



# Technical Note

## Ballistic Measurement System – Which Outcome Measures Should I Use?

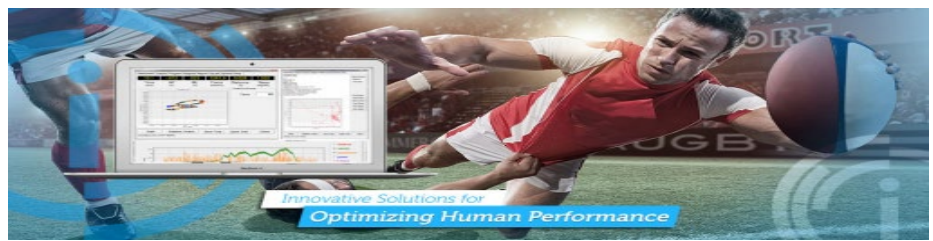
The BMS software can be used to calculate more than 60 different measurement parameters. All are validated in the scientific literature and have different relevance and application depending on the test type (e.g. countermovement, concentric only, isometric, drop / depth). In the following table we provide recommendations as to which parameters can be validly measured and used for different test types.

Green = valid  
 Yellow = may possibly be valid but understand the limitations  
 Red = not valid for this test type

Measurement Parameter	Counter Movement	Concentric Only	Isometric	Drop / Depth
Peak Force	Green	Green	Green	Green
Peak Force/mass	Green	Green	Green	Green
Mean Force	Green	Green	Green	Green
Mean Force/mass	Green	Green	Green	Green
Peak Power	Green	Green	Red	Green
Peak Power/mass	Green	Green	Red	Green
Mean Power	Green	Green	Red	Green
Mean Power/mass	Green	Green	Red	Green
Peak Velocity	Green	Green	Red	Green
Minimum Velocity	Green	Green	Red	Green
Peak Displacement	Green	Green	Red	Green
Minimum Displacement	Green	Red	Red	Green
Unloading Force	Green	Red	Red	Green
Force@Ecc2Con	Green	Red	Red	Green
Force@Peak Power	Green	Green	Red	Green
Velocity@Peak Power	Green	Green	Red	Green
Power@Peak Force	Green	Green	Red	Green
Velocity@Peak Force	Green	Green	Red	Green
Jump Height Derived From Flight Time	Green	Green	Red	Green
Jump Height Derived From Peak Velocity	Green	Green	Red	Green
Max RFD	Yellow	Green	Red	Yellow
RFD 30ms	Yellow	Green	Red	Yellow
RFD 90ms	Yellow	Green	Red	Yellow
RFD 150ms	Yellow	Green	Red	Yellow
RFD 200ms	Yellow	Green	Red	Yellow



innervations



Measurement Parameter	Counter Movement	Concentric Only	Isometric	Drop / Depth
RFD 250ms	Yellow	Green	Red	Yellow
Avg Ecc RFD	Green	Red	Red	Green
Avg Conc RFD	Green	Green	Green	Green
Total Impulse	Green	Green	Green	Green
Impulse 0-100 ms	Green	Green	Green	Yellow
Impulse 0-200 ms	Green	Green	Green	Yellow
Impulse 0-250 ms	Green	Green	Green	Yellow
Impulse 0-300 ms	Green	Green	Green	Yellow
Total Eccentric Impulse	Green	Red	Red	Green
Total Concentric Impulse	Green	Green	Green	Green
Tm to Pk Fc	Green	Green	Green	Green
RPD	Green	Green	Red	Green
Tm to Pk Pw	Green	Green	Red	Green
Eccentric Time	Green	Red	Red	Green
Concentric Time	Green	Green	Green	Green
Ecc+Con Time	Green	Red	Red	Green
Contraction Time	Green	Green	Green	Green
Flight:Contract	Green	Green	Red	Green
Unload Force	Green	Red	Red	Yellow
Unload force time	Green	Red	Red	Yellow
Unloading time	Green	Red	Red	Yellow
Unloading RFD	Green	Red	Red	Yellow
Yielding time	Green	Red	Red	Yellow
Yielding RFD	Green	Red	Red	Yellow
Braking time	Green	Red	Red	Yellow
Braking RFD	Green	Red	Red	Yellow
Force@100ms	Yellow	Green	Green	Yellow
Force@200ms	Yellow	Green	Green	Yellow
%Fmax@100ms	Yellow	Green	Green	Yellow
%Fmax@200ms	Yellow	Green	Green	Yellow
Peak Force Symmetry	Green	Green	Green	Green
Minimum Force Symmetry	Green	Red	Red	Red
Concentric Impulse Symmetry	Green	Green	Green	Green
Eccentric Impulse Symmetry	Green	Red	Red	Green
Force at transition Symmetry	Green	Red	Red	Green