



Pilates for Rehabilitation

Joseph Pilates originally developed the comprehensive program known as the Pilates Method in the 1920's to rehabilitate injured soldiers. Soon after he came to this country from Europe in the 30's, dancers embraced his system as a method of strength and conditioning (1). In the past two decades "Pilates" has become so popular that most people are familiar with its fitness benefits either from hearing about it in the news or experiencing it in their local fitness centers (2, 3). Some don't know however that in the hands of a trained therapist, Pilates can also be effective in rehabilitation from injuries or surgery.

This is due in part to the fact that Pilates seems to address some of the root causes of injury (1,4,5,6). For instance muscle imbalances have been linked to chronic low back pain, tendonitis, strains, and tears. Imbalances can come from many things. They are sometimes associated with postural asymmetries, and sometimes with poor ways of moving during daily activities. Imbalances can even develop due to dysfunctional breathing patterns (7) or to the compensatory ways we may move in order to avoid pain. A skilled therapist using Pilates, might deliberately position the patient asymmetrically, then choose to use the springs to resist some exercises, and assist others. This would allow them to get the patient out of incorrect movement patterns, and restore proper muscle balance. Studies support this idea. One even showed that Pilates eliminated pre-existing asymmetries in deep abdominal muscle volume (or bulk) while a conventional form of exercise did not (4).

Pilates also stresses the importance of neutral alignment (especially alignment of the spine and pelvis) thus contributing not only to correcting injury-causing misalignments, but also to retraining the muscles to better stabilize the newly aligned position (7). This helps heal traumatic and overuse injuries, and facilitates better movement patterns, especially in the predominantly upright positions that we use to perform everyday activities. Better daily biomechanics may then help to prevent future injuries (2,6,7)

Many types of joint pain as well as gradual degenerative disease processes like arthritis, are associated with unstable joints. Painful spinal instabilities are widely acknowledged to be linked to core weakness (1). Rather than simple weakness though, it tends to be poor neuromuscular control (recruitment patterns and timing) of the core muscles that destabilizes

the spine (1). Often people think that they are using their core muscles when they are really using the surface muscles to incorrectly “brace” themselves (C5). Specifically designed exercise approaches like Pilates, that facilitate correct core control seem to have greater potential to improve spinal stability. Often though, it requires the skills of a trained therapist to spot and fix incorrect muscle recruitment or subtle compensation patterns (1).

Many therapists have discovered that Pilates is a great tool for helping patients rehabilitate after surgery. They find that they can tailor Pilates exercises to accommodate temporary restrictions in weight-bearing, range of motion, and strength, then progress these parameters, when it’s safe to do so. “There are multiple levels of difficulty, and individual exercises are easily modified to allow compliance with postoperative total joint precautions” (3). Patients can not only build strength by adding resistance, but also take on more complex exercises as they recover. Unlike much of traditional strengthening performed on weight machines, Pilates exercises allow the use of spiral and diagonal movements that mimic real-life more closely. When patients see that they can do these in a pain free manner, they become more likely to try ever more challenging exercises, and more likely to feel confident about returning to their usual activities. This creates a healthy rehabilitative cycle (2).

Not only can Pilates be effective for rehabilitation, It is also an excellent form of exercise for aging adults (8). Many exercises are performed sitting or lying down, and use gravity to help stabilize the core (1). This minimizes balance problems (9). There is little to no impact, and only partial weight bearing through the limbs, making it easy on the joints. The focus on controlled breathing and the quality vs. quantity of movements is conducive to improved coordination.

Strengthening the core can have a quick pay off in terms of optimizing posture and decreasing the tendency to hunch forward. The focus on core and lower extremity strengthening, as well as the fact that the “Reformer” exercises are done on a moving platform, helps to improve balance and decreases the risk of falling (10,11,12). Strengthening these same muscle groups facilitates the standing and walking activities that are so important for maintaining good bone density as we age (1,6). Pilates can improve flexibility in the lower back(6), which in turn helps minimize the symptoms of the spinal stenosis often suffered by older adults (10,13). Each exercise starts with stabilizing the core, then adds controlled mid-range motions. Use of mid-range motions protects the joints while also keeping them flexible. It also helps fight the rigidity that occurs in certain disease processes like Parkinson’s (8). Finally, the focus on using the body symmetrically, in a controlled and customizable way, has been documented to help people with neurological problems such as MS or stroke (12,14).

Overall, there are important differences between teaching Pilates as a form of exercise, and using it as a form of therapy (2). The principles of Pilates make it a great tool for rehabilitation, but it takes a skilled therapist to know how to customize the exercises properly for each individual. Therapists can spot asymmetries and compensations, and if necessary correct the

biomechanics of how the patient is performing the exercise. They also have the knowledge base that allows them to know what is medically safe, and what other therapy techniques to include in the overall treatment. For the same reasons, older adults using Pilates for exercise might benefit from starting with a trained therapist, then transfer to a fitness setting when able.

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