correia F, Nogueira A, Magalhães I, Guimarães J, Moreira M, Barradas I, Molinos M, Teixeira L, Tulha J, Seabra R, Lains J, Bento V. Medium-Term Outcomes of Digital Versus Conventional Home-Based Rehabilitation After Total Knee Arthroplasty: Prospective, Parallel-Group Feasibility Study  
JMIR Rehabil Assist Technol 2019;6(1):e13111

Pattanshetty RB, Khan S. A shifting paradigm from human intelligence to artificial intelligence in rehabilitation: A descriptive review. *Indian J Phys Ther Res* 2022;4:8-13

Alsobhi M, Khan F, Chevidikunann M, Basuodan R, Shawli L, Neamatallah Z  
Physical Therapists' Knowledge and Attitudes Regarding Artificial Intelligence Applications in Health Care and Rehabilitation: Cross-sectional Study  
J Med Internet Res 2022;24(10):e39565

Exer Labs, Inc (n.d.). *Objective motion health data without hardware*. Exer. <https://www.exer.ai/>