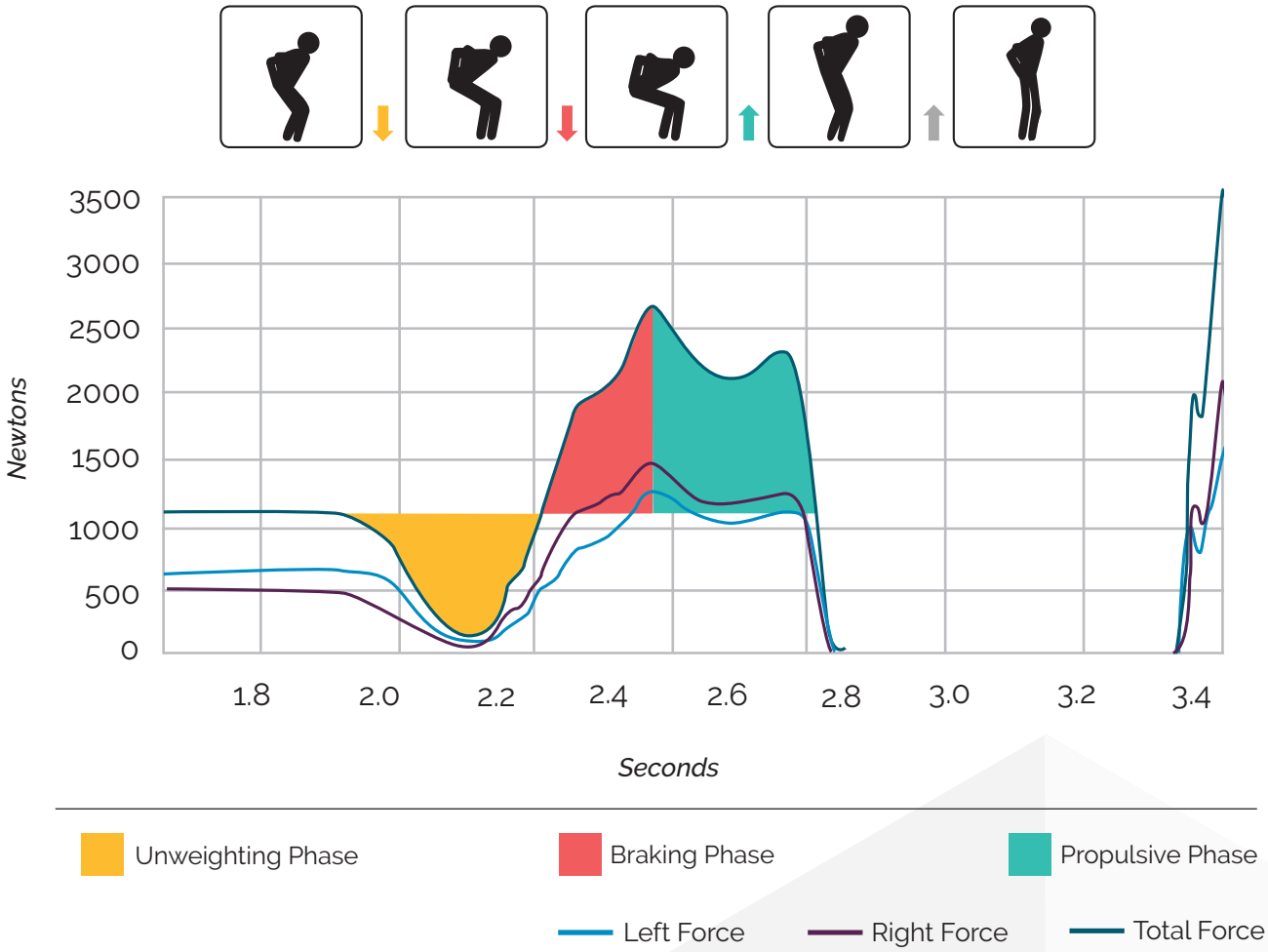
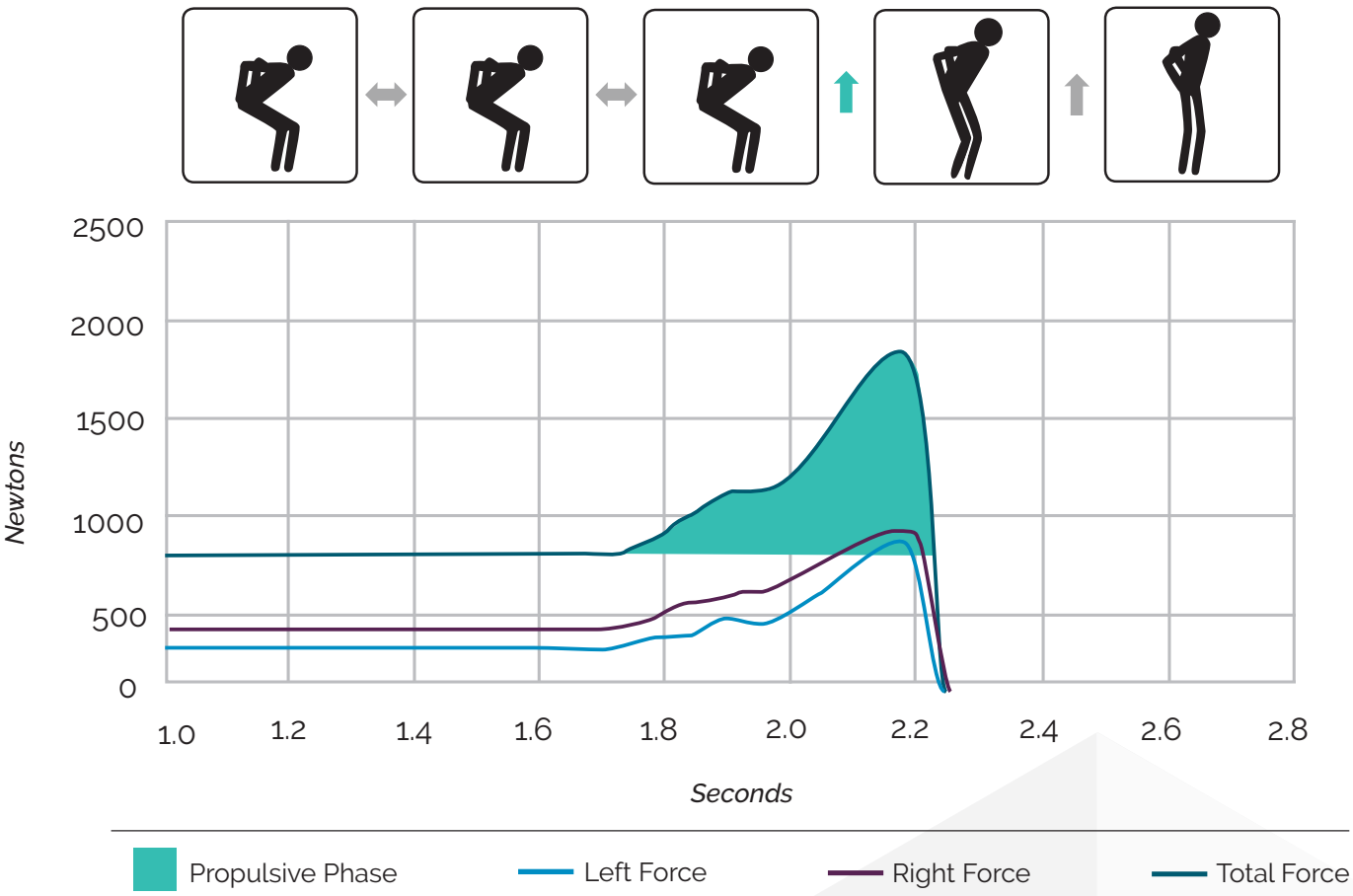
Countermovement Jump



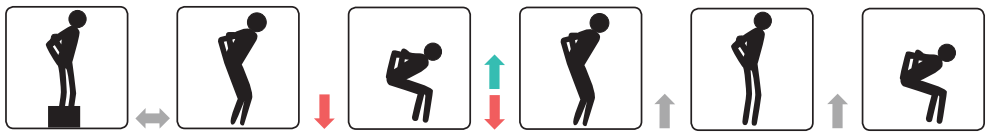
The Countermovement Jump is an extremely useful test of athletic performance. As a movement that includes both a stretch (eccentric) and shortening (concentric) phase, the CMJ test is useful for detecting both athletic potential and for identifying areas of weakness an athlete may possess. In the figure above you can see the three key phases that lead up to take off ***unweighting*** (athlete is falling with negative velocity that is descending), ***braking*** (athlete is still falling, but with ascending negative velocity), and ***propulsive***, where the athlete's velocity is positive. Each phase can be viewed individually but should also be considered as an individual component of the overall movement.

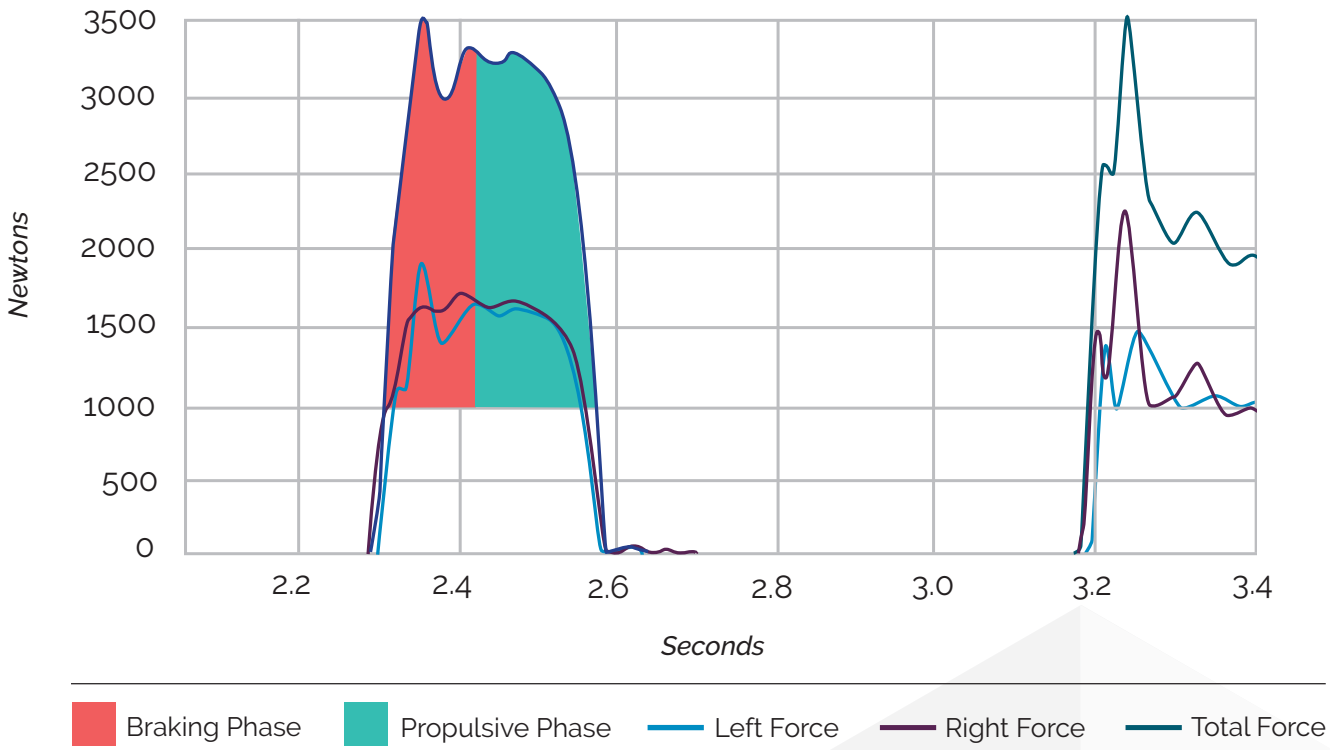
Squat Jump



The Squat Jump is a dynamic measurement of concentric ability. The athlete starts in a static squat position and explodes straight up with no countermovement. This enables the measurement and evaluation of the athlete's concentric ability without any eccentric pre load. There is only one key phase leading up to takeoff the propulsive phase. Leading up to takeoff, the athlete never achieves negative velocity, as the focus of this test is to activate pre-stretched muscles.

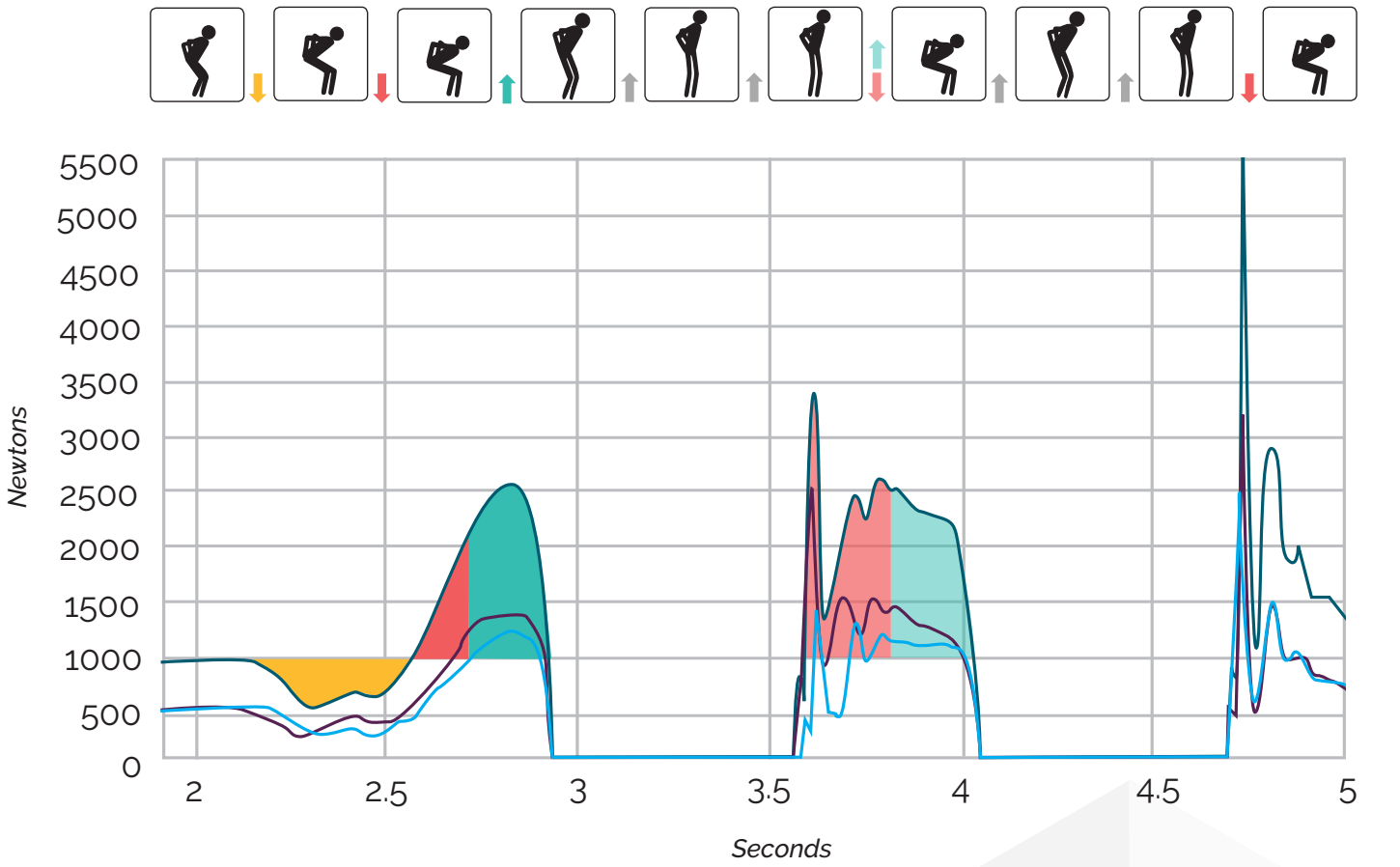
Drop Jump





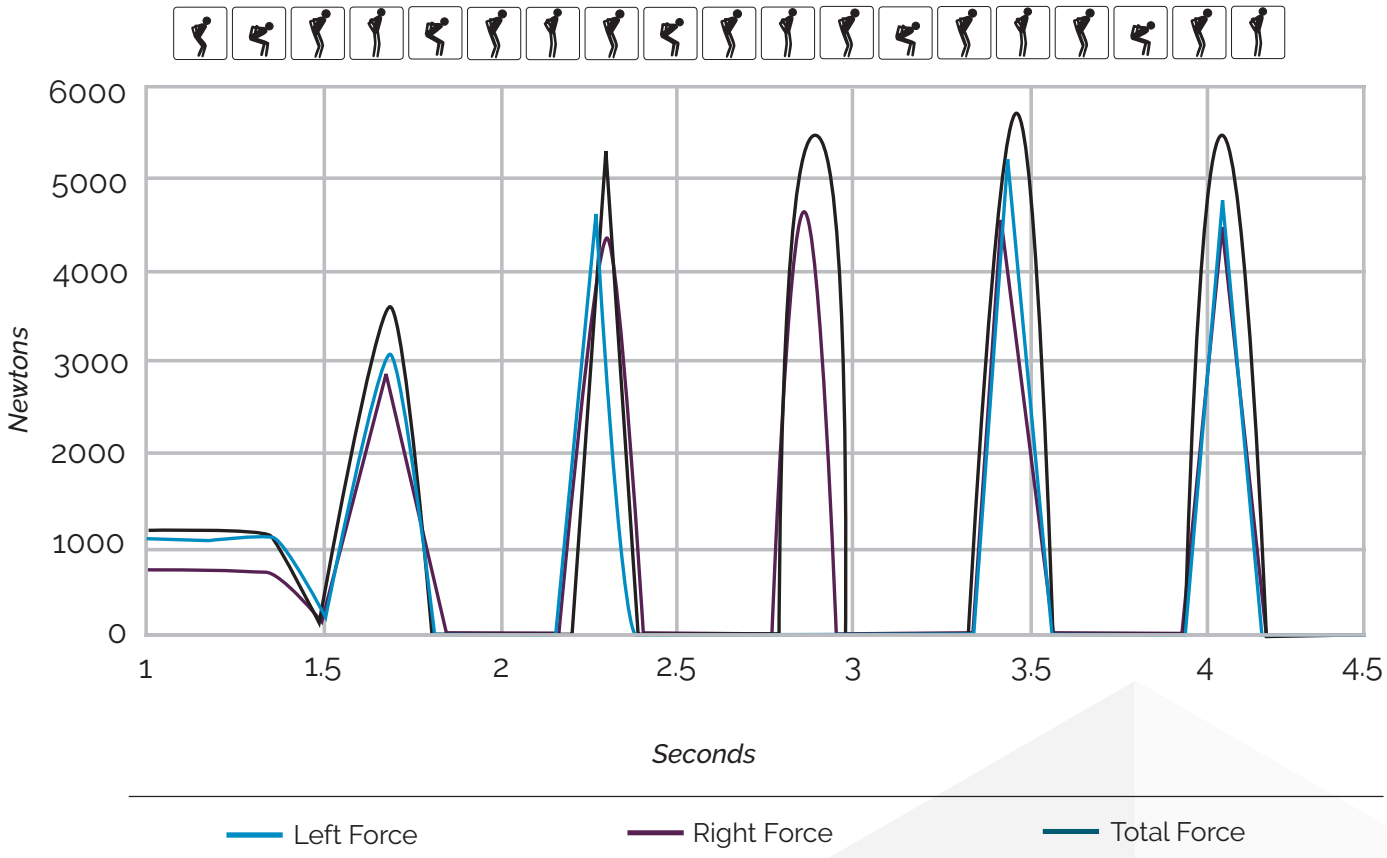
The Drop Jump is a very aggressive eccentric concentric action that can be used to evaluate and determine the quickness and reactivity of an athlete. The Drop Jump is a fast stretch shortening cycle movement the athlete drops onto the plates and immediately enters the braking phase and rapidly transitions into the propulsive phase. The key phases observed in a drop jump test are braking and propulsive. While each phase can be viewed independently, it is important to view the relationship between the braking and propulsive phases, as well as the time it takes for the athlete to absorb the landing and transition back into the air. One key area where differences in results can be achieved is the height from which the athlete drops, which often must be known before the test is started. The drop jump is also a test where an athlete's knowledge and experience of the test will have an impact on the resultant outputs i.e.—training for this test is possible, which is both good and bad depending on the reason for testing.

Countermovement Rebound Jump



The Countermovement Rebound Jump test combines element of the standard CMJ test with that of the Drop Jump test. The test consists of a standard CMJ followed by a rebound the resultant graphs exhibits characteristics very similar to that of the Drop Jump and consists of a 5 key phases: Unweighting , Braking (1) 1), Propulsive (1) 1), Braking (2) 2), and Propulsive (2) in that specific order. Not only does the test take into account the slow stretch shortening cycle of the CMJ, but it also provides a look at an athlete's fast stretch shortening action from a self selected drop height as the drop height is determined from the height of the initial CMJ (determined by impulse). The CMJ Rebound, therefore, is a useful dynamic movement for evaluating an athlete's reactivity and overall jump performance.

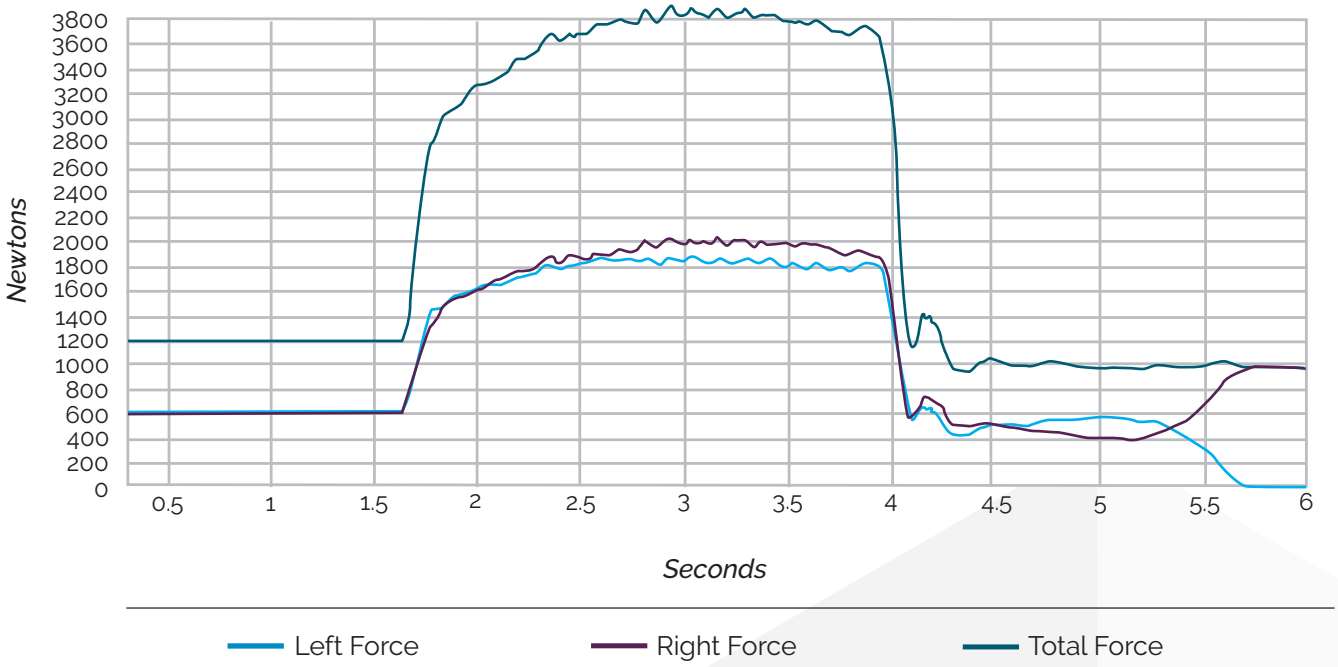
Multi-Rebound Test



The Multi-Rebound Test offers a look into an athlete's reactivity and fatigue. The test consists of a quiet phase followed by a quick CMJ, and then repeated rebounds until the test is completed. The object of the test is to jump as high as possible, as quickly as possible, and as many times as possible through the test's duration.

Each rebound jump throughout the test consists of a braking and propulsive phase, and key metrics for the Multi-Rebound test are RSI (Flight Time/Contact Time) and Jump Height, and averages for the all of the rebounds. These metrics are descriptive of an athlete's ability to sustain quick and explosive movements over a short period of time.

Isometric Mid-Thigh Pull



The Isometric Mid Thigh Pull is a test of isometric strength. The test consists of a quiet phase followed by a static pull on a bar that is fixed between the knees and the hips. Athletes should adopt an athletic posture with bent knees, and the bar should be adjusted for optimal positioning relative to the athlete's preferred stance. Key metrics for Isometric tests include force at various points during the test, the Rate of Force Development during specific sections during the test (i.e. 0 50ms, 50 100ms, etc.), Peak Force during the test, and specific temporal parameters. The IMTP examines how effectively and athlete produces force, both in terms of quickness and overall force production.