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FORCEDECKS
DUAL FORCE PLATE SYSTEM
VALDHUB

VALD HEALTH

LAND AND HOLD

Metric	Unit	Description	Interpretation
Peak Drop Landing Force Asymmetry	% L,R	Difference between maximal force values exhibited by each leg during landing.	LOWER = Decreased imbalance between left and right sides.
Time to Stabilisation Asymmetry	% L,R	Difference between the time taken for each leg to reach zero velocity (stabilization) on their respective plate.	LOWER = Decreased imbalance between left and right sides.

SINGLE LEG JUMP

Metric	Unit	Description	Interpretation
Jump Height (Imp-Mom) in Inches	in	How high someone can jump determined by their weight, gravity (constant), and the force produced during take-off.	HIGHER = Greater lower body power and explosiveness.
Peak Power / BM	W/kg	Maximal amount of power expressed during the jump, relative to body mass.	HIGHER = Greater ability to express force rapidly.
Countermovement Depth	cm	Measure of how deep the squat movement is, or the negative displacement of the center of mass from start of movement to point of zero velocity.	HIGHER = Greater ability to squat deeper in the lead-up to take-off.
Eccentric Braking Impulse	N s	Impulse (force x time) during the braking portion.	HIGHER = Greater ability to express force when decelerating the eccentric phase of take-off phase.
Concentric Impulse	N s	Impulse (force x time) from transition point (between eccentric and concentric phases) at zero velocity to take-off.	HIGHER = Greater force produced prior to take-off.
Landing Impulse	N s	Impulse (force x time) from point of contact until stabilization is reached.	LOWER = Greater shock absorption when landing.

COUNTERMOVEMENT JUMP

Metric	Unit	Description	Interpretation
Eccentric Braking Impulse Asymmetry	% L,R	Difference in the impulse (force x time) during the braking portion.	LOWER = Decreased imbalance between left and right sides.
Concentric Impulse Asymmetry	% L,R	Difference in the impulse (force x time) from transition point (between eccentric AND concentric phases) at zero velocity to take-off.	LOWER = Decreased imbalance between left and right sides.
Landing Impulse Asymmetry	% L,R	Difference in impulse (force x time) from point of contact until stabilization is reached.	LOWER = Decreased imbalance between left and right sides.
Jump Height (Imp-Mom) in Inches	in	How high someone can jump determined by their weight, gravity (constant), and the force produced during take-off.	HIGHER = Greater lower body power and explosiveness.
Peak Power / BM	W/kg	Maximal amount of power expressed during the jump, relative to body mass.	HIGHER = Greater ability to express force rapidly.
Countermovement Depth	cm	Measure of how deep the squat movement is, or the negative displacement of the center of mass from start of movement to point of zero velocity.	HIGHER = Greater ability to squat deeper in the lead-up to take-off.

PUSH UP

Metric	Unit	Description	Interpretation
Eccentric Mean Force Asymmetry	% L,R	The Reactive Strength Index, calculated as flight time / contact time.	HIGHER = Shorter contact time needed and/or higher jump.
Concentric Mean Force Asymmetry	% L,R	How high someone can jump determined by their weight, gravity (constant), and the force produced during take-off.	HIGHER = Greater lower body power and explosiveness.
Eccentric Peak Power / BM	W/kg	Maximal amount of power exerted during the eccentric (downward) phase, relative to body mass.	HIGHER = Increased ability to perfom work eccentrically.
Concentric Peak Power / BM	W/kg	Maximal amount of power exerted during the concentric (upward) phase, relative to body mass.	HIGHER = Increased ability to perform work concentrically.

QUIET STAND

Metric	Unit	Description	Interpretation
Area of CoP Ellipse Asymmetry	% L,R	Difference in the measurement of the size and shape of the area where body weight is distributed on the ground.	LOWER = Less movement/body sway and increased postural control.
Mean Force Asymmetry	% L,R	Difference in average amount of force exerted during the assessment.	LOWER = Decreased imbalance between left and right sides.

DROP JUMP

Metric	Unit	Description	Interpretation
RSI (Flight Time / Contact Time)		The Reactive Strength Index, calculated as flight time / contact time.	HIGHER = Shorter contact time needed and/or higher jump.
Jump Height (Imp-Mom) in Inches	in	How high someone can jump determined by their weight, gravity (constant), and the force produced during take-off.	HIGHER = Greater lower body power and explosiveness.
Eccentric Impulse Asymmetry	% L,R	Difference in impulse (force x time) during eccentric phase.	LOWER = Less discrepancy in force produced on average between legs during the eccentic phase.
Concentric Impulse Asymmetry	% L,R	Difference in the impulse (force x time) from transition point (between eccentric and concentric phases) at zero velocity to take-off.	LOWER = Decreased imbalance between left and right sides.

SINGLE LEG STAND

Metric	Unit	Description	Interpretation
Area of CoP Ellipse	mm sq	Measurement of the size and shape of the area where body weight is distributed on the ground.	LOWER = Less movement/body sway and increased postural control.
CoP Range - Medial-Lateral	mm	Distance between the furthest CoP points in the medial-lateral direction.	LOWER = Less movement/body sway and increased postural control.
CoP Range - Anterior-Posterior	mm	Distance between the furthest CoP points in the anterior-posterior direction.	LOWER = Less movement/body sway and increased postural control.

ISOMETRIC MID-THIGH PULL

Metric	Unit	Description	Interpretation
Peak Vertical Force	N/Bm	Maximal amount of force exerted during the assessment, relative to body mass.	HIGHER = Stronger, more powerful ability to extend.
Peak Vertical Force Asymmetry	% L,R	Difference in maximal amount of force exerted during the assessment.	LOWER = Decreased imbalance between left and right sides.
Start Time to Peak Force	s	Time elapsed from the point of initial effort until maximal force is exerted.	LOWER = Increased ability to generate force more quickly.

SQUAT ASSESSMENT

Metric	Unit	Description	Interpretation
Eccentric Mean Force Asymmetry	% L,R	Difference in average force achieved during the eccentric (downward) phase.	LOWER = Decreased imbalance between left and right sides.
Concentric Mean Force Asymmetry	% L,R	Difference in average force achieved during the concentric (upward) phase.	LOWER = Decreased imbalance between left and right sides.
Maximum Negative Displacement	cm	The depth reached from the beginning of the movement to the lowest point - how low someone squats.	LOWER = Ability to complete a lower / deeper squat.
Eccentric Peak Power / BM	W/kg	Maximal amount of power exerted during the eccentric (downward) phase, relative to body mass.	HIGHER = Increased ability to perform work eccentrically.
Concentric Peak Power / BM	W/kg	Maximal amount of power exerted during the concentric (upward) phase, relative to body mass.	HIGHER = Increased ability to perform work concentrically.

HOP TEST

Metric	Unit	Description	Interpretation
Mean RSI (Flight Time / Contact Time)		Average Reactive Strength Index value, calculated as flight time / contact time for all hops.	HIGHER = Greater efficiency of the stretch shortening cycle.
Jump Height (Flight Time)	cm	How high someone can jump determined by duration of time spent in the air.	HIGHER = Improved ability to jump higher.
Mean Impulse Asymmetry	% L,R	Difference in average impulse (force x time during each hop).	LOWER = Less discrepancy in force produced on average between legs.