

DVRT Restoration: Lunging Patterns

When people think of foundational movement patterns that have a BIG impact on movement quality, most will speak of squats, deadlifts, and possibly drills like the turkish get-up. However, the biggest “bang for your buck” movement very well could be the lunge.

The lunge possesses qualities that make it such a powerful movement pattern it only makes sense that its lack of priority in many fitness and performance programs stems from not having a systematic means of building success in the pattern. Providing you a systematic approach to the lunge will allow you have any level of individual benefit from the movement, but also help identify what movement compensations are preventing proper movement skills from being developed.

What does the lunge provide us? These are just some of the powerful aspects of the lunge....

Why Lunge? [Watch HERE](#)

- Front plane stability*
- Lower leg strengthening and stability*
- Hip mobility/stability/strength*
- Foot and ground interaction*
- Powerful hip extension training*
- Horizontal as well as vertical force production and absorption*

Are Lunges Only for Mobility?

These reasons alone should make lunging a point of emphasis for any good functional fitness program. However, we realize some skepticism may surround why the priority of lunging versus other more popular patterns and exercises such as squats and deadlifts.

A 1999 study by scientists at the University of Wisconsin, La Crosse, set out to find different levels of muscle activation by some common lower body exercises. In this study, both squats and lunges were included. The results?

The researchers studied glute max, glute medius, and hamstrings. All three are important in hip stability and power production. According to the EMG activity of 12 trained individuals there were three interesting findings;

“For the gluteus maximus, squats elicited significantly more muscle activation than both the horizontal and vertical leg presses, but showed no significant differences in EMG activity when compared to the other exercises.” (yes including lunges)

“Results for the gluteus medius showed that quadruped hip extensions, step- ups and lunges generated significantly more muscle activation than squats.(1)”

Hmm, isolated study? How about a study where researchers from the University of Arkansas and Eastern Kentucky University looked at muscle activity of squats compared to lunges. The study looked at female college athletes and found, *“ that there was no greater muscle activation when performing any of the squat depths to that of the body weight lunge. It was revealed that the body weight lunge did indeed produce more activation in the majority of all muscles analyzed when compared to the three squat depths. (2)”*

Why mention the body weight lunge? The real shock here is that the lunge was compared to a weighted squat! That says a lot about the power lunges do possess.

Direction and Construction of Lunge

One of the primary benefits of the lunge is the fact that it has not only vertical forces being applied to the body, but requires horizontal force as well. This concept of simultaneous forces acting upon and being used by the body most closely resemble what actually happens in walking, jogging, running, and most human motions.

The direction of the lunge is not only a means of adding variety, but progression as well. How we choose and what direction we choose to lunge will impact the intensity of the exercise. That is why it is key to understand how we construct the lunge and the reason that many fail to successfully implement the lunge is largely due to a tendency to neglect this valuable concept.

Success in the lunge is going to be based on a few key DVRT Restoration Concepts.....

-Direction of movement

-Tension of kinetic chains

-Driving through the ground

Two of these three concepts have been well discussed in previous modules, but are important to remind the coach and client of them as we build more complex patterns. The way our body creates stability and strength in more challenging environments will be by utilizing these ideas. So, how do we apply them to construction the lunge?

Kneeling/Half Kneeling Arc Press Outs: [Watch HERE](#)

For many clients, the lunge will start in a position that has little actual lunging occurring. That is because many clients need to learn the three base DVRT Restoration concepts discussed above in a more stable environment. That is why we will begin the series not by lunging but by having the individual own the kneeling and half kneeling postures.

Both kneeling and half kneeling have elements of instability to them that will reinforce some key concepts. Most notably will be the need to constantly drive into the ground to create strength and control from the ground up. Far too many people “fall” into the lunge causing them to have to overcome too many forces to redirect their strength back up. This results in excessive leaning, lack of stability, and inability to properly come to a standing position.

The Press Out becomes another vital component of construction the lunge. As in our DVRT Level 1 program, we discuss that great squats are not just lower body, but a total body effort. That means creating core tension and using the kinetic chains to develop more efficient movement. The lunge is no different in this case.

Using the Press Out helps us use the kinetic chains to develop a stable platform from the core and upper body so that the hips and lower body function more efficiently. Where many fail in the lunge, as in the squat, is that they rely solely on the lower body and don't realize the impact upon total body integration in creating more successful movement. The Press Out will teach how to develop proper tension and body integration.



As we move to more complex patterns, the opportunities to see compensation rise quite a bit. Even though kneeling and half kneeling postures don't seem nearly as complex as actual lunging, they can still be a challenging position for many. The body will always seek to find stability when feeling unstable. This means directed cuing of driving through the ball of feet and fully extending the hips will be very important in layering progression. One of the most common compensations in the kneeling position will have to do with the feet!

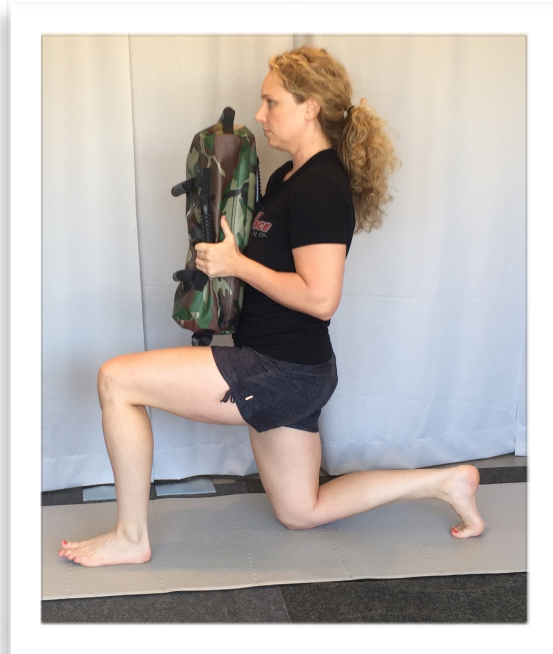


You will find people try to create a tripod to help their stability. You want heels pointing neutral.

Sitting back on the heels or flexing at the hips is not considered good form.



Once the kneeling position is well established, we don't need to try to increase load. While possible, due to the leverage of the Ultimate Sandbag there are better alternatives to stress the body and build the lunge pattern. Instead of focusing on load, we are going to alter body position. Moving from kneeling to half kneeling is used as a progression to provide more instability or when we identify an imbalance between the two sides of the body. We can also use the half kneeling position as a means to start layering the lunge pattern.



As in the kneeling posture, we are looking to maintain proper drive into the ground, correct angles in the hips and legs, as well as how to create tension through the core and lats. The half kneeling posture begins to expose our client to more frontal plane forces that often are a huge limiting factor in proper lunging. We will start to learn to control the frontal plane in the progression that follow this Press Out Series.

The kneeling and half kneeling Press Out may be many people's introduction to the lunge. It is important to not just perform the exercise, but be very intentional about the movement lessons being taught. This will help in much faster progression and greater success as we move through the lunge progressions. Over time, this may become part of a dynamic warm-up, or even a directed "core series" workout.

Kneeling Press Out Arc Press: [Watch HERE](#)

Before we move body positions, one of the big advantages of using the Ultimate Sandbag is the ability to change the direction of the load. Changing direction of our press out can help introduce new variables of movement. By not going straight out, but an from one side of the body to the other will also bring about anti-rotational forces. Remember, this is not meant to be a pressing strength drill, but teaching the client how to develop force from the ground up and link the various segments together.



Band Resisted Press Outs: [Watch HERE](#)

The reality of a good coach and program is having problem solving strategies in place even when good exercises and progressions don't work according to plan. Whether it is a client not "understanding" the movement, or needing an extra layer to get to the next level of movement, having additional movement strategies is helpful.

The band resisted Press Out is a good example. Using the band resistance often can be a necessary and helpful tool in helping the client truly understand how to brace the core and use the lat. The feedback and resistance of the band uses the movement rather than external cuing as a means of learning. It can be far more helpful for many individuals and may be the answer on how to get the client successfully to the next level in the series.

When using such a strategy it is important to note that the goal is not to overwhelm the client with the resistance causing faulty patterning. Rather, using JUST enough resistance to gain

feedback and proper understanding of the goal of full body integration. Again we will want to work from kneeling to half kneeling positions as a means of progression in the series.

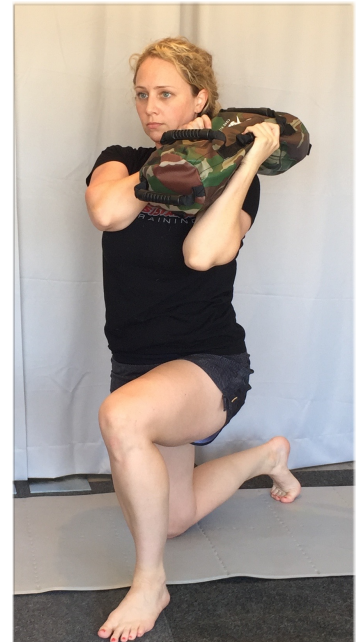




Kneeling and Half Kneeling Arc Press: [Watch HERE](#)

The Arc Press is a really great means of having almost a moving side plank. Due to the Ultimate Sandbag moving from side to side it will cause the body to constantly change how it finds and build stability. Altering time under tension will be our primary means of challenging the movement then eventually body position and load.

Using the Arc Press goes a long ways in building a lunge as it allows us the means to challenge the frontal plane both through a body position (i.e. half kneeling) and loading pattern (Arc Press). The combination of progressing to using both challenges the lifter to maintain stability while producing force. Two elements that most neglect in properly building the lunge pattern. The lunge is unique in that it is the combination of producing and resisting force that makes it so important in restoring and building functional movement.



Half Kneeling Around the World: [Watch HERE](#)

Before we get into the actual stepping phase of the lunge or the stance phase of the split squat, we want to take every opportunity we can to make sure we help the client prepare for the greater demands of the lunge. This means in really understanding how to both use their plank to resist sagittal plane forces as well as a reflexive core to control the frontal plane forces.

This gives us the opportunity to use an exercise that crossover both lunging and lift/chop patterns. The half kneeling Around the World may appear like a shoulder mobility drill (which it has the ability to do), but it is more focused upon getting core and hip integration. The movement of the Ultimate Sandbag around the body is to make the trunk reflexively resist the changing forces it applies.

During a plank we don't have any movement, which isn't the end goal. Our real goal with planking is to learn how to brace the core during various challenges. The half kneeling Around the World requires the client to resist extension, rotation, and lateral flexion. Basically a plank in 360 degrees with being flexible to contract and relax at the right moment. Much more challenging than most THINK it will be to perform. This element will help the client learn how to manage the more dynamic nature of the lunge.





Pallof Press Progressions: [Watch HERE](#)

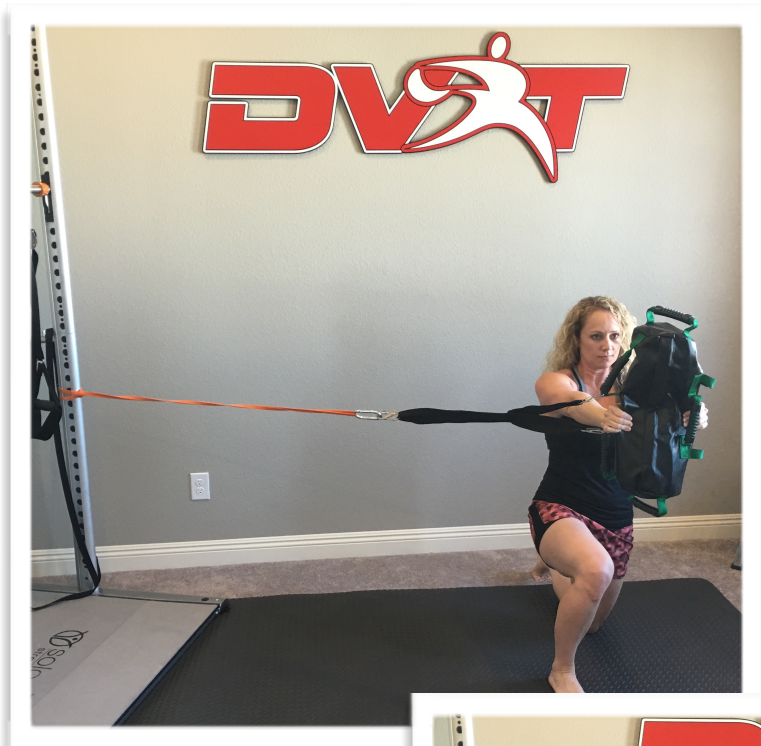
It might seem unnecessary to add even another layer before we actually lunge. However, when you consider the great struggle so many coaches and clients have with lunging, having additional strategies to fix specific problems can never be a bad thing. That does also lead us to the point that you don't have to follow every progression step by step. You can leap progressions IF you think you and/or your client has demonstrated the ability to perform the movement at a higher level.

The point in having these strategies is when you do encounter a need to help a client improve in a specific quality you have the means to address those issues. Especially when it comes to building strength to resist forces! So many times we only spend considerable time learning to express force, but the reality is that most injuries occur in one's inability to resist forces. This ends up being a quality that is rarely trained effectively.

We have already discussed the need for frontal plane stability, but there is also transverse plane forces occurring during a lunge. While at a lower level, the transverse plane does play a role and the ability to manage the resistance of frontal and transverse plane forces is a big part of successful lunging. That is why we are going to use some Pallof Press concepts to reinforce these ideas.

The Pallof Press is not unique to DVRT as it was created by physical therapist, John Pallof. His goal was to provide an anti-rotational exercise to the body and originally has been done with bands and cables. So, what does the Ultimate Sandbag bring to the Pallof Press that bands and cables do not?

For one, both hands are equally engaged. Grip has the ability to stimulate the kinetic chain just as the feet do. In most cable and band versions, only one hand can really be dominant. Using both allows us to integrate more of the core and upper body in learning how to resist motion. That also means due to the grip that we can create better engagement of the core and lats which will have a direct tie in to how we use the hips and lower body. One simple set of the exercise and you will feel the immediate difference!



We can manipulate the Pallof Press by not only going from kneeling to half kneeling, but also by changing what leg is forward. For many, having the same side leg forward is going to be an easier starting point than the opposing foot.



Building the Stepping Pattern of the Lunge: [Watch HERE](#)

The Shoulder and Suitcase positions represent more obvious lateral instability positional challenges. Why would these progressions be AFTER the Half Kneeling Arc Press? Now we are going to add motion of the body as well so this allows us to more easily adapt to such a jump in complexity and intensity.

The Shoulder position tends to be easier for people to not only bear more load, but to balance compared to the suitcase. This COULD be due to the fact that the Shoulder position allows more of the frame of the body to absorb the force. This doesn't mean we are relaxed in the Shoulder position, in fact, we want to create tension with the underarm to help provide stability.

We will begin with the knee of the leg on the SAME side of the Ultimate Sandbag resting on the ground. The individual is going to drive themselves upwards to the standing position. We can either dump the weight and reposition, or have them slowly drop back down to the same knee.

The progression would be to not switch shoulders, but to switch the legs. This will alter leverage and additionally change the cross pattern we see in the first series. While one may feel one is easier than the other, the real key is to identify WHICH leg is more difficult. By identifying this difference we can make smaller changes to movement that will challenge your client, but also look to see what is happening to their patterning.



Changing from the Shoulder to Suitcase position follows our important concept of altering holding position of load to either increase or decrease intensity. As mentioned previously, one might assume the Shoulder is more difficult, but due to the Ultimate Sandbag not resting on the body at all and the potential forward and backward motion of the load this is often seen as a progression.

Once again we want to identify which arm to leg is more challenging, but we will begin with the same side leg dropping back as the arm holding the Ultimate Sandbag. Be aware of “packing” the shoulder to provide additional stability.



This is contralateral loading of the Suitcase position in regards to the stance



This is ipsilateral loading of the Suitcase position.

Lunge to Arc Press: Half Kneeling/Hover: [Watch HERE](#)

The progressions of fighting both frontal plane forces and rotation have been in a manner where the load and leverage have been rather static. Using the lunge to Arc Press we will see things change as the body will have to deal with a load moving upon the body in a more unstable position.

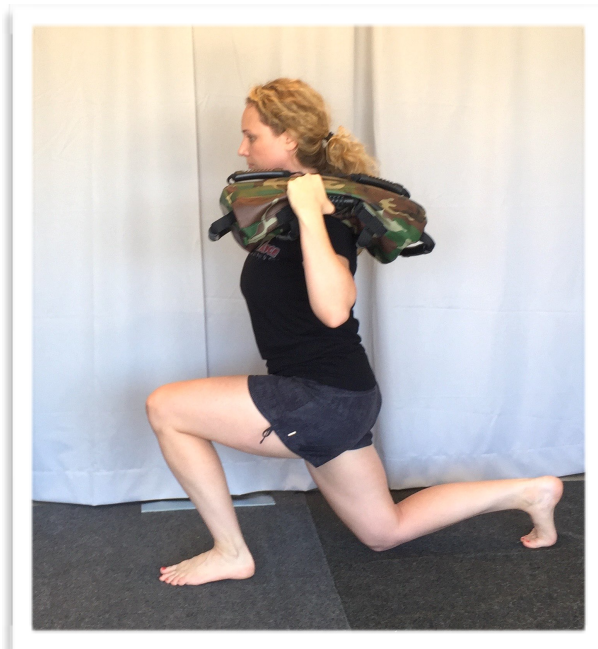
The Arc Press not only has the center of mass of the individual rise to a higher degree than any of the other holding positions, but the lateral movement throws frontal plane stability into high gear. This is a great example of a more complex way of both producing force and learning to resist force, especially for the core and hip structure. This is an important drill to optimize prior to moving onto the MAX Lunge progressions.

Half kneeling may be introduced in early stages, while the hovering position will be our ideal point for many clients with some training.

The easiest means in which to introduce lateral stability to more functional positions is to get people in their stable base of standing. Since walking is such a foundational pattern that challenges lateral stability, we are going to look to challenge this movement.

Like any other movement pattern though, if the walk becomes severely compromised or the posture/alignment can't be maintained the stress is too great to the body.

We will work from most stable position to more unstable holding and body loads.





Pulse MAX Lunge: [Watch HERE](#)

One of the key and most overlooked aspect of cross patterning and functional fitness is moving people from the ground in a systematic manner. We want to parallel many of the drills that laid a foundation in this program to create more challenging exercises and not just harder, but smarter programs.

The MAX Lunge is a great example of building the idea of cross patterning in both load and body position in a more functional pattern. In doing so, drills like the MAX Lunge can appear complex for many coaches. The reality is they just need the right progressions to ensure client success.

Drills like the Pulse MAX Lunge help clients learn the fundamentals of the movement in an easier to manage environment.



Problem Solving the Lunge-Up Downs: [Watch Here](#)

As much as we try to solve incremental issues with the lunge, the reality is that everyone responds to different movements in their own way. With that said, having a system in place gives us the tools and resources to address someone's specific needs when they arise.

The DVRT Up Down is a great example. Those of you that have taken our Level 1 DVRT course have already seen the Up Down. It is a foundational DVRT exercise that has so many uses and implications for creating better movement. Yet, most still overlook the simplicity of the exercise. Don't mistake for simple for not effective!

Many coaches miss the intent driving drills like Up Downs. For one, how we use the Ultimate Sandbag to help create that core and lat tension to help stabilize the hips. Secondly, how teaching people deceleration strength both removes a great deal of apprehension of the movement and allows us to employ one of the most important qualities of strength training.

Coming UP from the Up Down mimics many aspects of the deadlift as well. A lift everyone loves, but the Up Down gives us an even BIGGER bang for the buck! Starting from hip flexion, moving to hip extension, in a split stance which integrates the other planes of movement, as well as more lower leg and foot interaction. Sounds pretty great, which is why it makes it a

wonderful drill in helping people bridge either split stances or give them the ability to progress to more complex patterns.

The Up Down can be done with a multitude of holding patterns, yet, foundational is beginning in the Front Loaded position. This can allow us to most easily integrate the lats and core by “breaking apart” the Ultimate Sandbag. Such a cue is especially important when coming UP from the bottom position of the Up Down. Using the kinetic chain will allow the client to have a more solid base in which to produce strength and avoid the common lean that happens in many lunging patterns.



The Future of the Lunge

We have said throughout DVRT Restoration that our goal isn't to show you EVERY form of any exercise you can use. It is rather to build a thought process, a problem solving system, to get people moving better! When you understand movement principles and concepts the variations of movements you can create become almost endless.

Lunges have a unique ability to be taken many different forms due to their ability to manipulate direction of movement easily. We want to use all the concepts we have just covered and use them whenever we change an important training variable like direction of movement.

Do you have to go through EVERY step EVERY time you change the lunge? No, but at least you are armed with a system that allows you to go back and examine, "is there a better way getting people to perform the movement?" Your ability to address the specific needs of your clients should be at a higher level. Your ability to address the needs of a larger population of people should be better!

Good teachers and programs teach one how to think, not necessarily what to think. Hopefully you are seeing the patterns in place that empower you to not have a larger toolbox, but tools that allow you to be a better practitioner.



References:

1. Anders, Mark. "Glutes to the Max." ACE 7 (2006).
2. Dwelly, P., Oliver, G. Blair, H., Keeley, D. Hoffman, H, "Improved Muscle Activation in Performing A Body Weight Lunge Compared to the Traditional Back Squat," University of Arkansas, Fayetteville, AR, USA Eastern Kentucky University, Richmond, KY, USA