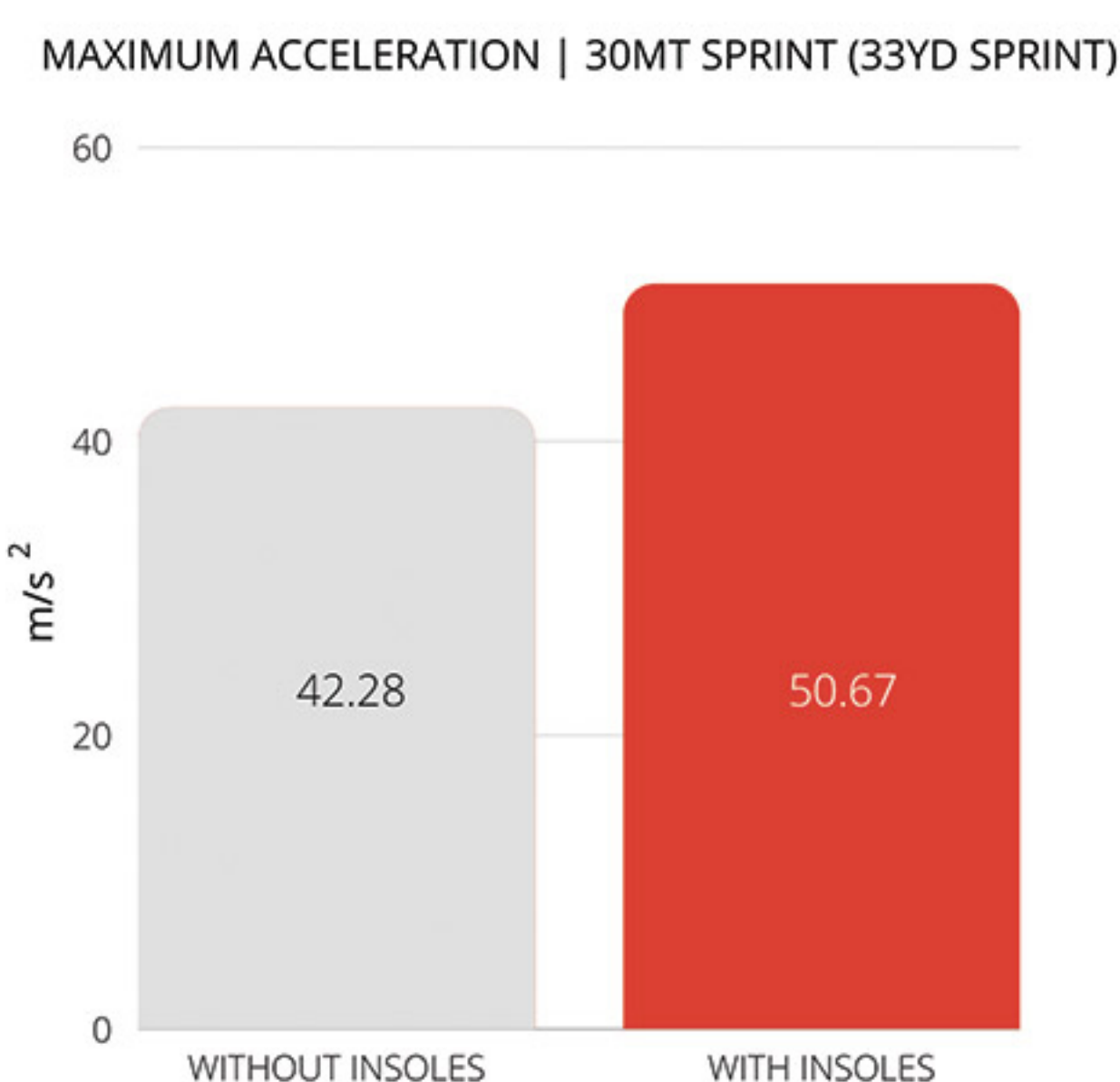
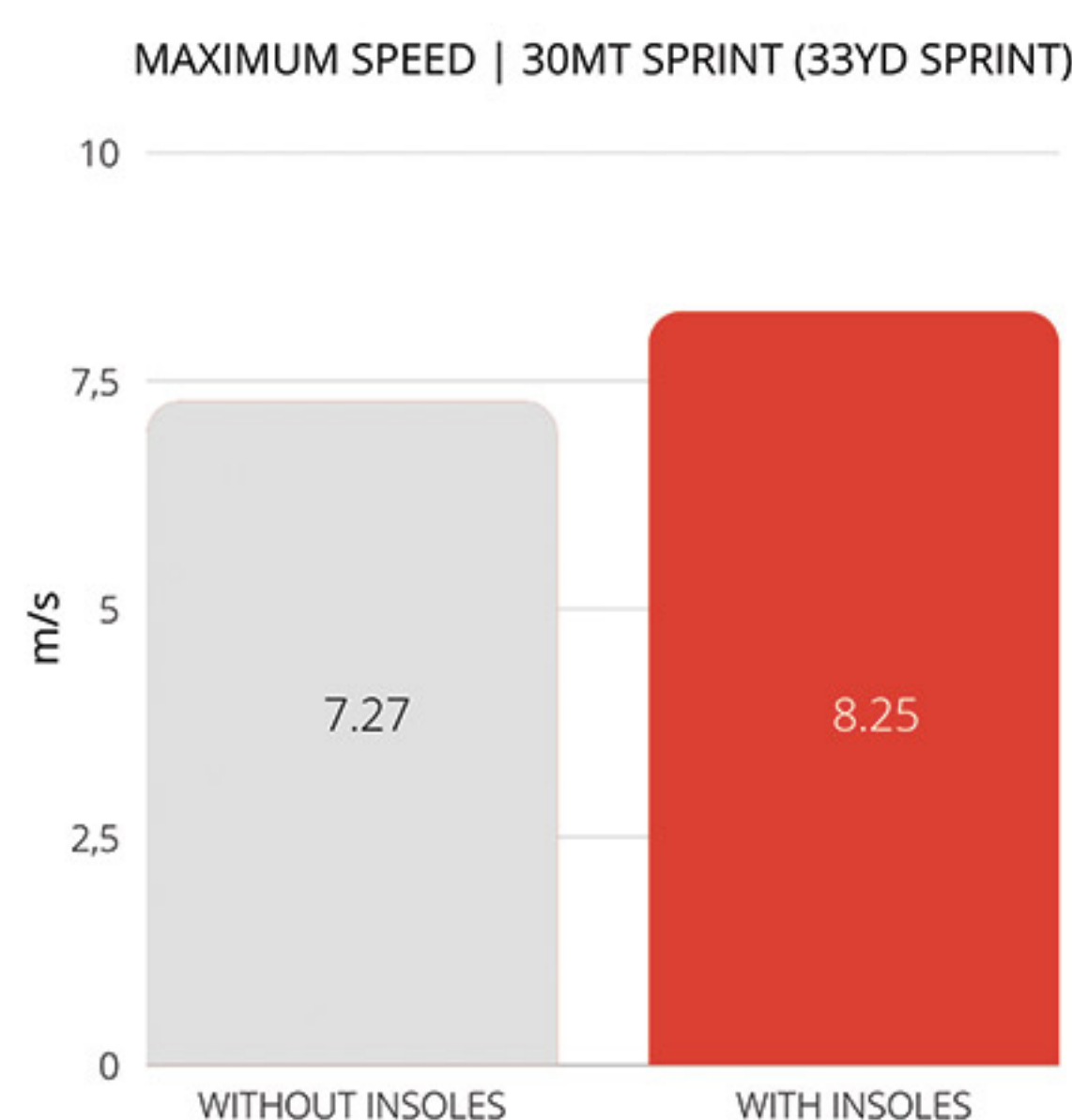


BIOMECHANICAL ANALYSIS CERTIFICATE

SPRINT OF 30 METERS (33 YARD SPRINT)

During sprinting over a length of 30 m (33yd), **maximum speed increased by 13.42%** and **maximum acceleration increased by 19.84%** with the use of carbon insoles.

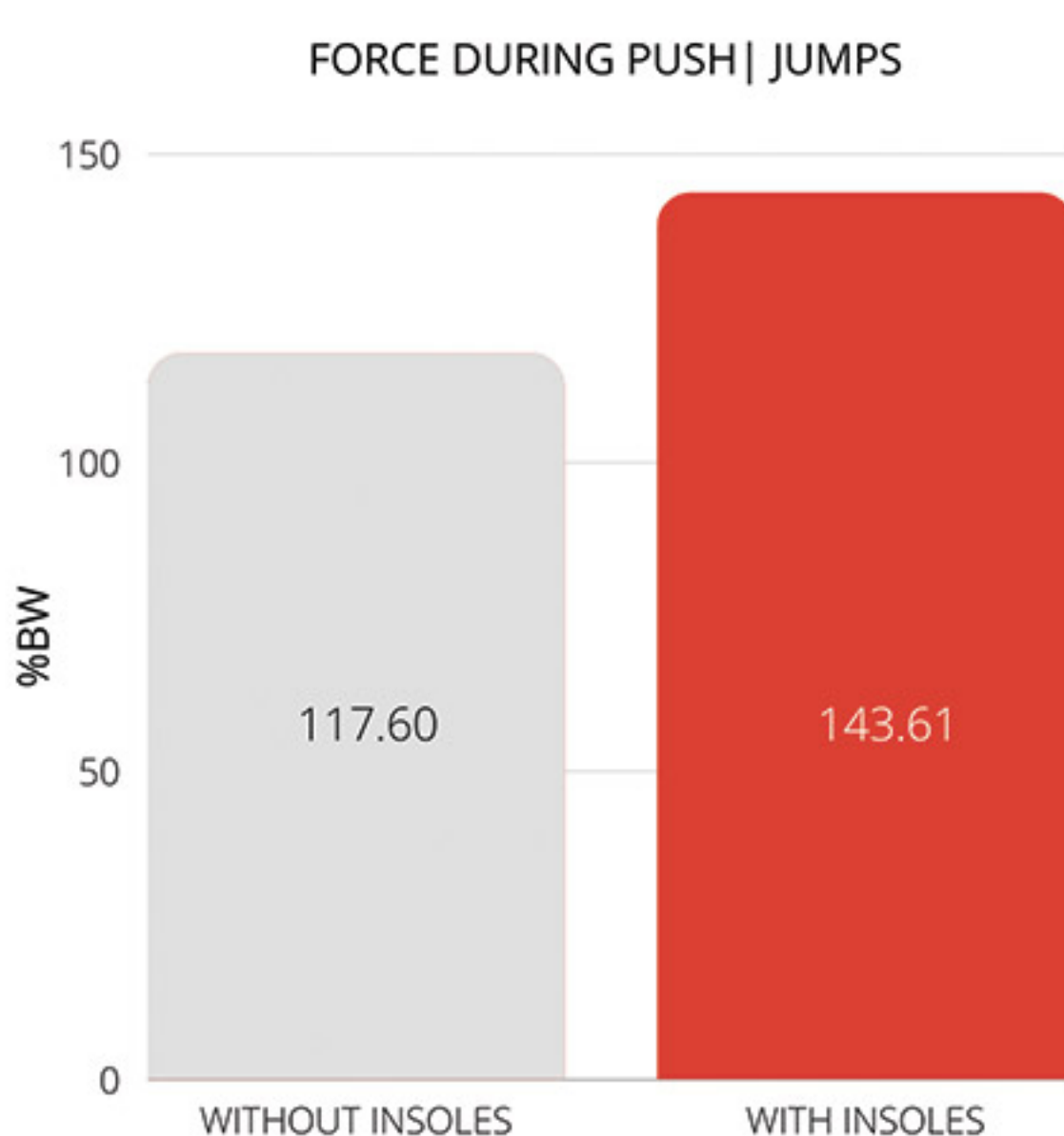
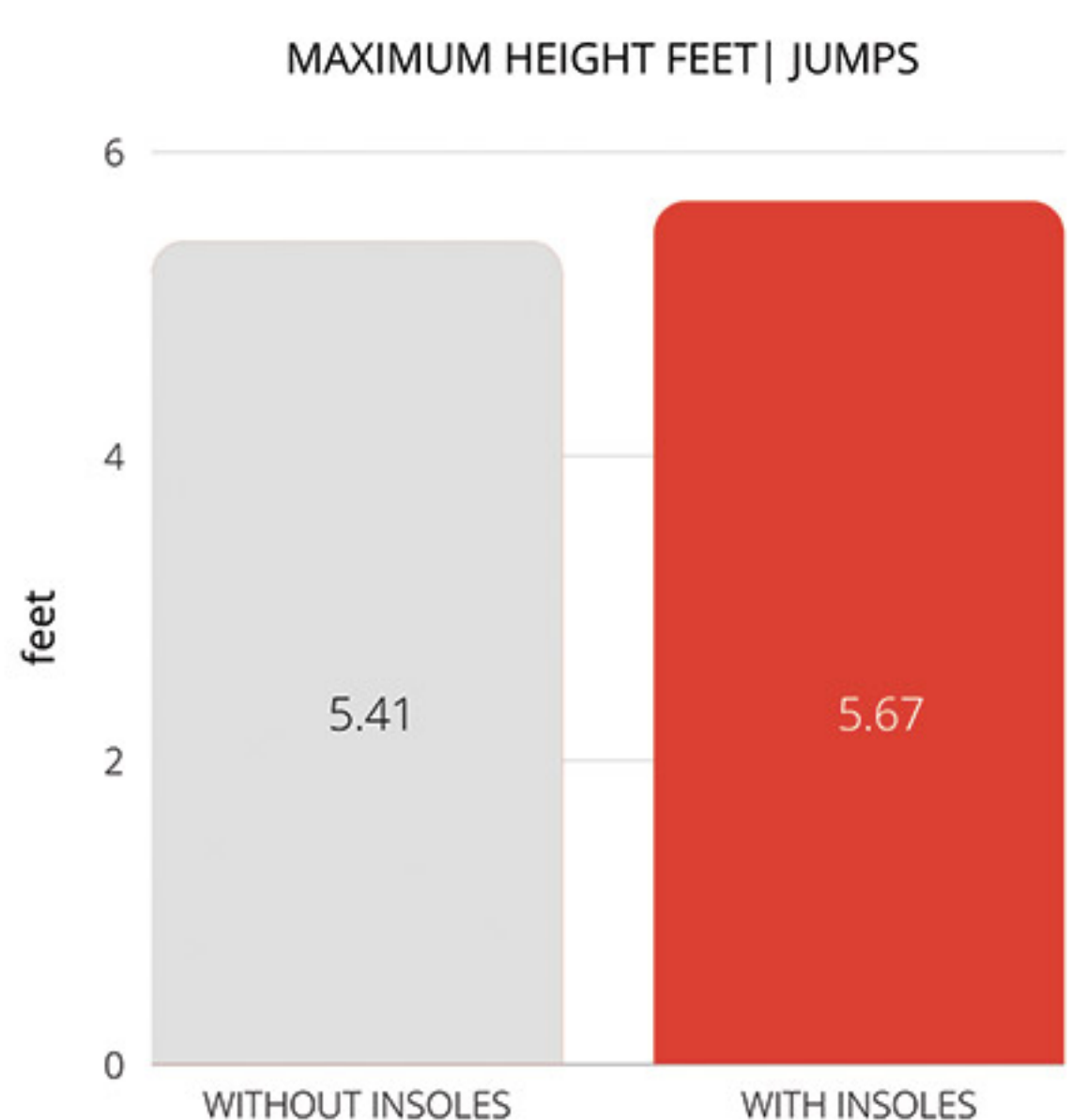
In fact, the subject A recorded an average maximum speed of 7.27 m/s [26.18 km/h = 16.27 mph] without insoles and 8.25 m/s [29.69 km/h = 18.45 mph] with insoles; an average maximum acceleration of 42.28 m/s² [547909 km/h² = 0.02627 mps²] without insoles and 50.67 m/s² [656619 km/h² = 0.03148 mps²] with insoles.



HIGH JUMPS

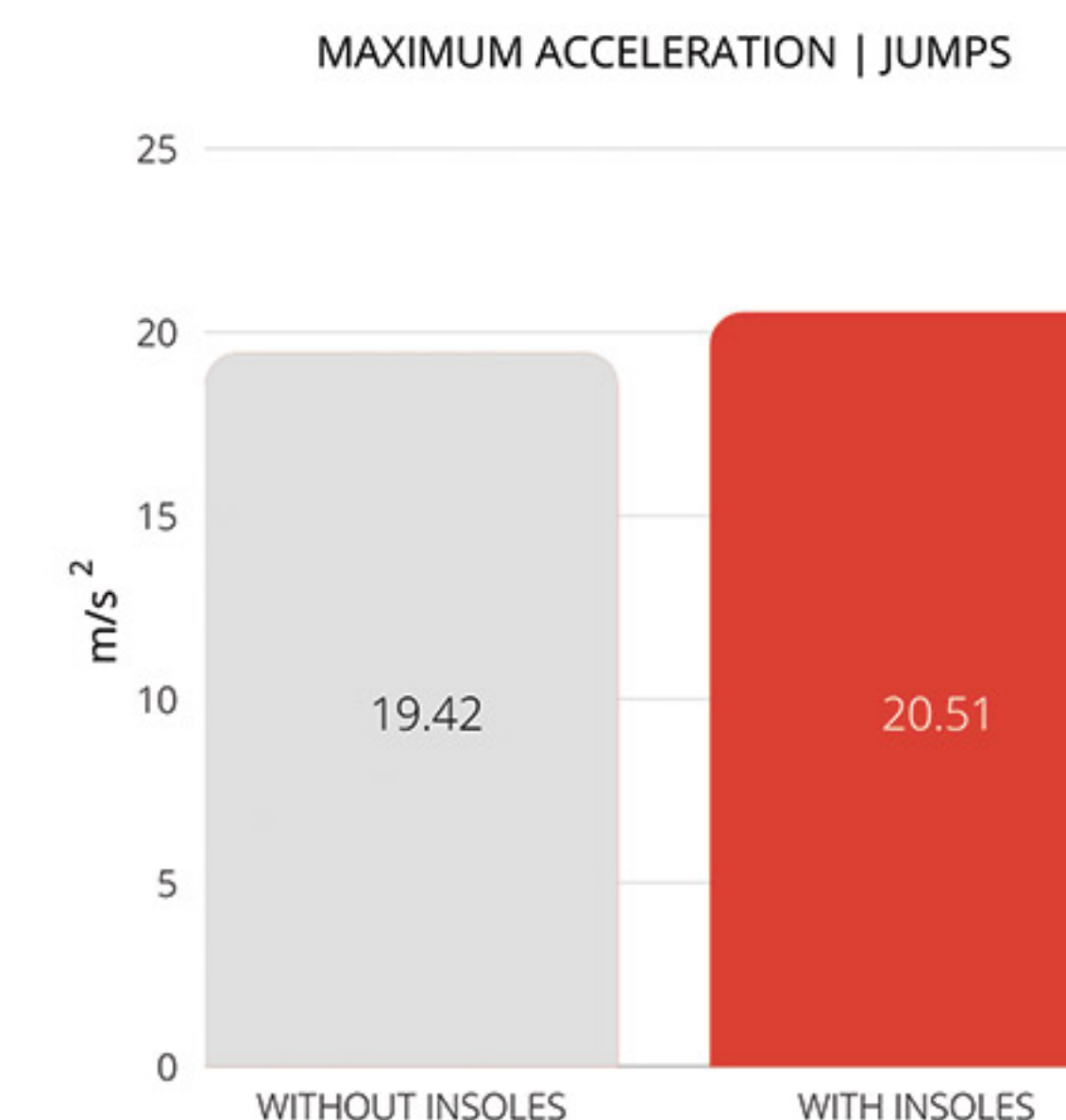
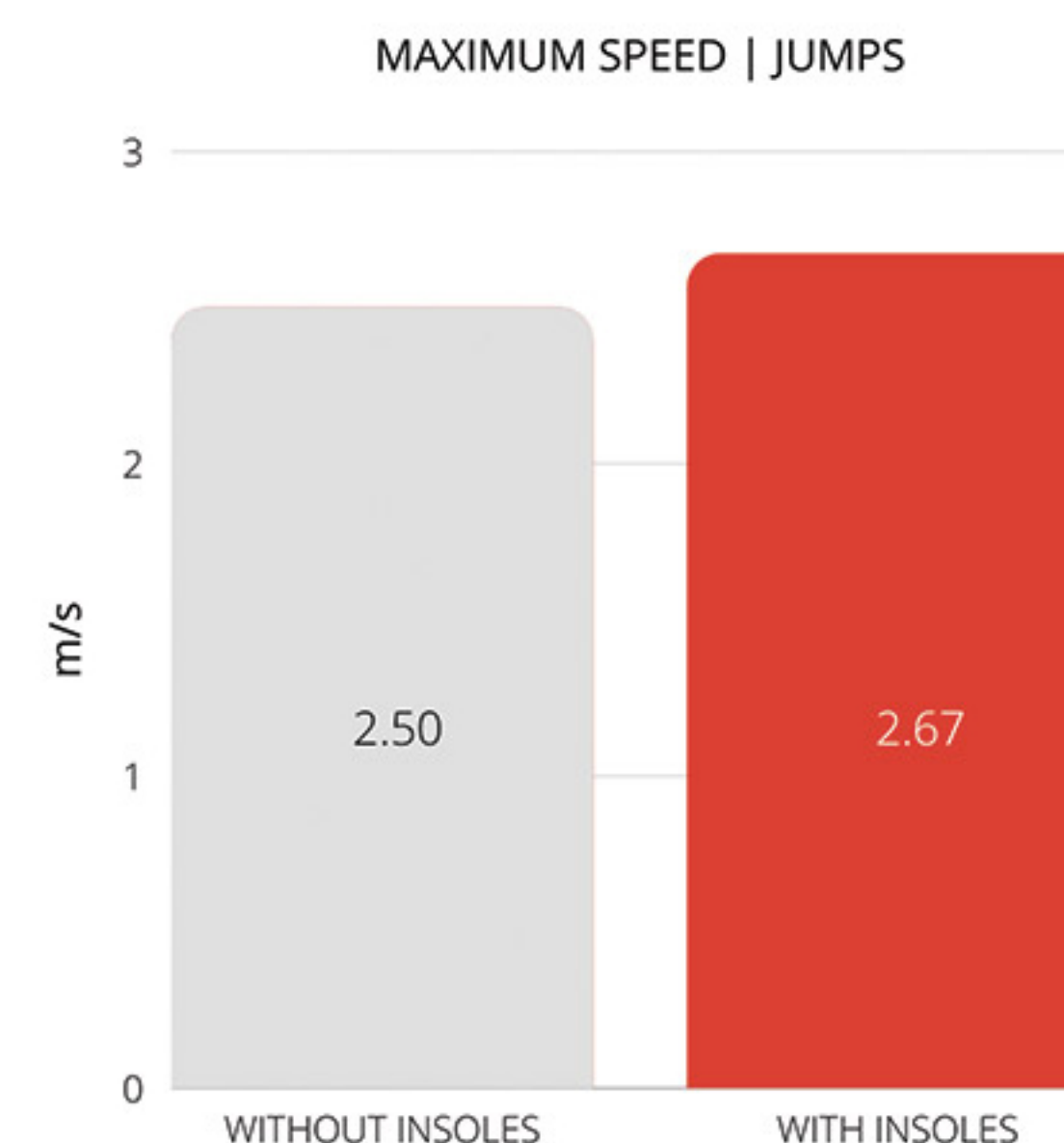
During jumps, subject A **achieves a 4.85% greater average maximum height** with insoles (165 cm – 5.41 feet without insoles and 173 cm – 5.67 feet with insoles), a difference equivalent in this case to 8 cm (3.15 inches).

There is also a **22.12% increase in maximum ground reaction force** during pushing when the insoles are worn; in fact, it increases from an average value of 117.60% BW to 143.61% BW.



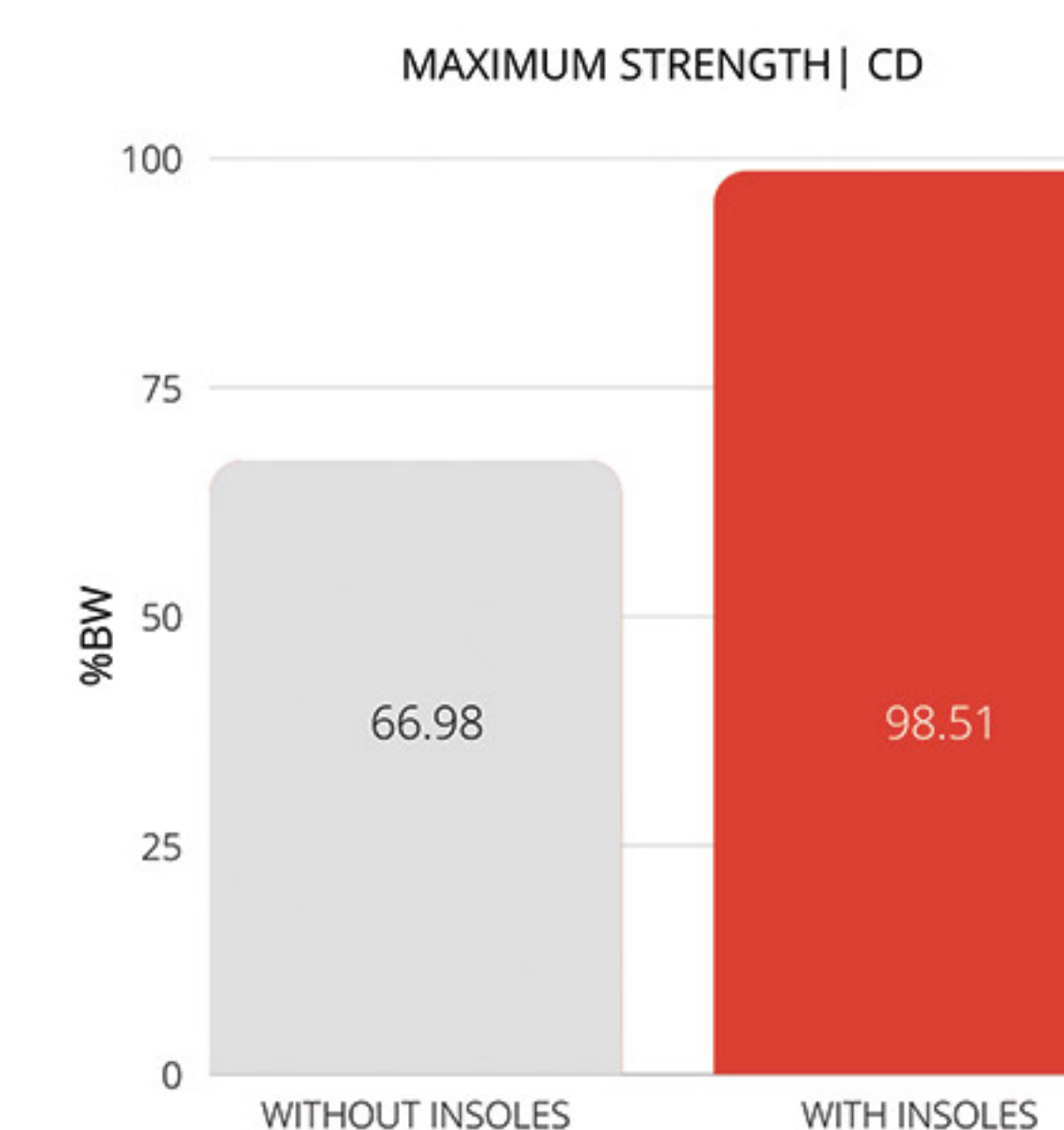
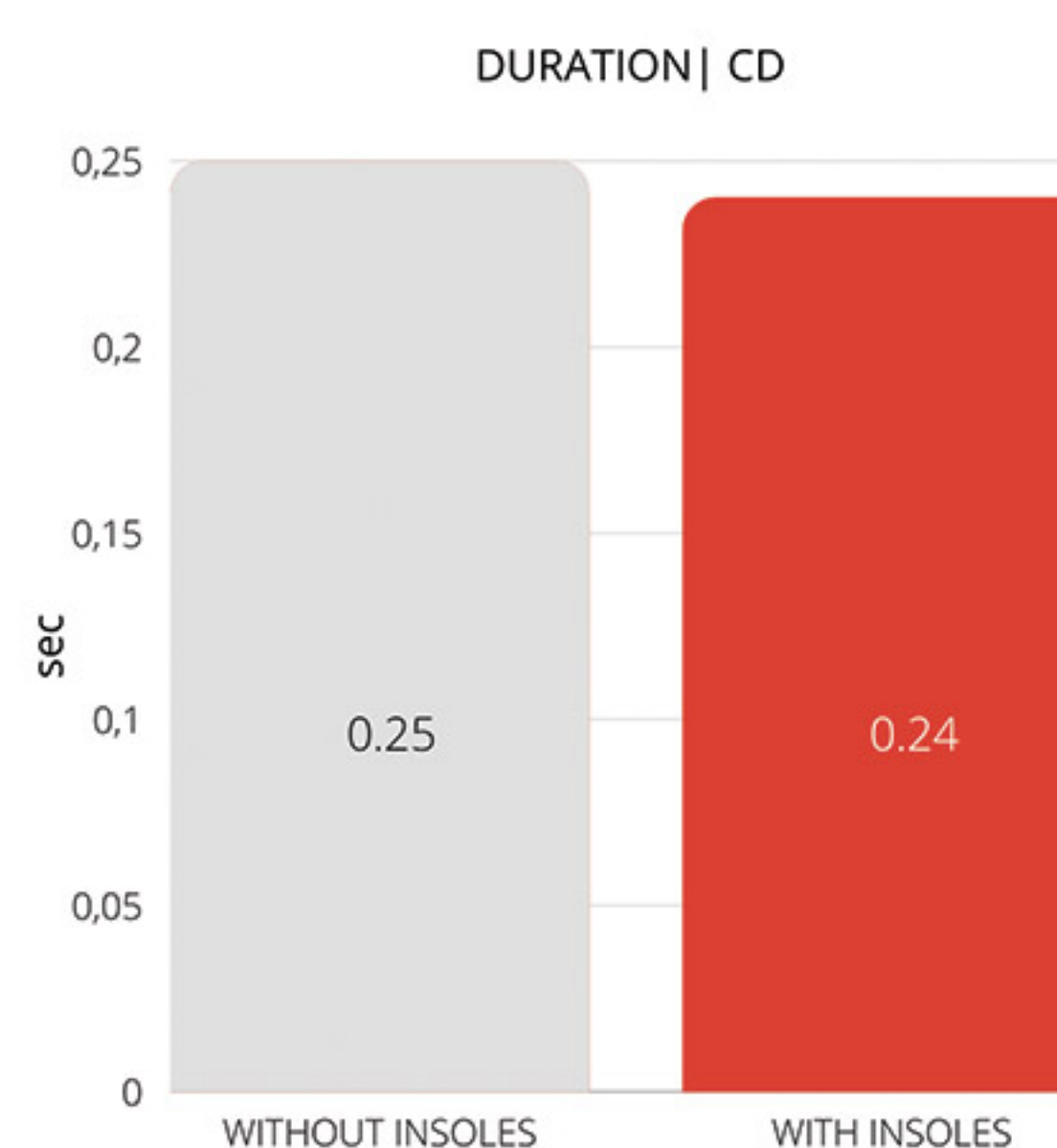
HIGH JUMPS

Also the average maximum speed and acceleration during the task increase when using insoles: **the speed increases by 6.80%** and **acceleration by 5.61%**.



CHANGES OF DIRECTION

In changes of direction, greater responsiveness of subject A is observed bilaterally, justified by a **reduced task duration of 4.17%** and an **increase in maximum ground reaction force of 47.07%** with the insole worn.



Acquisition date
Padova 07/07/2022