Effectiveness of a Specialized Parkinson's Group Exercise Class

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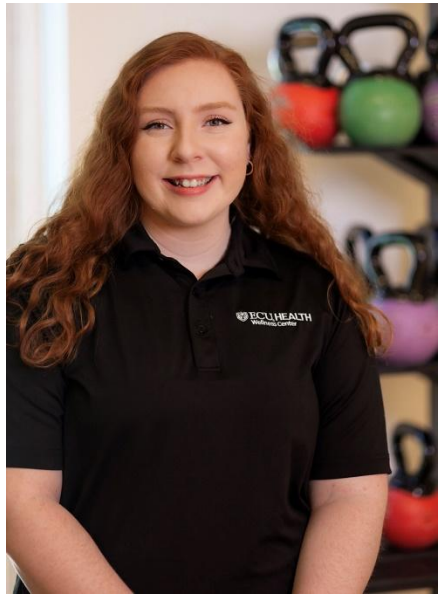
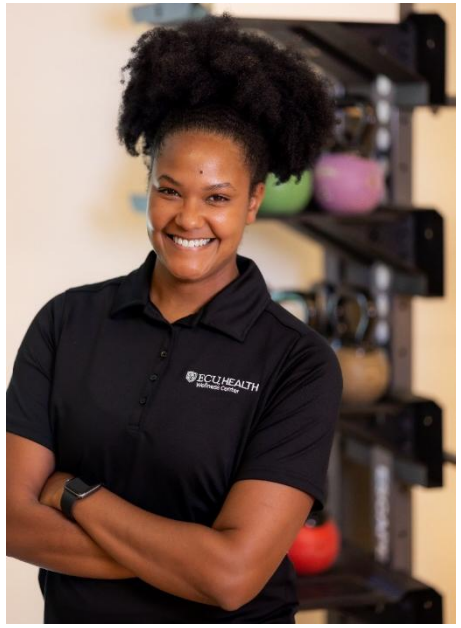
Introductions



Cassandra (Cas) Anderson

- Exercise Physiologist III at ECU Health
- Rock Steady Coach since 2023
- BS in Fitness and Wellness Leadership, SUNY Plattsburgh 2020
- MS in Kinesiology, Barton College, 2021
- Enrolled in PhD in Kinesiology, Concordia St. Paul, expected 2027



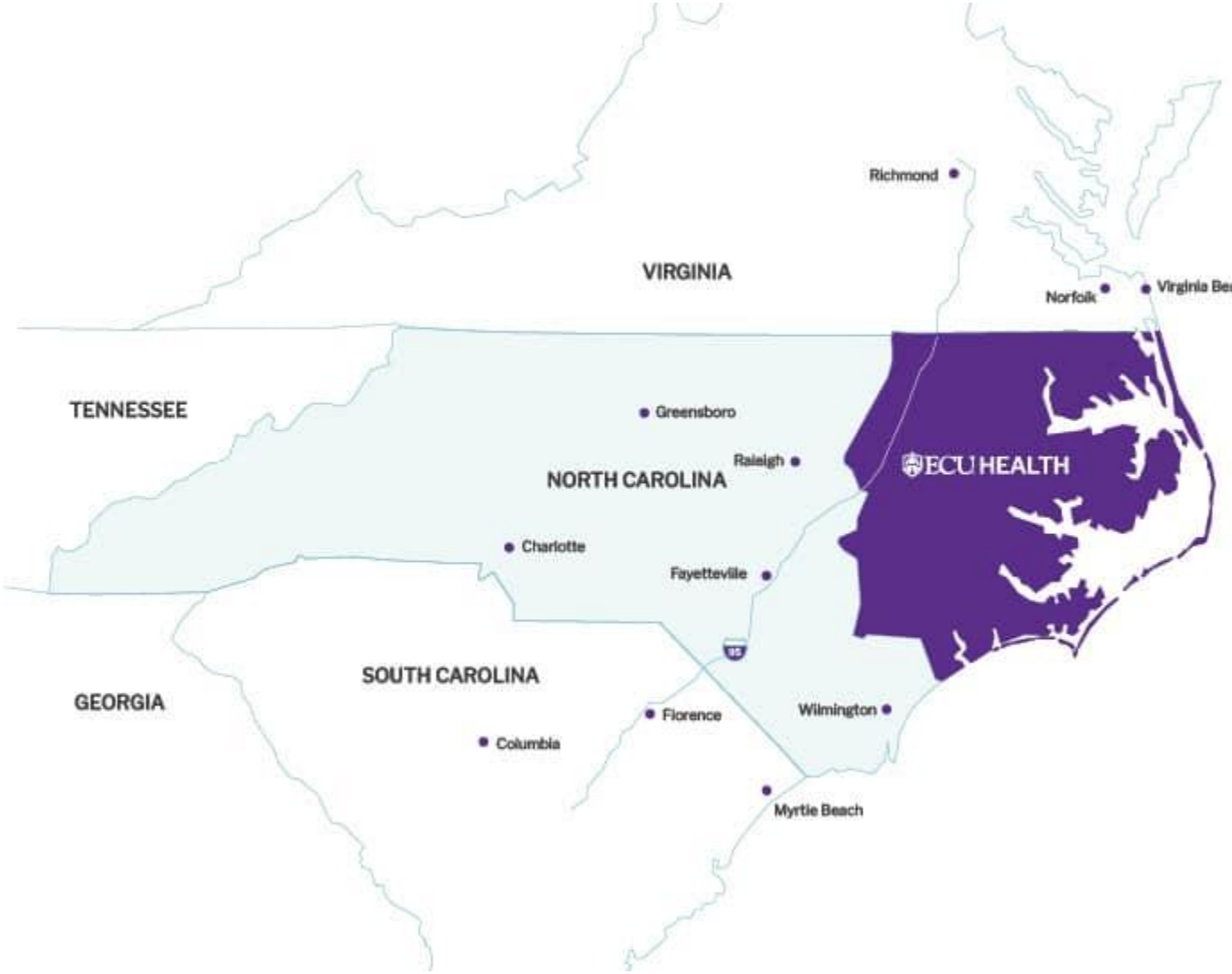
Kiara Robins

- Supervisor of Exercise at ECU Health
- Rock Steady Boxing Head Coach
- BS Exercise Physiology, ECU 2016
- MS Exercise Physiology, ECU 2022
- Enrolled in EdD in Kinesiology, Concordia St Paul, expected 2026

ECU HEALTH

Who We Are

ECU Health's is a mission-driven health care system serving more than 1.4 million people in 29 eastern North Carolina counties. ECU Health Medical Center located in Greenville, NC and is a teaching hospital for the Brody School of Medicine at East Carolina University; eight community hospitals; and numerous outpatient facilities, home health, hospice and wellness centers.



Who We Are

ECU Health Wellness Centers are medical fitness facilities designed to empower the community to achieve their optimal health. We offer a broad range of exercise, aquatic and wellness services for all ages and fitness levels. Our Parkinson's Medical Fitness Program was piloted at the ECU Health Wellness Center in Greenville, NC.

ECU Health Wellness Center – Ahoskie

ECU Health Wellness Center – Greenville

ECU Health Wellness Center – Washington

Learning Objectives

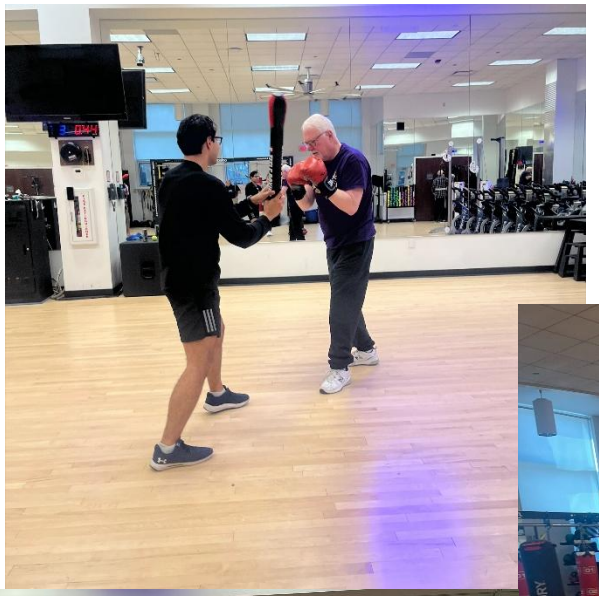
- Describe how targeted exercise impacts mobility in people with Parkinson's disease (PD)
- Review functional outcome data from a PD specific program combining Rock Steady Boxing (RSB) and Strength Training (ST)
- Identify strategies for launching and growing PD-specific programs in medical fitness settings

Mission Statements

To improve the health and well-being of eastern North Carolina

Parkinson's Disease

- PD affects ~1 million people in the U.S.
  - In NC alone ~34,500 people
- Impacts motor control, balance, gait, and overall independence
- Why is PD a priority population in medical fitness?
  - Progressive neurological condition
  - Evidence supports Exercise as Medicine
  - High risk of falls and injury
  - Comorbidities and complex needs
  - Need for skilled professionals



Exercise Recommendations for Parkinson's Disease

Aerobic Activity

- 3-4 days/week
- High intensity (80%-85%) for mild to moderate PD symptoms. 60-65% for decondition individuals or those with more advance PD
- 30 minutes of continuous or accumulated

Strength Training

- 2-3 non-consecutive days/week
- 30%-60% of 1-rep max for beginning individuals, 60-80% for more advance
- 1-3 sets of 8-12 reps for major muscle group

Flexibility

- >2-3 days/week with daily being most effective
- Full extension, flexion, rotation
- Hold 10-30s 2-4 rep

Neuromotor

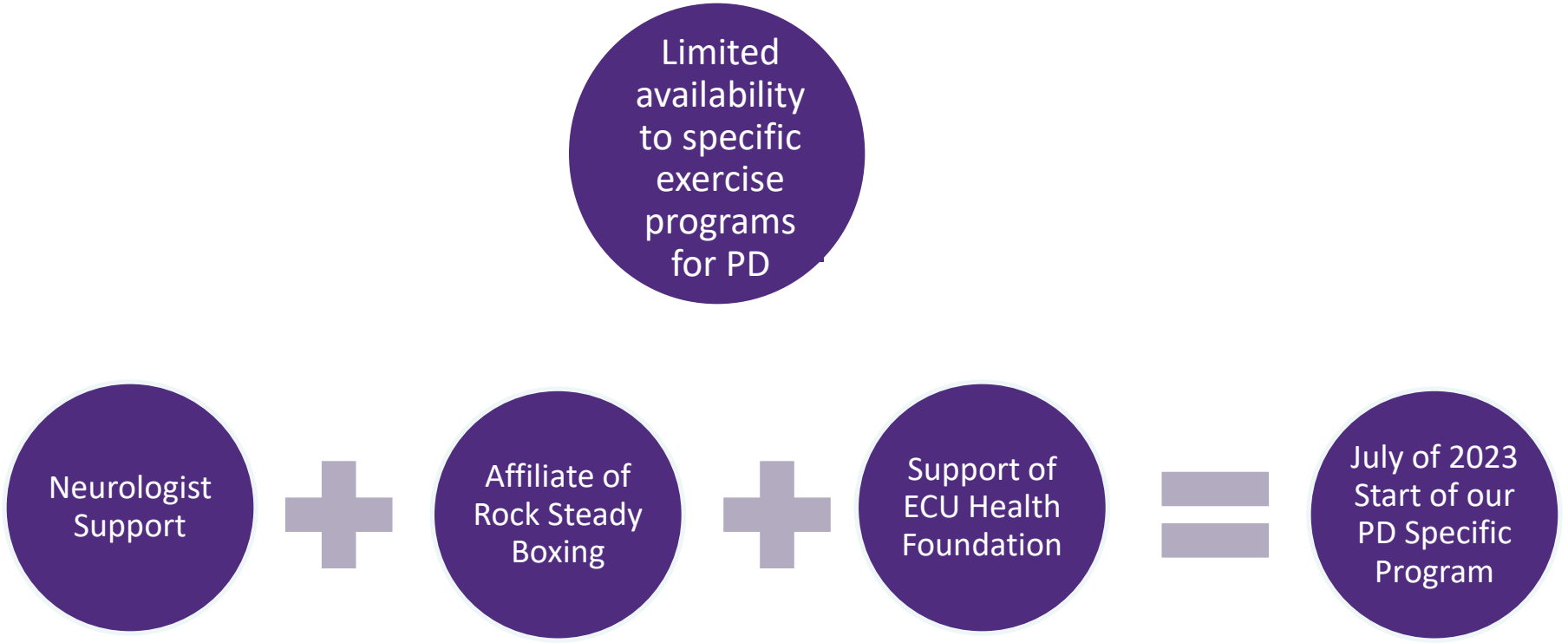
- 2-3 days/week
- 30-60 minutes
- Multi-directional stepping, weight shifting, dynamic balance activities, large movements, dual tasking

ACSM Exercise Testing and Prescription 12th Ed. (2025)

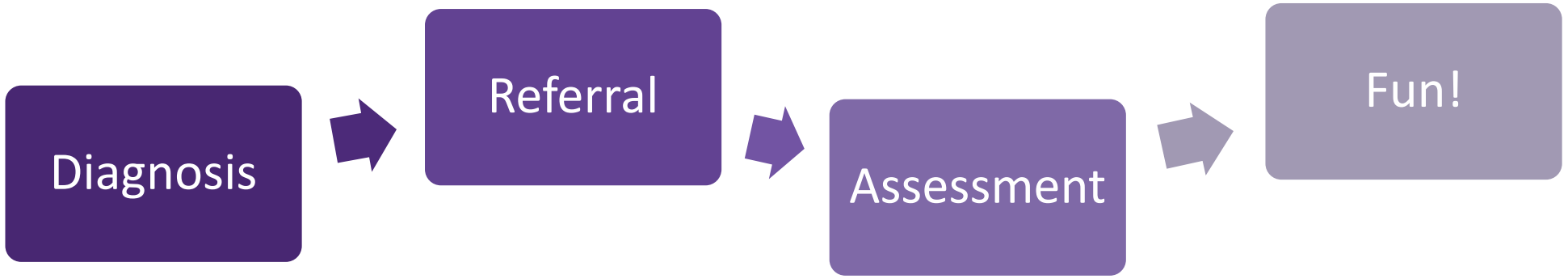
Role of Exercise in Management of PD

- Slow motor symptom progression
  - Improves gait, balance, and overall mobility
- Enhances neuroplasticity
  - Promotes new neural connections through repeated, task-specific movement
- Improves non-motor symptoms
  - Reduces depression, anxiety, sleep disturbances, and fatigue
- Supports independence
  - Delays physical decline and reduces fall risk
- Boosts quality of life
  - Builds confidence, social connection, and daily function

Development of our PD Medical Fitness Program



PD Referral Process



Testing Protocol

- **Initial Assessment**
  - Purpose: To determine the appropriate class level based on the individual's overall fitness, balance, and stability
  - Conducted by an exercise professional
  - 2 appointments about 45 minute to 1 hour
- **Tests**
  - Fullerton Advanced Balance (FAB) Scale
    - Evaluate more subtle changes in multiple dimensions of balance in higher functioning individuals
  - Berg Balance (BERG) Scale
    - Assesses static and dynamic balance and fall risk in older adults and individuals with balance deficits
  - Timed Up and Go (TUG) Test
    - Assess a person's mobility and to estimate their risk of falling
  - 30 Second Sit-to-Stand
    - lower body strength and endurance in older adults
  - Parkinson's Disease Questionnaire (PDQ)-39
    - measure health-related quality of life in individuals with Parkinson's disease
  - Equipment Orientation

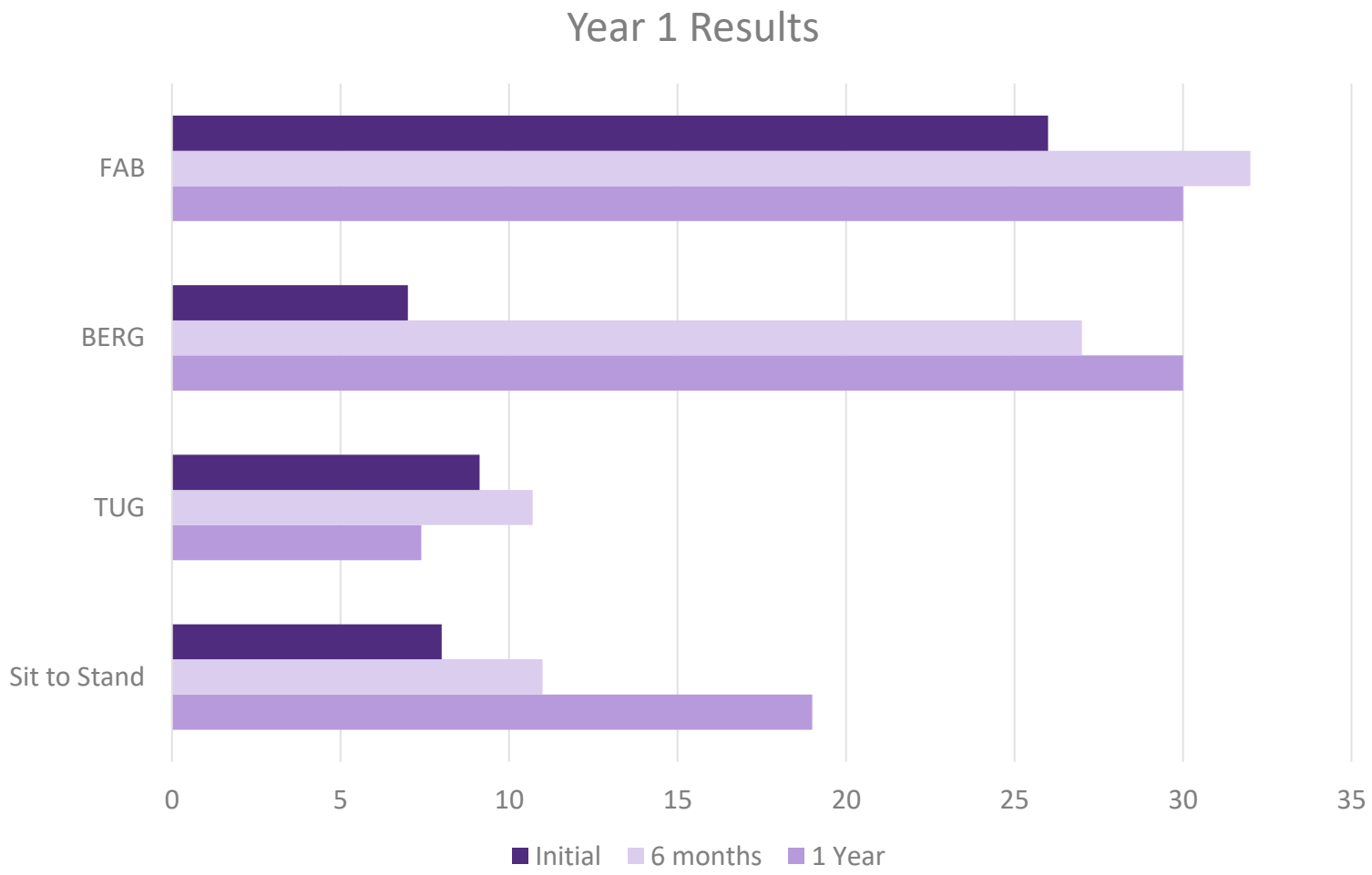
    -use Selectorized Precor to ensure proper seat setting and weights to be lifted as well as ROM

1st Year Program Overview

Participants	Program	Outcomes
Number of participants = 5	3x/week (2 RSB classes & 1 strength day)	TUG & 30-second Sit to Stand
Ages 41-84	1 year with assessments every 6 months	BERG & FAB Balance Tests
Hoehn & Yahr Stages 1.0-2.0	Participants accumulated ~180-240 minutes/week	Adherence

Key Results from Year 1

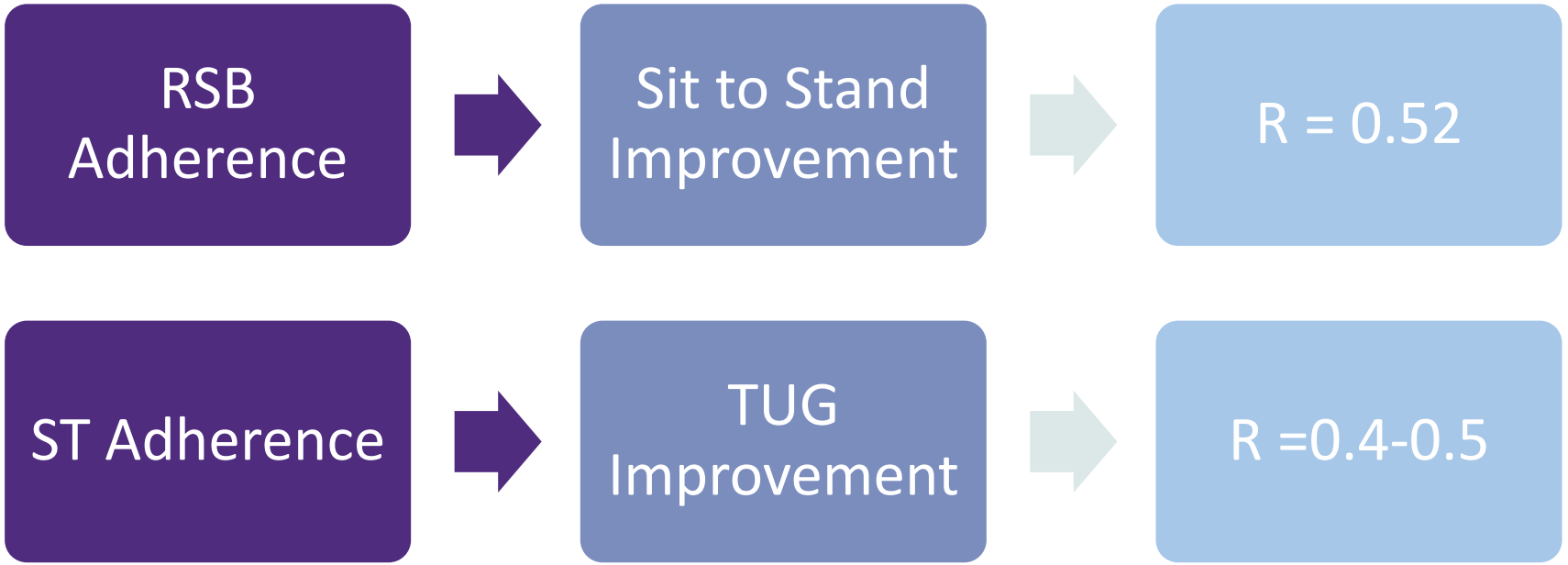
- Timed up and go (TUG): down 14%
- 30-second Sit-to-Stand: Up 13.9%
- No significant changes in BERG or FAB Scores
- Improvements most notable in functional mobility rather than static balance



Key Results from Year 1 cont'd

Adherence Rates

Rock Steady Boxing	Strength Training
55%	43%



Evolution since Year 1

- **Pilot Phase Recap**
  - 5 participants
  - 2 classes/ week & 1 ST session/week

- **Growth & Expansion (post 1-year to now)**
  - Average class size of 10-15
  - 2 classes/week, 1 ST session/week, & 1 Warm Water Pool session/month
  - Rotate OT students from East Carolina University!
  - Implementing short sessions of Tai Chi, Chair Yoga, Cycling & Dance

July 2023

July 2025

Growth & Expansion (post 1-year to now)

- Added one pool class a month (last Thursday)
- Started tracking data after pool sessions (*Joint Pain, Rigidity & Mood*)
- **Current trends observed:**
  - Decreased/no pain & rigidity post pool
  - Improved mood
- **Staff observations:**
  - 1 individual uses an assist device consistently and needs to use the chair lift to get into the pool has been able to walk the stairs to get out of the pool and walk to their walker without much assistance

Growth & Expansion (post 1-year to now)

- Support Group held at Wellness Center right before classes instead of main hospital campus at 6pm
  - Attendance has almost tripled
  - ECU Health Neurologists or wellness staff provide presentations
  - Time allowed for group discussion/Q & A
- **Frequent topics**:
  - Defining Parkinson's disease and risk factors
  - Deep brain stimulation therapy and other surgical therapies
  - Treatment of motor fluctuations and dyskinesia
  - Importance of exercise and diet

Barriers, Solutions, & Lessons Learned

Fatigue & Fluctuations in energy (on/off periods due to medication timing)	**Offer regressions and progressions of all exercises, allow rest breaks as needed**
Transportation	**Explored community transportation options**
Fear of Falling	**Build trust and confidence**
Cognitive and memory challenges	**Use clear, consistent and simple cues**
Inconsistent attendance	**“No Guilt” policy & flexible participation options**
Small staff capacity	**Peer-buddy system with OT students**

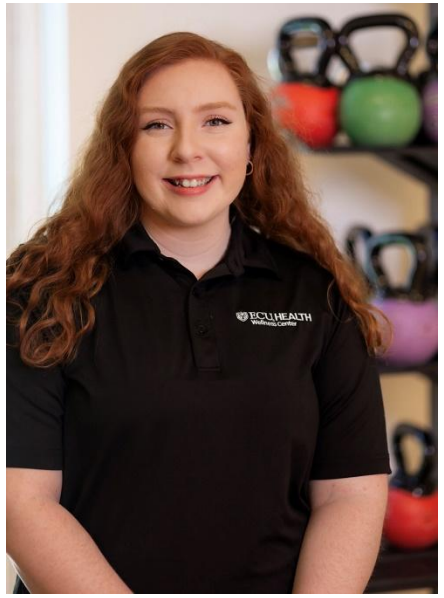
Takeaways for Implementation

- Adherence drives results
- Community matters
- Flexibility is crucial
- Scaling takes planning
- Aquatic training is a game changer

Summary

- RSB and ST led to measurable improvements in functional mobility
- Program adherence was closely tied to participant outcomes – consistency matters!
- Adding warm water pool sessions expanded accessibility and engagement, offering a lower-impact option
- Class size and community support have grown steadily, enhancing motivation and retention
- Simple functional assessments are effective tools to monitor progress in medical fitness programs

Contact Information



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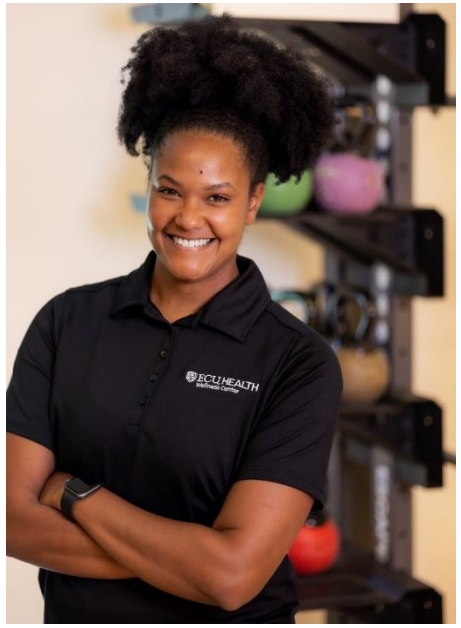

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