

Pilates can be a primary element in many physical therapy programs.

By Christine Romani-Ruby, MPT, ATC

# Toolbox of Movements

**A**S PILATES CAPTURES THE INTEREST OF America's fitness lovers, physical therapists are increasingly using this powerful tool to strengthen their rehabilitation programs. With this form of exercise, PTs can effectively integrate core stability, breathing and proper posture with the concepts of flexibility and strengthening. They also can use it as a stand-alone regime for patients to maintain and improve their rehabilitated conditions.

Pilates focuses on the mind-body connection and the body's "powerhouse." This is the deep abdominal and back muscles, and the muscles of the pelvic and shoulder girdles that work together to form the core strength of the body. As PTs look closely at Pilates, many find familiar physical therapy techniques packaged in a well-refined, dynamic repertoire that can gently and effectively change movement patterns and posture. With its attention to building core strength, fine-tuning body alignment and retraining the body

for correct movement patterns, Pilates can be the primary element in many physical therapy programs.

## A Multifaceted Tool

The highly adaptable and versatile exercises give PTs a toolbox of movements to develop muscle balance and retrain the body for proper motion. Whether using a mat or advanced Pilates apparatus, therapists can employ hundreds of exercises. They also can incorporate a variety of springs, straps, platforms, balls and other accessories into the program to encourage proper movement patterns and muscle recruitment.

Pilates is most effective in treating postural dysfunctions that involve muscle imbalance. The techniques also have been successful in rehabilitating patients with TMJ, scoliosis, balance disorders, fibromyalgia, scapular and humeral misalignment problems, abdominal surgeries, incontinence and pelvic floor dysfunction, lumbosacral sprain and strain, herniated cervical and lumbar disc, spondylolithesis, patellar tracking problems and thoracic outlet syndrome, among others. Pilates exercises can be basic or they can challenge even the most advanced, physically fit patients.<sup>1</sup> People of any age, ability, fitness level, injury or limitation can benefit from it.

In addition to its versatility, Pilates and PT practices share similarities that make it a strong partnership, including:

- *Principles of effective stretching.* Physical therapy and Pilates incorporate the techniques of manual stretching, which is achieved by stabilizing the proximal attachment as the distal segment moves.<sup>2</sup> This is best demonstrated by >



ILLUSTRATION BY PAUL PALCKO

using traditional Pilates equipment, but it also can be achieved on the mat when people correctly perform the exercises.

- **Cyclic stretching.** When a short duration force is gradually and repeatedly applied, released, then re-applied, a patient has achieved cyclic stretching. Some therapists believe that when appropriately applied, cyclic stretching is as effective and more comfortable for a patient than a static stretch of similar intensity.<sup>3</sup> Many Pilates exercises incorporate cyclic stretching for target areas, such as the hamstrings, calves, hip flexors and back extensors.

- **Neuromuscular inhibition (adapted from PNF techniques).** PTs have used neuromuscular inhibition techniques for years to supplement manual stretching or self-stretching; these techniques are effective in keeping the muscle relaxed as it's being stretched.<sup>3,4,5</sup> The PNF stretching techniques prominent in Pilates exercises include agonist contraction and hold-relax.

- **Function into a stretching program.** PTs find it critical to begin low-load resistance exercises to increase muscle strength and endurance.<sup>2</sup> Therapists will do this by adding functional activities using the new range of

motion in the treatment program as soon as possible. In Pilates exercises, the new range of motion is immediately used and resisted by the pull of the springs on most equipment.

PTs find that all Pilates exercises maximize rehabilitative results by using simple movements and applying great attention to proper form.

#### Back to Basics

In the book *Return to Life Through Contrology*,<sup>6</sup> Joseph Pilates described the six principles of his work. These tenets are particularly relevant to what PTs do in therapeutic exercise and neuro re-education.

- 1. Principle No. 1: Concentration.** Joseph Pilates encouraged people to visualize and engage the mind with every movement. In physical therapy, this is classified as awareness. Pilates assists with kinesthetic, proprioceptive and postural awareness. It also provides a method of self-evaluation for patients.

- 2. Principle No. 2: Control.** Joseph Pilates believed that all physical motion must be controlled by the mind.<sup>6</sup> Motion and activity without control leads to a haphazard, unsafe and counterproductive exercise regimen. PTs encompass control in motor learning. It can be as simple as an athlete learning to avoid

using momentum or as difficult as re-training a person with hemiplegia.

- 3. Principle No. 3: Centering.** Joseph Pilates based his method on the notion that all movement comes from the "powerhouse"<sup>6</sup>—the rectangular area from the shoulder girdle to the pelvis.<sup>2</sup> PTs often refer to the "powerhouse" as the origin of core stability.

- 4. Principle No. 4: Flow.** One should move smoothly and evenly outward from a strong center, avoiding stiff jerky movements that may cause strain and damage.<sup>6</sup> In physical therapy, this is known as synchronization—the rhythm we see in the glenohumeral movement or the grace we see in normal ambulation.

- 5. Principle No. 5: Precision.** Joseph Pilates encouraged concentration on proper movements to maximize their value and effectiveness. For PTs, this translates into the meticulous exercise we incorporate to isolate just one muscle for testing, strengthening or retraining. This idea of performing and finishing with a proper movement pattern is encouraged so that patients remember the correct form.

- 6. Principle No. 6: Breathing.** To breathe correctly, one needs to coordinate breath patterns with the exercise, completely inflating the

lungs, then using a full-forced exhalation. Joseph Pilates wrote, "Squeeze every last atom of air from your lungs until they are almost as free of air as is a vacuum."<sup>6</sup> PTs prescribe this type of diaphragmatic breathing during exercise.

Joseph Pilates incorporated two additional concepts that are important in the physical therapy realm: relaxation and stamina. To promote relaxation, he instructed people to "learn to move without tenseness."<sup>6</sup> PTs often use exercise to reduce patient stress and teach correct muscle movement. This decreases the strain on other soft tissues.

Stamina or endurance is extremely important for patients in rehabilitation, who must gain enough endurance to perform their daily activities without fatigue. These concepts, originating with Joseph Pilates, parallel much of what we do in therapeutic exercise, and the techniques combine them efficiently.

#### Improving Your Practice

The simplicity of the Pilates method helps PTs become more efficient in patient education and treatment. Patients can easily understand the principles and the steps they must take throughout the day—not just in physical therapy sessions—to fully rehabilitate themselves.

While Pilates encourages patients to take a more active role in their physical therapy programs, it also helps PTs conduct more consistent, successful programs. With the high level of specificity in the execution of each exercise, PTs can use exercise sheets to efficiently record the patient's program and progress with each movement. This enhances communication among physical therapists, preventing loss of momentum in treatment when sharing patients.

PTs are integrating Pilates into their rehab programs to improve patient outcomes. As more therapists work with Pilates exercise, they'll contribute to its evolution, as well as the growing number of healthy, happy bodies. ■

#### References

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