



THE DEADLIFT

ABSTRACT

The deadlift is one of the three movements used in powerlifting competition but is also a valuable exercise for those training for other sports or for clients who are just interested in body recomposition or general fitness.

In this paper, we will look at the evidence that using the deadlift in training gives a variety of benefits. We will also look at the key considerations you need to bear in mind when introducing the barbell deadlift and its variations to your clients.

After reading this paper, you should be ready to explain to clients why they should be deadlifting and how to get the most out of this movement.

THE DEADLIFT

WHAT IS A DEADLIFT?

The deadlift is perhaps the simplest of barbell-based strength training movements. The loaded bar is lifted from the platform until the lifter is standing upright with legs locked out and back vertical.



The deadlift is well known for being one of the three competition lifts in powerlifting (along with the back squat and the bench press) but is also valuable for general strength in the back and legs, as well as improving grip strength and developing the many other muscles that are involved in performing it.





There are two main types of deadlift – the conventional deadlift where the arms of the lifter are outside of their legs and the sumo deadlift where they are inside. Both are used in powerlifting competition and the choice between them is usually made based on individual body proportions and mobility.

In addition to the basic conventional and sumo styles, there are a wealth of other deadlift variations which, as we will see later, can be used to focus on particular things while training.

WHY DEADLIFT?

If your client is a powerlifter then they will need to deadlift but even if they are not, there are plenty of good reasons why deadlifting should form part of their training.

EFFICIENT USE OF TRAINING TIME

The deadlift is a compound exercise – it uses multiple muscle groups – so it is a good use of time in the gym. Even compared to other compound exercises, the deadlift is relatively unusual in requiring high engagement from both the upper and lower body to complete the movement. Each rep of the deadlift will work muscles from those involved in gripping the bar right through to the lower legs.

While the deadlift works many muscles, the prime movers that it engages are the biggest muscles in the body – the gluteus maximus, quadriceps and the hamstrings (Ebben et al., 2009). If your client is aiming for body recomposition, this means that the deadlift gives great value in terms of building as much muscle mass as possible.

The mechanics of the deadlift mean that higher loads can be used safely than in other movements. Each rep will be subjecting the body to more weight, meaning that there is a plenty of stimulus for adaptation.

SIMPLICITY

As we will see later, there is some technique to be learned by a novice deadlifter but, compared to many other exercises, the deadlift is very easy to learn to do correctly. It does not take very long for a novice to be able to safely lift considerable weight.

BACK STRENGTH

The erector spinae muscles of the back are exercised by the deadlift more than just about any other movement.

Back strength is important for everyone – maintaining a good posture requires a certain amount of strength in the back and glutes. For many sports, especially contact sports, back strength is even more crucial, both for being effective on the field of play and for injury prevention.

There is evidence that training the back effectively can help to prevent chronic back pain and reduce pain levels in those who suffer from it (Aasa et al., 2015; Welch et al., 2015).

HORMONAL EFFECTS

Studies have shown that lifting heavy weights stimulates the production of hormones that are important in muscle growth, such as human growth hormone and testosterone (Craig et al., 1989). Since deadlifting is an easy way for even novices to lift significant weights, it can help to generate hormones that will help other exercises to be more effective. There is evidence that lower body training can lead to greater strength gains in the upper body (Bartolomei et al., 2018) and this may be due to hormonal effects.

GRIP

The ability to hold on to things is important in many sports and generally in life so exercises that challenge the grip, like the deadlift does, are valuable. Grip strength has even been found to be a good predictor of long-term health (Leong et al., 2015), although this correlation should not be taken to imply definite causation.

IT'S FUN!

We have seen that there are many reasons to deadlift from a sports performance and general health point of view. Something worth remembering, though, is that lifting heavy weights can be very enjoyable and satisfying in itself. Most people will be able to lift more than their own body weight with a relatively short period of training the deadlift. Doing that is a great confidence builder for anyone who does not consider themselves 'strong'.

COACHING THE DEADLIFT

Hopefully by now you are convinced that the deadlift is a valuable exercise to include in your clients' programmes. We will now look at the practicalities involved in coaching the deadlift.

EQUIPMENT

The basic deadlift is performed with a barbell. While the deadlift seems like a very simple exercise, the bar that is used can make a big difference, especially with heavier weights.

The main thing you want from a bar for deadlifting is good grip. This mainly comes down to the knurling but, for those with small hands, the diameter of the bar can also affect how easy it is to hold on to.

If your client is training for powerlifting, you will want to make sure to use an International Powerlifting Federation (IPF) certified bar as that is likely to be the kind of bar they will use in competition. These bars are 29 mm in diameter and tend to have the most aggressive knurling for the best possible grip. They also have longer sleeves at the ends than most bars, to enable more plates to be loaded for big lifts. For non-powerlifters, you could use weightlifting or hybrid bars. For clients with small hands, you may even want to use a 15 kg women’s weightlifting bar – the slightly smaller 25 mm diameter can make a surprising difference.

You will also want to use bumper plates for clients who are deadlifting. While most reps of deadlift should be completed by returning the bar to the ground under control, it is inevitable that at some point the bar will be dropped. Using bumper plates avoids this causing damage to either plates or platform.

COMMON OBJECTIONS

While the basic technique for the deadlift is easy to learn, some clients can be intimidated by the reputation of the deadlift as a heavy lift and the myth that it inevitably leads to back problems.

As we saw earlier, the evidence is actually that deadlift training can help prevent chronic back pain. With the correct technique and sensible loading, the risk of injury from deadlifting is very low.

Here are some of the most common objections you will get to trying the deadlift from novices and some suggested responses.

OBJECTION	RESPONSE
I’m not strong enough	We’ll start light, focussing on technique
I might hurt myself	We will only add weight when it is safe to do so. A stronger back will actually protect you from injury.
I don’t want to get bulky	Adding muscle to the back and legs will help you to lose fat and thus be more lean
I might damage my hands	By using chalk and proper hand care, you can avoid most problems. If you really don’t want to risk callouses, you can wear gloves or straps.

Usually, once they have actually had a go at deadlifting, these issues will disappear and be replaced by a desire to lift more weight!

CONVENTIONAL OR SUMO?

There is much debate in the powerlifting world about whether the conventional or sumo style of deadlifting is the easiest way to lift maximal loads. While most world records have been set using the conventional style, there are some good arguments that the sumo style is more efficient, at least for some lifters. The best choice of deadlift style usually comes down to the body type of the powerlifter. Bigger, less flexible lifters tend to do better with the conventional style while smaller lifters with better mobility tend to do better with sumo.

For clients who are not powerlifters, maximal lifting is not so important so either style can be used. It is still worth considering both options though – one is likely to be more comfortable for your client than the other.



The sumo style requires more mobility to get into a good start position, so a good test for choosing between the styles for a novice is to check whether they can adopt a good sumo start position without a rounded back. If they can’t then conventional is the best choice, at least to start with.

You can also check your client’s conventional start position. If this puts them into a position where their back is close to horizontal, this could indicate that sumo style might be better for them.

If you client can’t get into either start position without rounding their back, they will need to work from blocks (see later) until their mobility improves.

GRIP CHOICE

The two most common options for gripping the bar in a deadlift are double overhand and mixed or switch grip.



While mixed grip does help a lot by preventing the bar from rotating, it does bring an increased risk of injury, notably to the biceps of the arm that is 'switched'.

Some powerlifters use a weightlifting-style hook grip to assist their grip strength. While this is very effective, it can be painful so may not be the best choice for a novice.

SAFETY

The crucial thing for any deadlift is that the back remains locked tight in a neutral alignment. The weight of the bar will tend to pull the back into a flexed or rounded position. This must be avoided as it is the major injury risk in deadlifting.

Something to look out for is your client rounding their back as they return the bar to the platform. A common mistake is to concentrate hard on the concentric (upward) part of the movement but to lose focus during the eccentric (downward) phase. Make sure they maintain strict technique all the way through the movement in order to ensure they are safe.

Perhaps the most important point about safety is for clients to recognise when their back is beginning to round and to drop the weight in that situation.

TECHNIQUE

The deadlift can seem like it does not involve any technique. While it is true that it is a simpler movement than many other barbell exercises, technique is important.

Whichever style of deadlift is being used, getting the start position right is critical. Here are the main points to look for in each of the start positions:

CONVENTIONAL	SUMO
Feet around hip width	Feet wider, based on mobility
Bar over middle of foot	Bar close to shins
Arms just outside legs	Vertical arms
Shoulders over bar	Shoulders over bar
Neutral Spine	Neutral Spine
Eyes looking slightly down	Eyes looking forwards

As well as adopting a good start position and maintaining a neutral spine for safety, to get best results from the deadlift, it is important to time the effort from the legs and hips correctly.

For clients using the conventional deadlift, focus on using the legs to lift the bar until it almost reaches the knees and then aggressively engaging the hips to drive forwards to the bar and complete the lift.

For those using the sumo style, encourage them to use their legs until they are locked, when they should straighten at the hips to get to an upright position.

PROGRAMMING

The main thing to bear in mind when fitting the deadlift into a programme is that it takes a lot out of the client, both in terms of fatiguing the back and leg muscles and the psychological load of lifting heavy. For this reason, it is usually best performed at the end of a training session and not too often. Once a week is a common frequency.

For novices, the deadlift works well with linear progressive overload, with weight being added to the bar every time it is trained. By starting with a weight that is easy for the client and adding weight every session, it should be possible to work up to them lifting well over their own body weight before more sophisticated programming is needed.

Compared to other compound movements such as the squat or bench press, lower volume per session tends to be used for the deadlift. While you may have a client squatting as many as five work sets of five reps, for the deadlift you will more likely have them performing three, two or even just a single set of five with their work weight.

DEADLIFT VARIATIONS

There are more variations of the deadlift than we could possibly include here but we will look at some of the more common ones and why you might want to use them with a client.

BLOCKS / PINS

Earlier we mentioned that clients who lack the mobility to get into a good start position may need to work off blocks until they become more flexible. You will find that even raising the bar a small amount on low blocks will make it much easier for the client to achieve a neutral spine.

Lifting from blocks can also be useful for targeting a weak point in a deadlift to break through a training plateau. Something to note here is that the actual weak point will usually be an inch or two lower than



where the lifter gets the bar to in a failed attempt – you want to look for where the bar slows down rather than where it stops.

Pins in a power rack can also be used to raise the bar. Lifting from pins is actually slightly harder than from blocks – because the bar is supported more narrowly, it will flex less when starting the movement.

CHAINS / BANDS

Many powerlifters do some of their deadlift training with either chains or bands attached to the bar to make the later part of the lift more challenging relative to the start. While it makes sense that doing this might have some benefits and there is evidence that doing this helps with speed and power training (Galpin et al., 2015), there is no clear evidence that this type of lift is any better than just deadlifting normally for general purposes. If your client is training for a sport where the range of motion of the upper part of the deadlift is critical, it may be worth considering.

TRAP / HEX BAR

This alternative to a straight bar is called either trap bar because the lifter is 'trapped' inside it or the hex bar because of its shape. Using this kind of bar changes the mechanics of the deadlift significantly. Because the arms are by the lifter's sides, it is much easier to maintain an upright posture. Depending on what height the handles on the bar are, the range of motion will be reduced and much more focus may be put on the muscles of the legs, especially the quadriceps (Swinton et al., 2011).

Most people can lift significantly more weight using a hex bar and the reduced risk of back rounding makes it a popular choice for those deadlifting for general strength and conditioning purposes rather than as an end in itself.

UNILATERAL

There are several ways to perform a deadlift that targets one side of the body at a time. These are called unilateral lifts. These can be useful for correcting muscle imbalances or strengthening muscles involved in lateral stability.

These exercises are usually performed with much lower weights than a barbell deadlift and typically use high rep ranges – eight reps per set is common. In a suitcase lift, a kettlebell or dumbbell is lifted from a block positioned to the side of the client. One legged deadlifts are also performed using a kettlebell or dumbbell and are a good exercise for challenging balance as well as strength.



ROMANIAN DEADLIFT (RDL)

There is an argument that the Romanian deadlift, popularised by the famous weightlifter Nicu Vlad, is not really a deadlift at all – since it starts with the bar at waist height rather than from the floor. However, it is such a useful exercise for hamstring development that it would be wrong not to mention it. The Romanian deadlift is often just referred to as the RDL.

To perform an RDL, the client should first deadlift the bar to waist height. Then, they should bend their knees slightly. After this point, the knees should not bend any more. They should lower the bar slowly down the legs, keeping their back locked in a neutral position.

Once they reach the limit of their mobility, they should return to the top position. If they are performing the movement correctly, they should feel tension in the hamstrings towards the bottom position. If a client has such excellent mobility that they can lower the barbell to the platform with a neutral spine, you can have them stand on a low block to enable the range of motion to be increased.

The key to getting the most out of the RDL is to focus on moving in a slow and controlled manner rather than rushing the movement. Keep the loading relatively low in order to maintain that focus.

SUMMARY

In this paper, we have looked at why the deadlift is a valuable exercise, even for clients who are not interested in powerlifting as a sport. We have also considered some of the key points when coaching novices in the deadlift.

Key things to remember are:

- The deadlift is a fundamental compound strength exercise
- Far from causing back issues, used correctly the deadlift will help prevent chronic back pain
- Maintaining a neutral spine is critical for safety
- The choice between conventional and sumo should be based on the individual
- There are many variations of the deadlift that each have their use
- Deadlifting is fun!

You should now feel inspired to introduce your clients to the deadlift so that they can get the benefits of this fantastic exercise. ■





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