

# **Deadlifting.. A Best Practice or Hazardous Lifting Exercise?**



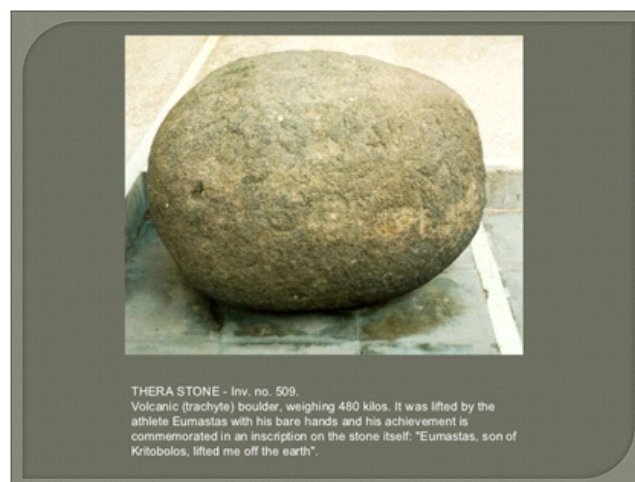
July 2019 blog  
by Gareth Milner

**The Deadlift** is a weight training exercise in which a loaded barbell or bar is lifted off the ground to the level of the hips, then lowered to the ground. It is one of the three powerlifting exercises, along with the squat and bench press. It is an excellent compound exercise that targets the quadriceps, hamstrings, gluteal muscles, lower back, trapezius and forearms. The name Deadlift itself stems from the exact meaning of the word, which is picking up a dead weight from the floor. There's not much concrete proof out there about where the name originated; some say it came from soldiers picking up the bodies of their fallen comrades on the battle field, yet that's most likely a rumour.

**But is it a safe gym exercise for the back?**

### **History of the Deadlift**

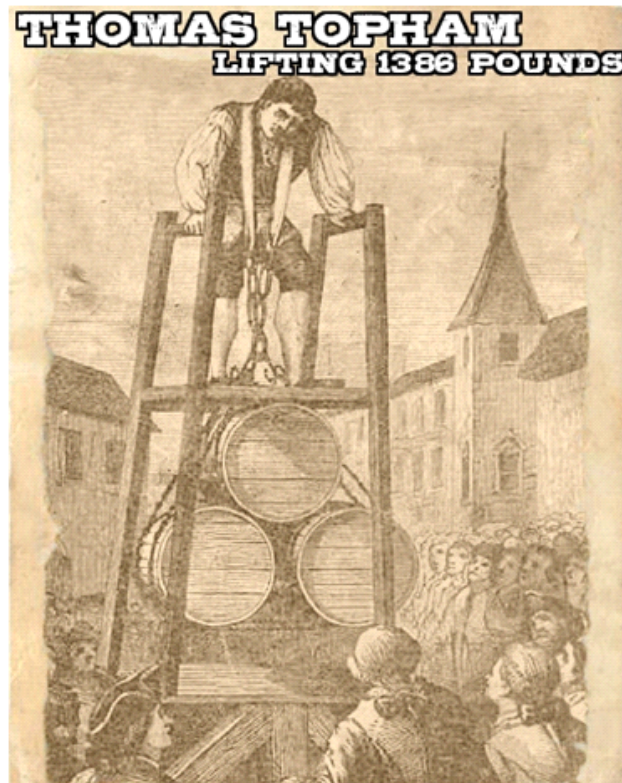
Possibly the first tale of what could be considered a Deadlift comes from the sixth century B.C. on the Greek Island of Thera. Archaeologists stumbled upon an unearthed a massive boulder (shown below). They noticed that the boulder had an inscription on it, and it read, "Eumastas, the son of Critobulus, lifted me from the ground." It's rumoured that Eumastas had hoisted the boulder to hip height, but there's no concrete evidence of him doing so.



Then, similar to Eumastas' boulder feat, there was Bybon. In Olympia, Greece there is a stone that has a hand imprint with a similar description which reads "Bybon, son of Phola, has lifted me over his head with one hand." Unlike Eumastas' tale, historians tend to believe this as a little more factual, stating that Bybon most likely lifted the stone with two hands, and held it overhead with one.

Obviously, neither of these can truly be proven, nor do they constitute a true barbell deadlift. But they do entail the act of picking up a dead weight from the ground and lifting it to waist height, and in Bybon's case, higher.

Hundreds of years passed including performers, circus acts and athletes that competed with each other. Records state that in the 1700s British strongman Thomas Topham (image below) lifted over 1,800 lbs in the harness lift.



In the 1900s the 'Father of the Deadlift' Hermann Goerner (pictured below) was born. Goerner began his rise to fame for his strength feats performed with the Pagel's Circus between 1910-1930. At this time, he began getting well-known for his feats of strength which include: Wrestling an elephant, clean and jerking 330 lbs, one-arm snatching 169 lbs, triple flipping a 50kg kettlebell, deadlifting 793 lb and one-hand deadlifting 727 lbs.



The image below is in my opinion the best bodybuilder (not powerlifter) of all time, Arnold Schwarzenegger, performing a sizable Deadlift. Arnold very much believed in Deadlifting, squatting and bench press. If you need to lift 5 completely full beer kegs, call Arnold. His body did not break under 322 kg (710 lbs).



On the Continent it is more usual for top physiques also to be top power lifters. Here ARNOLD SCHWARZENEGGER makes a new dead lift record of 710lb!

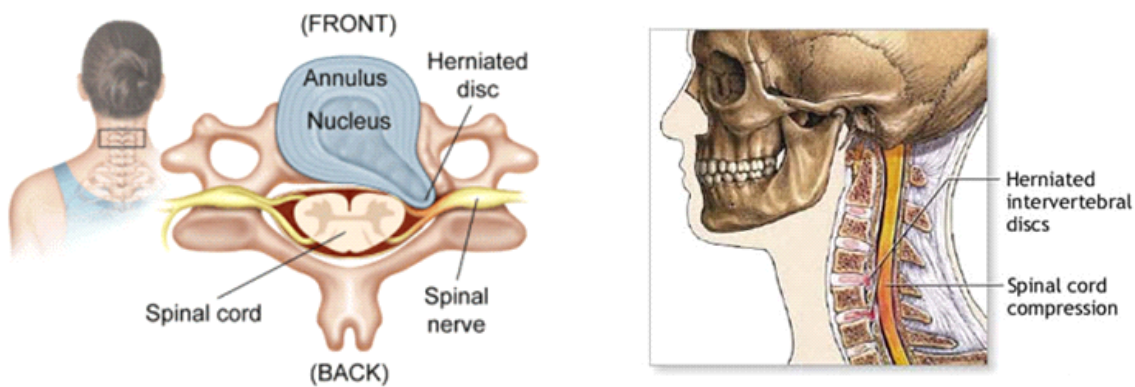
In July 2016, Staffordshire-born strongman Eddie Hall (pictured below) made history after becoming the first person to complete a half tonne deadlift at the World Deadlift Championships in Leeds, UK.



Beating the previous 463 kg record, the reigning World's Strongest Man champion raised the *Heaviest Strongman deadlift* to an unprecedented 500 kg (1,102 lbs 4.9 oz). He describes it as "the most incredible lift in human history and one of the most dangerous things I've ever done."

## My Deadlifting History

I got into weight training and body building as a skinny 15 year old. But I soon packed on muscle with core exercises like the deadlift which I started at 16 years old in the gym at Dulwich College and outside my garage at home. With a healthy back, I loved this exercise. Putting my lifting straps on and my back support, revving myself up to lift heavy. It is an exciting exercise (like squats and bench press) which really does energise the lifter. At my biggest around 17-18 years old at around 195lbs at 5 ft 9 inches, I lifted a respectable 120kg (265 lbs) for 8 reps. The last rep for always full out, using every bit of power and energy I had to get it up. I remember building strong and big lower back muscles. However during this period through to my early 20s I was unaware of the damage this was doing to my spinal discs, especially in my neck, as my deadlifting then stopped at the early age of 23 when I suffered a cervical disc herniation at C5/C6 which soon also cut my Osteopathy career dead at the age of 24 (only 2 years graduated). It wasn't all the deadlifts fault though; lots of judo, golf, rugby and an accident at 23 added up to my disc herniation but the deadlift would have contributed to the C5/C6 cervical disc weakness.



## Cervical Disc Herniation



## Cervical MRI Scan (the arrows point to herniations at the C5/C6 & C6/C7 discs)

### How to get into the Deadlift Position?

Preparing for the deadlift is just as important as performing the actual exercise. **First and foremost, the bar needs to be on the ground.** Some people place it on the lowest arms front of the **squat rack**, which is improper and not a deadlift. *Approach the bar on the floor and place your feet shoulder width apart* from the center of the bar. Your feet should be **facing straight forward or slightly outward** if this is more comfortable for balance.



Me preparing for a Deadlift - not quite what I used to lift :(

Bend your hips and knees as if performing squats until you are **fully down** (until the bar almost touches your shins) **and can grasp the bar.** With a neutral spine, brace your stomach.

This is where you have the choice of hand positioning. Get a feel for what works best for you. **First, there is the Supinated Grip** as shown below. I preferred this grip, however I feel more comfortable with arms more narrow between my knees. The Supinated Grip is when you have your palms facing down towards your body. You can use wrist straps for better grip with this hand placement.



The other is called the **Alternate Grip (shown below)**, which is when one hand is supinated and the other is pronated. This is commonly the recommended grip to use. But you should use what feels the most comfortable to you.



After choosing your grip, we at Osteopathic Solutions recommend *placing your hands and arms between your knees*. Most practitioners of the deadlift suggest placing your hands and arms just beyond shoulder width apart to where they are just outside your legs. This will place significant strain on the neck and lower back and is best avoided.

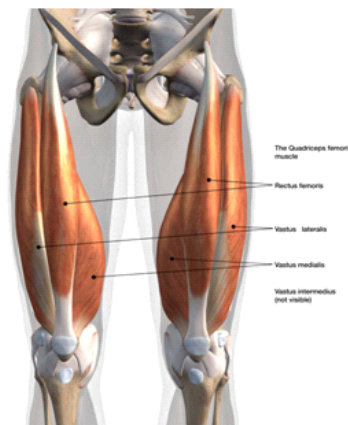
### **Positioning Your Body**

Place your head in a neutral position where you are looking forward with your chin slightly up, but not looking at the ceiling. Your back should never be rounded (forward flexed) i.e. loss of the natural spinal curves. Keep it in a neutral position as much as possible. Only pro deadlifters round their back for competitions. Your hips should be down to where your shins are just about to touch the bar in a vertical-like position. Some trainers may advise a higher hip placement, but this is intended for people with longer arms and shorter torsos. If this applies to you then by all means use that stance. However the average person will end up locking their knees too soon, which forces the lift solely onto the lower back muscles which is not what you want.



## Initiating & Performing the Deadlift

Right before performing the lift, you want to lessen the slack your arms have and pull on the bar just enough to cause slight tension. This will prevent the possibility of jerking on the weight, which could throw you completely off balance. **Your arms should stay straight the entire time.** They are just there to hold onto the bar, and are not bending or pulling at all. Your quadriceps or 'quads' (image below) are the first muscles that need to be initiated as you drive your feet into the floor. Imagine that you are performing leg presses as you move the weight from the floor. A lot of pro deadlifters use imagery of the floor being moved from the bar to help with the lift. At the top, do not hyperextend and lean back. You want to keep your spine neutral and everything tight.



## Deadlift Training Frequency

There are actually many ways to benefit from deadlifting frequencies. It really all depends on what you seek to achieve. Muscle building would be best suited with you performing five sets for 5-10 reps with weight being increased after each set. You would use the deadlift one training day a week for three weeks. Then, in the fourth week, you should perform a lighter load. Drop sets and supersets really have no place for deadlifting programs.

Pure power and strength is obtained by performing deadlifts once every other week, and instead of 5-10 reps you will be performing 1-3 reps with extra sets. The weights being used are heavy and close to your 1 rep max (1RM). Ensure that you do not reach the point of overtraining. It often occurs when the person has gotten much stronger. It is preventable by actually decreasing training frequency.



## Deadlifting Variations

What has just been described is the conventional Deadlift. The following are some variations:

- **Sumo Deadlift (shown below).** Your hands are inside your feet with a wider stance. This technique would be more hazardous for the knees.



- **Snatch Grip Deadlift (shown below).** Your hands will use a wide grip like in the Snatch. This technique would be more hazardous for the neck and shoulders.

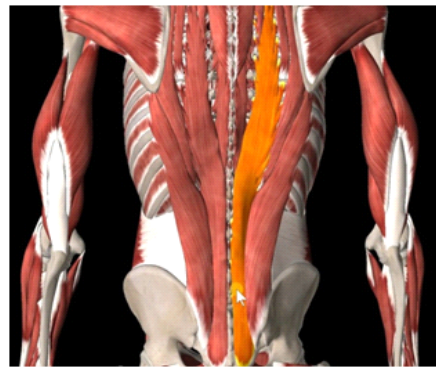


## The Biomechanics of the Deadlift

Let's look at some basic biomechanics of the Deadlift. When you Deadlift you use every single muscle in your body including:

- Your arms, forearms and hands hold onto the barbell and make sure the bar stays in the right position and stays stable throughout the lift
- Your shoulder and trapezius muscles hold the weight and hold it stable
- Your back and core muscles help keep your entire body tight and stable to help keep your spine secure
- Your posterior chain muscles (erector spinae, latissimus dorsi, glutes, hamstrings and calf muscles) act as a lever and lift the weight

The principle lifting muscles are the glutes (left image below) and lumbar erector spinae (right image below), as well as the quadriceps.

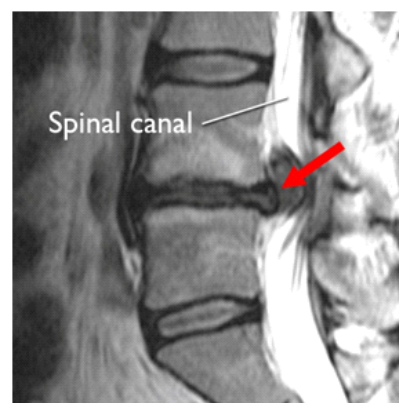
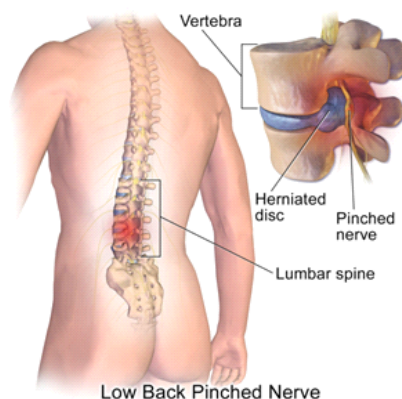


During the initial phase of the lift the glutes are powerfully contracting, extending the hips (taking the hips from a flexed position). The quadriceps are also powerfully contracting, extending the knee joints. For the final part of the lift (once the knees are nearly straight) the lower back erector spinae then contract to complete the lift, taking the neutral spine to a position of vertical.

Check out my blog " Human Biomechanics - Kept Simple " on [www.osteopathicsolutions-manualhandling.co.uk/osteopathic-solutions-blogs](http://www.osteopathicsolutions-manualhandling.co.uk/osteopathic-solutions-blogs)

## **Musculoskeletal Disorders & Deadlifting**

No matter what any gym trainer or fellow weight lifter says to you, **the deadlift will damage your spinal discs even with good form**, especially L4/L5 and L5/S1. Disc herniations and prolapses are most common between the ages of 35 to 45 years old. You may get big lower back muscles and glutes through this exercise, however you asking for these injuries which from experience are horrible. No surgery and rehab exercises will 100% heal a herniated or prolapsed disc (ask Tiger Woods!). You will have back pain for life.



**Lumbar Disc Herniation**

The most common part of the deadlift where people get hurt is during the eccentric (lowering) part of touch and go deadlifts (this is when you bounce the bar on the ground to then perform the next lifting rep). **For that reason, resetting between every rep is preferred for general strength programs.** This allows you to reset, get your form right, and get your breathing right on every rep.

## **Alternative Gym Exercises to build a 'Strong' Back**

When I say 'strong' I don't mean a back that has huge muscles and can lift huge weights. I mean a back that has good muscle bulk, tone and flexibility with no structural damage. Now that is strong.

Talking about muscles only, yes the deadlift is a great exercise to build big calf muscles, hamstrings, quadriceps, glutes, forearms and above all lower back tree trunks but we can hit these muscle groups individually in a way that is safe for our back and more directly targets singular muscles.

### **Calf Muscles**

Often neglected in the gym (you often see an upper body full of big, lean muscles but calves with as much meat as a chicken wing) the gastrocnemius and soleus muscles (left image below) can be hit with calf raises (right photo below).

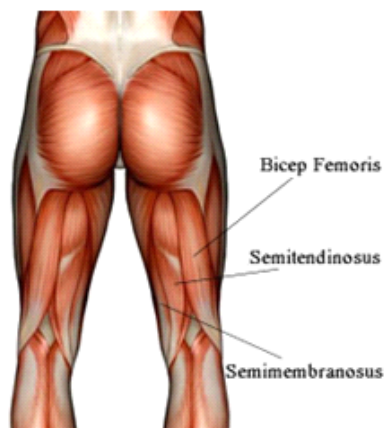


I remember in my bodybuilding gym Muscle FX in Croydon, South London doing standing calf raises like Arnold did (pictured below). But this machine carries the weight on the shoulders, which this area of your body is not designed to carry weight. To build strong calf muscles that provide excellent foot, ankle and knee stability perform seated calf raises.



### **Hamstrings**

The hamstrings' (image below) principle function is to flex the knee. Leave their hip extension function (check out my blog " Human Biomechanics - Kept Simple " on [www.osteopathicsolutions-manualhandling.co.uk/osteopathic-solutions-blogs](http://www.osteopathicsolutions-manualhandling.co.uk/osteopathic-solutions-blogs)) to the gluteus maximus. I recommend seated leg curls or even better still, prone leg curls (a machine that is harder to come across). With prone leg curls I feel there is more tension through the hamstrings which allows for a more powerful contraction and therefore increased working of the hamstring muscles.



### **Glutes**

Leg Press, Leg Press and one more time Leg Press.



Don't touch squats with a barge pole (strange coming from a Director of a Manual Handling Training Provider). Remember gymnasium squats involve carrying the barbell across the shoulders; another exercise that quickly knackered my neck.

### Forearms

Any gripping of dumbbells, barbells, kettlebells, cables etc. will work the forearm muscles, but if I am honest gripping a 120kg barbell and deadlifting it when I was in my teens really did build big forearm muscles.

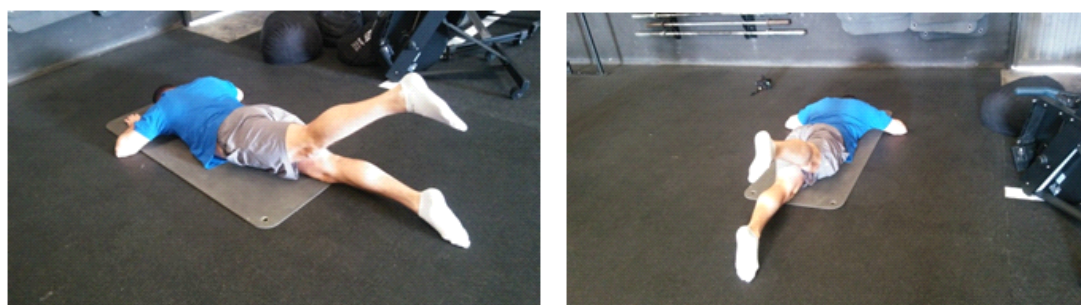
### And not forgetting the Lower Back Muscles (lumbar erector spinae)

Let's remember, the back (spinal) muscles are there to keep you upright, and for spinal stability and mobility. They are not physiologically designed to lift heavy weight. A favourite of mine is **Back Extensions** as shown below. I would avoid doing these holding a plate of iron in your arms.



### Back Extensions

Side lying and prone **Pilates Exercises** will also build a strong lower back, one that I have already mentioned has good muscle bulk, tone and flexibility with no structural damage. Core stability exercises often focus solely on your abdominal muscles but the concept is much more than just these muscles; the deep back muscles should also be worked. Some of my favourite Pilates based exercises are shown below that tone and strengthen the lower back muscles, removing the need to deadlift.





Please read my blog 'Self Help for your Back Pain' on [www.osteopathicsolutions-manualhandling.co.uk/blogs](http://www.osteopathicsolutions-manualhandling.co.uk/blogs) which features these exercises and more.

### **Warming Up & Down for Deadlifts**

If you perform deadlifts it is essential you warm up and warm down. Doing **Back Extensions** for a couple of sets of 8 reps, followed by some **Lower Back Stretching Exercises** (shown below) will get the lower back muscles warm with good blood flow and also more flexible. Performing these stretches after deadlifting will aid muscle recovery (as well as that essential whey protein shake!), aiding the prevention of symptomatic muscles strains. Even lifting the barbell on its own for a few sets of 8 reps is a good warm up.



### **Lower Back Stretching Exercises**

### **Conclusion**

**Should you practise the deadlift?**

If you are a powerlifter or a bodybuilder and you want to win your competition, then yes.

If you are not, and want to avoid a serious spinal injury (like I had) then **AVOID IT LIKE THE PLAGUE.**



Keep backsafe in the gym from myself and my team of Occupational Osteopaths!