SENIORS FOR PILATES

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Abstract

Various medicine, studies and well meaning professionals address aging processes. They try to cure the ailments and fix the body parts which wear and tear as the years go by. Fewer studies, people and pills address preventative medicine, promoting health and wellness for the aging population. Pilates was created approximately 100 years ago by a man who aged so well that he worked with clients and students until his death at 83 years old. Joseph Pilates controlled his body with exercise, overcame and prevented a number of ailments and created an excellent program for the aging population to follow. How can we use his life’s discipline and Pilates program with modern day remedies and knowledge to age better, with more health, less disability and pain? Once I began my study of Pilates, I found what I would argue as the “best medicine” for aging, the most enjoyable and safest way to age with health. Seniors I teach show a renewed passion for movement; they are all for Pilates. Following, I will address specific aging processes and how Pilates directly and indirectly affects these as well as precautions that enable Pilates application to a senior’s health. Pilates is a safe and effective “medicine” for the aging population.
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Introduction

As a Physical Therapist in a busy outpatient clinic, I get to treat a variety of clients. My favorite (and whom seem to favor me) are seniors. I love the knowledge they share with me and the willingness they have to receive help for the aches and pains that seem to have come on “with age”. What I don’t like, is how little I learned in school of what helps a “senior” age well, with health. Why do we study, learn, practice and teach how to fix instead of how to keep from getting “broken”?

Becoming a Pilates student and teacher enabled me to study, learn, practice and teach how to help my clients age beautifully. A number of aging processes can be addressed directly through Pilates, others, indirectly. It might even prove the “best medicine” for aging. Aches and pains are addressed in the clinical setting with insurance compliant therapy, but the real healing and maintenance of health comes from clients gaining responsibility, joy, and success with movement. Seniors have reported to me time and again that Pilates is most helpful, most enjoyable and reaps the most benefits over the long term. Seniors can not only heal with Pilates but prevent injury and disability through the practice of lifelong movement. This discovery has made my senior clients for Pilates!

How does Pilates heal and aid in aging well? How can it help a person live their life with more comfort, ease, success and longevity? How does one “sell” and exercise regime to a well aged person, so that he or she feels like they “own” it? Finding the answers to these questions will enable one to see why seniors love Pilates.
Aging Processes

Senior populations often present to the clinic with aches and pains or dysfunction directly related to the aging processes. Physiologically and psychologically our bodies are affected by a reduction in muscle mass, decreased balance control and reactions, decreased mental stamina, chronic pain, decreased movement, increased risk for fracture with fall (osteoporosis) and injury with ADLs. Some aging “diseases” such as Alzheimer’s and certain cancers are difficult to remedy and cannot be “cured”, but there are a greater number of aging concerns that can be postponed, minimized or even prevented with a healthy lifestyle and regular medical screening. Sharon Brangman, MD, AGSF, spokeswoman for the American Geriatrics Society, tells WebMD, "The more you do in middle age to prepare yourself for successful aging, the better."

As we age, we feel a number of changes to a varying degree, some we fight, some we let be. Obesity and metabolic syndrome affect how a person can move, the strain on their joints, their confidence, as well as stamina with exercise and life’s normal pace. Leanna Skarlunis reports in a WebMD article in 2009: “About three-fourths of adults aged 60 and older are overweight or obese. More than 40% of adults 60 and older have a combination of risk factors known as metabolic syndrome. Women in perimenopause and menopause tend to accumulate fat around the waist and hips, and men get the gut.” Osteoarthritis, or degenerative joint disease (DJD), is a progressive disorder of the joints caused by gradual loss of cartilage and resulting in the development of bony spurs and cysts at the margins of the joints. It affects nearly half the elderly population and is a leading cause of disability (Skarlunis 2009). Osteoporosis (low bone density) affects almost 44 million adults aged 50 and older, most of them women (Skarlunis 2009). According to the National Osteoporosis Association, osteoporosis is not part of normal aging. Healthy behaviors and treatment, when appropriate, can prevent or
minimize the condition. Cancer and cardiovascular disease risks increase with age. Cardiovascular disease (CVD) affects more than one-third of men and women in the 45- to 54-year age group and is the leading cause of death in the U.S. (Skarlunis 2009). Age related eye diseases, gum diseases, cavities, tooth and hearing loss increase in incidence with age. Although comments on “senior moments” and memory loss are commonly heard amongst the elderly, mental clarity can remain healthy with lifestyle management skills to reduced stress, anxiety and overload. Balance and recovery/reactions reduce with age if not addressed specifically. In a given year, more than one-third of adults age 65 and older experience a fall. Twenty percent to 30% of those who fall, suffer injuries that decrease mobility and independence; falls are the leading cause of death from injury in this age group (Skarlunis 2009).

The aging processes are numerous and accumulative. The world of medicine can address many but the world of exercise and discipline of Pilates can postpone, minimize or even prevent more. Seniors and those that are lucky enough to work with them are finding Pilates the “best medicine” for aging.
<table>
<thead>
<tr>
<th>Aging Processes</th>
<th>Effects of Pilates on aging processes</th>
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<tbody>
<tr>
<td>Obesity and metabolic syndrome</td>
<td>Improved sense of well being with exercise aids chemical and behavioral changes needed for weight loss/control. Establishing a better Mind-Body connection improves self regulation. Heart rate and muscle bulk increases can burn fat, improve cardiovascular fitness and increase/regulate metabolism.</td>
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<tr>
<td>Osteoarthritis and DJD: Degenerative Joint Disease</td>
<td>Controlled, low load movement of a joint will assist in lubricating and improving joint nutrition, this in turn reduces pain and increases healing of a joint.</td>
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<tr>
<td>Osteoporosis</td>
<td>Weight bearing improves bone density (arms must weight bear to improve density in such Upper Extremity Joints). Certified BASI Flexion and Rotation of the spine (or where bone density is low) is contraindicated. A certified professional will aid clients in education, biomechanics and exercise safely with this knowledge.</td>
</tr>
<tr>
<td>Cardiovascular disease increases</td>
<td>Improved breath control and efforts to maintain and create precision with exercises improve cardiovascular health by increasing blood flow and rhythm.</td>
</tr>
<tr>
<td>Cancer, eye disease, teeth/gum disease, hearing loss</td>
<td>Overall wellbeing and improved mind-body connection can help a person recognize when they are ill and seek treatment earlier when something “doesn’t quite feel right”.</td>
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<td>Memory loss/confusion</td>
<td>Blood increases to the heart and muscles, improves flow to the brain. The Pilates discipline of cross midline, unilateral moves and simultaneous arm differing from leg movements aid in mental clarity and more accurate memory recall.</td>
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<tr>
<td>Balance changes and fall risk increases</td>
<td>Improved musculoskeletal health (improved strength of muscle, length of tendons/ligaments and bone density) aids in decrease fall risk. Stimulating one’s vestibular system with body and head position changes improves balance. Improved posture in a variety of positions prepares one for real life balance challenges.</td>
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Application of Pilates to Aging Processes:

AFPA (American Fitness Professionals & Associates Blog Oct 2014) states a number of benefits of Pilates for senior citizens. Pilates’ movements can help with balance, stability, control and overall fitness, as well as relief from arthritis, and improved flexibility and strength. Through teaching Pilates, I have witnessed seniors attain passion, friendship, improved self esteem and a sense of choice and power over life’s aging processes.

Seniors who attend Pilates most certainly break a sweat. Isometric and eccentric strengthening as well as controlled breathing contribute to a healthy heart and normalizing one’s metabolic function. However, Pilates is not an aerobic workout. It can adjunct a prescribed exercise program for reduction of weight or CVD recovery by allowing a person increased exercise tolerance, strength, flexibility, and reduced risk of injury. It can also make a person’s mind-body connection become stronger, clearer, allowing them the opportunity to sense when their body is in a state of function or repair, when all is well, or when help might be needed before injury occurs.

Those that suffer from osteoarthritis find relief with gentle joint lubricating movement as well as learning the discipline of dissociating torso from limb through Pilates. This technique of Pilates allows a client to find safe range of movement in a joint which may be affected by reduced joint space and “stiffness” common with osteoarthritis without compensating with torso movement, especially lumbar strain. Improving posture allows large weight bearing joints most affected by OA to have optimal alignment in which to bear the load and move appropriately.

Pilates benefits seniors through core strengthening and education on body mechanics. They can subsequently avoid injury to lumbar discs and vertebrae, especially those suffering
from reduced bone density (osteopenia and osteoporosis). Seniors attending Pilates learn how to activate their “core” or Transversus Abdominus as well as use breath control. These skills aid them in safe accomplishment of strenuous or challenging activity as well as activities of daily living (ADLs) that otherwise may have caused them harm. A BASI certified Pilates instructor will know the contraindications of twisting/rotation and bending/flexion movement of the less dense spinal vertebrae for those with osteoporosis/penia and modify the exercises to avoid injury. This practice enables the client themselves to learn how to move in their everyday life and perform other kinds of exercises which may have less professional supervision or guidance.

Osteoporosis can also benefit from Pilates unique upper extremity weight bearing exercises such as front support and side kick or those on an apparatus with spring resistance. The balance and posture portion of any Pilates program will reduce a senior’s risk for falls which can greatly disable a person with low bone density.

The same blood vessels that go to the heart, pumping much needed oxygen to your muscles during exercise, also branch off and go to the brain. The mental demands of Pilates stimulate growth in neurons, improving mind-body connections and proprioceptive awareness. Pilates’ 4th of 10 principles, Concentration, comes to mind (get it?). Movements that cross midline or are performed unilaterally excite neurons that otherwise can lay more dormant in an aging brain with disease states like Parkinson’s or Alzheimer’s.

In retirement, a person can find the time to finally take care of themselves. They might also find the lack of a “job” and “workplace” somewhat unsettling. Joining a Pilates class can give structure to the day, week, and social calendar. The acquaintances you meet in class are likely to become friends soon, with a common goal in mind. The mental and physical challenge
of accurately performing and refining a Pilates movement or session can provide a fulfilling sense of achievement familiar to one who is used to climbing a corporate ladder or finding new heights in her/his previous career.

Social media often sings the praises of Pilates, especially for the senior population. *Sixty and me* encourages those over the age of 60 to start doing Pilates in order to strengthen their “powerhouse”: the legs, abdominals, arms, hips and back. You can start at any level of fitness and cardiovascular strength given the right Pilates instruction. Seniors partaking in Pilates are heard saying “I could wear my sleeveless shirts this summer….and get compliments on my biceps!”, “My family commented on how confident I looked, just because I held my posture better”, “I have the energy and flexibility now to stay active, play with my grandkids, work in the garden and take walks with my family”. Even Joseph Pilates, himself stated, “Physical fitness is the first requisite of happiness. If at the age of 30 you are stiff and out of shape, you are old. If at 60 you are supple and strong then you are young.”
Case Study

Marie Allen is a 68 year old woman who came to my Physical Therapy clinic with complaints of chronic plantar fasciitis in her left heel. She was fed up with being limited in her walking, standing (hence cooking) and exercise due to the pain (8/10 VAS). She had retired from a very stressful and time consuming career 10 years earlier and subsequently lost 65 pounds from simple lifestyle changes: having time to cook healthily and time to exercise. Objective findings November 2015 (prior to application of Pilates or PT) included, limited dorsiflexion left>right, painful palpation of calcaneal protuberance on plantar region of heel as well as limited tolerance for walking (1 mile with pain) and standing (15 min). Her posture suffered from protracted shoulders, mild kyphosis with poor thoracic extension and over utilization of upper trapezius muscles bilaterally.

Within 3 months of PT, her left heel symptoms reduced and she was discharged to a home exercise program (HEP) which consisted of an evidenced based plantar fasciitis HEP as well as Reformer footwork and the fundamental BASI Pilates Mat warm up exercises. She continued over the next 2 years to increase her Pilates class time to 2 mat classes a week, one senior strength and balance fitness class (taught by myself) as well as one Allegro beginner level group class.

Today her objective findings are: minimally 10% limited dorsiflexion, no palpation pain on her heel, no limits to standing but limits of 3 miles walking before pain (foot or back) begins. She does not use orthotics though she has a reduction in arch height bilaterally. She feels stronger than she ever has. She comments on “new muscles” she never knew she had in her shoulders (axilla region to be precise) and legs as well as abdomen. She has made 2 very close
friends from attending class who form a solid support structure and source of encouragement for a healthy happy life. She has not had new injuries and promotes Pilates to all her friends and family, often reigning them in for a sample class, whether they like it or not. They end up loving it, and grateful. Marie Allen has become for Pilates.

**BASI Program for Case Study:**

Marie Allen prefers classes in which to practice her Pilates due to the social outlet, support and affordability. She begins her BASI mat classes with a standing warm up of weight shifting side to side in a sumo stance, then forward back in a staggered stance, ending with a **Standing Roll Down**, feet lined up under her ischial tuberosities. Her teacher brings forth 1-2 **Principles of Pilates** to be highlighted and returned to her mind during the 50 min session.

She begins lying supine, **connecting her mind to body** with 5-6 exhales, **activating her core** (transversus abdominus) as well as supporting a **neutral spine and optimal supine posture** in the thoracic region (stretching her tight pectoral region). This time improves her focus on the mind-body connection.

She then uses the fundamental warm up exercises (the BASI names of exercises have been highlighted): **Pelvic Curl, Spine Twist Supine, Chest lift and Chest lift with Rotation.** She is progressed through a mix of intermediate and fundamental level skills in the unique BASI block format: **Roll-up, Leg Circles, Rolling like a Ball, Spine Stretch** (especially good for her proprioception of thoracic alignment/posture), **Spine Twist, Saw**, High kneeling position for **Magic Circle Arms Kneeling Series (Arms Bend, Arms Straight, Arms Overhead, Single Arm Side Press, Single Arm Bicep)** in order to open the hip flexors and use posture
correction/stabilization via core during her arm work, \textit{Side Lifts, Gluteal Side Lying Series} with 3 pound ankle weight on, \textit{Cat Stretch} (vital for her to gain more thoracic extension and lumbar spine dissociation), \textit{Double Leg Kick, Rest Pose}, ending with a last burst of the best \textbf{Hundred} she can do, or working on her progress toward \textit{Teaser}. \textit{Standing Roll Down} to complete the mat session.

If Marie were to have a private Pilates session she would have optimal gains with use of the following \textbf{BASI block (highlighted)} designed program using apparatus as needed:

\textbf{Footwork} on the Reformer (or Cadillac), adding in Prehensile to strengthen the arch support in her feet and using Prancing to enable increased dorsiflexion and soleus stretch/use. This is key to her continued management and prevention of plantar fasciitis which plagued her for years before beginning PT and Pilates.

\textbf{Abdominal work} would include Teaser on the Cadillac as she has not yet accomplished it in mat but wishes to build up strength for mat in time; the Cadillac version will allow her that step.

\textbf{Hip Work:} Supine Leg Series: Frog, circles down, circles up, walking, bicycle. An emphasis on neutral spine and shoulders in optimal position (flat on the mat) would help counter her minimal kyphosis and habitual anterior rotation of the humeral head.

\textbf{Spinal Articulation:} Monkey Original on the Cadillac would assist Marie in her Mat Roll Over which she does not yet have the strength for in Mat class. Strength to articulate flexion in her spine is important to allow her to perform her out of class activities with comfort and safety.
**Stretches** would ideally be done on the Ladder Barrell: Shoulder Stretch 1 and 2, as well as the leg series if time: adductors, gluteals, hamstrings and hip flexors.

**Full Body Integration** would bring her back to the reformer for Elephant and Down stretch. Elephant would improve her ability to hinge at the hips and weight bear with scapular control through her arms and as well as increase her dorsiflexion. Down stretch improves her thoracic extension with scapular stabilization to counter the tendency she has to over utilize upper trapezius muscles.

![Image of a person performing a Pilates exercise on a reformer](image)

**Arms** Sitting Series (chest expansion, biceps, rhomboids, hug-a-tree, circles up, circles down, salute) on the reformer would benefit her seated posture: co-contraction of back extensors and flexors in long sitting position whilst working her arms with scapular stabilization and intentional movement (add/abduction during rhomboids exercise).

**Leg work:** Jumping Series with the jump board on the reformer would enable her to work her feet in a dynamic yet core demanding way, to aid her walking tolerance and improve her arch strength.
Finishing with **lateral flexion** via Side Lift on the Step Barrel then **back extension** via Swan Prep on the Step Barrel.

Standing Roll Down will complete her private BASI session using apparatus.
Conclusion

Marie Allen benefits from Pilates in a number of ways: improved posture, stamina, strength, flexibility, social opportunities and support. She has a new sense of accomplishment and overall well being through Pilates. She prefers classes but has recently bought an Allegro for her home use. Marie is for Pilates. Many seniors I meet and treat are for Pilates. It directly affects many aging processes allowing concerns to be postponed, minimized or even prevented. Pilates encourages accountability and monitoring of a healthy lifestyle and can safely adjunct regular medical screening to help one age with health, ease, and pleasure.

Marie and I, her Physical Therapist and now Pilates teacher, have found it, her “best medicine” for aging. To be honest, it’s contagious too….there’s a growing number of seniors who desire to improve themselves, to age backwards, become better, wiser, enjoy more of life than they have. Who’s to stop them, who’s to help them, who’s for Pilates!
Bibliography


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