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Peyow® Aqua Pilates

Dynamic Stability with Peyow Aqua Pilates
by Anne Pringle Burnell
education@aquapilates.net

Learning Objectives

1) List three of the Pilates principles.

2) Describe one Pilates exercise for dynamic stabilization of the torso.

3) Describe one Pilates exercise for dynamic stabilization of the scapular region.

4) List 2 benefits of the Hundred.

4

Joseph H. Pilates principle concepts were defined from his method "Contrology".

- Breathing
- Centering
- Concentration
- Control
- Precision
- Flow

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Breathing

- Full breath to improve the flow of oxygen, and increase the capacity of the lungs.
- In through the nose, out through the mouth.
- Inhale breath is into the lower area of the lungs which expands the ribcage posteriorly and laterally.
- Exhale breath focuses on co-contracting the pelvic floor muscles and the transversus abdominus.

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Centering

- Physically bringing the focus to the center of the body first, that area between the lower ribs and pubic bone known as the "powerhouse" .
- Muscles of the power house include the pelvic floor muscles, TA, inner thighs, and multifidis.
- Activating the "power house" muscles first.

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Concentration

- Mind/body connection
- If one brings full attention to the exercise and does it mindfully with full commitment, maximum value will be obtained from each movement.
- "It is better to do five repetitions perfectly than 20 without paying attention"

8

Control

- Called his method "contrology"
- Complete muscular control from beginning to end of movement
- Complete end range of movement
- Activate the correct muscles for a particular movement
- Keep other muscles free of tension

9

Precision

- Awareness of form is sustained throughout each movement.
- There is an appropriate postural alignment and limb position relative to other body parts for each exercise
- Quality is emphasized over quantity.

10

Flow

- Fluidity, grace, and ease are goals applied to all exercises.
- The energy of an exercise flows through the body evenly, connecting each exercise to the next.

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Pilates Origins

Matwork
Reformer
Cadillac/Trapeze
Chair
Ladder barrel
Arc Barrel
Spine Corrector

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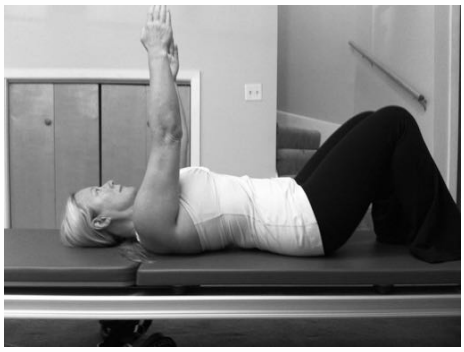
Matwork



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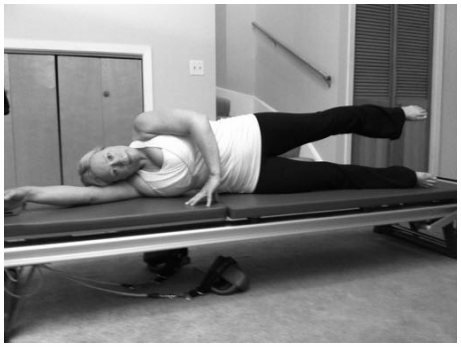

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Reformer




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Cadillac




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Chair



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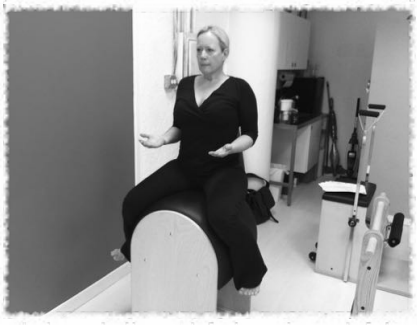
Ladder Barrel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Arc Barrel

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Peyow Aqua Pilates

- Joseph Pilates exercises for Mat, Reformer, Cadillac, Chairs, Barrels adapted for the water.
- Joseph Pilates principles.
- Aquatic Environment

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Water Properties

- Resistance
- Law of Inertia
- Buoyancy
- Acceleration
- Surface Area
- Form Drag, Water Drag, Frictional Drag
- Action/Reaction
- Shallow Water, Deep Water
- Thermal regulation
- Rebound
- Suspended
- Temperatures

Pg 6

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Peyow Aqua Pilates

Basic Exercises

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WARM UP

- Breathing Squat
- Pelvic Rock
- Ankle touch
- Knee Sweep
- Cat
- Mermaid
- Breast Stroke
- Scissors

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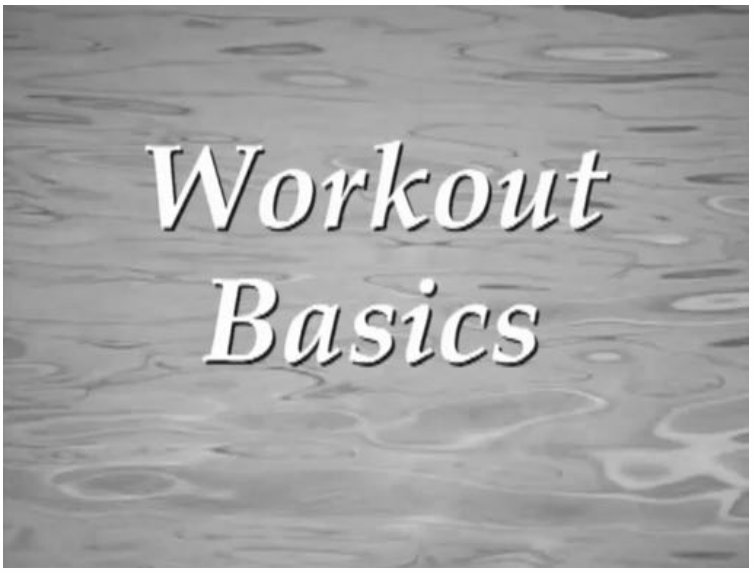

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WORKOUT BASICS

- Knee circles outward/inward
- Leg circles outward/inward
- Swing kicks
- Plank Balance
- Chest Press
- Shoulder Adduction
- Mini Circles
- Swing Kicks w/dumbbells

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Static & Dynamic Stabilization:
Using the Pilates Method in the Aquatic Environment

- Static stabilization
- Dynamic stabilization
- Land vs. Water

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Static Stabilization

What is static stabilization?

- It is the natural strength component you use when trying to hold an object still, body weight or otherwise, by controlling the forces, such as gravity, placed on that object.

Why use it?

- On land – It is the safest way to train.
- In Water – It teaches balance.
- In Pilates – the principle of centering, activates core muscles first

What are some land exercises?

- Plank
- Isometric Wall Squat
- Bridges
- Static Lunge

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Dynamic Stabilization

What is Dynamic Stabilization?

- A System that braces or stabilizes against a changing load.
- Load can be directional, off the center of gravity, or in momentum.
- Directional: "Take your pelvis with you"
- Off Center: "Martial Arts", leaning
- Momentum: "Put on the Brakes", stopping, going, turning, twisting, jumping, landing

Main Movements in Dynamic Stability:

Transfer Weight ★ Lean ★ Rotate ★ Travel ★ Jump ★ Combinations

What are some land exercises?

- Deadlift
- Push ups
- Jump squats
- Walking lunges

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Dynamic Stability 3 Regions

Lumbo-Pelvic
Scapular
Ankles

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Dynamic Stabilization
Lumbo-Pelvic Region

The lumbo-pelvic region is vulnerable to injury

Meant to move with TA stabilizing.

To safely move directionally, tilt off center, rotate, jump, lean, run, stop, and go we need the core stabilizers to turn on quickly.

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PLANK CHALLENGES

- Reverse crank
- Single knee pull
- Double knee pull
- Double knee pull arabesque
- Reverse Stretch

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TEASERS

- Hundred
- Inner & Outer Thigh
- Abduction/Adduction w/internal/external hip rotation
- Beats
- Bicycle
- Tilt - a - whirl
- Tilt - a - Whirl straight legs

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Dynamic Stabilization Scapular Region

- Shoulder is vulnerable to injury, hyper-mobility
- Scapular stability decreases risk of injury
- Scapular stability may alleviate postural tension

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ARM SERIES I

- Hundred
- 45 degrees
- Rowing
- One arm rowing
- Chest expansion
- Biceps

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ARM SERIES II

- Lat Pull
- Wide arm press
- Close grip press
- Triceps press
- One arm triceps
- Angled triceps

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Dynamic Stabilization
Ankles

- First responder on the ground, must be quick, agile
- Lessens impact when landing phase is articulated and controlled
- Link to Balance

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Standing Footwork

- 1st position parallel, laterally rotated
- 2nd position parallel, laterally rotated
- Medially rotated

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Jumping Footwork

- 1st position parallel, laterally rotated
- 2nd position parallel, laterally rotated
- 2nd position beats

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DYNAMIC STABILIZATION PROGRESSION

- Increase kinesthetic awareness
- Increase balance, ability to ground.
- Strengthen trunk stabilizers, interdependent of the extremities.
- Increase flexibility, strength, endurance, coordination.

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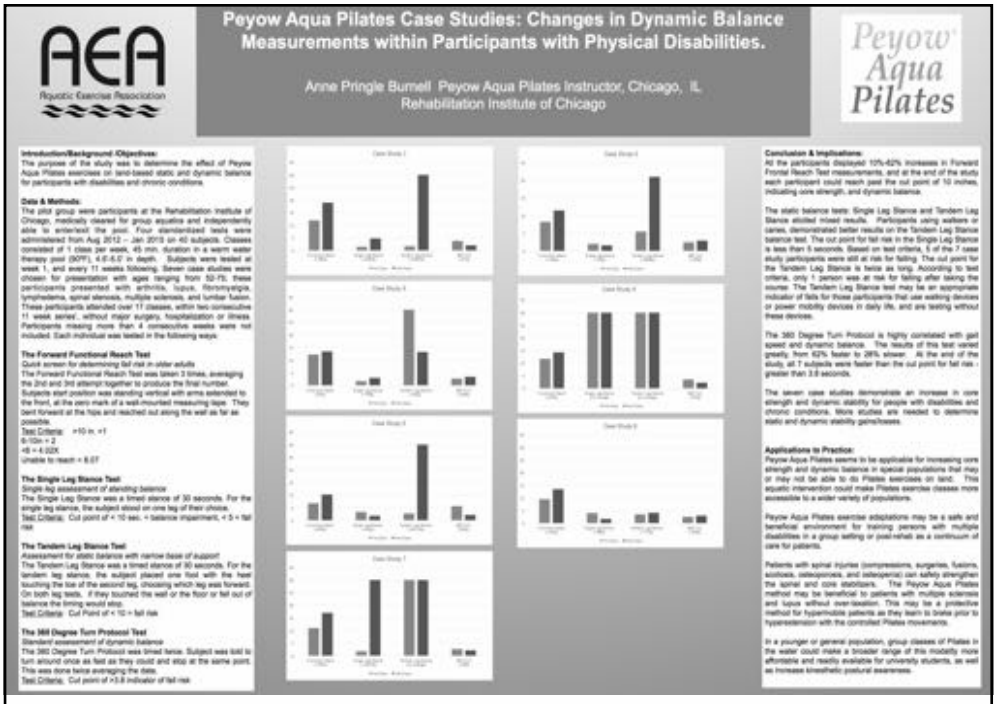

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Peyow Aqua Pilates Case Studies: Changes in Dynamic Balance measurements within Participants with Disabilities.

Objective: The purpose of the study was to determine the effect of Peyow Aqua Pilates exercises on land-based static and dynamic balance for participants with disabilities and chronic conditions.

Data & Methods: The pilot group were participants at the Rehabilitation Institute of Chicago, medically cleared for group aquatics and independently able to enter/exit pool. Four standardized tests were administered from Aug 2012 – Jan 2015 on 39 subjects. Classes consisted of 1 class per week, 45 min. duration in a warm water therapy pool (90º), 4.5' -5.0' in depth. Subjects included attended over 17 classes, within two consecutive 11 week series' without major surgery, hospitalization, or illness. Participants missing more than 4 consecutive weeks were not included. 7 case studies were chosen for presentation.

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Tests

- Forward Frontal Reach Test
- Single Leg Balance
- Tandem Leg Balance
- 360 Degree Turn Protocol

Tests were implemented at the start of each 11 week session and at the end.

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Overview of Test Results:

TEST 1: FRT: Quick screen for determining fall risk in older adults.
- >10 in. =1
- 6-10in = 2
- <6 = 4.02X
- Unable to reach = 8.07

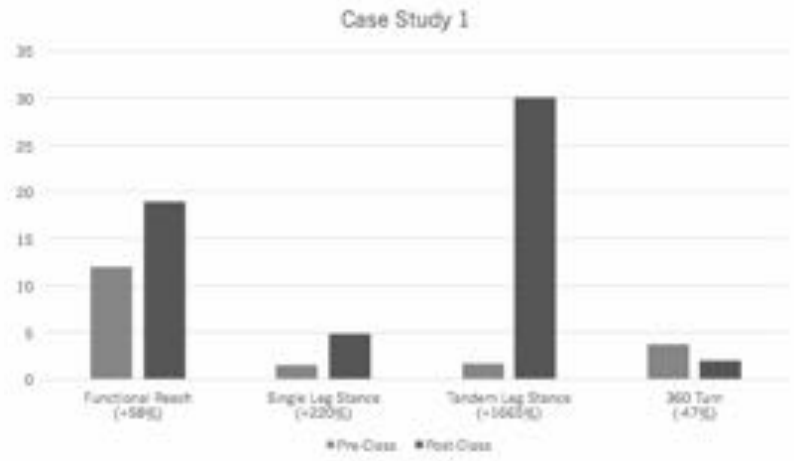
TEST 2: SINGLE LEG assesses standing balance.
- Cut point of < 10 sec. = balance impairment, < 5 = fall risk.

TEST 3: TANDEM BALANCE assesses static balance, narrow base of support.
- Cut Point of < 10 = fall risk.

TEST 4: 360º TURN PROTOCOL assesses dynamic balance.
- 360º and walking speed are highly correlated.
- Cut point of >3.8 indicator of fall risk.

50

Patient 29, # classes 64



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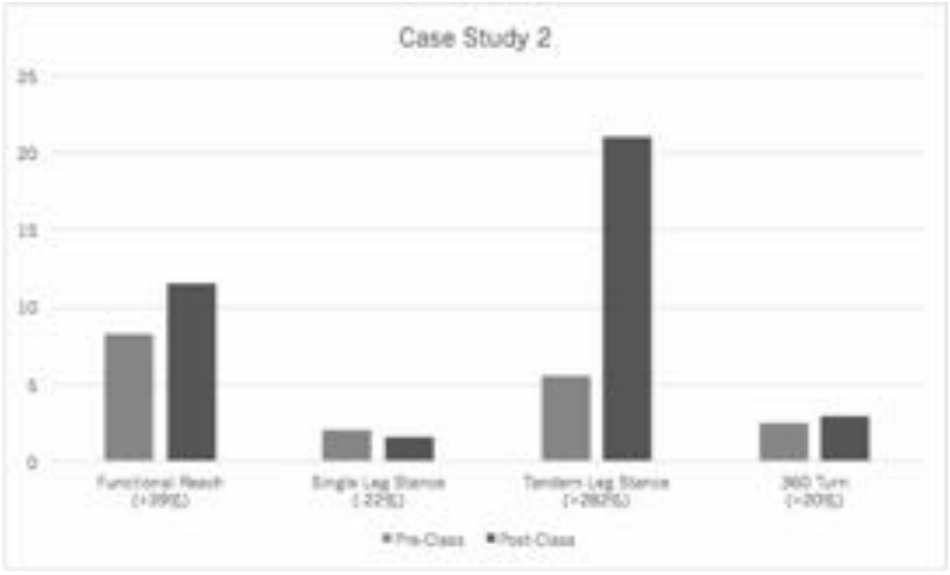

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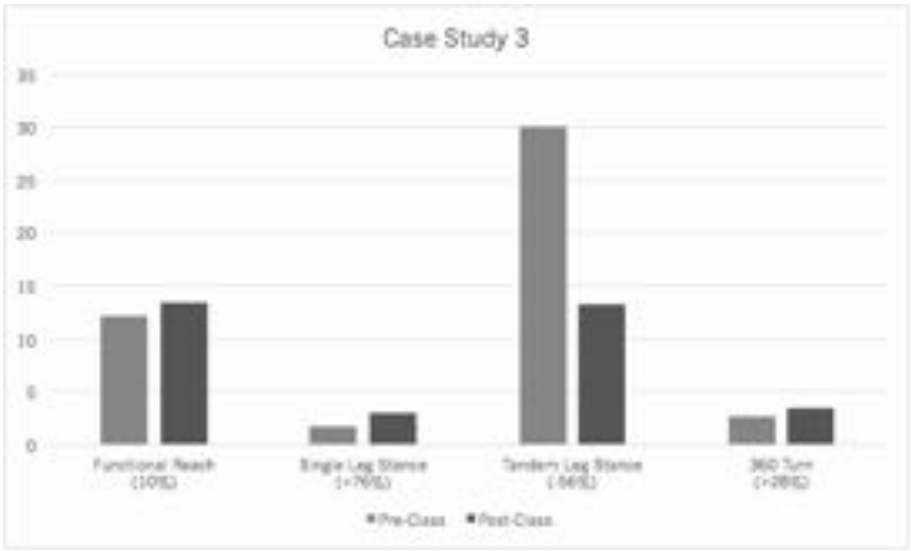

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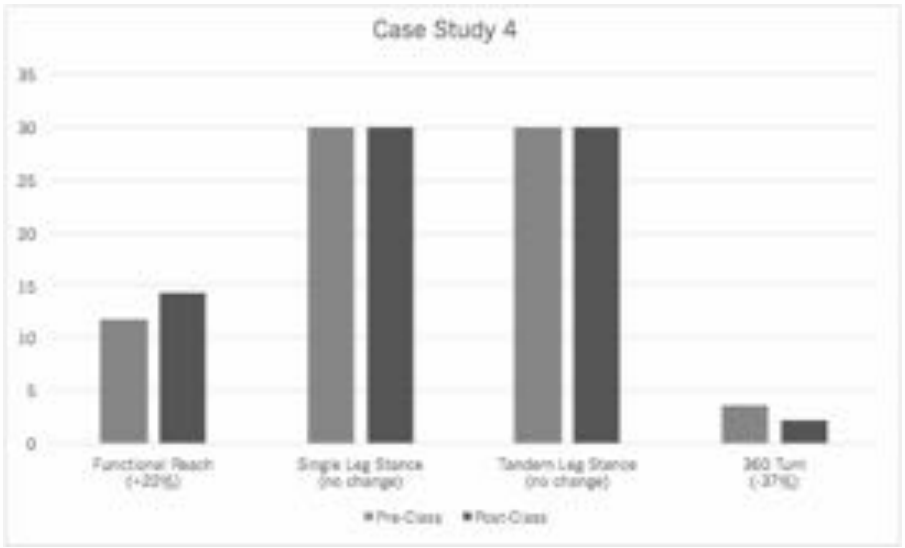

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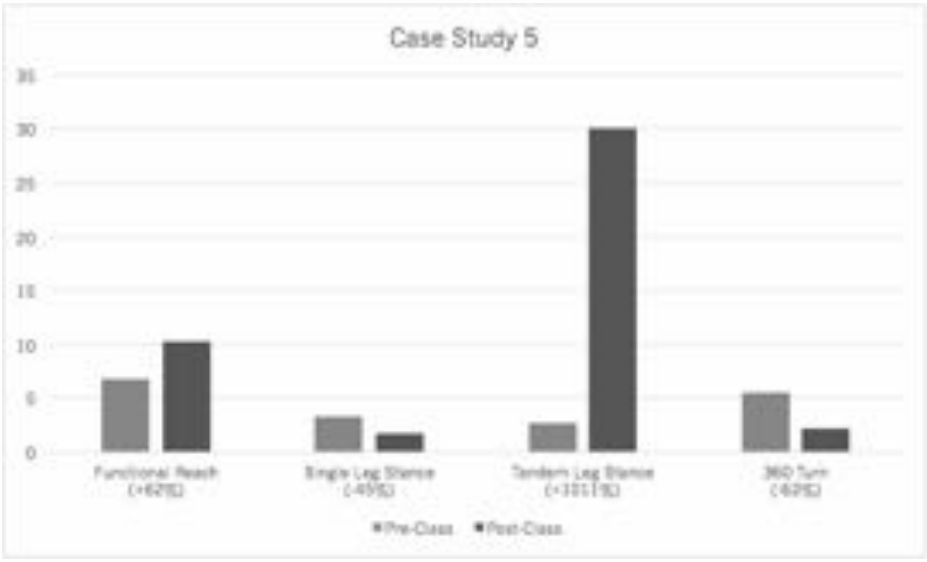

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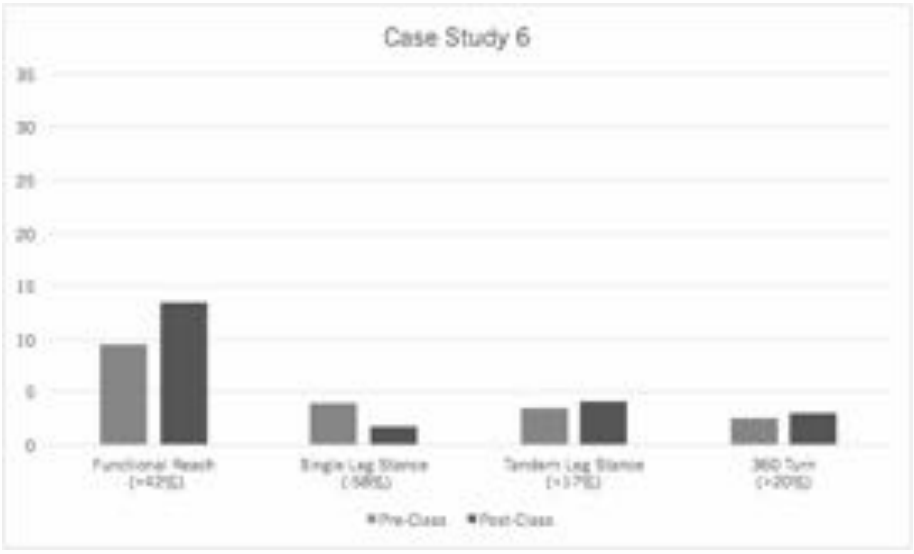

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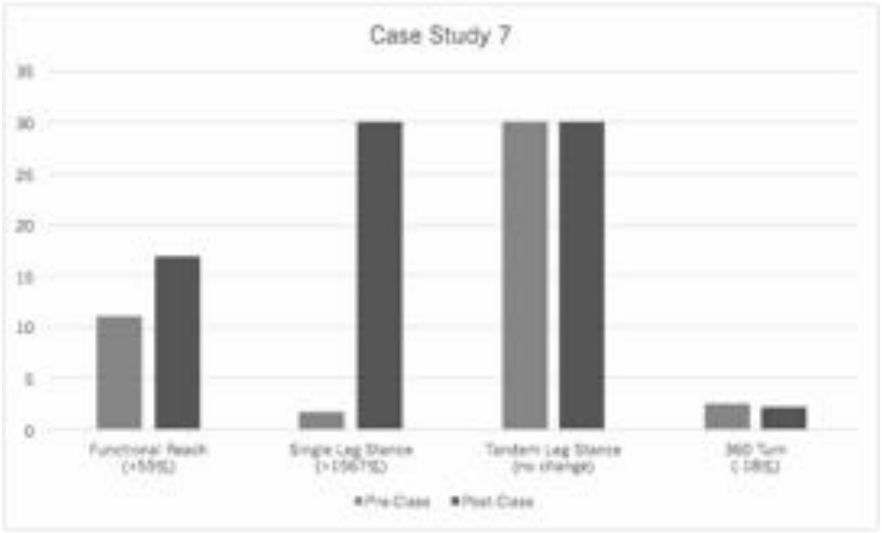
Patient 2, # classes 64



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Conclusion & Implications: All the participants displayed 10%-62% increases in Forward Frontal Reach Test measurements, and at the end of the study each participant could reach past the cut point of 10 inches, indicating core strength, and dynamic balance.

The static balance tests: Single Leg balance, and Tandem Stance elicited mixed results. Participants using walkers or canes, demonstrated better results on the Tandem Stance balance Test. The cut point for fall risk in the Single Leg Stance is less than 5 seconds. Based on test criteria, 5 of the 7 case study participants were still at risk for falling. The cut point for the Tandem Stance is twice as long. According to test criteria, only 1 person was at risk for falling after taking the course. The Tandem Stance Test may be an appropriate indicator of falls for those participants that use walking devices or power mobility devices in daily life, and are testing without these devices.

The 360 Degree Turn Protocol is highly correlated with gait speed and dynamic balance. The results of this test varied greatly, from 62% faster to 28% slower. At the end of the study, all 7 subjects were faster than the cut point for fall risk- greater than 3.8 seconds.

The seven case studies demonstrate an increase in core strength and dynamic stability, for people with disabilities and chronic conditions. More studies are needed to determine static and dynamic stability gains/losses.

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Applications to Practice:
Peyow Aqua Pilates seems to be applicable for increasing core strength and dynamic balance in special populations that may or may not be able to do Pilates exercises on land. This aquatic intervention could make Pilates exercise classes more accessible to a wider variety of populations.

Peyow Aqua Pilates exercise adaptations may be a safe and beneficial environment for training persons with multiple disabilities in a group setting or Post-Rehab as a continuum of care for patients.

Patients with spinal injuries (compressions, surgeries, fusions, scoliosis, osteoporosis, and osteopenia) can safely strengthen the spinal and core stabilizers. The Peyow Aqua Pilates method may be beneficial to patients with Multiple Sclerosis and Lupus without over-taxation. This may be a protective method for hypermobile patients as they learn to brake prior to hyperextension with the controlled Pilates movements.

In a younger or general population, group classes of Pilates in the water could make a broader range of this modality more affordable and readily available for university students, as well as increase kinesthetic postural awareness.

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- Precision
- Flow

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Q&A

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by Anne Pringle Burnell
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Resources

[1] Pilates' Return to Life Through Contrology, by Joseph H. Pilates and William John Miller, c.p.1998 Presentation Dynamics Inc.
[2] Journal of Athletic Training 2007;42(1):42–46 Comparison of Static and Dynamic Balance in Female Collegiate Soccer, Basketball, and Gymnastics Athletes. Eadric Bressel, EdD; Joshua C. Yonker, MS, LAT, ATC; John Kras, EdD; Edward M. Heath, PhD, Utah State University, Logan UT, Lamar University, Beaumont, TX.
[3] Peyow™ TM Aqua Plates Instructor Manual, copyright 2005 by Anne Pringle Burnell & Lee Everett, MPT
[4] Stott Pilates Comprehensive Matwork Manual c.2001 Merrithew Publishing
[5] Muscles Testing and Function, Third Edition, copyright 1983 by Florence B. Kendall PT and Elizabeth Kendall McCreary.
[6] Stott Pilates Advanced Reformer Manual c.2003 Merrithew Publishing
[7] Stott Pilates Essential & Intermediate Cadillac Manual c. 2003 Merrithew Corporation
[8] Stott Pilates Complete Ladder Barrel c. Merrithew Corporation
[9] www.pilates.com History of Joseph Pilates
[10] Pilates Method of Physical & Mental Conditioning by Philip Friedman & Gail Eisen c.p. 1980

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Pilates Method Alliance Research Platform Presentations, November 13, 2014

1) Holly Wallis ReActive, Oakland, CA, USA, Dufour, S.; McMaster University, Hamilton, ON, Canada, 2014. The effect of Pilates as treatment for diastasis rectus with associated lumbo-pelvic dysfunction: a case study. Presenter: Holly Wallis; ReActive, Oakland, CA, USA

2) Francine Picolli, MD; Simétrico – Saúde e Movimento, Porto Alegre, RS, Brazil. Vargas, CB; Simétrico – Saúde e Movimento, Porto Alegre, RS, Brazil, 2014. The effects of classical Pilates training on physical activities on healthy women: a controlled trial. Presenter: Francine Picolli, MD; Simétrico – Saúde e Movimento, Porto Alegre, RS, Brazil. franpicolli@yahoo.com.br .

3) Craig Ruby, PT, DEd, MPT, Romani-Ruby, C, Alley, A, Elliott, M, Grady, I; Wheeling Jesuit University, Wheeling, WV, USA, 2014. The effectiveness of mat-based Pilates core strengthening on hamstring flexibility. Presenter: Craig Ruby, PT, DEd, MPT; *Wheeling Jesuit University, Wheeling, WV*. craigruby@gmail.com

4) Manns, DR., Plotke, R., Powers, C.; Kaiser Permanente Movement Science Fellowship, Los Angeles, CA, USA, 2014. The impressions of a ten-minute Pilates exercise session on the postural control of a community dwelling female in her forties: a case study. Presenter: Deidra Manns, DPT, PMA-CPT, COMT; Monarch Wellness Group, Los Angeles, CA drdiedramannspt@gmail.com

Additional research:

5) Roy La Touche, Karla Escalante, Maria Teresa Linares, 2008. Treating Non-Specific chronic low back pain through the Pilates Method. Journal of Bodywork and Movement Therapies Volume 12, Issue 4, Pages 364-370.

6) Brena Guedes de Siqueira Rodriques, Samaria Ali Cader, Nata'li Valim, Oliver Bento Torres, Edile'a Monteiro de Oliveira, Estello Henrique Martin Dantas, 2010. Pilates Method in personal autonomy, static balance, and quality of life of elderly females. Journal of Bodywork and Movement Therapies
April 2010 Volume 14, Issue 2, Pages 195-202.

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