VALD

ForceDecks

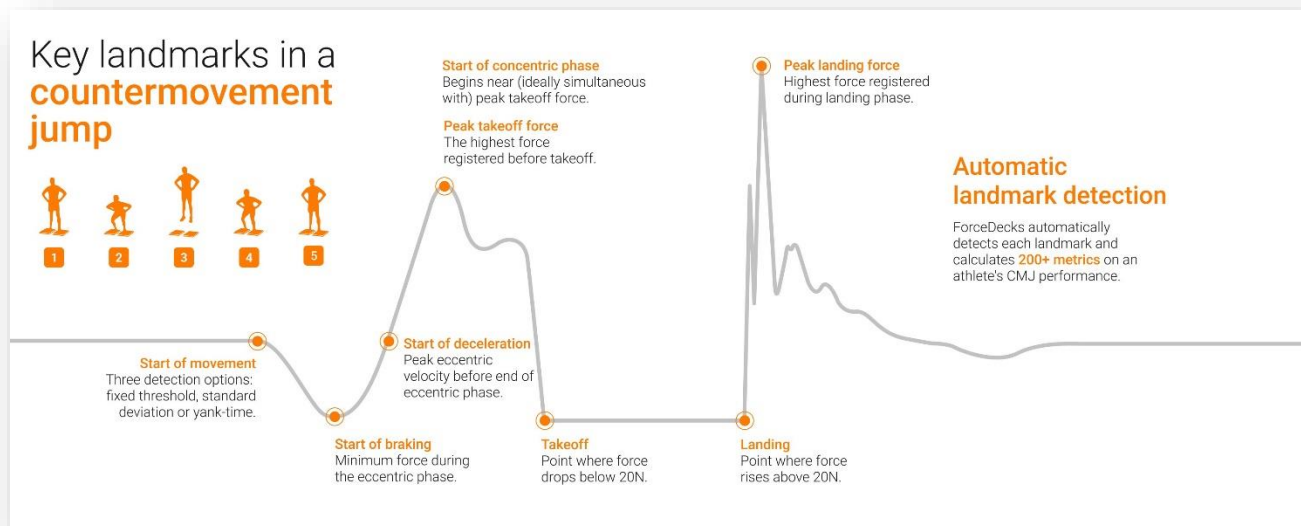# Technical Glossary

Contents

1 Introduction

This Technical Glossary aims to explain technical terms and definitions, and metrics for ForceDecks test types, so users can identify key characteristics and understand their test results.

2 Technical Definitions

TECHNICAL TERM	DESCRIPTION
ABSOLUTE	The magnitude of a given value (irrespective of being positive or negative)
ACCELERATION	Rate of change in velocity over time of the centre of mass (m/s^2)
ASYMMETRY	A relative measurement of difference between two sided values expressed as a percentage. Calculated as (Left Metric value − Right Metric value) / maximum of (Left Metric value or Right Metric value) x 100
BODY MASS (BM)	Measure of mass collected during weighing (kg)
BODY WEIGHT (BW)	Mass captured during the 'Weigh Profile' stage (N)
CENTRE OF MASS (CoM)	The balance point of the body that mass is distributed about
DISPLACEMENT/HEIGHT	Change in the vertical position of the Centre of Mass
FORCE	Strength as an attribute of physical action or movement
IMPULSE (ABSOLUTE IMPULSE)	Integration (area under the curve) of Force over a given period time period (Ns)
IMPULSE (NET IMPULSE)	Area under the force curve over a given time period but only above body weight (Ns)
IMPULSE (POSITIVE IMPULSE)	Area under the curve from the start of movement to take off (i.e.: eccentric and concentric phases combined) but only above body weight (Ns)
LEFT FORCE	The vertical Force component measured from the left force plate (N)
LEFT METRIC	Metric calculated using only the Left Force
MAXIMUM/PEAK	The highest or largest value within a dataset or phase
MEAN	Average of all data points within a dataset or phase, including the start and end of the phase
MINIMUM	The single lowest value within a dataset or phase
POWER	The work rate a force exerts on an object, calculated as force x velocity (W)
RECORDING	An entire force-time dataset from the time Start Recording is clicked until Stop Recording is clicked
REP	Short for *repetition*, a period of time in a recording during which a single instance of a test is performed
RATE OF FORCE DEVELOPMENT (RFD)	Change in force over a given time period or phase (N/s)
RIGHT FORCE	The vertical Force component measured from the right force plate (N)
RIGHT METRIC	Metric calculated using only the Right Force
RATE OF POWER DEVELOPMENT (RPD)	Change in power over a given time period or phase (W/s)
VELOCITY	Change in centre of mass position over time (m/s)
VERTICAL FORCE	The vertical force component measured from a single force plate or combined from both (N)

3 Countermovement Jump (CMJ) Metrics

3.1 **Movement Phases**

Key landmarks in a **countermovement jump**

Start of movement
Three detection options: fixed threshold, standard deviation or yank-time.

Start of braking
Minimum force during the eccentric phase.

Start of deceleration
Peak eccentric velocity before end of eccentric phase.

Peak takeoff force
The highest force registered before takeoff.

Start of concentric phase
Begins near (ideally simultaneous with) peak takeoff force.

Takeoff
Point where force drops below 20N.

Peak landing force
Highest force registered during landing phase.

Landing
Point where force rises above 20N.

Automatic landmark detection
ForceDecks automatically detects each landmark and calculates **200+ metrics** on an athlete's CMJ performance.

1. START OF MOVEMENT
Moment where force deviates from steady-state (3 detection methods available)

2. ECCENTRIC PHASE
Start: Start of Movement
End: Moment of Minimum Displacement (Moment of Zero Velocity)

> 2.1. ECCENTRIC BRAKING PHASE
> **Start:** Minimum force during Eccentric Phase
> **End:** Moment of Minimum Displacement (Moment of Zero Velocity)

> 2.2. ECCENTRIC DECELERATION PHASE
> **Start:** Moment before positive vertical acceleration (maximum negative Velocity)
> **End**: Moment of Minimum Displacement (Moment of Zero Velocity)

3. CONCENTRIC PHASE
Start: Moment of Minimum Displacement (Moment of Zero Velocity)
End: Take-off

4. TAKE-OFF
Where Vertical Force is drops below 20N after Start of Movement

5. LANDING
When Vertical Force is rises above 20N after Take-off

3.2 Metrics

METRIC NAME	UNIT/CALCULATION	DESCRIPTION
TAKE-OFF PHASE		
Braking Phase Duration	Second (s)	Time period of the Eccentric Braking Phase
Braking Phase Duration:Concentric Duration	Unitless	Ratio of Braking Phase Duration to Concentric Phase Duration
Braking Phase Duration:Contraction Time	Unitless	Ratio of Braking Phase Duration to Contraction Time
CMJ Stiffness	Newton per meter (N/m)	Peak Vertical Force during the Concentric Phase ÷ by the displacement at the start of the Concentric Phase (i.e., minimum displacement)
Concentric Duration	Millisecond (ms)	Time period of the Concentric Phase
Concentric Impulse	Newton second (N s)	Net Impulse during the Concentric Phase
Concentric Impulse (Abs) / BM	Newton second per kilogram (N s/kg)	Absolute Impulse during the Concentric Phase ÷ by Body Mass
Concentric Impulse-100ms	Newton second (N s)	Net Impulse during the first 100ms of the Concentric Phase
Concentric Impulse-100ms:Concentric Impulse	Unitless	Ratio of Concentric Impulse 100ms to Concentric Impulse
Concentric Impulse-50ms	Newton second (N s)	Net Impulse during the first 50ms of the Concentric Phase
Concentric Maximum RFD	Newton per second (N/s)	Peak RFD over a 50ms window during the Concentric Phase
Concentric Mean Force / BM	Newton per kilogram (N/kg)	Concentric Mean Force ÷ by Body Mass
Concentric Mean Force	Newton (N)	Average Vertical Force during the Concentric Phase
Concentric Mean Power / BM	Watt per kilogram (W/kg)	Concentric Mean Power ÷ by Body Mass
Concentric Mean Power	Watt (W)	Average Power during the Concentric Phase
Concentric Mean Velocity	Meter per second (m/s)	Average Velocity during the Concentric Phase
Concentric Peak Force	Newton (N)	Maximum Vertical Force during the Concentric Phase
Concentric Peak Force / BM	Newton per kilogram (N/kg)	Concentric Peak Force ÷ by Body Mass
Concentric Peak Velocity	Meter per second (m/s)	Maximum Velocity during the Concentric Phase
Concentric RFD	Newton per second (N/s)	RFD between the start of the Concentric Phase and Peak Concentric Force. 0 will be reported if Total Vertical Force slopes downward.
Concentric RFD - 100ms	Newton per second (N/s)	RFD during the first 100ms of the Concentric Phase
Concentric RFD - 200ms	Newton per second (N/s)	RFD during the first 200ms of the Concentric Phase
Concentric RFD - 50ms	Newton per second (N/s)	RFD during the first 50ms of the Concentric Phase

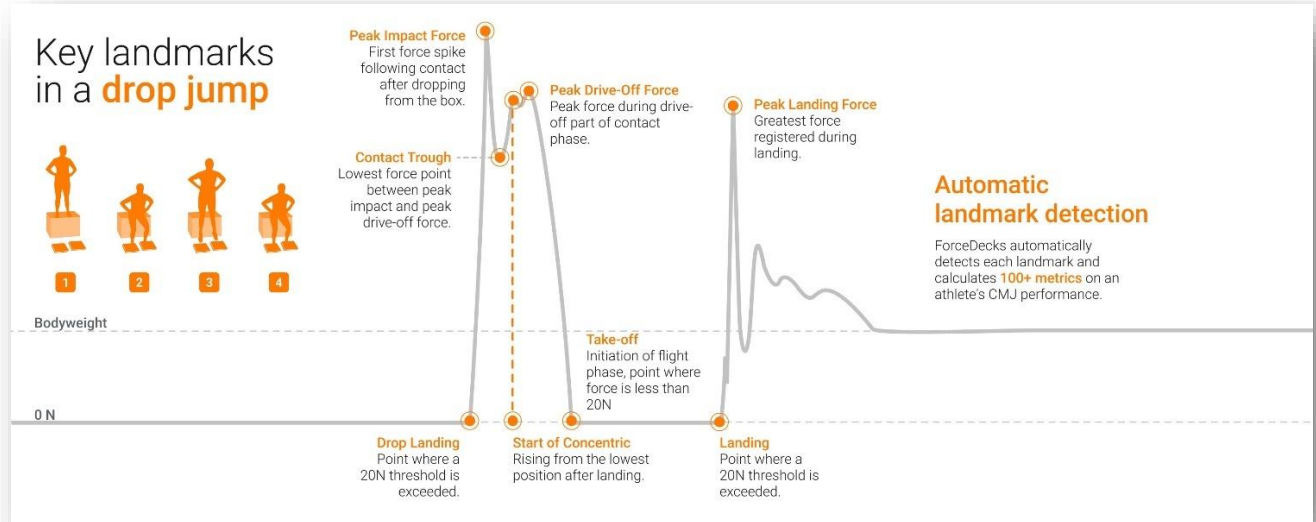|		
Concentric RFD / BM	Newton per second per kilogram (N/s/kg)	Concentric RFD ÷ by Body Mass
Concentric RPD	Watt per second (W/s)	RPD from the start of the Concentric Phase to the point when Peak Power occurs
Concentric RPD - 100ms	Watt per second (W/s)	RPD during the first 100ms of the Concentric Phase
Concentric RPD - 50ms	Watt per second (W/s)	RPD during the first 50ms of the Concentric Phase
Concentric RPD / BM	Watt per second per kilogram (W/s/kg)	Concentric RPD ÷ by Body Mass
Concentric RPD-100ms / BM	Watt per second per kilogram (W/s/kg)	Concentric RPD 100ms ÷ by Body Mass
Concentric RPD-50ms / BM	Watt per second per kilogram (W/s/kg)	Concentric RPD 50ms ÷ by Body Mass
Concentric Time to Peak Force	Millisecond (ms)	Time period for the start of the Concentric Phase to the point when Peak Force occurs
Contraction Time	Millisecond (ms)	Time period from Start of Movement to Take-off
Contraction Time:Eccentric Duration	Percent (%)	Ratio of Contraction Time to Eccentric Duration
Countermovement Depth	Centimeter (cm)	Maximum Displacement between Start of Movement to Take-off
Displacement at Take-off	Centimeter (cm)	Displacement from initial starting position to take-off (i.e. standing upright to leaving the force plates)
Eccentric Acceleration Phase Duration	Second (s)	Time period of the Eccentric Acceleration Phase (i.e., from Start of Movement to the point when maximum negative Velocity occurs)
Eccentric Braking Impulse	Newton second (N s)	Net Impulse during the Eccentric Braking Phase
Eccentric Braking RFD / BM	Newton per second per kilogram (N/s/kg)	Eccentric Braking RFD ÷ by Body Mass
Eccentric Braking RFD	Newton per second (N/s)	RFD over the full Eccentric Braking Phase
Eccentric Braking RFD-100ms	Newton per second (N/s)	RFD during the first 100ms of the Eccentric Braking Phase
Eccentric Braking RFD-100ms / BM	Newton per second per kilogram (N/s/kg)	Eccentric Braking RFD 100ms ÷ by Body Mass
Eccentric Deceleration Impulse	Newton second (N s)	Net Impulse during the Eccentric Deceleration Phase
Eccentric Deceleration Impulse / BM	Newton second per kilogram (N s/kg)	Eccentric Deceleration Impulse ÷ by Body Mass
Eccentric Deceleration Phase Duration	Second (s)	Time period of the Eccentric Deceleration Phase
Eccentric Deceleration RFD	Newton per second (N/s)	RFD over the full Eccentric Deceleration Phase
Eccentric Deceleration RFD / BM	Newton per second per kilogram (N/s/kg)	Eccentric Deceleration RFD ÷ by Body Mass
Eccentric Duration	Millisecond (ms)	Time period of the Eccentric Phase
Eccentric Mean Braking Force	Newton (N)	Average Vertical Force during the Eccentric Braking Phase
Eccentric Mean Deceleration Force	Newton (N)	Average Vertical Force during the Eccentric Deceleration Phase

Eccentric Mean Force	Newton (N)	Average Vertical Force during the Eccentric Phase. Equivalent to Body Weight (N).
Eccentric Mean Power	Watt (W)	Average Power during the Eccentric Phase
Eccentric Mean Power / BM	Watt per kilogram (W/kg)	Eccentric Mean Power ÷ by Body Mass
Eccentric Peak Force	Newton (N)	Maximum Vertical Force during the Eccentric Phase
Eccentric Peak Force / BM	Newton per kilogram (N/kg)	Eccentric Peak Force ÷ by Body Mass
Eccentric Peak Power / BM	Watt per kilogram (W/kg)	Eccentric Peak Power ÷ by Body Mass
Eccentric Peak Power	Watt (W)	Maximum Power during the Eccentric Phase
Eccentric Peak Power:Concentric Peak Power	Unitless	Ratio of Eccentric Peak Power to Concentric Peak Power
Eccentric Peak Velocity	Millisecond (m/s)	Maximum Velocity during the Eccentric Phase
Eccentric Unloading Impulse	Newton second (N s)	Net Impulse during the Eccentric Unloading Phase (i.e., from Start of Movement to the start of the Eccentric Deceleration Phase)
Eccentric:Concentric Duration	Percent (%)	Ratio of Eccentric Duration to Concentric Duration
Eccentric:Concentric Mean Force Ratio	Percent (%)	Ratio of Eccentric Mean Force to Concentric Mean Force
Flight Time	Millisecond (ms)	Time period between Take-off and Landing
Flight Time:Contraction Time	Unitless	Ratio of Flight Time to Contraction Time
Flight Time:Eccentric Duration	Unitless	Ratio of Flight Time to Eccentric Duration
Force at Peak Power	Newton (N)	Vertical Force at the point when Peak Power occurs
Force at Zero Velocity	Newton (N)	Vertical Force at the point when zero Velocity occurs prior to Take-off
Force at Zero Velocity / BM	Newton per kilogram (N/kg)	Force at Zero Velocity ÷ by Body Mass
Jump Height (Flight Time)	Centimeter (cm)	Jump Height calculated from Flight Time
Jump Height (Flight Time) in Inches	Inch (in)	Jump Height (Flight Time) converted to inches
Jump Height (FT) Relative Landing RFD	Newton per second per centimeter (N/s/cm)	Landing RFD ÷ by Jump Height (Flight Time)
Jump Height (FT) Relative Peak Landing Force	Newton per centimeter (N/cm)	Peak Landing Force ÷ by Jump Height (Flight Time)
Lower-Limb Stiffness	Newton per meter (N/m)	Change in Vertical Force during the Eccentric Phase ÷ by Countermovement Depth
Mean Eccentric+Concentric Power:Time	Watt per second (W/s)	Mean Power between Start of Movement and Take-off, ÷ by Contraction Time
Minimum Eccentric Force	Newton (N)	Minimum Vertical Force during the Eccentric Phase
Movement Start to Peak Force	Second (s)	Time Period between Start of Movement and the point when Peak Vertical Force occurs prior to Take-off

Movement Start to Peak Power	Second (s)	Time Period between Start of Movement and the point when Peak Power occurs prior to Take-off
P1 Concentric Impulse	Newton second (N s)	Net Impulse during the first 50% of the Concentric Phase (time-wise)
P2 Concentric Impulse	Newton second (N s)	Net Impulse during the second 50% of the Concentric Phase (time-wise)
P2 Concentric Impulse:P1 Concentric Impulse	Unitless	Ratio of P2 Concentric Impulse to P1 Concentric Impulse
Peak Net Take-off Force / BM	Newton per kilogram (N/kg)	Maximum Vertical Force between Start of Movement and Take-off, - Body Weight, and ÷ by Body Mass
Peak Power	Watt (W)	Maximum Power during the Concentric Phase
Peak Power / BM	Watt per kilogram (W/kg)	Peak Power ÷ by Body Mass
Peak Take-off Acceleration	Meter per second squared (m/s²)	Maximum Acceleration of the Centre of Mass between Start of Movement and Take-off
Positive Impulse	Newton second (N s)	Net impulse during the entire repetition (eccentric, concentric, and landing combined)
Positive Take-off Impulse	Newton second (N s)	Net impulse during Take-off (eccentric and concentric phases combined)
RSI-modified	Meter per second (m/s)	Jump Height (Flight Time) ÷ by Contraction Time
RSI-modified (Imp-Mom)	Meter per second (m/s)	Jump Height (Imp-Mom) ÷ by Contraction Time
LANDING PHASE		
Jump Height (Imp-Dis)	Centimeter (cm)	Maximum Displacement of the Centre of Mass between Take-off and Landing
Jump Height (Imp-Mom)	Centimeter (cm)	Jump Height calculated from the Velocity of the Centre of Mass at the instant of Take-off and Body Mass
Jump Height (Imp-Mom) in Inches	Inch (in)	Jump Height (Imp-Mom) converted to inches
Landing Impulse	Newton second (N s)	Absolute Impulse from Landing to the point when Peak Landing Force occurs
Landing Net Peak Force / BM	Newton per kilogram (N/kg)	Maximum Vertical Force after Landing, - Body Weight, and ÷ by Body Mass
Landing RFD	Newton per second (N/s)	RFD between Landing and the point when Peak Landing Force occurs
Landing RFD 50ms	Newton per second (N/s)	RFD of the first 50ms following Landing
Mean Landing Power	Watt (W)	Average Power between Landing and the end of the rep
Peak Landing Acceleration	Meter per second squared (m/s²)	Maximum Acceleration of the Centre of Mass between Landing and the end of the rep
Peak Landing Force	Newton (N)	Maximum Vertical Force after Landing
Peak Landing Force / BM	Newton per kilogram (N/kg)	Peak Landing Force ÷ by Body Mass
Peak Landing Power	Watt (W)	Maximum Power between Landing and the end of the rep

Peak Landing Velocity	Meter per second (m/s)	Maximum Velocity of the Centre of Mass between Landing and the end of the rep
Take-off Peak Force	Newton (N)	Maximum Vertical Force between Start of Movement and Take-off
Take-off Peak Force / BM	Newton per kilogram (N/kg)	Take-off Peak Force ÷ by Body Mass
Time to Braking Phase	Second (s)	Time period between Start of Movement and the beginning of the Eccentric Braking Phase
Total Work	Joule (J)	Integration of Power (i.e., area under the Power-Time curve) between Start of Movement and Take-off
Velocity at Peak Power	Meter per second (m/s)	Velocity of the Centre of Mass at the point when Peak Power between Start of Movement and Take-off occurs
Vertical Velocity at Take-off	Meter per second (m/s)	Velocity of the Centre of Mass at the point when Take-off occurs

4 Drop Jump (DJ) Metrics

4.1 Movement Phases

Key landmarks in a **drop jump**

Peak Impact Force First force spike following contact after dropping from the box.

Peak Drive-Off Force Peak force during drive-off part of contact phase.

Contact Trough Lowest force point between peak impact and peak drive-off force.

Peak Landing Force Greatest force registered during landing.

Automatic landmark detection ForceDecks automatically detects each landmark and calculates **100+ metrics** on an athlete's CMJ performance.

Bodyweight

0 N

Drop Landing Point where a 20N threshold is exceeded.

Start of Concentric Rising from the lowest position after landing.

Take-off Initiation of flight phase, point where force is less than 20N

Landing Point where a 20N threshold is exceeded.

1. DROP LANDING
Point where a 20N threshold is exceeded

2. ECCENTRIC PHASE
Start: Drop Landing
End: Moment of Minimum Displacement (Moment of zero Velocity)

3. CONCENTRIC PHASE
Start: Moment of Minimum Displacement (Moment of zero Velocity)
End: Take-off

4. TAKE-OFF
Where Vertical Force drops below 20N after Drop Landing

5. LANDING
When Vertical Force rises above 20N after Take-off

4.2 Metrics

METRIC NAME	UNIT/CALCULATION	DESCRIPTION
TAKE-OFF PHASE		
Active Stiffness	Newton per meter (N/m)	Peak Drive-Off Force ÷ by the maximum displacement of the Centre of Mass during the Contact Phase
Active Stiffness Index	Unitless	Active Stiffness Drop Height and by Body Weight
Coefficient of Restitution	Unitless	Ratio of Vertical Velocity at Contact to Vertical Velocity at Take-off
Concentric Duration	Millisecond (ms)	Time period of the Concentric Phase
Concentric Impulse	Newton second (N s)	Net Impulse during the Concentric Phase
Concentric Impulse (Abs) / BM	Newton second per kilogram (N s/kg)	Absolute Impulse during the Concentric Phase ÷ by Body Mass
Concentric Mean Force	Newton (N)	Average Vertical Force during the Concentric Phase
Concentric Mean Power	Watt (W)	Average Power during the Concentric Phase
Concentric Mean Power / BM	Watt per kilogram (W/kg)	Concentric Mean Power ÷ by Body Mass
Concentric Mean Velocity	Meter per second (m/s)	Average Velocity during the Concentric Phase
Concentric Peak Velocity	Meter per second (m/s)	Maximum Velocity during the Concentric Phase
Contact Time	Second (s)	Time period between Drop Landing and Take-off
Countermovement Depth	Centimeter (cm)	Displacement between Drop Landing to Take-off
Displacement at Take-off	Centimeter (cm)	Displacement at the moment of Take-off
Drop Height	Centimeter (cm)	Vertical height of the initial drop before Drop Landing (either manually entered or calculated from Effective Drop)
Drop Landing RFD	Newton per second (N/s)	RFD between Drop Landing and the point when Peak Force occurs while landing
Eccentric Duration	Millisecond (ms)	Time period of the Eccentric Phase
Eccentric Impulse	Newton second (N s)	Net Impulse during the Eccentric Phase
Eccentric Mean Force	Newton (N)	Average Vertical Force during the Eccentric Phase
Eccentric:Concentric Mean Force Ratio	Percent (%)	Ratio of Eccentric Mean Force to Concentric Mean Force
Effective Drop	Centimeter (cm)	Drop Height calculated using Vertical Velocity at Contact and gravity
Flight Time	Millisecond (ms)	Time period between Take-off and Landing
Force at Zero Velocity	Newton (N)	Vertical Force at the point when zero Velocity occurs prior to Take-off

Force at Zero Velocity / BM	Newton per kilogram (N/kg)	Force at Zero Velocity ÷ by Body Mass
Jump Height (Flight Time)	Centimeter (cm)	Jump Height calculated from Flight Time
Jump Height (Flight Time) in Inches	Inch (in)	Jump Height (Flight Time) converted to inches
Jump Height (Imp-Dis)	Centimeter (cm)	Maximum Displacement of the Centre of Mass between Take-off and Landing
Jump Height (Imp-Mom)	Centimeter (cm)	Jump Height calculated from the Velocity of the Centre of Mass at the instant of Take-off and Body Mass
Jump Height (Imp-Mom) in Inches	Inch (in)	Jump Height (Imp-Mom) converted to inches
Movement Start to Peak Power	Second (s)	Time Period between Drop Landing and the point when Peak Power occurs prior to Take-off
Passive Stiffness	Newton per meter (N/m)	Peak Impact Force ÷ by the maximum displacement of the CoM during the Contact Phase
Passive Stiffness Index	Unitless	Passive Stiffness Drop Height and ÷ by Body Weight
Peak Drive-Off Force	Newton (N)	Maximum Vertical Force during the Drive-Off Phase (between Contact Trough and Take-off)
Peak Drop Landing Force	Newton (N)	Maximum Vertical Force during the Contact Phase
Peak Impact Force	Newton (N)	Maximum Vertical Force in the first rise/spike in Vertical Force following Drop Landing
Peak Take-off Acceleration	Meter per second squared (m/s²)	Maximum Acceleration of the Centre of Mass between Drop Landing and Take-off
Positive Impulse	Newton second (N s)	Net impulse during the entire repetition (from Drop Landing to the end of the repetition)
Positive Take-off Impulse	Newton second (N s)	Net impulse during the Drop Landing and Take-off phases combined
RSI (Flight Time/Contact Time)	Unitless	Ratio of Flight Time to Contact Time
RSI (JH (Flight Time)/Contact Time)	Meter per second m/s	Ratio of Jump Height (Flight Time) to Contact Time
Vertical Velocity at Contact	Meter per second m/s	Velocity of the Centre of Mass at the point when Drop Landing occurs
Vertical Velocity at Take-off	Meter per second m/s	Velocity of the Centre of Mass at the point when Take-off occurs
LANDING PHASE		
Contact Trough	Newton (N)	Maximum Vertical Force between the points when Peak Impact Force occurs and the Start of the Concentric Phase
Jump Height (FT) Relative Landing RFD	Newton per second per centimeter (N/s/cm)	Landing RFD ÷ by Jump Height (Flight Time)
Jump Height (FT) Relative Peak Landing Force	Newton per centimeter (N/cm)	Peak Landing Force ÷ by Jump Height (Flight Time)
Landing Net Peak Force / BM	Newton per kilogram (N/kg)	Maximum Vertical Force after Landing, - Body Weight, and ÷ by Body Mass
Landing RFD	Newton per second (N/s)	RFD between Landing and the point when Peak Landing Force occurs
Mean Landing Acceleration	Meter per second squared (m/s²)	Average Acceleration of the Centre of Mass between Landing and the end of the rep
Mean Landing Power	Watt (W)	Average Power between Landing and the end of the rep
Mean Landing Velocity	Meter per second m/s	Average Velocity of the Centre of Mass between Landing and the end of the rep

Peak Landing Acceleration	Meter per second squared (m/s²)	Maximum Acceleration of the Centre of Mass between Landing and the end of the rep
Peak Landing Force	Newton (N)	Maximum Vertical Force after Landing
Peak Landing Power	Watt (W)	Maximum Power between Landing and the end of the rep
Peak Landing Velocity	Meter per second m/s	Maximum Velocity of the Centre of Mass between Landing and the end of the rep
Peak Power	Watt (W)	Maximum Power during the Concentric Phase
Peak Power / BM	Watt per kilogram (W/kg)	Peak Power ÷ by Body Mass

5 Squat Jump (SJ) Metrics

5.1 Movement Phases
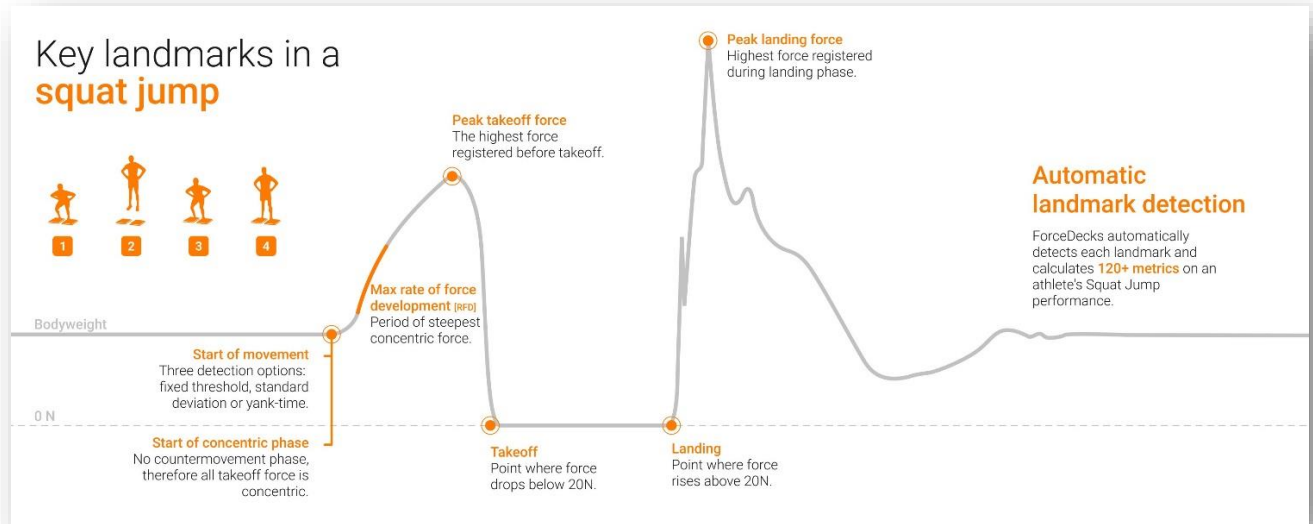
Key landmarks in a **squat jump**

1. **START OF MOVEMENT**
Moment were force deviates from steady-state (3 detection methods available)

2. **CONCENTRIC PHASE**
Start: Start of Movement
End: Take-off

3. **TAKE-OFF**
Where Vertical Force drops below 20N after Start of Movement

4. **LANDING**
When Vertical Force rises above 20N after Take-off

5.2 Metrics

METRIC NAME	UNIT/CALCULATION	DESCRIPTION
TAKE-OFF PHASE		
Concentric Impulse	Newton second (N s)	Net Impulse during the Concentric Phase
Concentric Impulse (Abs) / BM	Newton second per kilogram (N s/kg)	Absolute Impulse during the Concentric Phase ÷ by Body Mass
Concentric Impulse-100ms	Newton second (N s)	Net Impulse during the first 100ms of the Concentric Phase
Concentric Impulse-100ms:Concentric Impulse	Unitless	Ratio of Concentric Impulse 100ms to Concentric Impulse
Concentric Impulse-50ms	Newton second (N s)	Net Impulse during the first 50ms of the Concentric Phase
Concentric Maximum RFD	Newton per second (N/s)	Peak RFD over a 50ms window during the Concentric Phase
Concentric Mean Force	Newton (N)	Average Vertical Force during the Concentric Phase
Concentric Mean Force / BM	Newton per kilogram (N/kg)	Concentric Mean Force ÷ by Body Mass
Concentric Mean Power	Watt (W)	Average Power during the Concentric Phase
Concentric Mean Power / BM	Watt per kilogram (W/kg)	Concentric Mean Power ÷ by Body Mass
Concentric Mean Velocity	Meter per second (m/s)	Average Velocity during the Concentric Phase
Concentric Peak Velocity	Meter per second (m/s)	Maximum Velocity during the Concentric Phase
Concentric RFD	Newton per second (N/s)	RFD from the start of the Concentric Phase to the point when Peak Force occurs
Concentric RFD - 100ms	Newton per second (N/s)	RFD during the first 100ms of the Concentric Phase
Concentric RFD - 200ms	Newton per second (N/s)	RFD during the first 200ms of the Concentric Phase
Concentric RFD - 50ms	Newton per second (N/s)	RFD during the first 50ms of the Concentric Phase
Concentric RFD / BM	Newton per second per kilogram (N/s/kg)	Concentric RFD ÷ by Body Mass
Concentric RPD	Watt per second (W/s)	RPD from the start of the Concentric Phase to the point when Peak Power occurs
Concentric RPD - 100ms	Watt per second (W/s)	RPD during the first 100ms of the Concentric Phase
Concentric RPD - 50ms	Watt per second (W/s)	RPD during the first 50ms of the Concentric Phase
Concentric RPD / BM	Watt per second per kilogram (W/s/kg)	Concentric RPD ÷ by Body Mass
Concentric RPD-100ms / BM	Watt per second per kilogram (W/s/kg)	Concentric RPD 100ms ÷ by Body Mass
Concentric RPD-50ms / BM	Watt per second per kilogram (W/s/kg)	Concentric RPD 50ms ÷ by Body Mass
Concentric Time to Peak Force	Millisecond (ms)	Time period for the start of the Concentric Phase to the point when Peak Force occurs
Contraction Time	Millisecond (ms)	Time period from Start of Movement to Take-off

Countermovement Depth	Centimeter (cm)	Maximum Displacement between Start of Movement and the end of the Eccentric phase (i.e. bottom of the squat)
Displacement at Take-off	Centimeter (cm)	Displacement at the moment of Take-off
Flight Time	Millisecond (ms)	Time period between Take-off and Landing
Force at Peak Power	Newton (N)	Vertical Force at the point when Peak Power occurs
Movement Start to Peak Force	Second (s)	Time Period between Start of Movement and the point when Peak Vertical Force occurs prior to Take-off
Movement Start to Peak Power	Second (s)	Time Period between Start of Movement and the point when Peak Power occurs prior to Take-off
P1 Concentric Impulse	Newton second (N s)	Net Impulse during the first 50% of the Concentric Phase (time-wise)
P2 Concentric Impulse	Newton second (N s)	Net Impulse during the second 50% of the Concentric Phase (time-wise)
P2 Concentric Impulse:P1 Concentric Impulse	Unitless	Ratio of P2 Concentric Impulse to P1 Concentric Impulse
Peak Net Take-off Force / BM	Newton per kilogram (N/kg)	Maximum Vertical Force between Start of Movement and Take-off, - Body Weight, and ÷ by Body Mass
Peak Power	Watt (W)	Maximum Power during the Concentric Phase
Peak Power / BM	Watt per kilogram (W/kg)	Peak Power ÷ by Body Mass
Peak Take-off Acceleration	Meter per second squared (m/s²)	Maximum Acceleration of the Centre of Mass between Start of Movement and Take-off
Positive Impulse	Newton second (N s)	Net impulse during the entire repetition
LANDING PHASE		
Jump Height (Flight Time)	Centimeter (cm)	Jump Height calculated from Flight Time
Jump Height (Flight Time) in Inches	Inch (in)	Jump Height (Flight Time) converted to inches
Jump Height (FT) Relative Landing RFD	Newton per second per centimeter (N/s/cm)	Landing RFD ÷ by Jump Height (Flight Time)
Jump Height (FT) Relative Peak Landing Force	Netwon per centimeter (N/cm)	Peak Landing Force ÷ by Jump Height (Flight Time)
Jump Height (Imp-Dis)	Centimeter (cm)	Maximum Displacement of the Centre of Mass between Take-off and Landing
Jump Height (Imp-Mom)	Centimeter (cm)	Jump Height calculated from the Velocity of the Centre of Mass at the instant of Take-off and Body Mass
Jump Height (Imp-Mom) in Inches	Inch (in)	Jump Height (Imp-Mom) converted to inches
Landing Impulse	Newton second (N s)	Absolute Impulse from Landing to the point when Peak Landing Force occurs
Landing Net Peak Force / BM	Newton per kilogram (N/kg)	Maximum Vertical Force after Landing, - Body Weight, and ÷ by Body Mass
Landing RFD	Newton per second (N/s)	RFD between Landing and the point when Peak Landing Force occurs
Landing RFD 50ms	Newton per second (N/s)	RFD of the first 50ms following Landing

Mean Landing Power	Watt (W)	Average Power between Landing and the end of the rep
Peak Landing Acceleration	Meter per second squared (m/s²)	Maximum Acceleration of the Centre of Mass between Landing and the end of the rep
Peak Landing Force	Newton (N)	Maximum Vertical Force after Landing
Peak Landing Force / BM	Newton per kilogram (N/kg)	Peak Landing Force ÷ by Body Mass
Peak Landing Power	Watt (W)	Maximum Power between Landing and the end of the rep
Peak Landing Velocity	Meter per second (m/s)	Maximum Velocity of the Centre of Mass between Landing and the end of the rep
Positive Take-off Impulse	Newton second (N s)	Net impulse during the entire repetition (Take-off and landing combined)
RSI-modified (Imp-Mom)	Meter per second (m/s)	Jump Height (Imp-Mom) ÷ by Contraction Time
RSI-modified	Meter per second (m/s)	Jump Height (Flight Time) ÷ by Contraction Time
Take-off Peak Force	Newton (N)	Maximum Vertical Force between Start of Movement and Take-off
Take-off Peak Force / BM	Newton per kilogram (N/kg)	Take-off Peak Force ÷ by Body Mass
Total Work	Joule (J)	Integration of Power (i.e., area under the Power-Time curve) between Start of Movement and Take-off
Velocity at Peak Power	Meter per second (m/s)	Velocity of the Centre of Mass at the point when Peak Power between Start of Movement and Take-off occurs
Vertical Velocity at Take-off	Meter per second (m/s)	Velocity of the Centre of Mass at the point when Take-off occurs