Dynamic Chiropractic

SPORTS / EXERCISE / FITNESS

# Russian Kettlebell Swings for Injury Rehab

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Right about now is when many people ask two questions: "What is a Russian kettlebell?" and "How can it be used safely during injury rehab?" Here are the answers. Kettlebells have been around for ages. Generally made out of cast iron, they're cannonball-shaped weights with a single handle on top. Kettlebells originated in Russia; the first recorded mention of them was in 1704. The Russian word for kettlebells is *girya* and the men who lifted these weights were called *gireviks*.

Although they look much different from your standard free weights and machines, kettlebells are one of the best and most efficient fitness/rehab tools available. The lightest one weighs in at only 10 pounds, and they increase in weight all the way up to 100 pounds. Kettlebells offer movement-based rehab training, otherwise known as functional training. They offer full-body conditioning and kinetic chain rehabilitation benefits. The body learns to work as one synergistic unit linked strongly together for core stability.

Kettlebell Training

Kettlebell training involves multiple muscle groups and energy systems at once, thus increasing resistance to injury. Improved mobility and range of motion can be obtained by teaching basic patterns of hip-joint hinging and gaining increased strength without increase of muscle mass. Kettlebell bodies are lean, toned and functional, not bulky – a benefit that helps prevent recurrent injury.

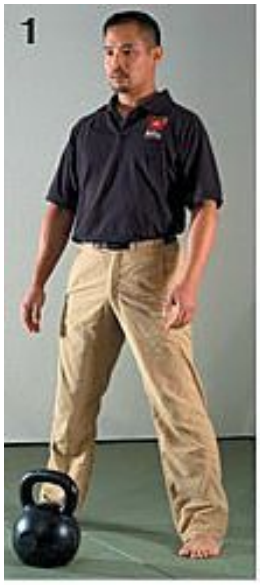
At first glance, one might be intimidated by a kettlebell thinking it may cause injury, rather than strengthening you and preventing injury. And in a way you would be correct. In reality, you can be hurt using any fitness and rehab equipment if you are not using it properly. Technique, form, proper instruction and intent of movement are all paramount in the application of kettlebell exercises. This is where expert coaching and guidance are vital in rehabilitation protocols and outcome assessments of your clients. However, when properly executed, kettlebell exercises can be the primary weapon in your arsenal for bulletproofing the body against injury.

I consulted with one of the pre-eminent experts on kettlebell training, Dr. Mark Cheng, to learn more about the benefits of the kettlebell swing. Dr. Cheng is a doctor of Chinese orthopedic medicine and acupuncture, as well as an RKC (Russian kettlebell certified) "team leader" by way of his training with kettlebell guru Pavel Tsatsouline. Dr. Cheng teaches kettlebell rehabilitative fitness, RKC system strength training, and Chinese martial arts. According to Dr. Cheng, the kettlebell swing is "weight training by means of synergy instead of isolation."

In a recent article in *Black Belt* magazine, Dr. Cheng summarized Pavel's explanation of the movement: "Visually, the basic body mechanics for the swing are virtually identical to the wall squat and deadlift. However, it's a ballistic movement. Instead of lifting the kettlebell in front of the body using the arms, the arms loosely hold it and the explosiveness of the hips snapping into extension propel it forward."

Rehab Applications

This is where the uniqueness of the kettlebell swing comes into play with rehabilitation. One of the primary areas of the body that causes back pain via dysfunctional movement patterns is the hip joint and glutei muscles. Many people who suffer from lower back pain have decreased mobility in the hips, particularly with internal rotation and extension. The glutei muscles have become inhibited from poor postural control and no longer initiate hip extension with stabilization. This may be caused by the poor motor control, decreased mobility and stability effects of Vladimir Janda's upper- and lower-crossed postural distortion syndromes.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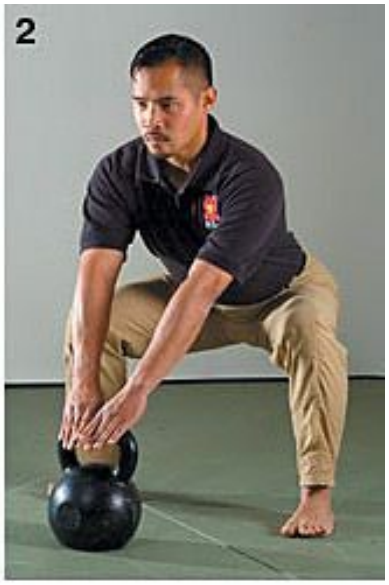
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The swing: Dr. Cheng starts with the kettlebell positioned on his centerline (1). Keeping his spine arched and bending at the hips, he reaches down for the weight (2) and begins the swing by half dead-lifting it and then hiking it back between his legs (3). As it swings forward, he simultaneously drives his heels into the ground, locks his knees, clenches his glutes and shortens his abs -- explosively (4-5). Keeping his arms relaxed, he depends on the power generated by snapping his legs and hips into extension to propel the kettlebell forward and upward, after which gravity pulls it down. Men usually start with a 16-kilogram (35-pound) kettlebell, while women are encouraged to use one that weighs 8 kilograms (18 pounds). The number of repetitions isn't important; perfect form is. -- Picture and KB sequence description courtesy of Black Belt Magazine.

A well-performed swing teaches hip hinging and glute / hip extension under a controlled, weighted environment. The ability to "hip hinge" is vital to learning the proper mechanism of lifting and bending to alleviate additional stressors to the lower back. If the hips lack mobility, the lumbar spine may lose stability as compensation, thus increasing the risk of injury.

According to Dr. Cheng's article, quoting Pavel, "If you completely engage the muscles of your posterior chain by digging your heels in, locking out your knees and clenching your glutes to the point where your hips extend, you won't get injured. The kettlebell can pull you off-balance only if you neglect one of those points during the swing. Otherwise, you perfectly counteract the forward pull by engaging your entire body in the stabilization process."

Never fear the dead-lifting motion of the swing. This is a natural movement that most people have completely forgotten how to perform, and have also become totally detached from how it should feel. They need to learn these essential motor skills during rehabilitation to ensure reduced risk of injury. In fact, one of the main reasons they may have suffered a back injury is because they do not know how to perform these movements.

The kettlebell swing can be performed either one-handed or two-handed, and basically involves using your posterior chain (i.e., your core, back, hamstrings and hips) to swing the kettlebell out in front of you and then in between your legs in a fast, continuous pendulum-type motion.

Reference the pictures of Dr. Cheng performing a two-handed kettlebell swing movement. Notice the hip hinging, line of drive, hip extension, head and thoracic spine position, and the foot placement.

Benefits of the Swing

- Swings develop the important posterior chain muscles of the body such as the hamstrings, glutes and back. These muscles are often overlooked with traditional weight training and rehabilitation movements.
- Swings work the abs and strengthen the core muscles, and provide a stable platform for functional abdominal training that actually has benefit in terms of real-world activities of daily living.
- Swings build your back from top to bottom, inside and out. Not only is the lower back involved with kettlebell swings; the lats, traps and scapula are all involved in the movement, giving you a total back-strengthening program.
- High-rep swings also develop back endurance, which helps reduce the incidence of back injuries.
- Swings are a fantastic conditioner and fat burner. Losing body fat around the midsection will help alleviate back pain.

This is just a partial list of positive health benefits derived from performing kettlebell swings. You will

find that patients actually enjoy doing the exercise. They become stronger, leaner, more powerful and more resistant to injury. What's not to love?

Part of our responsibility as health care professionals is to teach and educate our patients to stay healthy. By mastering the kettlebell swing and teaching your patients, you give them a way to take back (pun intended) control of their bodies and their lives.

*Resources*


- Cheng M. "Russian Kettlebells Revolutionize Martial Arts Weight Training and Injury Rehab." *Black Belt* magazine, 2011.
- Instructor profiles: "RKC Team Leader - Dr. Mark Cheng." Dragon Door Kettlebells, Strength Training, Conditioning, Diet and Health Resources.
- Cook G. Movement: *Functional Movement Systems : Screening, Assessment, and Corrective Strategies*. Santa Cruz, CA: On Target Publications, 2010.
- Tsatsouline P. *Enter the Kettlebell! Strength Secret of the Soviet Supermen*. St. Paul, MN: Dragon Door Publications, 2006. Print.


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