

Between session reliability of countermovement jump testing in academy rugby league environments:
Considerations for league wide profiling in applied locations and minimum detectable change thresholds for longitudinal observations.

Supporting information 1. Countermovement jump variable definitions.

Category	Variable	Definition
Output	Jump Height	The change in system centre of mass position between the instant of take-off and peak positive vertical displacement of the system centre of mass, calculated using the vertical velocity of the system centre of mass at the instant of take-off and the equations of uniformly accelerated motion.
	Jump Momentum	The vertical momentum of the system centre of mass at the instant of take off
	mRSI	The jump height calculated using the vertical velocity of the system centre of mass at the instant of take-off divided by the total time taken from the initiation of movement to the instant of takeoff (i.e. Time to Take-Off).
	Peak Velocity	The peak instantaneous vertical velocity of the system centre of mass.
Strategy	Positive Net Impulse	The total vertical impulse above bodyweight applied to the system centre of mass during the braking phase and the propulsion phase.
	Countermovement Depth	The peak negative vertical displacement of the system centre of mass.
	Stiffness	The vertical ground reaction force applied to the system centre of mass at the instant of peak negative vertical displacement of the system centre of mass divided by the peak negative vertical displacement of the system centre of mass
Braking	Time to Take-off	The total time take from the initiation of movement to the instant of take-off
	Average Braking Force	The average vertical ground reaction force applied to the system centre of mass during the braking phase.
	Avg. Braking Power	The average mechanical power applied to the system centre of mass during the braking phase.
	Avg. Braking Velocity	The average vertical velocity of the system of mass during the braking phase.
	Avg. Relative Braking Force	The average vertical ground reaction force applied to the system centre of mass during the braking phase as a percentage of system weight.
	Avg. Relative Braking Power	The average mechanical power applied to the system centre of mass during the braking phase relative to system mass.
	Braking Net Impulse	The net vertical impulse applied to the system centre of mass during the braking phase.
	Braking Phase	The time taken to complete the braking phase.
	Braking Rate of Force Development	The average slope of the vertical ground reaction force applied to the system centre of mass during the braking phase.
	Peak Braking Force	The peak instantaneous vertical ground reaction force applied to the system centre of mass during the braking phase.
	Peak Braking Power	The peak negative instantaneous mechanical power applied to the system centre of mass during the braking phase.
	Peak Braking Velocity	The peak negative instantaneous vertical velocity of the system centre of mass during the braking phase.
	Peak Relative Braking Force	The peak instantaneous vertical ground reaction force applied to the system centre of mass during the braking phase as a percentage of system weight.
	Peak Relative Braking Power	The peak negative instantaneous mechanical power applied to the system centre of mass during the braking phase relative to system mass.
Transfer	Force at Minimum Displacement	The vertical ground reaction force applied to the system centre of mass at the point of the peak negative vertical displacement of the system centre of mass.
	Relative Force at Min Displacement	The vertical ground reaction force applied to the system center of mass at the point of the peak negative vertical displacement of the system center of mass as a percentage of system weight.
	Impulse Ratio	The ratio between the net vertical impulse applied to the system centre of mass at the point of the peak negative vertical displacement of the system centre of mass.

Category	Variable	Definition
Propulsive	Avg. Propulsive Force	The average vertical ground reaction force applied to the system centre of mass during the propulsion phase.
	Avg. Propulsive Power	The average mechanical power applied to the system centre of mass during the propulsion phase.
	Avg. Propulsive Velocity	The average vertical velocity of the system centre of mass during the propulsion phase.
	Avg. Relative Propulsive Force	The average vertical ground reaction force applied to the system centre of mass during the propulsion phase as a percentage of system weight.
	Avg. Relative Propulsive Power	The average mechanical power applied to the system centre of mass during the propulsion phase relative to system mass.
	Peak Propulsive Force	The peak instantaneous vertical ground reaction force applied to the system centre of mass during the propulsion phase.
	Peak Propulsive Power	The peak instantaneous mechanical power applied to the system centre of mass during the propulsion phase.
	Peak Relative Propulsive Force	The peak instantaneous vertical ground reaction force applied to the system centre of mass during the propulsion phase as a percentage of system weight.
	Peak Relative Propulsive Power	The peak instantaneous mechanical power applied to the system centre of mass during the propulsion phase relative to system mass.
	Propulsive Net Impulse	The net vertical impulse applied to the system centre of mass during the propulsion phase.
	Propulsive Phase	The time taken to complete the propulsion phase.
Landing	Peak Landing Force	The peak instantaneous vertical ground reaction force applied to the system centre of mass during the landing phase.
	Relative Peak Landing Force	The peak instantaneous vertical ground reaction force applied to the system centre of mass during the landing phase as a percentage of system weight

Full list of metrics can be obtained from <https://www.hawkindynamics.com/hawkin-metric-database>