

Feature

Kettlebells: Powerful, Effective Exercise and Rehabilitation Tools

By Mark Crawford, contributing writer

When Wendy Schauer, DC, severely injured her back ten years ago, she knew what to do—she tried all the same therapies she recommended to her patients. “I stretched, iced, and went for massage, chiropractic, physical therapy, and acupuncture treatments,” she says. “I was receiving the best treatments available. At times I was in the offices of other providers five or six times a week.”

After nearly five years of rehabilitation, however, she was still in pain. Then she discovered kettlebells. After working out with this simple equipment for four to six weeks, her back pain disappeared and she felt more energetic than she had in years. “I continued my routine and soon was getting muscles all over,” she says. “My abdominals were stronger than I could ever imagine. My body became strong, supported, and erect. I now use my body to the fullest, and my energy is through the roof. This allows me to see my chiropractic patients until 6:15 at night. After that, I teach a kettlebell class for an hour, four nights a week at my center in Olympia, Wash. I have more energy in my mid-40s than I did in my 20s.”

Kettlebells 101

A kettlebell is a cast-iron weight that resembles a cannonball with a single-looped handle attached to it. Kettlebells come in several sizes, ranging from a few pounds to over 100 pounds. Although they can be used for standard weight-training exercises such as bench presses, overhead presses, curls, and squats, perhaps their greatest value is derived from ballistic work, such as snatches, swings, cleans, and jerks that result in more functional power.¹

Long known as a highly effective strengthtraining method in Eastern Europe, kettlebells are gaining in popularity in the U.S. as more people discover the work of Pavel Tsatsouline, the former Soviet Special Forces physical training instructor who is considered the modern “king” of kettlebells.^{2,3}

“Kettlebell workouts increase strength, endurance, agility, and balance by challenging both the muscular and cardiovascular systems with dynamic, total body movements,” says Robert G. Silverman, DC, whose practice is in White Plains, N.Y. “A kettlebell is an all-in-one workout tool that develops all-around fitness and teaches kinetic linking. Kettlebells get you connected to the ground—drawing energy from the ground up and transferring the energy through to the shoulders to generate enough power to control the kettlebell movements. Kettlebell workouts also enhance awareness of posture, position, breath, and grip. I especially like the cardio component it provides. It’s also easy to perform interval training principles (slow, fast, repeat).”

The center of gravity for a kettlebell is a little farther away from the grip than other types of equipment. “Thus, the central nervous system has to coordinate the synchronous firing of major and minor proprioceptive muscle groups to control the motion,” says Guillermo Bermudez, DC. Dr. Bermudez is the president of the ACA Sports Council and practices in Beaverton, Ore. “Most kettlebell exercises are compound exercises. With a simple swing of the kettlebell, a patient recruits the hips, pelvis, lumbar, thoracic, shoulder, elbow, and wrist supportive musculature in order to complete a very simple motion.”

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Ballistic exercises, such as swinging, are used to produce more speed and power by recruiting fast-twitch muscle fibers. Since these exercises often take place with arms in an overhead position “the muscles responsible for assisting the breathing process are engaged in muscular activity, which doesn’t allow them to assist in the respiratory process,” says Dr. Silverman. “This forces the muscles most responsible for breathing to play an even larger role in cardiovascular fitness.”

Several studies have confirmed the cardiovascular benefits of kettlebell training.^{4,5} In February 2011, based on research conducted at the University of Wisconsin-La Crosse, the American Council on Exercise stated that “Kettlebells provide a much higher-intensity workout than standard weight-training routines and offer superior results in a short amount of time.”⁶ This statement is based on research during which subjects continuously performed kettlebell snatches and quick lifts over the head during a 20-minute period. Calorie burning was equivalent to running a six-minute mile or crosscountry skiing uphill at a fast pace.

“The average participant in this study burned about 20 calories a minute during a kettlebell workout, which equates to 400 calories during a typical 20-minute workout,” says Dr. Silverman. “The rapid calorie-burn is due to the interval training format of kettlebell workouts. Researchers also noted that the participants achieved exercise heart rate and maximum oxygen uptake.”

Other benefits of kettlebells include their low cost (\$100 to \$200 for a set of four) and easy storage. They are also easy to use—weights don’t have to be added to a machine or elastic bands changed.

“You also don’t have to know how to dance or have rhythm,” says Dr. Schauer. “Once you have learned the correct technique for two

simple moves—the ‘snatch’ and the ‘swing’—you’re ready to go. There’s no big learning curve.”

“One of the best things about kettlebells,” adds Shane E. Espinoza, DC, second vice president for ACA Sports Council, whose practice is in North Plains, Ore., “is that they help patients gain flexibility in the hips, while simultaneously strengthening the glutes, hamstrings, and quads, as well as adding proprioceptive input to the rest of the body. Kettlebells offer an amazing workout with just two pieces of equipment. Exercising with them is very safe as long as proper form is maintained.”

Kettlebells vs. Weights

Why choose kettlebells instead of dumbbells or free weights? The primary benefits of kettlebell training lie in the philosophy that the movements allow functional human patterns. “Kettlebell drills have historically focused on working many muscle groups in unison, while dumbbells are more commonly used for isolation drills like curls and lateral raises in traditional weighttraining techniques,” says Dr. Silverman. “Kettlebells are actually more challenging than dumbbells. The handles are also thicker, which promotes the development of a vise-like grip in no time.”

Dr. Espinoza prefers kettlebells to free weights because only two or three kettlebells are needed for a full body workout. “The shape of the horns allows people to learn proper form while squatting—and hip hinging is more functional during the swings,” he says. “If patients try to do that with free weights, their overlapping grip can throw them off balance. Learning how to get up off the floor with a kettlebell above your head keeps you aware of how your body needs to be engaged in the movement.”

Free weights do have their place in rehabilitation,

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notes Dr. Espinoza—as when a patient finishes with tubing for rotator cuff work and moves on to light free weights.

Patient Rehabilitation

Kettlebells have proven useful in the rehabilitation of athletes with lower-extremity injuries.⁷ Dr. Espinoza teaches patients to conduct their basic warm-ups according to Pavel Tsatsouline's *Power to the People* and *Enter the Kettlebell*. This includes face-the-wall squats, halos, and the pump stretch, followed by two exercises: the kettlebell swing and the get up. "Once they are taught how to do the basic exercises, they are sent home with very specific progressions," says Dr. Espinoza. "They are asked to show us how they do the exercises. For some people, this takes weeks to months. With proper form and function, they progress really well."

In most cases of back pain, the hip flexors are tight and the glutes are weak, so kettlebell training is excellent for strengthening the back and the glutes, as well as stretching the hip flexors.^{8,9}

Dr. Silverman uses the "Turkish get-up" (TGU) kettlebell exercise as a way to test weighted athleticism within a functional movement assessment. Seven steps are involved in performing the TGU. Each step screens for possible weakness or flexibility weakness.

"For example," says Dr. Silverman, "the 'roll-topress' portion of the TGU screens for proper positioning of the shoulder/trap, as well as wrist/elbow flexibility and proper neck positioning. The TGU promotes shoulder stability, mobility, and resilience, which is great for rotator issues."

Parting Advice

Dr. Schauer believes kettlebells are the single

most important tool that can be added to a recovery training schedule. It is important to start slowly, however, especially if patients are rehabbing, "primarily because of the weakness and lost muscle tone that develops from repeated muscle spasms, but also because of the mental block created by the fear of pain," she adds.

Proper form is key. If used correctly, kettlebells are a very safe and effective way to exercise. Improper form and weight during kettlebell exercises, however, can lead to significant sprains and strains. Dr. Bermudez says the kettlebell injuries he sees most often are to the wrist and shoulders. "That's because people are being taught to swing the balls above the head." He recommends swinging the ball to 90 degrees or eye level.

Most experts recommend www.dragondoor.com as the go-to resource for kettlebell information, including certification. Dr. Espinoza has a set of four kettlebells that he uses four times a week. Dr. Silverman is a hard-style kettlebell certified (HKC) instructor. Dr. Schauer is a Russian kettlebell certified (RKC) instructor (both levels of certification are provided by Dragon Door).

"Fifteen to 20 minutes a day is all someone needs for an amazing workout," says Dr. Schauer. "Even if you begin with five minutes of swings a day, you will start to feel changes in your body. I obtained my Russian kettlebell certification not just to teach the average person, but to help my patients when they had no quality of life due to pain and weakness. All have experienced improvement using kettlebells."

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References

1. Brummitt J. Develop power and core strength with kettlebell exercises. *NSCA's Performance Training Journal* 2010 Sep;9(5):19-21.
2. Tsatsouline P. *Power to the People! Russian Strength Training Secrets for Every American*. St. Paul:Dragon Door Publications. 2000.
3. Tsatsouline P. *Enter the Kettlebell!* St. Paul:Dragon Door Publications. 2006.
4. Farrar R, et al. [Oxygen cost of kettlebell swings](#). *J Strength Cond Res*. 2010 Apr;24(4):1034-6.
5. Schnettler C, et al. Kettlebells: twice the results in half the time. *ACE Fitness Matters* 2010 Jan-Feb:6-11.
6. American Council on Exercise press release. February 9, 2011.

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