Why Train the Feet?

During locomotion, the body naturally drives through the big toe as the final point of force transfer, ensuring efficient propulsion and stability. The nervous system is wired to prefer rolling through the big toe, as it provides the most stable and mechanically advantageous path for force application. This occurs due to humans gait orientation, which has selected for our specific myofascial system and the spring like nature of feet. This enhances balance, coordination, and efficiency, allowing for smoother transitions between strides and directional changes.

With every ground contact, the foot undergoes some deformation, but it must efficiently absorb, stabilize, and redirect forces for the next step, or landing, through three key phases. First, it eccentrically absorbs impact and stores energy by deforming slightly. Next, it locks into a isometric contraction, creating a stable platform to resist unwanted movement. Finally, the foot releases the stored energy in the foot and ankle complex, propelling the body for its next ground contact.

The Spring Ankle Torque Device enhances this process by strengthening the isometric phase present in any change of direction, reinforcing the torque and myofascial patterns essential for high-performance movements. By strengthening these positions and joints under maximal and controlled conditions, the device builds resilience, optimizes force transfer, and enhances athletic performance by reinforcing the body's natural preference for driving through the big toe.

The Spring Ankle

A well-developed foot-ankle complex is essential for force absorption and power output, especially in sprinting and agility-based sports. Effective training should engage the entire chain of muscles and structures involved in foot function. The Spring Ankle Torque Device is the ultimate tool for this purpose, offering eight sport-specific positions to enhance strength and responsiveness. By incorporating this training, athletes can develop a strong, reactive foot that improves energy return, boosts speed, increases resilience, and enhances overall movement efficiency.

Key Considerations for Training the Foot and Ankle

- **Hip and Knee Strength Typically Dominate in the Weight Room:** Traditional strength programs emphasize the hip and knee, often neglecting the foot and ankle.
- **The Foot is Typically Lacking Strength:** Weak feet and ankles can limit an athlete's ability to generate and absorb force efficiently.
- **Downregulation as a Rate Limiter:** If the foot and ankle are weak, the body will naturally self-limit output to prevent injury, leading to reduced performance.
- **Proper Function is Essential for Optimal Output:** A well-functioning foot and ankle complex improves force transfer, balance, and injury resilience.
- **Sport is Dynamic:** Athletes face unpredictable movements in competition, so foot and ankle strength must be trained in varied and unpredictable ways.
- **A Strong Foot/Ankle Complex Enhances Performance:** By developing foot strength, athletes improve their ability to cut, sprint, and jump with more power and efficiency.

By implementing foot and ankle training into a program, athletes can improve movement efficiency, prevent injuries, and unlock greater speed and power potential.

Exploring the Power of Spring Ankle Torque Training

In competitive sports, every second counts, and athletes are always seeking ways to improve their performance. One groundbreaking method making waves is the Spring Ankle Torque Position training system, developed by renowned sprint coach Chris Korfist. Known for his work with everyone from junior high athletes to NFL players, Chris has designed this innovative system to enhance speed, power, and overall athletic performance. The Spring Ankle Torque system offers a range of benefits beyond basic speed improvements.

Here’s what makes it a game-changer:

- **Improved Balance and Coordination**: By enhancing sensory feedback from the feet, this training boosts proprioception—the body’s ability to sense its position—helping athletes move with precision.
- **Joint Stability**: Strengthening the muscles and ligaments around the foot and ankle improves stability, which is essential for quick, multidirectional movements and injury prevention.
- **Flexibility and Range of Motion**: The training increases ankle and foot flexibility, allowing for more efficient movements and reduced injury risk.
- **Force Distribution**: Athletes learn to distribute force evenly through their feet, minimizing strain on specific joints and muscles.
- **Enhanced Endurance**: With improved technique, athletes conserve energy, enabling them to perform at peak levels for longer.
- **Speed and Agility**: Better foot mechanics and stability contribute directly to faster, more agile movements.
- **Injury Recovery**: Targeted exercises aid athletes recovering from foot injuries, restoring strength and flexibility safely.

By incorporating Spring Ankle Torque training, athletes can unlock their full potential, making this system a true game-changer in sports.

Understanding the Components of the Spring Ankle Torque Device

Heel Height: Strength in a Variety of Shank Angles

The low heel positions allow you to train strength in deeper ranges and lower shank angles as seen in acceleration and deep change of direction mechanics.The high heel positions are more effective for upright positions and higher shank angles, correlated to top end sprinting and mild change of direction maneuvers. Sport is unpredictable—you will find yourself in deep shank and high shank positions and you must train your athletes to withstand high forces in both positions.

Torque: Preventing Excess Ankle Collapse

Heel torque is crucial for preventing the ankle from collapsing inward or outward upon ground contact. As the foot strikes, heel torque stabilizes the ankle, ensuring proper force absorption and redirection. Without it, excessive inward collapse (eversion) or outward collapse (inversion) can compromise balance and reduce power transfer. How the heel must torque is dependent on how the foot must absorb and produce force.

Foot Angle: Managing Different Foot Strikes

In sport, foot contact position varies with body position, contact surface qualities, and movement goal, dictating how force is absorbed and redirected. An athlete’s ability to change direction depends on managing force across the variety of different foot angles they experience. The slant on the device mimics foot and ankle positions seen in sport, training foot mechanics specific to sport demands. This improves adaptability, ensuring precise, controlled movement in any direction.

Spring Ankle Torque Position One:

Heel Low

Heel Drive Out

Big Toe Low

Spring Ankle Torque Position One Example: Linear Acceleration

Heel Low
A low heel position places the athlete in deeper shank angles, mirroring acceleration mechanics and aggressive change-of-direction maneuvers. This position strengthens the foot and ankle complex to handle high-force deceleration and redirection, preparing athletes for explosive takeoffs from low positions.

Heel Drive Out
Driving the heel outward reinforces proper torque patterns, preventing excessive eversion of the ankle at foot strike. This is critical in acceleration, where mismanaged torque can lead to instability or energy loss. By training this outward drive, athletes develop better force absorption and redirection, maintaining efficiency in sport-specific movements.

Big Toe Low

At foot strike, the big toe starts in a pronated position, absorbing and redirecting force through the medial forefoot. This allows the athlete to efficiently transition from absorbing impact to propelling forward, ensuring a strong, stable push-off. The ability to reverse force from this pronated position is essential for linear acceleration, where rolling through the big toe at toe-off maximizes propulsion. Training this position strengthens the foot's ability to handle force transitions, reducing injury risk and improving sprint performance.

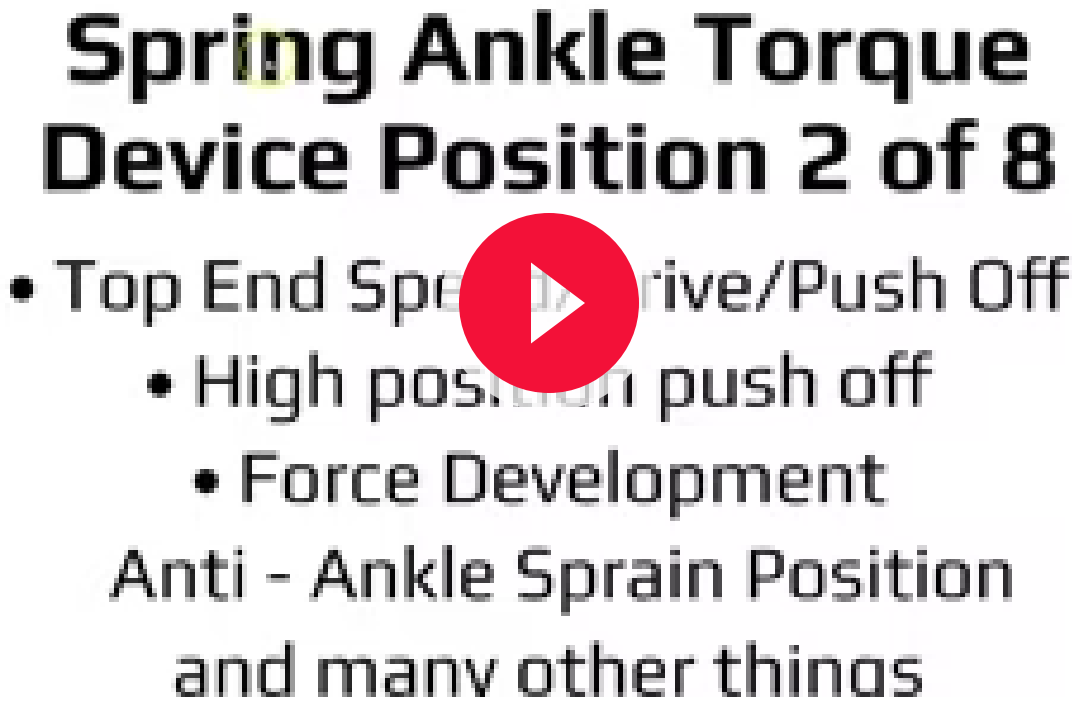
These are the exact mechanics that **Spring Ankle Torque Position 1** is meant for, among many other movements, as it optimizes energy transfer, stability, and force production during sprinting.

Spring Ankle Torque Position Two:

Heel High

Heel Torque Out

Big Toe Low



Spring Ankle Torque Position Two Example: Max Velocity Sprinting

Heel High

A high heel position aligns with the upright posture seen in max velocity sprinting, where ground contact times are shorter, and force application is rapid. This position strengthens the foot and ankle to withstand the high-impact forces of top-end speed, reinforcing stiffness for efficient energy return.

Heel Torque Out

Outward heel torque prevents excessive eversion at foot strike during top end sprinting, ensuring proper force absorption and redirection. In max velocity sprinting, this stability is crucial for maintaining elastic energy transfer and preventing energy leaks that slow the athlete down. Proper torque mechanics also minimize excessive rotation up the kinetic chain, allowing for smoother, more efficient strides.

Big Toe Low

At foot strike, big toe is low in a pronated position and directs force through the forefoot, ensuring a strong, stable push-off. This optimizes propulsion by allowing the athlete to roll efficiently through the big toe at toe-off, sustaining forward momentum. Properly loading the foot in max velocity sprinting minimizes braking forces, maximizes force application, and enhances overall sprint efficiency.

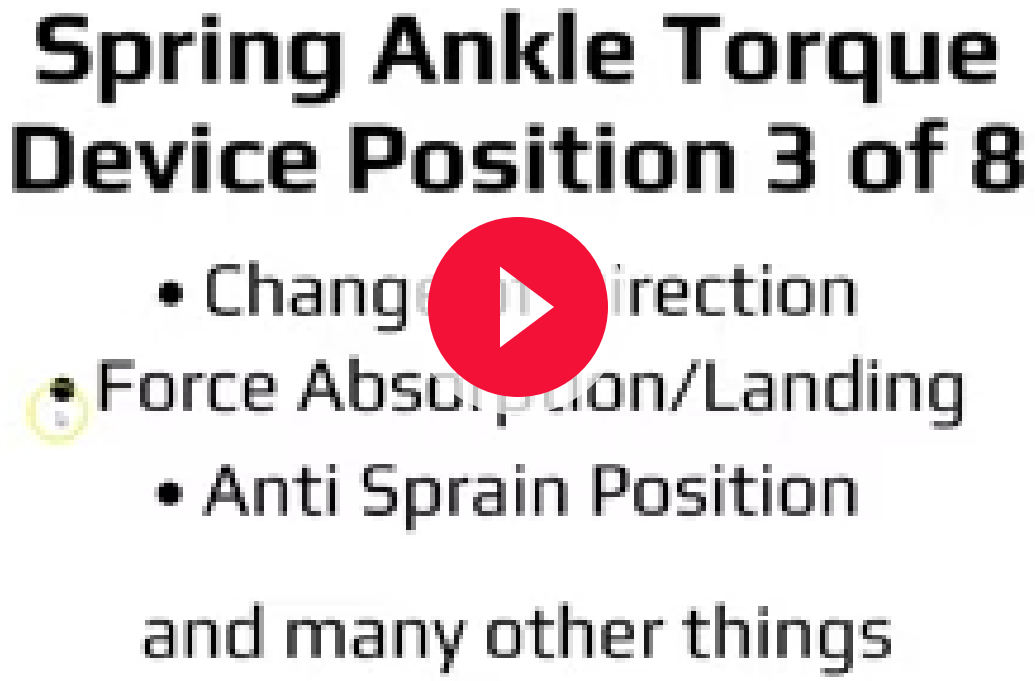
Spring Ankle Torque Position Two develops the exact mechanics needed for max velocity sprinting, reinforcing stiffness, stability, and efficient energy transfer to maintain top speed.

Spring Ankle Torque Position Three:

Heel Low

Heel Torque In

Big Toe High



Spring Ankle Torque Position Three: Example – Linear Deceleration

Heel Low:

During deceleration, a low heel position allows the athlete to absorb impact forces more efficiently by placing the foot in deeper shank and torso angles. This positioning helps the athlete manage the high forces generated when slowing down by engaging the lower leg and core muscles. The deeper angles ensure that the body remains stable and in alignment while controlling the rate of speed reduction.

Heel Torque In:

As the foot makes contact with the ground during deceleration, the inward heel torque stabilizes the ankle and prevents the foot from excessive inversion. This inward torque helps manage the forces generated from the decelerating movement, preventing ankle collapse and ensuring the foot stays aligned. It also allows for proper force absorption through the medial side of the foot, enhancing control and balance during the slowing phase.

Big Toe High:

The big toe is elevated during deceleration ground contact, placing the foot in a supinated position. As the athlete decelerates, the high big toe ensures that the forces are transferred properly for a smooth transition into the next movement phase, whether that be a change of direction or re-acceleration.

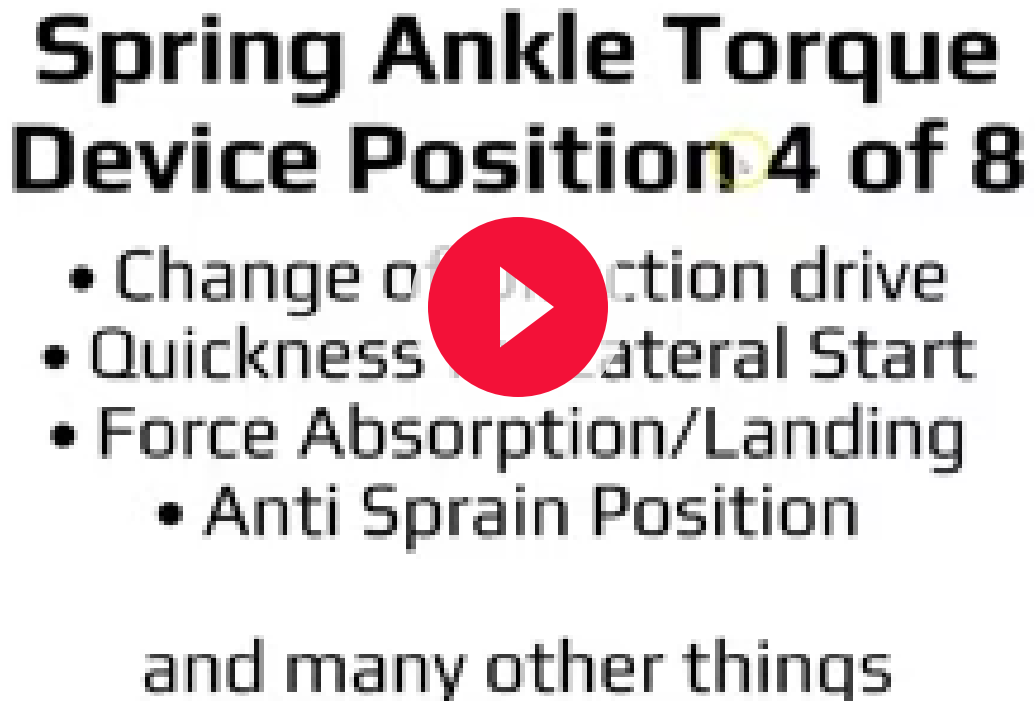
Spring Ankle Torque Position Three is critical for deceleration, as it emphasizes controlled force absorption, ankle stability, and alignment. The low heel, inward heel torque, and high big toe work together to stabilize the body during rapid slowing movements, reducing the risk of injury and ensuring a smooth, controlled transition.

Spring Ankle Torque Position Four:

Heel High

Heel Torque In

Big Toe High



Spring Ankle Torque Position Four: Example – High Velocity Backpedaling

Heel High:

During backpedaling, the athlete maintains a high heel position to keep the torso and shank in an upright posture. This high heel helps to prevent the body from leaning too far forward, which is essential for maintaining control and balance while moving backward. By keeping the heel elevated, the athlete can stay aligned, ensuring a smoother and more efficient backward movement, while also reducing strain on the lower back and knees.

Heel Torque In:

As the foot contacts the ground during backpedaling, the heel torques inward, stabilizing the ankle and preventing excessive inversion. This inward torque helps maintain proper foot alignment and keeps the body in a controlled position, especially as the foot absorbs the forces of deceleration. The torque in ensures that the foot remains stable, protecting the ankle from collapsing and optimizing energy transfer through the push-off phase.

Big Toe High:

With the big toe elevated in a slightly supinated position, this position allows for controlled force absorption to continue backwards movement The high big toe ensures that the force is efficiently transferred through the medial side of the foot during the push-off.

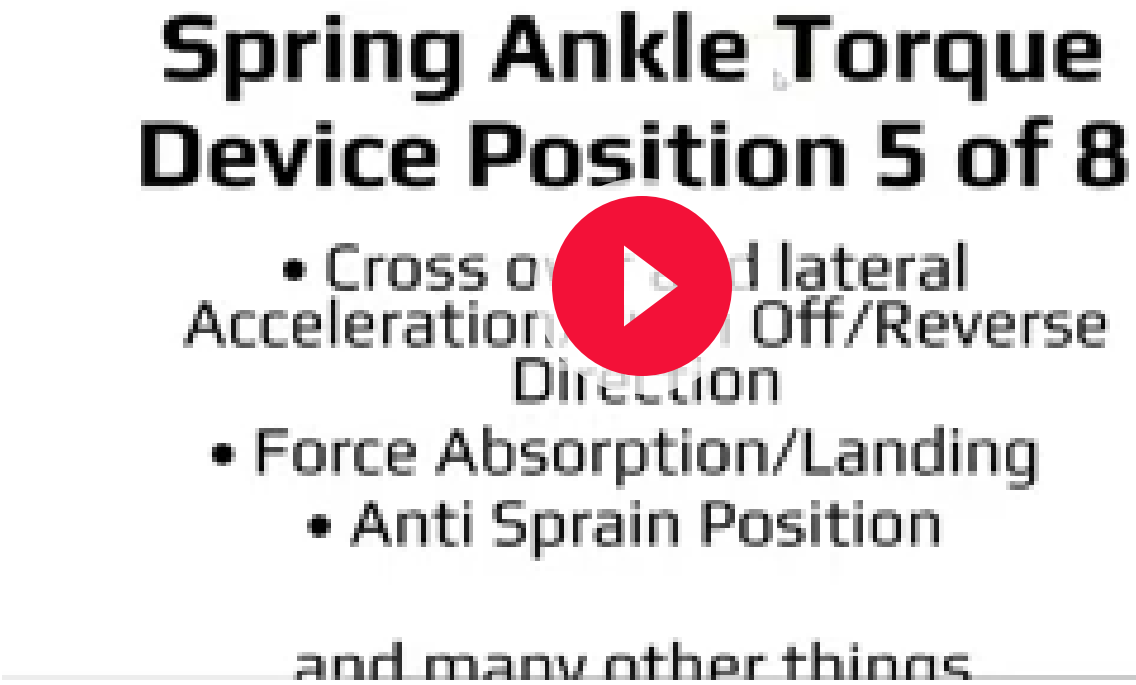
Spring Ankle Torque Position Four is vital during backpedaling, as it focuses on maintaining balance and stability while moving in reverse. The combination of a high heel, inward torque, and a high big toe ensures proper foot alignment, force absorption, and efficient propulsion, enabling the athlete to maintain control and reduce injury risk during rapid backward movements.

Spring Ankle Torque Position Five:

Heel High

Heel Torque In

Big Toe Low



Spring Ankle Torque Position Five: Example – Right Curve Sprint (Right Foot)

Heel High:

In a right curve sprint, the high heel position helps the athlete maintain a tall, upright posture, which is crucial for keeping forward momentum through the curve. This position allows the body to stay aligned and minimizes excessive lean, ensuring the athlete can maintain their speed and position while navigating the curve.

Heel Torque In:

Heel torque inward stabilizes the foot by preventing excessive eversion and controlling the forces acting on the ankle. This inward torque helps absorb and redirect the lateral forces generated during the curve, allowing for more efficient energy transfer and better foot control. It helps keep the foot in a strong position to push off effectively.

Big Toe Low:

With the big toe low, the foot enters a pronated position at foot strike, ensuring proper force absorption. This pronation allows the foot to adapt to the surface and conditions of the curve, while directing force through the medial forefoot for a stable push-off. As the athlete moves through the curve, this position helps control the foot's trajectory and maximizes propulsion as they roll through the big toe.

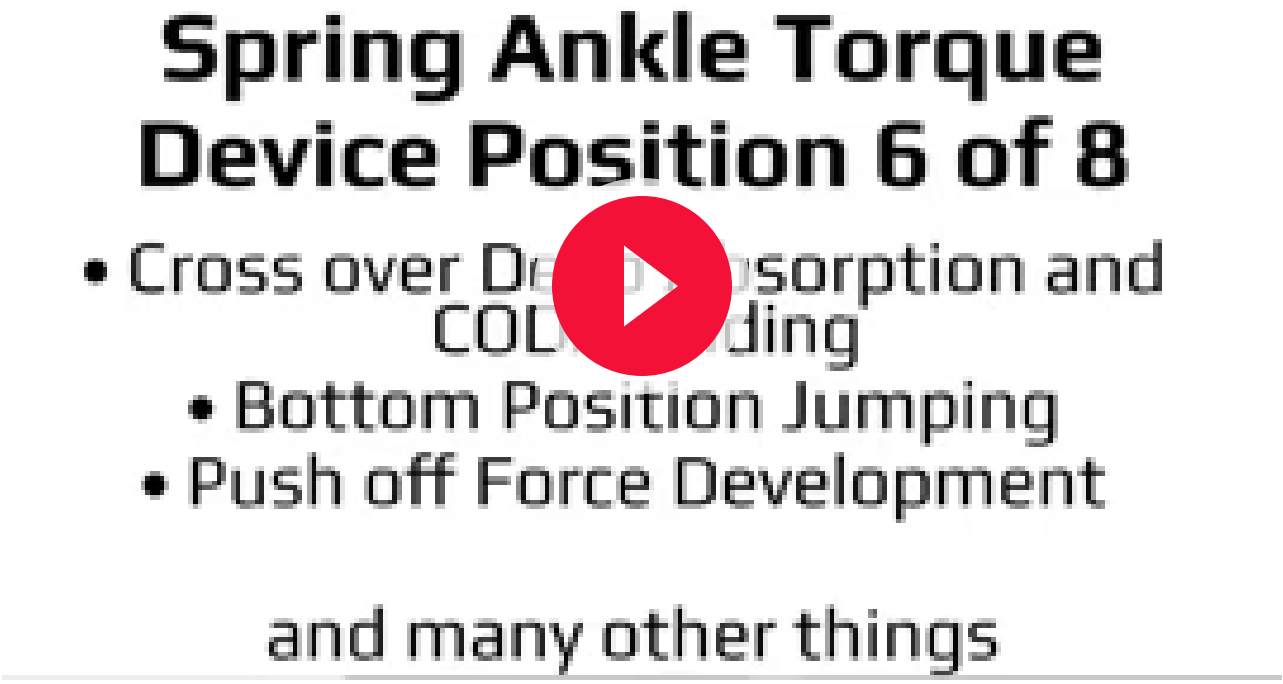
This Spring Ankle Torque Position Five mechanic enables the athlete to maintain balance, power, and stability through the right curve, enhancing speed and control in the sprint.

Spring Ankle Torque Position Six:

Heel Low

Heel Torque In

Big Toe Low



Spring Ankle Torque Position Six: Example – Left to Right Change of Direction (Right Foot)

Heel Low:

A low heel position places the foot in a deep, aggressive angle, mimicking the mechanics of rapid deceleration and explosive acceleration. This position enhances the athlete's ability to absorb force during the initial ground contact while keeping the foot in a stable position to redirect movement quickly. It sets the foundation for an efficient push-off as the athlete shifts direction.

Heel Torque In:

Heel torque inward stabilizes the foot and ankle, preventing excessive eversion and ensuring proper force redirection. As the athlete shifts from left to right, this inward torque creates a stable platform to push off with maximum force, ensuring control during the change of direction. It helps the foot resist unwanted movement and allows for a powerful and stable pivot.

Big Toe Low:

In this position, the big toe remains low, entering a pronated stance upon ground contact. This allows the foot to absorb impact effectively and ensures the forces are directed through the medial forefoot. The athlete can then efficiently roll through the big toe at toe-off, maximizing propulsion and maintaining momentum as they complete the direction change.

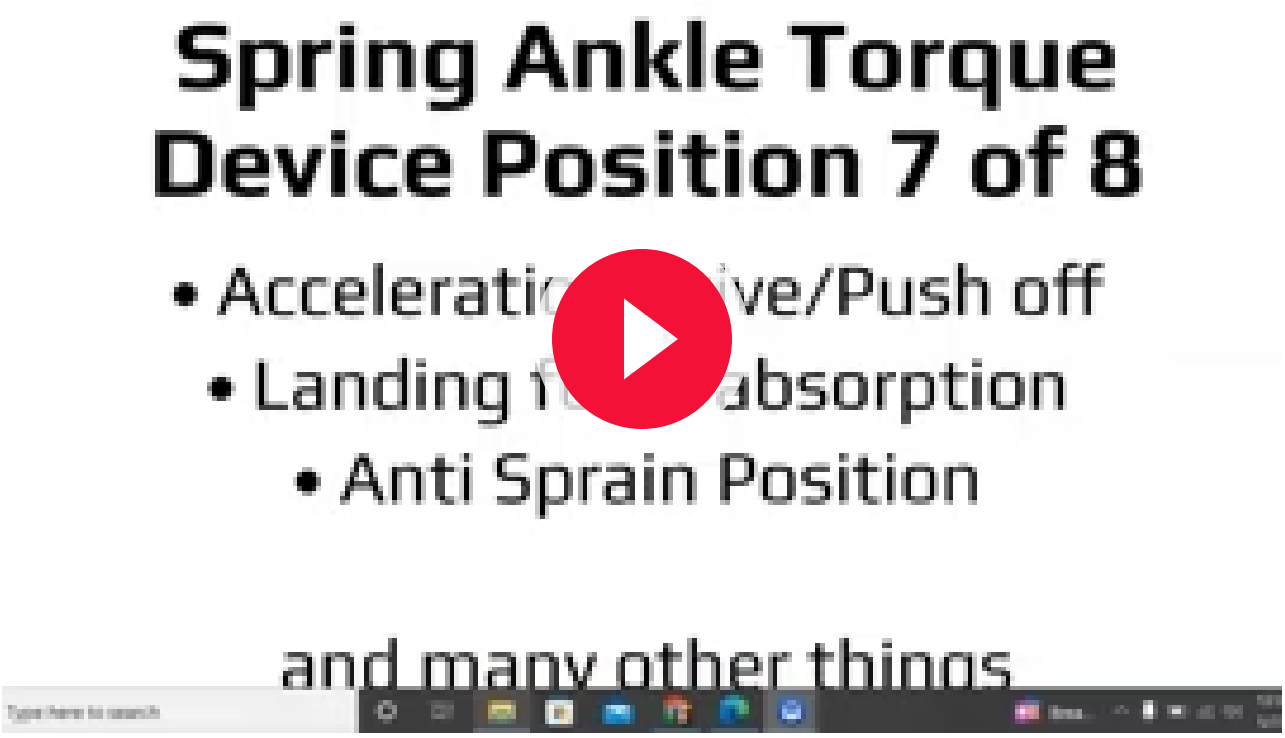
This Spring Ankle Torque Position Six mechanic is essential for rapid, controlled changes of direction, ensuring that the athlete maintains stability and power throughout the movement while minimizing injury risk.

Spring Ankle Torque Position Seven:

Heel High

Heel Torque Out

Big Toe High



Spring Ankle Torque Position Seven: Example – Right Curve Sprint (Left Foot)

Heel High:

In a right curve sprint with the left foot, the athlete maintains a high heel position to support an upright torso and shank alignment. This high heel helps the athlete stay in an efficient, balanced posture, crucial for maintaining speed and control while navigating the curve. By keeping the heel elevated, the athlete avoids excessive forward lean, which can compromise sprinting form and reduce velocity.

Heel Torque Out:

As the left foot contacts the ground during the right curve sprint, the heel torques outward to stabilize the ankle and prevent inversion. The outward torque supports the proper alignment of the foot and ensures that forces are absorbed efficiently without losing energy. This torque out stabilizes the foot, allowing for optimal force transfer and minimizing any loss of balance as the athlete pushes off for the next stride.

Big Toe High:

When the left foot strikes the ground during the curve sprint, the big toe is elevated in a supinated position. As the foot rolls through the push-off phase, the elevated big toe allows for a strong, stable release of energy, helping to maximize propulsion and maintain the athlete’s momentum through the curve.

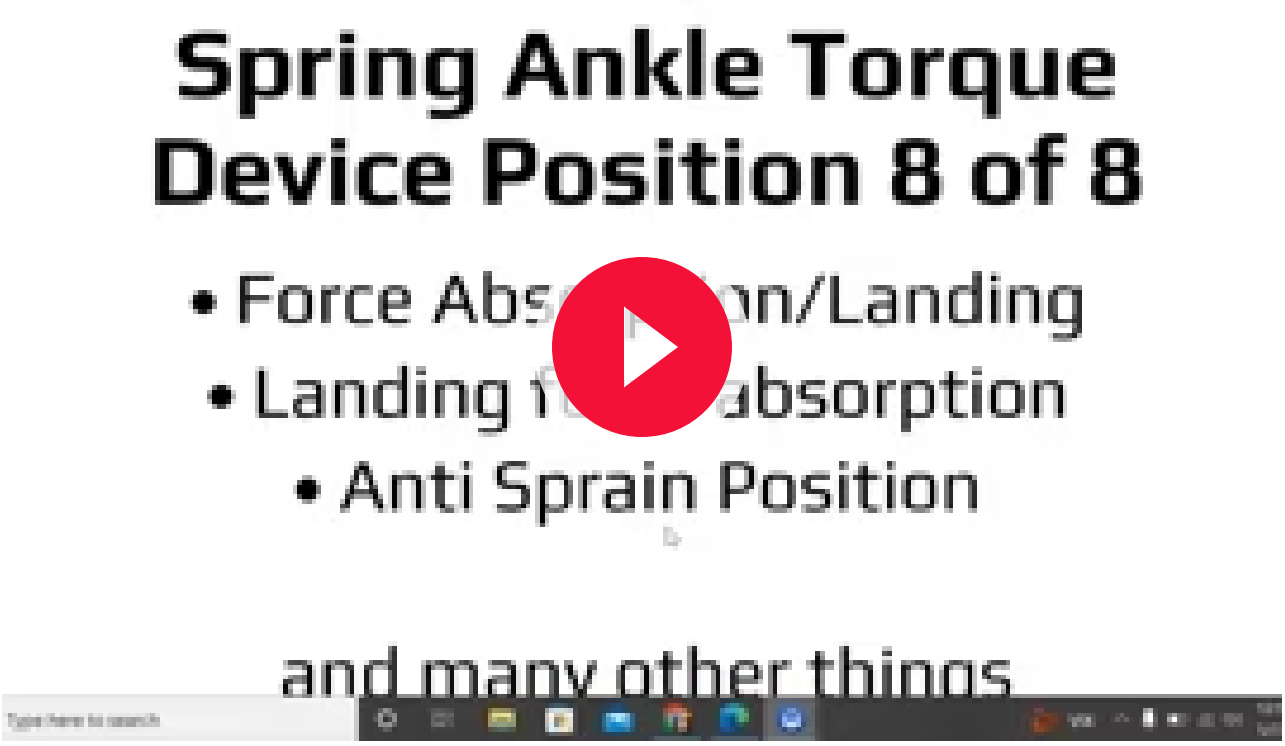
Spring Ankle Torque Position Seven is essential for a right curve sprint with the left foot, as it focuses on maintaining proper alignment and controlling force transfer through the supinated foot. The combination of a high heel, torque out, and a high big toe enables the athlete to sustain stability, efficiently absorb impact, and maximize propulsion while maintaining speed through the curve.

Spring Ankle Torque Position Eight:

Heel Low

Torque Out

Big Toe High



Spring Ankle Torque Position Eight: Example – Left to Right Change of Direction (Left Foot)

Heel Low:

In a left-to-right change of direction, the left foot typically strikes the ground with a low heel position. This lower heel places the body in a deeper shank angle, allowing for effective absorption of the forces during the deceleration phase and facilitating a quick transition to accelerate in the new direction. The low heel position provides the necessary stability and control to pivot and shift direction rapidly.

Torque Out:

When the left foot contacts the ground and begins to redirect the body to the right, the heel torque outward stabilizes the foot, preventing excessive inversion. The outward torque ensures the foot maintains proper alignment, preventing the ankle from rolling inward and optimizing the transfer of force to the new direction. This action reinforces a stable, powerful push-off to propel the body in the desired direction.

Big Toe High:

As the left foot strikes the ground, the big toe is in a relatively high, supinated position. This position allows the athlete to efficiently load the outer portion of the foot while the big toe is in a high position. The foot rolls through the toe to accelerate into the new direction, maximizing propulsion.

Spring Ankle Torque Position Eight is crucial for lateral cuts and rapid changes of direction, like the left-to-right shift in this example. The low heel, torque outward, and high big toe combination ensures the athlete maintains stability while efficiently redirecting force and propelling into the new direction.