An Introduction to Kettlebell Training

by John Platero

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The kettlebell has a unique spherical shape and a handle that provides the user with the ability to work with **curvilinear movements and momentum**. There are different types of kettlebells, and some athletes will go as far as saying some kettlebells are not *real kettlebells*. At what weight does a kettlebell become real? Think about this: I'm a cyclist. My bikes are $8k to $10k. Would I get less of a workout on a beach cruiser going as hard as I can for an hour than I would on my $10,000 time trial bike? No. But I'm not going to win the Tour de France on a beach cruiser, either. However, that beach cruiser is still a real bike. So, for most people, this 8.8 lb. or 4 kg kettlebell will be provide a sufficient workout, just like a beach cruiser will be sufficient for most people to get a workout on their bicycle.

Why is momentum important? Anytime we move, momentum is created; therefore momentum exists both in average daily activities and sports. Some might say kettlebells make the movements or exercises more functional. Be careful with that term functional; **functional exercise is a concept** and can mean many things, so be wary -- it's also functional to isometrically hold an object in a static position with zero momentum.

So, what is momentum? **Momentum is mass times velocity**. Anytime we move a dumbbell, barbell or a selecterized plate, there is momentum. **Mass** is a measurement of the amount of matter something contains, while **weight** is the measurement of the pull of gravity on an object. Since we'll probably be training people on planet earth, mass and weight represent essentially the same thing. So for our purposes, there's no difference between a mass moving through space or a weight moving through space. (Wait, let me take some of that back -- different shapes may have different atmospheric pressure or wind drag, but in this case, it is negligible.)

Here is another concept to keep in mind when moving any mass or weight. It's not the weight of a bullet that kills you - it's the speed. **As we move a weight faster it gets exponentially heavier.** Think of it this way, it takes a lot longer for a 2000 lb. truck moving at 50 mph to slow down then a 200 lb. go-cart.

So, let me discuss curvilinear motion. **Curvilinear motion describes the motion of a moving object that conforms to a known or fixed curve**. For example, a figure eight would be curvilinear. A kettle bell swing would be curvilinear. I can swing a dumbbell or a medicine ball but the kettlebell has a handle which makes it easier to perform these types of motions. However, regardless any object you exercise with, including the kettlebell, always look at joint action. What joints are moving? What muscles are moving the joint? How are the forces being applied to the joint?

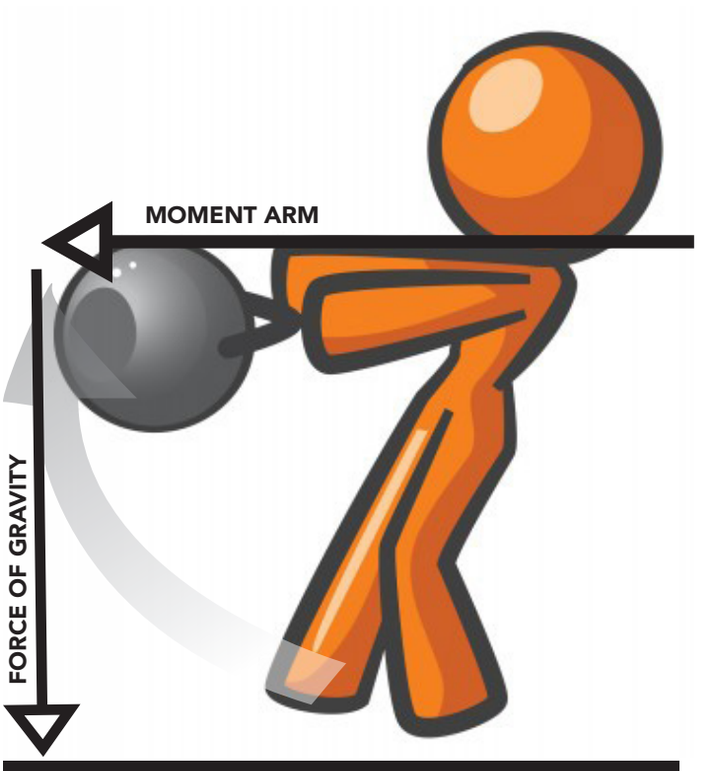
If you're in the sport of kettlebells, there are rules you must abide by, not unlike the sport of power lifting. In bench pressing, you have to bring the bar to the chest. But, if your goal is to just work your chest, you can stop the bar at any point. As long as it isn't violating or hurting the joint. The range of motion is goal-dependent.

The body is smart. It has an efficient way of lifting heavy a weight, and it efficiently shares the load between all the joints in order to get a weight up. The heavier the weight becomes, the more technique is needed because the body needs to find the most efficient way.

A clean and jerk is done with a seven-foot bar (or it can be done with any bar, but in competition it's done with an Olympic seven-foot bar). Think about the joint actions. Your ankles, knees, hips and spine all flex and then extend. The shoulder abducts, externally rotates and then flexes. The elbow flexes and then extends.

Let's compare that to a kettlebell swing and then a jerk. Here's an example where a kettlebell really works. Because of its shape, it allows you to use momentum where the bar would not. A kettlebell is definitely more conducive to momentum than the Olympic bar. In comparison to the clean and jerk, the joint action is almost exactly the same. Now forget we have kettle bells in hand. Think about what happens to your knees, hips, ankles and spine. You come to a certain point and then jerk. So it's somewhat of a clean and jerk. However, with a bar, you can't swing the bar through your legs. You can clean it, jerk it, but then you have to stop it. You can't use momentum to get it back up.

We could also perform a clean and jerk with dumbbells



or even a medicine ball -- well, it would be hard to get a 95lb medicine ball. But what's different between the dumbbells and the kettlebells? It is the handle! The handle allows the user to swing, and by virtue of the handle, the user's arms got longer. In other words, his arm is a fixed length, but the further away this weight gets from the axis that's moving it, the heavier, the more force it has. So, if this handle were three feet long, and this little weight were three feet out, it would feel heavier to you. So the lever arm from your hand to the load is a little longer. In essence, the moment arm of resistance has gotten longer. Remember, your biomechanics: **the moment arm is the perpendicular distance from the point of rotation to the line of force**, which in this case is gravity. The kettlebell handle increases the moment arm which increases the torque, which in turn increases the momentum.

There are some people out there who think the kettlebell is a "magical" strengthening piece of equipment. This thought was popularized by a recent bestselling book about a guy who used a 53 lb kettlebell to do sets of 75 swings for 10-20 minutes a week. Let's examine this. If you think about the joint action in a swing, it's somewhat of a mini squat. You're using your glutes, quads and spinal erectors to go into hip extension and spinal extension. Think about it -- he did sets of 20 minutes, while most people normally do three sets of 10 to 15 reps, which might only last less than a minute of total exercise! Three to five sets of 15 reps twice a week, would be equal to four minutes of exercise per week. It's quite a bit of a difference compared to twenty minutes of exercise. No magic - just simple math.

The author did 20 minutes of swings with a fairly heavy weight. In reality, when you take a weight of 53 lbs and move it, it's no longer 53 lbs. It has inertia and then momentum. If you double the speed, 53 lbs goes to the second power. If you triple the speed, 53 lbs goes to the third power. So 53 lbs becomes a lot heavier than just 53 lbs when you're moving it quickly. If anyone did this 20 minutes a week using a heavy weight, then anyone would tone up! Don't be fooled and deceived by marketers telling you that a particular apparatus or a particular piece of equipment is going to get you in shape. The magic is within the human body. It's the joints moving and the muscles moving the joints and your commitment and your intensity that will get you in shape.

Remember that **your body has elastic properties**. Your skin, tendons, ligaments, and muscle fibers all have elastic properties. This means when it's stretched, it gains potential energy. So as the kettle bell comes down, it's stretching - or elongating - tissue. It gains potential energy. That potential energy allows you to use momentum to bring it back up. This is where the kettlebell is superior to the bar.

Momentum is definitely a part of both daily activities and sports. We have momentum even when we walk. It's up to you as the personal trainer to decide on whether or not the weight, the speed and the piece of equipment is the best choice for you or your client to help them reach their goal safely and effectively.

Integrating Kettlebells into Your Training

A properly designed kettlebell training routine combines aspects of both strength and cardio training in a single workout. Performing distinct kettle bell workouts with little or no rest not only builds muscle endurance and strength, but forces the body to work at a high heart rate for a cardiovascular benefit.

For hundreds of years, kettlebell use has focused on **muscle integration rather than isolation**. Nearly every drill recruits multiple muscle groups to work in unison. The body is trained as a whole and particular emphasis is focused on the core and back muscles. Even before the discovery of electricity, **kettlebells have incorporated multi-joint, full body movements**.

Kettlebell training ironically doesn't even require kettlebells to experience some of the ideas and results surrounding it. There is quite a variety of kettlebell drills. Many of the more advanced drills simply aren't possible to perform with a dumbbell. If you don't have a kettlebell, two of most basic, fundamental drills can be experienced (to some degree) with a dumbbell. Training with kettlebells has actually turned into a sport.

As described above, the handle on a kettlebell allows the user to swing it around, taking advantage of its momentum. Remember, the faster the kettlebell is moving, the more stress or force it creates on the user. This can have a positive or negative effect depending on the person's structural integrity, fitness level and experience. It is up to you as a personal trainer to decide on whether a client should use kettlebells, which exercises to do, how much weight to use and how fast the kettle bell should move. Like any other modality, always begin conservatively and progress slowly allowing the person to adapt.

Here are four kettlebell exercises that you may integrate in to your training.

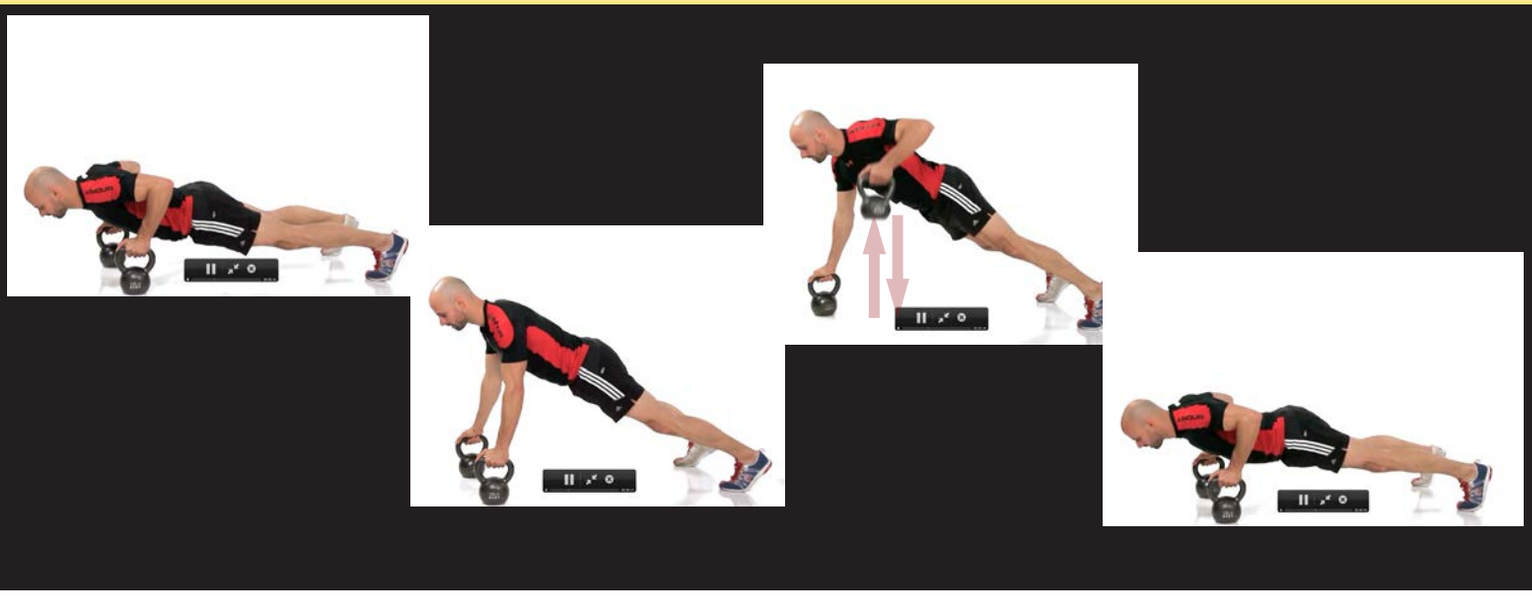
Push-up with One Arm Row

This exercise involves movement in both the sagittal and transverse planes: or, more simply, it involves both a push and a twist. You may see people perform this exercise with only one kettlebell but it puts additional stress on the olecranon bursa in the non-kettlebell elbow. We prefer each hand to start on a kettlebell. This exercise may be uncomfortable for some people at the base of the hand; however, the kettle bell does lower the stress on the wrist in a push up by allowing the wrist to remain in neutral and not go so far into extension.

Start: Get into a push up position with the feet in a wider than normal stance. Place each hand on a kettlebell.

Action: Perform a push up. At the top of the motion, tighten your core. With the one arm, row the kettlebell as far as you can without rotating your core.

Breathing: In the push up, inhale on the way down, then exhale on the way up. As you row, inhale once again, and then exhale as you return the kettlebell to the floor.



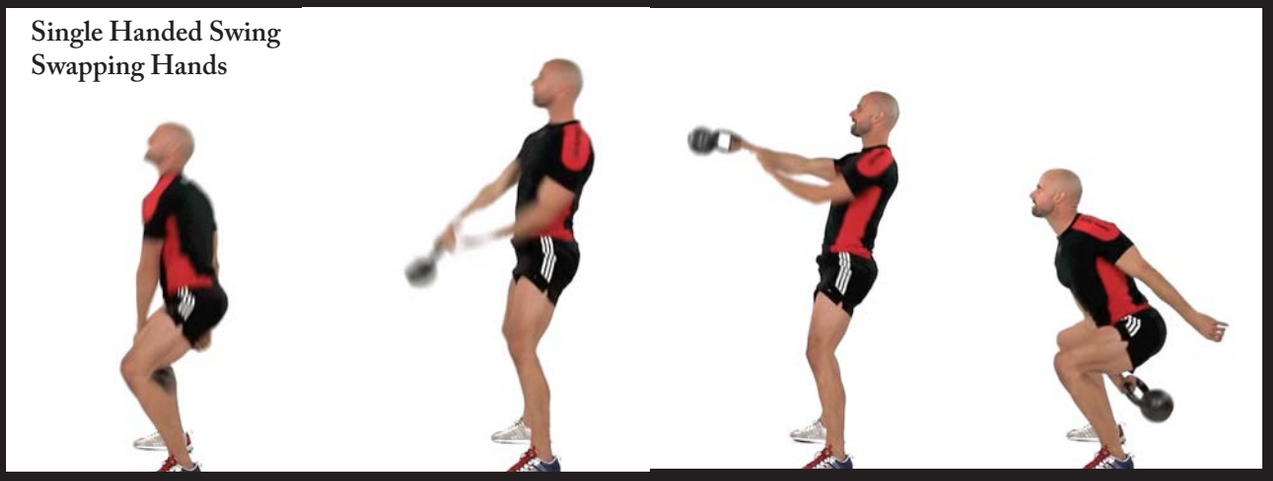
Kettlebell Swing

Start: Take a wide stance, with the feet 1.5 times shoulder width and toes pointing slightly outwards. This is important to allow for the kettlebell to swing backwards and for stability during the upper portion of the lift. Squat down with your spine in alignment and lift the weight to an erect posture with your shoulders back. Now you're ready to begin. Keep your head straight, and look across the room while you perform the exercise.

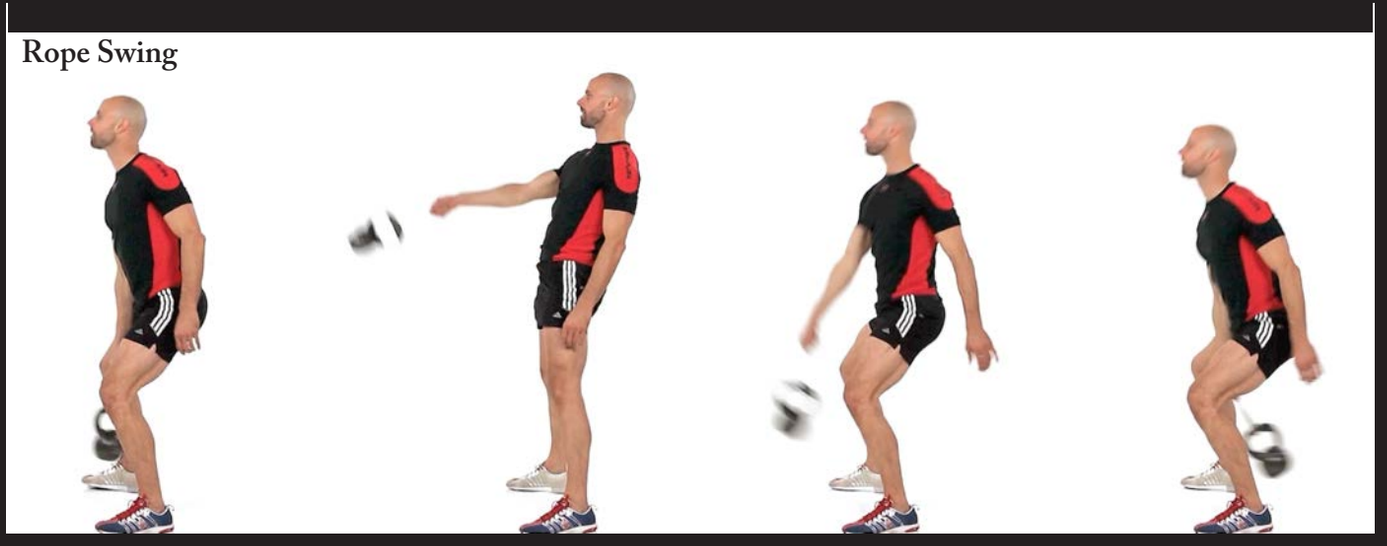
Action: To initiate the movement, squat down (pushing your hips back) until the kettlebell is well clear of your groin. Flick the kettlebell back between your legs with your arm. This is the only time you use your arms to push the weight. At this position in the swing, your forearms are against your groin and the kettle bell is between your legs extending behind you. At this point, you will simultaneously squat up and thrust your pelvis forward. This is the key element of the kettlebell swing. It should be the hips moving the weight, not the arms. This thrust should cause you to stand up and straighten as the kettle bell propels forward. Aim for chest height. Simply repeat this action for additional repetitions.

Breathing: Exhale as you swing the weight, and inhale on the way down.

Single Handed Swing
Swapping Hands



Rope Swing



Variations

Single-handed Swing: The single-handed swing targets the muscles a little differently because it is unilateral and the body rotates a little to balance the weight. The single-handed swing is easy to do after mastering the double swing. Remember to align the weight in the center so it does not hit your thigh.

Swapping hands: When the kettlebell swings to the highest point, it will pause for a brief moment before it swings back down again. During this pause, you can change hands. We recommend practicing this outdoors or in a safe area beforehand.

Rope swing: Athletes from a weight training background may experience some difficulty allowing their arms to remain passive in an exercise and tend to lift the kettle bell with their arms. A short towel or rope tied around the kettlebell is a good tool to teach proper form. When a person swings the kettlebell, the rope should be in line with the arms. If the rope is not aligned, the exercise is being done incorrectly. Make sure the rope isn't too long so the kettle bell does not hit the ground.

Clean and Press

Start: This exercise can be done with one hand or two. Straddle the kettlebells with the feet shoulder width apart. Squat down with arms extended and grasp the kettlebell handles with an overhand grip. Position the shoulders over the kettlebells with the spine in alignment, butt pointing downwards and trunk almost perpendicular to the ground.

Action: Without using or bending your arms, pull the kettlebells up off the floor by extending your hips and knees. As the kettlebells reach knee height, vigorously elevate your shoulders while keeping the kettlebells close to your thighs. When the kettlebells pass your mid-thigh, jump upwards extending your body.

Pull the kettlebells upwards with both the upper trapezius and arms, allowing your elbows to move out to sides, but keep the kettlebells close to your body. Aggressively move under the kettle bells as if you were almost pulling yourself under the kettlebells. While moving into a mini-squat position, catch the kettlebells on the top of your shoulders rotating the arm under the kettlebells and then catching it on the backside of the forearm with a straight wrist. Hitting the bottom of the squat, stand up immediately. To press the weight, drive upward with the legs, lifting the kettlebells off the forearm and extending the kettlebells overhead.

To return to the floor, bend your knees slightly and slowly lower the kettlebells with the spine and wrist in alignment. Decelerate the decent of the squat to absorb the weight of the falling kettlebells.

Breathing: Inhale before you lift the kettlebells, then exhale slowly as you lift. Inhale again as you lower the weight.

Front Squats

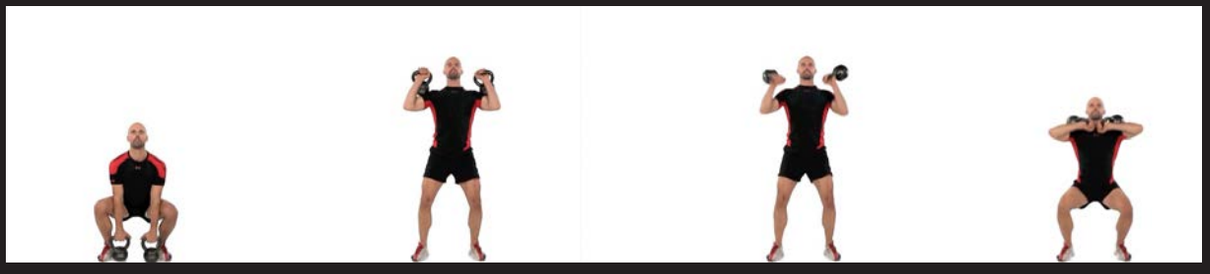
Start: Stand with feet shoulder width or slightly wider. The toes should be pointed straight ahead or slightly outwards. Clean the kettlebells so that both hands are facing each other. The elbows should be pointing outwards and the kettle bells should be resting on each shoulder.

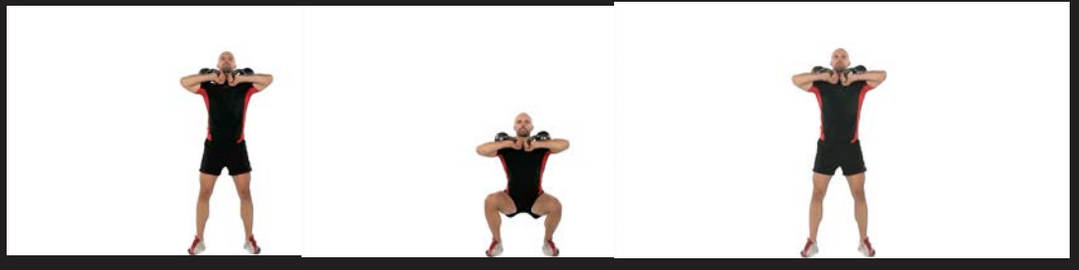
Action: The movement is initiated by moving the hips back and bending the knees and hips to lower the torso and accompanying weight, then returning to the upright position. The squat can continue to a number of depths depending on the goal, but a correct squat should be close to parallel with the ground. By "hinging at the hip" the squat is much safer on the knees. The muscles around the hips provide the power out of the bottom.

Some common errors include:

- Descending too rapidly
- Flexing the torso too far forward -- over-flexing the torso greatly increases the forces exerted on the lower back, risking a spinal disc herniation.
- Not aligning the knee with the direction of the toes -- the knee should remain over the first two toes at the bottom of the motion. Have your toes slightly pointed out in order to track the knee properly.
- Forgetting the wrist -- it should be held straight in neutral alignment.
- Looking down or upwards -- keep head facing forward and eyes looking ahead.

Breathing: Inhale on the way down, and exhale on the way up.





Here is a sample circuit utilizing these four exercises. Perform 25 repetitions (depending on the goal) of each exercise with no rest in between each exercise.

- Kettlebell Front Squat
- Pushups
- Kettlebell Two-Arm Swings
- Kettlebell Clean and Press
- V-Up
- Mountain Climbers
- Kettlebell Pushup with One-Arm Row

***This article is not all inclusive to kettlebells and kettlebell training. If you're interested in becoming more knowledgeable about kettlebells, I highly suggest you get certified as a kettlebell instructor, and don't stop there -- keep educating yourself. Learning is a process and it never ends -- that's the beauty of it.*

Notes