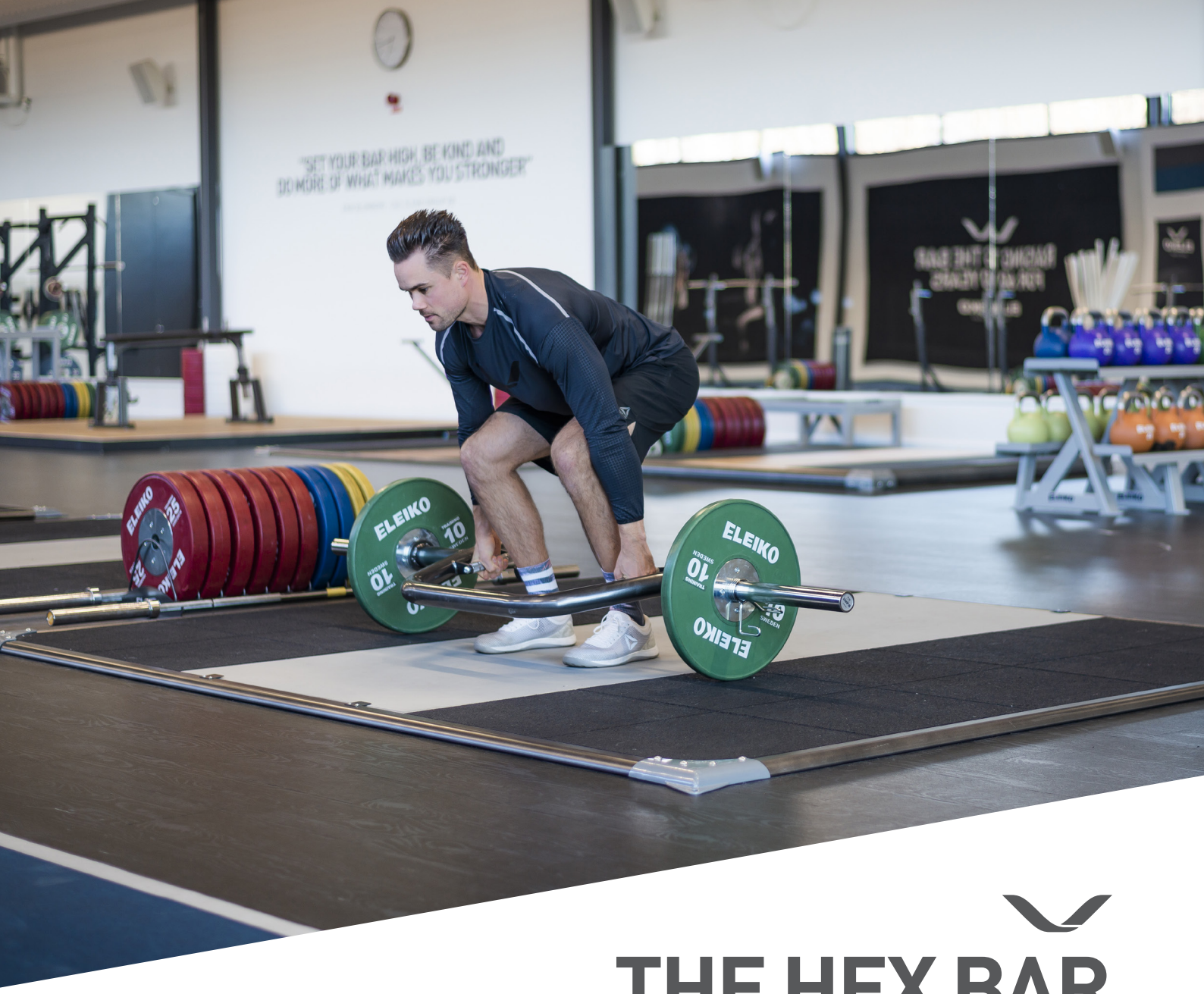


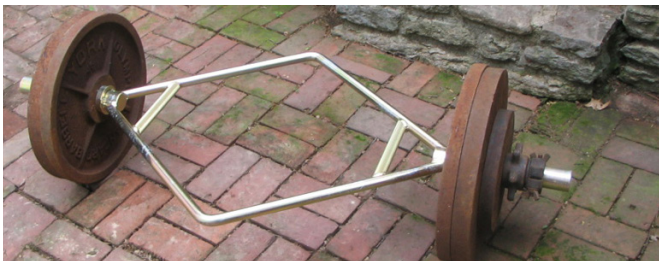
THE HEX BAR

Hexagon or diamond-shaped barbells, also known as trap bars, have been used in gyms since the 1980s. They have become most associated with deadlifts but can be used for a wide variety of exercises.

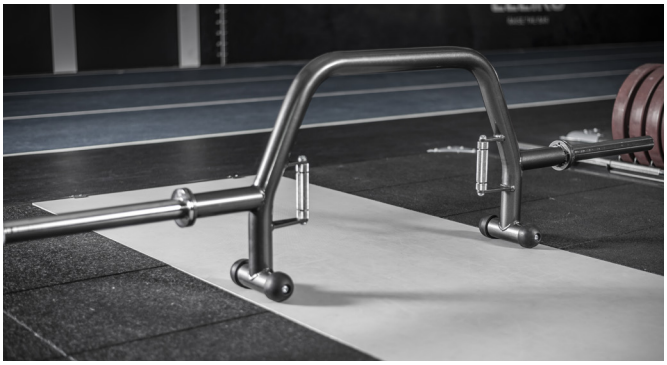
In this paper, we will look at what the science can tell us about why using a hex bar is different from a standard barbell and how that should inform the way we use it in training. We will also consider some of the many exercises that can be done with the hex bar. After reading this paper, you should understand the role that the hex bar can play in your coaching and have plenty of ideas for using it with your clients.

HISTORY

The modern hex bar is a descendant of the Gerard Trap Bar, invented by USA powerlifter Al Gerard in the mid-1980s. This was a diamond-shaped bar that he used to work around back and mobility problems that prevented him squatting and deadlifting heavy with a barbell (Wood and Gerard, 2017).



Since then, this kind of bar has typically used a hexagon shape rather than a diamond, which allows a bit more space inside the bar. The very latest design replaces one of the sides of the hexagon with counterweights, making access to the loaded bar easier and allowing easier storage.



Hex bars come in a range of sizes and vary in weight from 25kg to as much as 35kg. What they all have in common are handles that are at ninety degrees to the collars that the plates are loaded on. That means that the bar is gripped with a neutral grip rather than the pronated (overhand) or supinated (underhand) grips that are used with a barbell. This is the fundamental difference that changes the way that many exercises are performed.

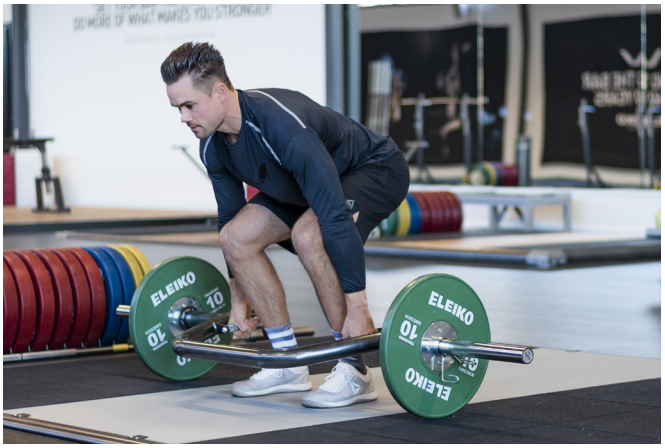
HEX BAR DEADLIFT

The exercise that is most commonly associated with the hex bar is the deadlift. This is often considered an easier version of the movement, and it is true that beginners usually find it more straightforward and experienced lifters can use more weight with it than with a barbell. However, don't dismiss it as only for those who can't perform a barbell deadlift – as we will see, there is evidence that for some purposes, a hex bar may be a better option.

DIFFERENCES FROM BARBELL DEADLIFTS

It is apparent from comparing a conventional deadlift and a hex bar deadlift that the torso will usually be more upright when using a hex bar. This is supported by studies (Swinton et al., 2000) and makes sense – holding the bar with handles to the side means that the centre of mass of the bar is not as far forward as it would be when using a barbell. Instead of bending so much at the hips, the hex-bar deadlifter bends their knees more. A sumo-style barbell deadlift has a more similar torso position but comes with more mobility requirements. Staying more upright and keeping the centre of mass further back means that the moment arms (levers) of the resulting system are shortened. This creates lower loads at the lumbar spine, hips and ankles. On the other hand, it has been shown that loading at the knees is higher because of the greater flexion there (Swinton et al., 2000). It, therefore, makes sense that muscle activation differs when performing deadlifts with a straight bar and a hex bar (Camara et al., 2016). In general, the hex bar version puts more focus on anterior (front) muscles of the legs, especially the quadriceps. The barbell deadlift causes more activation in the posterior (back) of the legs, especially the hamstrings. The barbell version also causes greater activation in the erector spinae muscles of the back, which have to work isometrically to maintain position.

HEX BAR START POSITION



BARBELL DEADLIFT START POSITION

The neutral grip of a hex bar deadlift removes a common dilemma faced by those using heavy deadlifts: grip choice. Grip strength can be the limiting factor for many, especially when using a double-overhand grip. Mixed grip helps but introduces additional injury risk (notably of a torn biceps on the supinated grip side). Straps solve the problem but then lead to almost no grip development. Grip will usually not be an issue in a hex bar deadlift, and static holds can be used if more grip work is desirable.These differences together mean that typically higher loads can be lifted using a hex bar than with a barbell (Lake et al., 2017) and the same loads can be moved more quickly (Camara et al., 2016), meaning that higher power is being produced.

USING THE HEX BAR DEADLIFT

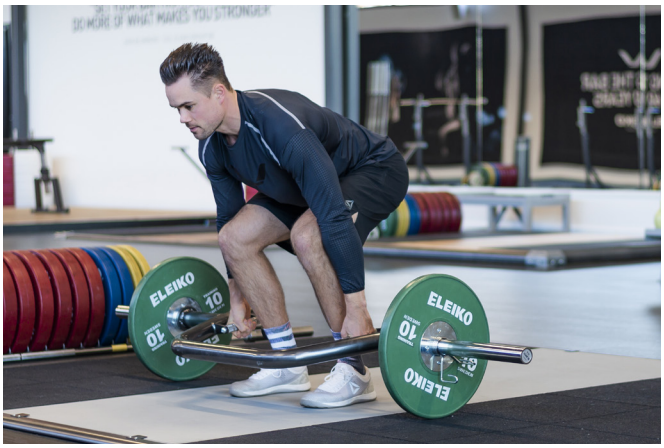
While barbell deadlifts are clearly a requirement for powerlifters and are an important exercise for general back and leg strength development, it is worth considering the hex bar deadlift for at least some deadlift work. Athletes in sports where power development is paramount may get more benefit from the hex bar deadlift as they will be able to move equivalent loads more quickly than they would with a barbell.

If a client has existing back issues or does not have the required mobility to get into a good start position for conventional or sumo barbell deadlift, the hex bar can provide a good way for them to do heavy lifting work. This is especially true if a back injury prevents squatting – the ability to precisely control the range of motion of the hex bar deadlift (by raising the plates on blocks) means that it can be a valuable tool during rehab. Hex bar deadlifts can also be useful as part of a standard program for more experienced lifters, to reduce the load on the back when it is fatigued from other exercises such as conventional deadlifts.

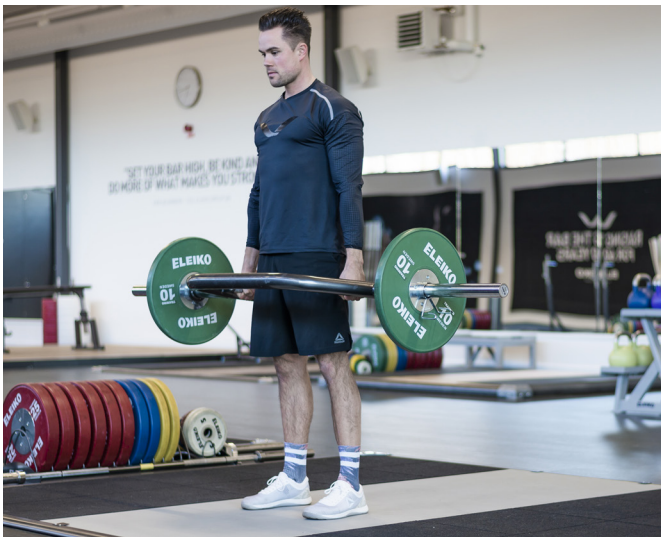
COACHING THE HEX BAR DEADLIFT

The fundamentals of a hex bar deadlift are not very different from a conventional deadlift. At the start, the feet should be positioned so that the axis of the bar runs over midfoot, the back should be locked tight in a neutral position and hands should grip the middle of the handles.

START POSITION



FINISH POSITION



The biggest mistake that beginners make is to use an off-centre grip – that will lead to rotation of the bar either forwards or backwards. The technique for lifting the bar is similar to that of a sumo deadlift – most of the movement is completed with knee extension, so your client should push the floor through their feet until their knees are fully extended. Then, they should just need a small amount of hip extension to reach vertical.

As with other deadlifts, ensure your client lowers the bar under control – the eccentric part of the lift is valuable and maintaining control reduces injury risk. Almost everyone can deadlift more weight with a hex bar than with a barbell – a ten percent increase to one rep maximum or even more is not unusual. However, just because more weight can be lifted, does not mean you have to programme that way. As with all new movements, it makes sense to increase the weight used over time rather than max out immediately. It may be more valuable to use the same weight but enable your client to move more quickly or perform more reps.

OTHER USES FOR HEX BARS

While the deadlift accounts for the majority of work you will see people doing with a hex bar, you are missing out on a lot of value if you are not using it for other things as well. Some of the movement we will look at here are useful versions of exercises that usually use a barbell – you can them use to avoid back fatigue or just to add variety to your programming. The first one we will look at has evidence that it actually works better than with a barbell.

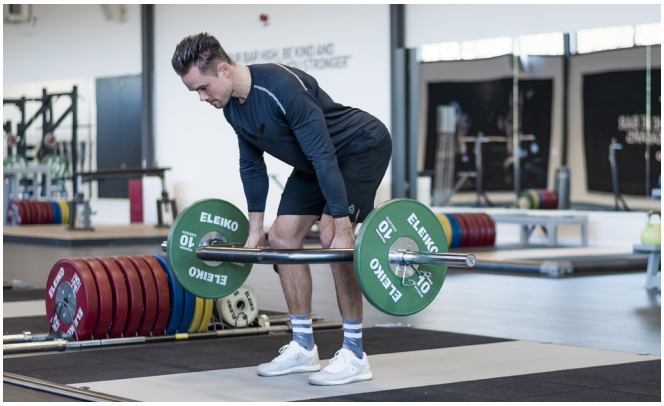
ROMANIAN DEADLIFT

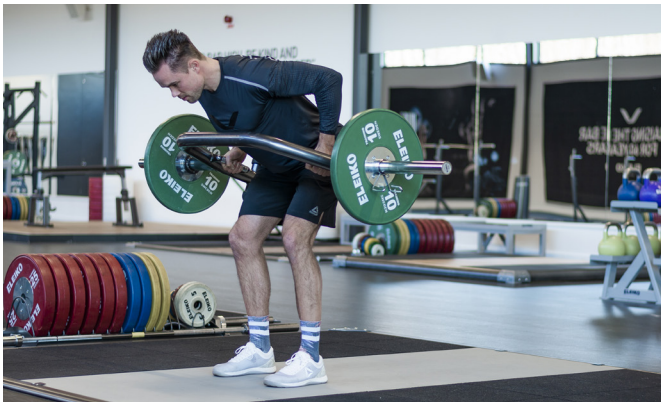
Some people have anthropometry that makes standard Romanian deadlifts awkward – they struggle to get the bar around their knees while working their back and hamstrings correctly. A hex bar removes that problem while also making grip easier without needing straps.

"Athletes in sports where power development is paramount may get more benefit from the hex bar deadlift..."

BENT OVER ROW

As with the Romanian deadlift, many people can get into a better position for bent over rows with a hex bar than they would be able to manage with a barbell.

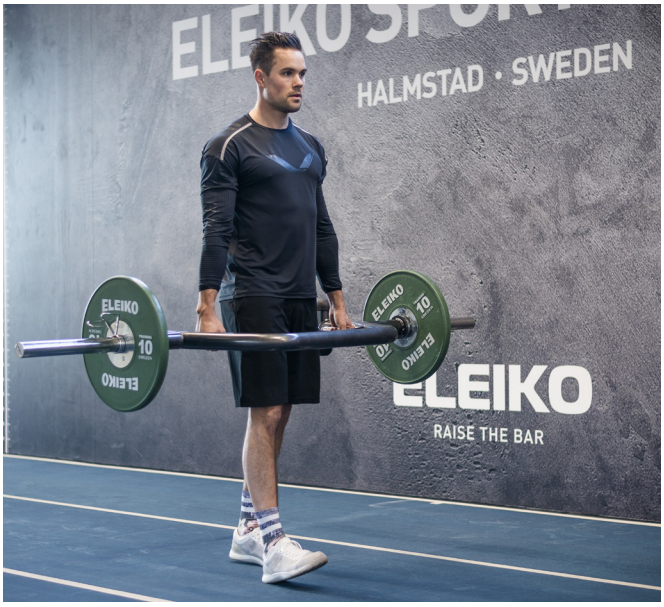




For many people, using a hex bar will also enable a greater range of motion for bent over rows.

FARMER'S WALK

If you don't have access to dedicated farmer's walk equipment, a hex bar provides a way to do them that is much more convenient than lifting heavy dumbbells from the floor. Loading can also be more precisely controlled.

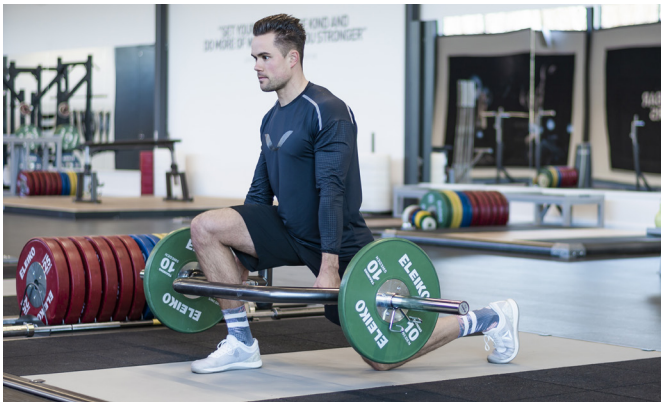


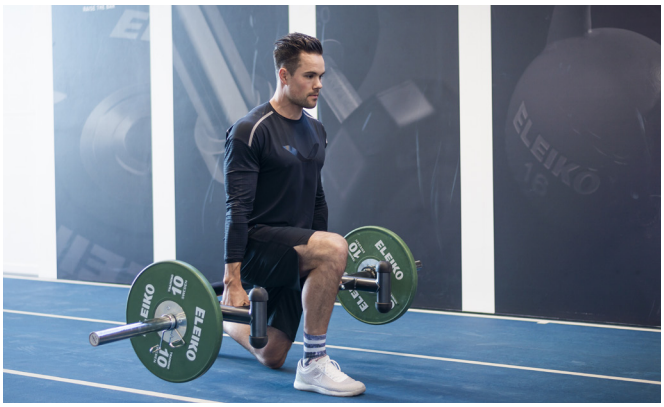
SHRUGS

While the inventor of the original trap bar denies that its original purpose was for shrugs, it can be useful for those who want to load the trapezius muscles with a substantial weight. As with other hex bar variations, the neutral grip can be more comfortable for many people. Usually, the hex bar will be placed in a rack for shrugs to avoid needing to lift it all the way from the floor for each set, but lighter sets could be done from the floor.

UNILATERAL LEG WORK

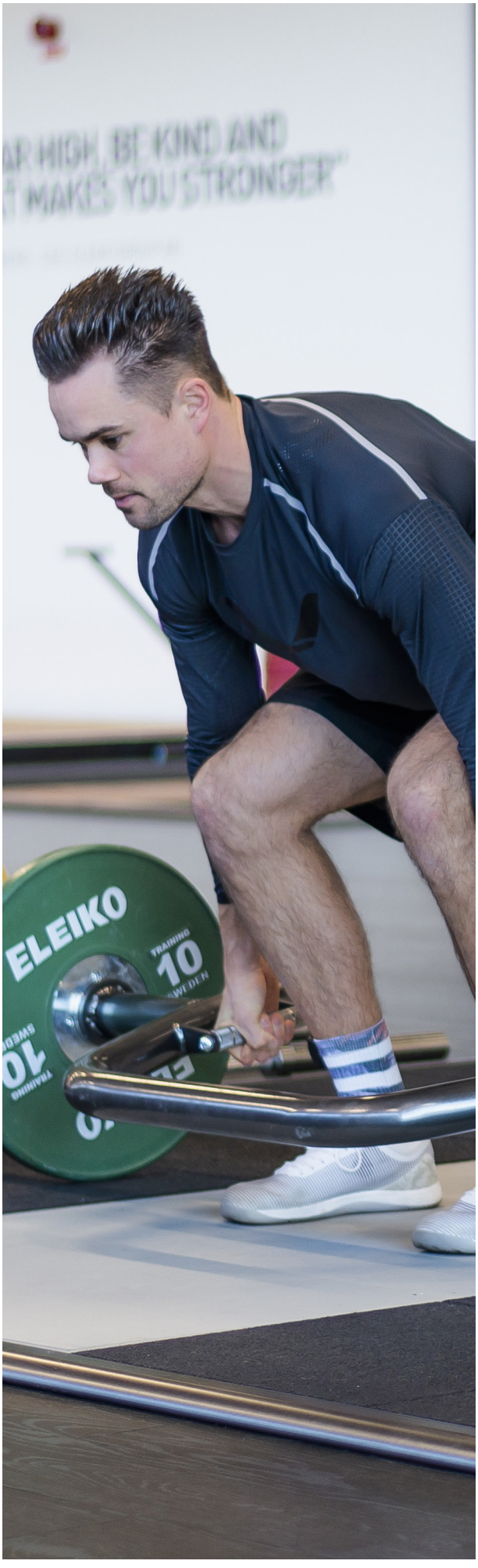
A significant advantage of the hex bar over the barbell for unilateral work – anything where your client will be working each leg individually – is stability. The low position (compared to barbell on shoulders) and neutral grip (compared to barbell at hips) makes it easier to maintain balance through exercises such as lunges, single-leg deadlifts. One great unilateral leg exercise that is often overlooked is just to hold a heavy hex bar and shift the load from one foot to the other, a bit like walking on the spot. This is often done using a belt squat machine but a hex bar works very well, with straps for grip if required.





GRIP WORK

Although the hex bar generally challenges the grip less than a barbell, it can actually be an excellent tool for working on grip strength. Static holds with a neutral grip create less load – and thus fatigue – on the back than using a barbell.



SUMMARY

In this paper, we have seen that the hex bar is a versatile piece of equipment that enables some useful variations of barbell movements.

The main things to remember are:

- The biomechanical and muscle activation differences in the deadlift mean that hex bar deadlifts may be a more valuable exercise for some clients
- There is evidence that weighted jumps may be best done using a hex bar
- Other barbell exercises are also changed by the use of a hex bar, meaning that they are worth considering
- A hex bar can provide a substitute for specialist strongman equipment such as log press or farmers walk apparatus

You should now have some ideas about how you could use a hex bar with your clients and explain to them the differences from using a standard barbell.

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