

PILATES AND STABILITY IN OLDER ADULTS

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ABSTRACT

Pilates is a uniquely well-suited exercise / fitness program that can greatly enhance the quality of life for the elderly segment of our population. Through Pilates, and its focus upon balance and strengthening of ligaments, tendons and joint areas, older adults have the opportunity to increase their level of functional strength; thus aiding in the efficiency of daily life.

Under the skilled supervision of a well-qualified Pilates instructor, the older adult embarks on an individualized program that concentrates on proprioceptive biomechanical awareness, balance, proper gait pattern, and postural positioning. This program assesses where the individual is at and sets up a series of small goals that safely initiate the progressive movement patterns to gradually address faulty motor strategies / compensations which have developed over their lifetime. The program is also complimented by simple homework to allow for continued growth and emancipation.

Results include overall improved confidence, better balance, strength and flexibility when performing everyday tasks as well as in their life journey.

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INTRODUCTION

Our parents and grandparents, how easily they are forgotten about. How easily they become stagnant and lacking in confidence and mobility. More often than not they are placed in a chair or bed to live out the last days on their path of life. Many feel they aren't worthy anymore and only have the gumption to think about when their next meal will arrive, if their family might visit, or perhaps when they have to take their medication. How did our elders get to this point? It could be a number of scenarios such as accidental falls, anxiety, depression, arthritis or a combination of symptoms / illnesses which plague this population. Following is a discussion and individualized program regarding how movement based exercise and balance awareness by way of the Pilates method can help our older adult community age gracefully and most importantly enjoy an exceptional quality of life.

PILATES AND OUR SENIOR POPULATION

Pilates is a uniquely well-suited exercise / fitness program that can greatly enhance the quality of life for the elderly segment of our population. From balance issues to toning of general muscle groups, Pilates focuses upon the strengthening of ligaments and tendons of joint areas, which greatly increase the elderly ability to function effectively in average daily activities. "Pilates and its use of gentle resistance to improve muscular strength is key for aging adults, who can lose up to 50% of their strength between the ages of 30 and 80 if they don't work at maintaining it. But it is never too late to reap the benefits of strength training. In 1994, a Tufts University study in the New England

Journal of Medicine showed that elderly participants who embarked on this type of training program improved their strength 113% within a 10-week period.”¹ Other benefits of Pilates include improved flexibility, agility, coordination and body awareness, as well as increased circulation, reduced blood pressure, better joint mobility and improved posture. “Studies have shown that this kind of exercise can help fend off cardiovascular disease, osteoporosis, arthritis, back pain and injury.”² Furthermore, Pilates heightens concentration, relieves tension and improves mood, as it actively engages the body and mind. All of the aforementioned are crucial attributes to human well being and especially our aged.

VERSATILE AND FUNCTIONAL

The versatility of the Pilates method lends itself well to the older market. If the equipment seems intimidating, mat-based exercises can ease people, based on their functionality, into Pilates principles. If getting down on the floor is a problem, many equipment pieces are positioned at a comfortable bed-like level. If being horizontal is disorienting, there are plenty of moves performed in a seated position. If the resistance on the Reformer or Trapeze Table is too much, spring tension can be easily adjusted. If back pain is an issue, supportive pieces such as the Arc Barrel and Spine Supporter can be deployed. Furthermore, Body Arts and Science International writes, “The typical studio environment offers a trusting, caring, non-competitive setting where the

¹ Prime Time for Pilates, The Journal on Active Aging, March/April 2002

² Ralph La Forge, M.S. “Research Case for Mindful Exercise Grows.” IDEA Health & Fitness Source, July-August 1998

exercises are non-impact, relatively safe and easily adaptable.”³ Bottom line, there is something for everyone, and sufficient variety to allow for a continually evolving and challenging program.

“The functional property of the Pilates method is one of its most unique and valuable attributes.”⁴ Utilizing functional exercises that focus on the body supporting itself while performing a movement or everyday task help develop functional strength. “With the Pilates approach to functional movement, the emphasis is on maintaining the integrity of body alignment while performing that given movement. Theoretically, this approach will help the correction of imbalances and avoid the reinforcement of current imbalances.”⁵

Functional fitness key for today’s aging adults. Kris Kory, practice manager of the Special Care Holistic Wellness Connection in New Britain, Connecticut, says, “[The aging market] is looking not only to slow down the aging process, but they’re also exercising to improve their quality of life, so they have more functionality and mobility in their everyday activities.” Pilates is poised to play a prominent role in this growing movement, as more and more people come to realize there is a way to grow old gracefully.

³ Body Arts and Science International, Study Guide, p.107

⁴ Body Arts and Science International, Study Guide, p.69

⁵ Body Arts and Science International, Study Guide, p.70

One of many examples is Mickey Erbe. "Years of body neglect left 56-year-old music professional Mickey Erbe in rough shape. Postural problems from his sedentary lifestyle led to significant back pain and even walking became a challenge. 'I literally lost the use of my left arm,' Erbe remembers. After seeing chiropractors and acupuncturists, he thought he'd try this 'Pilates thing' he'd been hearing about. Erbe admits he tried Pilates on a lark. 'At first I thought I'd crack if I as much as leaned over,' he says, 'but from the first hour I felt terrific.' The deep breathing and gentle stretching did him wonders. Committed to twice weekly private sessions, Erbe credits pilates with increasing his stamina, flexion and strength, and restoring his ability to lead an active life."⁶

THEORETICAL CASE STUDY

Name: Helen B. Salisbury

Age: 71 years young

Height: 5' 11"

Frame: Medium build with slight Kyphosis as well as Hyperlordosis.

General: Well being of Helen is average. She walks about 4 times a week for ½ hour or more increments. She also plays golf 3 times a week and attends a strength training class at Curves® gym. Helen has had some instance of lower back pain throughout her life, but nothing plaguing for more than 3 days at a time. She has had no major surgeries, no cancer, and maintains an average diet. Helen is heavily lacking in flexibility, prone to injury and falls, (compounded by the beginning stages of Osteoporosis), and finally, has trouble with anxiety and bouts of high blood pressure, which is sometimes medicated per her doctor's instructions.

⁶ Prime Time for Pilates, The Journal on Active Aging, March/April 2002

Compliance: Assumed compliance with this program is per the instructors (myself in this case) recommendation. That recommendation would be two sessions per week with instructor with at least one homework session.

Conditioning Program:

NOTE: * = recommended for homework

Fundamentals: First 10+ Sessions

A. Mat Work – Warm-up

- Roll-Down (posture assessment)
- Pelvic Curl *
- Spine Twist Supine *
- Chest Lift *
- Chest Lift w/ Rotation *
- Leg Changes *

B. Incorporation of Balance Work (choose 2-3 to work on during one session)

Balance is a skill that needs to be practiced in every movement during daily activity. These exercises have been proven to help aid in proprioceptor activation, and re-training of imbalances.

1. **Tandem Walking / Stance:** Stand with one foot in front of the other in a straight line. Maintain position for 10 seconds and switch feet. *

Figure 3: tandem walking



Place one foot directly in front of the other, touching heel to toe, and hold. Repeat with other foot in front.

Progress to taking a step or two by placing your heel to your toe with each step. Eventually try walking across the room.

(figure courtesy of The American Journal on Active Aging)

2. **Stork Stance:** Stand on one foot with the other bent at 90° angle, arms perpendicular to floor. Maintain position for 5-10 seconds. Repeat other side. *
3. **Static Balance Stances – Relevé/Plié:** Standing with feet in 1st position. Rise onto toes, lower. Lower to bent knee, rise. Repeat 10 times. *



(figure courtesy of The American Journal on Active Aging)

4. **Ball Leg Extension:** Sit on ball with feet on floor. Back upright and arms extended to the side at 90°. Slowly lift one leg, keeping knee in flexion, and hold for 5-10 seconds. Repeat other side. * (suggest sitting on chair if ball isn't available)

C. Progression Through BASI ® Block System

(choose one of each in block if more than one is stipulated)

Block	Equipment	Exercise(s)	Comments
Foot Work	Reformer Cadillac	Foot Work Series	Focus on full extension and correct tracking in ankle knee complex.
Ab Work	Reformer Cadillac	Hundreds Prep * Warm-up Series	
Hip Work	Reformer Cadillac	Basic Straps Series * Basic Leg Springs *	
Spinal Articulation	Reformer	Bottom Lift	Begin around session 5.
Stretches	Reformer	Standing Lunge Kneeling Lunge	Focus on correct alignment and posture concurrent with hip, knee and ankle placement.
Arm Work	Reformer Arm Chair	Arms Supine Series Arm Chair Series	
Addl. Leg Work	Leg Weights	Gluteals Lying Side Series *	
Lat. / Flex. Rotation	Pole Wunda Chair Magic Circle	Standing Series With Pole * Side Stretch Side Leg Lifts *	Focus on stretching areas adequately to move into more aggressive lateral flexion / rotation.
Back Extension	Mat Reformer	Basic Back Extension * Breaststroke Prep	Introduce goal post arms and uni-lateral options on or by session 5.

Sessions 11-20: Fundamental Plus

Based upon progression of Helen and challenge desired by client, I would begin to **maintain full focus on the fundamental exercises** (introduced in sessions 1-10) and their importance, but begin to introduce new pieces of equipment and exercises as she/I see fit.

A. Mat Work – Warm-up

- Roll-Down (posture assessment)
- Pelvic Curl *
- Spine Twist Supine *
- Roll-up *
- Single Leg Stretch *
- Criss-Cross *
- Double Leg Stretch *

B. Incorporation of Balance Work (choose 2-3 to work on during one session)

Continue work in the area of balance and stability prior to moving through the BASI ® block system. An additional, more advanced, exercise has been added as number five for variety and progression.

1. **Tandem Walking / Stance:** Stand with one foot in front of the other in a straight line. Maintain position for 10 seconds and switch feet. *
2. **Stork Stance:** Stand on one foot with the other bent at 90° angle, arms perpendicular to floor. Maintain position for 5-10 seconds. Repeat other side. *
3. **Relevé/Plié:** Standing with feet in 1st position. Rise onto toes, lower. Lower to bent knee, rise. Repeat 10 times. *
4. **Ball Leg Extension:** Sit on ball with feet on floor. Back upright and arms extended to the side at 90°. Slowly lift one leg, keeping knee in flexion, and hold for 5-10 seconds. Repeat other side. * (suggest sitting on chair if ball isn't available)
5. **Standing Toe Lift:** Stand on one foot with the other foot flat on top of the ball at approximately 90°. (1) Lift supporting toe as high as you can, (2) bring both arms out to the side and then overhead, (3) hold 2-3 seconds and finally (4) lower heel to floor. * (suggest placing foot on chair if ball isn't available)

C. Progression Through BASI ® Block System

(choose one of each in block if more than one is stipulated)

Block	Equipment	Exercise(s)	Comments
Foot Work	Reformer Cadillac Wunda Chair	Foot Work Series	Focus on full extension and correct tracking in ankle knee complex.
Ab Work	Reformer Cadillac Wunda Chair	Hundred/Coordination * Warm-up Series Roll-up Bottom Loaded *	

		Standing Pike	
Hip Work	Reformer Cadillac	Straps Series * Basic Leg Springs *	Add Extended Frog and Extended Frog Reverse for variation on Reformer.
Spinal Articulation	Reformer Cadillac Wunda Chair	Bottom Lift w/ Ext. Monkey Original, Tower Prep & Tower Pelvic Curl	Focus on clean articulation and spinal proprioception for vertebra visualization.
Stretches	Reformer	Standing Lunge Kneeling Lunge Full Lunge	Focus on correct alignment and posture concurrent with hip, knee and ankle placement.
Full Body Int. 1	Reformer	Knee Stretch Series Up Stretch Elephant	Move into intermediate Cadillac and more difficult Reformer FBI 1 if client warrants/needs the added difficulty.
Arm Work	Reformer Wunda Chair Ped-o-Pul	Arms Sitting Shrugs, Triceps Press Sit, Triceps Prone Arms Standing Series	Incorporate new series and new equipment as needed without forgetting fundamental series introduced in sessions 1-10.
Addl. Leg Work	Leg Weights	Gluteals Kneeling Box *	Introduce as an additional option.
Lat. / Flex. Rotation	Reformer Ladder Barrel Step Barrel	Mermaid Side Over Prep & Side Over Side Lift	
Back Extension	Cadillac Wunda Chair Ladder Barrel	Prone 1 Swan Basic Basic Back Ext. & w/ Arms	Based upon progression of back extension and kyphotic nature, introduce higher-level exercises more often.

Conditioning Program Rationale and Desired Results: The rationale or reason I chose this particular program of progression through 20 sessions was to first introduce this client to a form of movement, which has been foreign in her life thus far. The fundamental exercises / movement patterns of Pilates are the core of my program which I feel will enable this client to eventually grasp the mind / body connection, the importance of flow / movement and concurrently build strength. The fundamentals are reinforced throughout each session, complimented by simple balance exercises that have been proven to help in re-training of imbalances; thus aiding in better alignment and functional strength when performing daily activities. Many of the exercises taught are included so that a homework program could be utilized. This homework program is a way to help the client feel emancipated and confident while ultimately aiding in faster progression towards the desired results of better balance and stability, as well as increased flexibility and overall improved quality of life.

CONCLUSION

"The benefits for [Pilates and] geriatrics in particular are uniquely and largely unexplored."⁷ However, this population is not to be excluded from the Pilates repertoire. As mentioned, although this group may not have as many options, they clearly can participate and use modifications and assists when needed. Furthermore, our elders can benefit immensely from the use of Pilates and movement based exercises. Some would suggest it is an imperative requirement for our older adults to take part in a movement based exercise program and vital to counteracting / reducing many of the illnesses we encounter throughout the aging process. Over and above having a soft spot for all of our parents and grandparents, this research has convinced me that I must wholeheartedly agree.

I believe that geriatrics should not be an area of uncharted territory; thus I plan to make it a part of my community service, once involved in the Pilates community, to reach out to this population and hopefully help them grow old gracefully...or perhaps at the very least let them know that they haven't been forgotten about.

⁷ Body Arts and Science International, Study Guide, p.107

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