



Pilates Method Alliance®
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PMA Position Statement: On Pilates

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The Pilates method has been in continuous use in the United States since 1926 when its creator Joseph Pilates and his wife Clara immigrated to New York City from Germany. The Pilates Method Alliance (PMA) is the international not for profit professional association for the Pilates method. The PMA's mission is to protect the public by establishing certification and continuing education standards for Pilates professionals.

The PMA made history in 2005 by launching the first industry wide certification exam for the Pilates method in the United States. The PMA has established recommended industry performance parameters guiding the practice of all PMA Certified and non-certified Pilates teachers. The PMA has established these standards to further bring professionalism to Pilates.

The PMA is well aware that as Pilates exercise has gained popularity, confusion and controversy have increased in the media, the public and even between Pilates teachers. Since the PMA's goal is protect and enhance the Pilates method, it is necessary to establish a position statement to clarify the perception of what Pilates was historically and what it is today.

WHAT IS PILATES?

Pilates is a method of exercise developed by German-born Joseph Pilates. In 1926, Joseph and Clara Pilates brought their exercise system, originally called "Contrology", to New York City. The Pilates method is a physical movement program designed to stretch, strengthen, and balance the body.

Pilates exercise focuses on postural symmetry, breath control, abdominal strength, spine, pelvis and shoulder stabilization, muscular flexibility, joint mobility and strengthening through the complete range of motion of all joints. Instead of isolating muscle groups, the whole body is trained, integrating the upper and lower extremities with the trunk.

Return to Life and Your Health are the only texts published by Joseph Pilates. These texts provide a basis to understand the history and philosophy behind the Pilates method. The PMA believes that the Pilates method of exercise instruction should evolve in accordance with current scientific research and biomechanical principles.

"Contrology is complete coordination of body, mind and spirit. Through Contrology you first purposefully acquire complete control of your own body and then through proper repetition of its exercises you gradually and progressively acquire that natural rhythm and coordination associated with all your mental and subconscious activities." (Pilates 1945)

The guiding principles of the Pilates Method are whole body health, whole body commitment, and breath. (Pilates, 1945) The movement principles are elements that are present in the successful performance of all the Pilates exercises: whole body movement, breathing, balanced muscle development, concentration, control, centering, precision, and rhythm. (PMA Study Guide 2005)

With systematic practice of specific exercises coupled with focused breathing patterns, Pilates has proven itself invaluable not only as a fitness endeavor itself, but also as an important adjunct to professional sports training and physical rehabilitation of all kinds.

WHAT ARE THE BENEFITS?

Pilates yields numerous benefits such as increased spine mobility (Carr & Day 2004), increased muscle flexibility (Schroeder et al 2002, Otto et al 2004, Rogers et al 2005, Segal et al 2004), improved muscular endurance (Sewright 2004, Rogers 2005), improved posture (McMillan, 1998) improved tennis serve velocity (Sewright 2004), improved body awareness (Lange 2000), decreased low back pain (Anderson 2006), reduction in the need for lumbar surgeries (Cohen 2006), improved bone density (Betz 2005), improved ability to correctly contract the transversus abdominus (Herrington & Davis 2005), improved pelvic control (Herrington & Davis 2005) recruitment of Rectus Abdominus and External Oblique muscles (Esco et al 2005), and decreased lumbar paraspinal muscle activity in subjects with low back pain. (Quinn 2005)

SPINE POSITION- NEUTRAL VS. FLAT BACK:

Joseph Pilates thought that the “spine should be flat like a newly-born infant even throughout adult life.” (Pilates, Return to Life pg. 27) We know today based on a plethora of scientific research that the normal kyphotic and lordotic curves of the spine are healthy and help the spine to absorb compressive forces safely in a vertical orientation to gravity. Today, we refer to “neutral spine” or “neutral zone” as the position where each spinal or vertebral segment bears an equal distribution of force. (Panjabi, 2003) We might also say that neutral spine is the “optimal” position of the spine that would be safe for lifting a heavy object. Environmental influence on what bodies generally need for balanced muscle development appears to change over time. Today, it is no longer the goal of modern Pilates to obtain a “spine that is kept as straight as a plumb line.” (Pilates, Return to Life, pg 27) It is postulated that Joseph Pilates' intention in use of the flat back position was to strengthen the abdominals for maximal vertical function. The goal for each client's spine is optimal stability and mobility. When we consider the health and condition of each client's spine, we may choose to bias the program towards flexion or extension based on their issues or physical dysfunctions.

FLEXION BIASED:

Due to Joseph's belief that the spine should be flat or as straight as a plumb line, a great percentage of his exercises involve spine flexion. We now know today that due to the invention of the home computer, the internet, long commutes in automobiles, the population today needs exercises to improve and maintain spinal extension more than ever. The ultimate goal of Pilates is a spine that moves freely with control in all directions; flexion, extension, sidebending and rotation as well as in combinations of those movements. Pilates utilizing spring assistance has been shown to improve spinal flexion. (Carr & Day 2004)

BREATHING: DIAPHRAGMATIC VS. COSTAL:

Pilates style of breathing emphasizes costal breathing meaning that the posterior-lateral ribs move in an upward and outward motion during an inhalation. A transversus abdominus contraction is required to prevent the distension of the abdominals and subsequent reduction in core control. (Richardson 2004, Chaitow 2002) The exhalation phase may be a passive exhale or a very active “forced expiration” to emphasize rib mobility, lung cleansing and abdominal strength. (Pilates 1945, Richardson 2004) Diaphragmatic breathing allows distension of the abdominals, decreases core control and is often used for relaxation, motility of the organs and in Yoga practices. (Gilbert 1999) Diaphragmatic breathing is not to be used for Pilates exercises nor for vigorous activities such as running, weight lifting, jumping or wrestling.

NOT DESIGNED TO BE AEROBIC:

Pilates exercise was never designed to be aerobic nor did Joseph claim that his exercises were aerobic. Recent research has supported this statement in showing that Beginner Mat Pilates is low-moderate intensity and Intermediate and Advanced Mat work meets the criteria for moderate intensity activities. (Olsen, et al 2003)

NOT ONLY FOR ELITE OR WEALTHY:

Joseph Pilates wrote Return to Life as a home exercise program (page 18) available to anyone for only the price of the book. He suggested that everyone should do his exercises everyday. He also designed the Wunda Chair as a piece of home exercise apparatus. The public may participate in mat classes for as little as \$10-15 per hour. To book a private session with a Pilates teacher should be considered in the same arena as booking time with a massage therapist or personal trainer at a cost of \$50-\$100 per hour. Pilates teachers also recommend that their clients practice Pilates exercises everyday or at least 3-4 times per week at home to supplement their training in the studio.

NOT ONLY FOR HEALTHY OR WELL:

Joseph Pilates modified his method of exercise based on his client's injuries, according to many of the first-generation teachers. Pilates can be modified for unfit, post-trauma, post-disease, elderly, and has been shown to increase enjoyment and participation in exercise even for children. (Ickes 2005, Jago 2005)

PILATES IS NOT FUSION:

Pilates is performed on a mat or apparatus that Joseph Pilates designed: Reformer, Trapeze Table, Wunda Chair, High Back Chair, Ladder Barrel, Half Barrel, Spine Corrector, Ped-O-Pul, Head Harness, Foot Corrector, Toe Corrector, Magic Circle, Bean Bag and Pinwheel. Pilates is not performed in a pool, on a small or large ball or in combination with other forms of exercise and still called Pilates. Today, it is certainly acceptable to apply the principles to all forms of movement, exercise, sports and daily life activities as Joseph intended.

PURIST VS. MODIFIED PILATES:

The PMA believes that Pilates should evolve along with the advances of modern science, maintaining the integrity of the method with the safety and health of its participants always in mind. This means that if an exercise is determined to be contra-indicated or unsafe we will respect it as historical repertoire and modify it or delete it from any client's program that might be injured by performing the exercise.

RESEARCH:

One of the goals of the PMA is to fund research on the Pilates method of exercise. In 2005, the PMA conducted a research project to look at the benefits of a Pilates Mat program for 5th and 6th graders. Preliminary results indicated significant increase in (hamstring) flexibility and single leg standing balance. (Ickes 2005) The PMA will continue to progress with the goal of bringing Pilates into the school systems as a viable form of exercise for children. The increasing incidence of chronic low back pain has caused veterans of the Iraqi War to return home early. The Veteran's administration is planning a large research project, utilizing Pilates interventions in former soldiers with low back pain.

Sources:

Anderson B, Spector, A. (2000) "Introduction to Pilates-Based Rehabilitation" Orthopedic PT Clinics of North America, 9:3, Sept 2000, pp. 395-410.

Betz S. (2005) Modifying Pilates for Clients with Osteoporosis. IDEA Fitness Journal, April 2005, 2 (4), 46-55.

Blum CL. (2002) Chiropractic and Pilates therapy for the treatment of adult scoliosis. Journal of Manipulative and Physiological Therapeutics, Vol 25 (4) May 2002, pp 1-15.

Bosch, KD. (2005) Pilates-based rehab for multiple sclerosis is rooted in sound biomechanical research. Advance for Directors in Rehabilitation, Vol 14 (10) pp. 55.

Brown, S. E. & Clippinger, K. (1996). Rehabilitation of anterior cruciate ligament insufficiency in a dancer using the clinical reformer and a balanced body exercise method. WORK: A Journal of Prevention, Assessment & Rehabilitation, 7(2), 109-14.

Brown, S. E. (1999). Pilates: man or method? Journal of Dance Medicine & Science, 3(4), 137.

Brown, S.E. (2002). Pilates: where are we now? Journal of Dance Medicine & Science, 6 (4), 108-109.

Carr BS, Day J. (2004) Effect of directed spring guidance on rate of skill acquisition. JOSPT, 34 (1).

Chaitow L, et al. (2002) Multidisciplinary Approaches to Breathing Pattern Disorders: Philadelphia, Saunders Publishing.

Cozen, D.M. (2000). Use of pilates in foot and ankle rehabilitation. Sports Medicine and Arthroscopy Review, 8 (4), 395-403.

Duschatko, D.M. (2000). Certified pilates and gyrotonics trainer...frozen shoulder. Journal of Bodywork and Movement Therapies, 4 (1), 13-19.

Esco MR, Olsen MS, et al. (2005) Abdominal EMG of Selected Pilates' Mat Exercises. Abstract: Auburn University Montgomery, AL, Rehabilitation Associates, Montgomery, AL.

Fitt, S., Sturman, J., McClain-Smith, S. (1993/94). Effects of pilates-based conditioning on strength, alignment, and range of motion in university ballet and modern dance majors. Kinesiology and Medicine for Dance, 16 (1), 36-51.

Gilbert C. (1999) Yoga and breathing. Journal of Bodywork and Movement Therapies, Volume 3, Issue 1, January 1999, Pages 44-54.

Herrington L, Davies R. (2005) The Influence of Pilates Training on the Ability to Contract the Transversus Abdominis Muscle in Asymptomatic Individuals. Journal of Bodywork and Movement Therapies, Volume 9, Issue 1, January 2005, Pages 52-57.

Hodges PW. (2003) Intervertebral stiffness of the spine is increased by evoked contraction of transversus abdominis and the diaphragm: in vivo porcine studies. *Spine*, Dec 1:28(23):2594-601.

Hodges PW, et al. (1997) Contractions of specific abdominal muscles in postural tasks are affected by respiratory maneuvers. *J Appl Physiol*, Sep;83(3):753-60.

Jago R, et al (2006) Effect of 4 weeks of Pilates on the body composition of young girls. *Preventive Medicine* 2006. (Corrected Proof- to be published in a 2006 issue)

Lange C, et al. (2000) Maximizing the benefits of Pilates-inspired exercise for learning functional motor skills. *Journal of Bodywork and Movement Therapies*, 4(2), 99-108.

Latey P. (2001) The Pilates method: history and philosophy. *Journal of Bodywork and Movement Therapies*, Oct 2001, pp. 275-282.

Latey P. (2002). Updating the principles of the Pilates method - Part 2. *Journal of Bodywork and Movement Therapies*, 6 (2), 94-101.

Lessen D, et al. *The PMA Pilates Certification Exam Study Guide*. Miami: Pilates Method Alliance, Inc; 2005.

Loosli AR, Herold D. (1992). Knee rehabilitation for dancers using a pilates-based technique. *Kinesiology and Medicine for Dance*, 14 (2), 1-12.

McLain S, et al. (1997). The effect of a conditioning and alignment program on the measurement of supine jump height and pelvic alignment when using the Current Concepts reformer. *Journal of Dance Medicine and Science*, 1, 149-154.

McMillan, A, Proteau, L, & Lebe, R. (1998). The effect of pilates-based training on dancers' dynamic posture. *Journal of Dance Medicine & Science*, 2 (3), 101-107.

Musolino JE, Cipriani S. (2004) Pilates and the "Powerhouse" -I. *Journal of Bodywork and Movement Therapies*. 8(1):15-24.

Musolino JE, Cipriani S. (2004) Pilates and the "Powerhouse" -II. *Journal of Bodywork and Movement Therapies*, Volume 8, Issue 2, April 2004, Pages 122-130.

Olson MS, St. Martin R, et al. (2005) PILATES: A Man or an Exercise Method? Lessons from the Lab. *IDEA Fitness Journal*, Nov-Dec 2005, pp. 38-43.

Olson MS, Williford HN, et al. (2005) The Energy Cost of a Basic, Intermediate and Advanced Pilates Mat Workout. Abstract: Auburn University Montgomery, AL, Rehabilitation Associates, Montgomery, AL.

Otto R, et al. (2004) The Effect of 12 Weeks of Pilates vs. Resistance Training on Trained Females. *Medicine and Science in Sports and Exercise*. 36:5 Supplement May 2004 pp. S356-357.

Panjabi MM. (2003) Clinical spinal instability and low back pain. *J Electromyogr Kinesiol*. 2003 Aug;13(4):371-9.

Parrott, AA. (1993). The effects of pilates technique and aerobic conditioning on dancers' technique and aesthetic. *Kinesiology and Medicine for Dance*, 15 (2), 45-64.

Pilates JH, Miller WR. Return to Life Through Contrology. (Originally published 1945) Miami: Pilates Method Alliance, Inc; 2003.

Pilates JH. Your Health: A Corrective System of Exercising That Revolutionizes the Entire Field of Physical Education, 1934.

Quinn JV. (2005) Influence of Pilates-Based Mat Exercise on Lower Back Pain. Master's Thesis Florida Atlantic University.

Richardson C, et al. (2004) Therapeutic Exercises for Spinal Segmental Stabilization in Low Back Pain, 2nd Ed.; London, Churchill-Livingstone.

Richardson C, et al. (1990) An initial evaluation of eight abdominal exercises for their ability to provide stabilization for the lumbar spine. *Australian Physiotherapy*: 36:1, 6-11.

Rogers KV, Gibson AL. (2005) Effects of an 8-week Mat Pilates training program on body composition, flexibility, and muscular endurance. Master's Thesis Barry University-Department of Sport and Exercise Science.

Schroeder JM, et al. (2002) Flexibility and Heart Rate Response to an Acute Pilates Reformer Session. *Medicine and Science in Sports and Exercise*, 34:5 May 2002.

Segal NA, Hein J, Basford JR. (2004) The effects of Pilates training on flexibility and body composition: an observational study. *Arch Phys Med Rehabil* 85(12):1977-81; Dec 2004.

Self, BP, et al. (1996). Functional biomechanical analysis of the pilates-based reformer during demi-plie movements. *Journal of Applied Biomechanics*, 12 (3), 326-337.

Sewright K, et al. (2004) Effects of 6 Weeks of Pilates Mat Training on Tennis Serve Velocity, Muscular Endurance, and Their Relationship in Collegiate Tennis Players. *Medicine and Science in Sports and Exercise*. 36:5, May 2004, p. S167.