CHEAT SHEETS

The Curved Sprint Deceleration Assessment

Testing curvilinear deceleration ability with SmartSpeed

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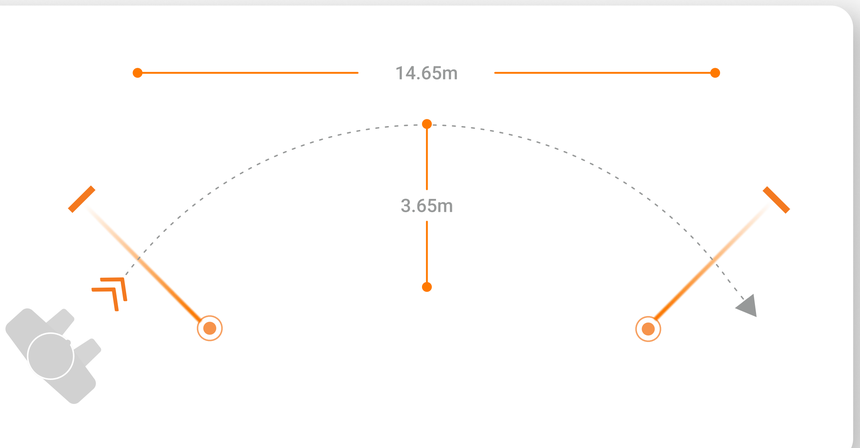
Most maximum-velocity efforts in pro soccer are **curvilinear**

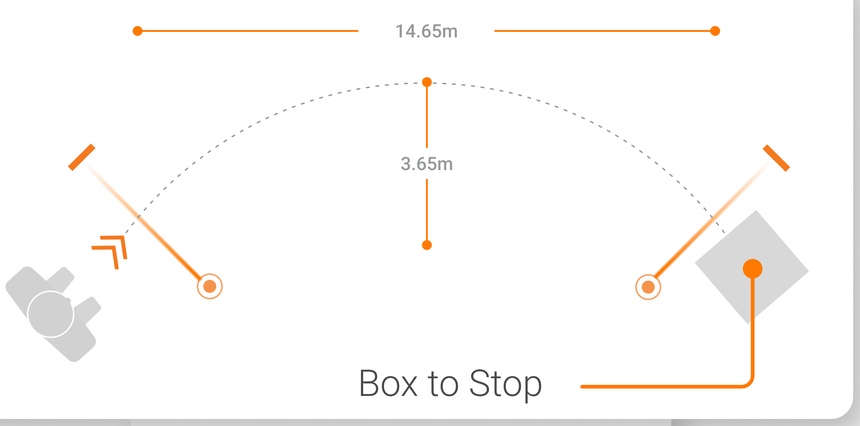
Testing horizontal **deceleration**

Horizontal deceleration is a **vital, yet often under-tested** component of athletic performance.

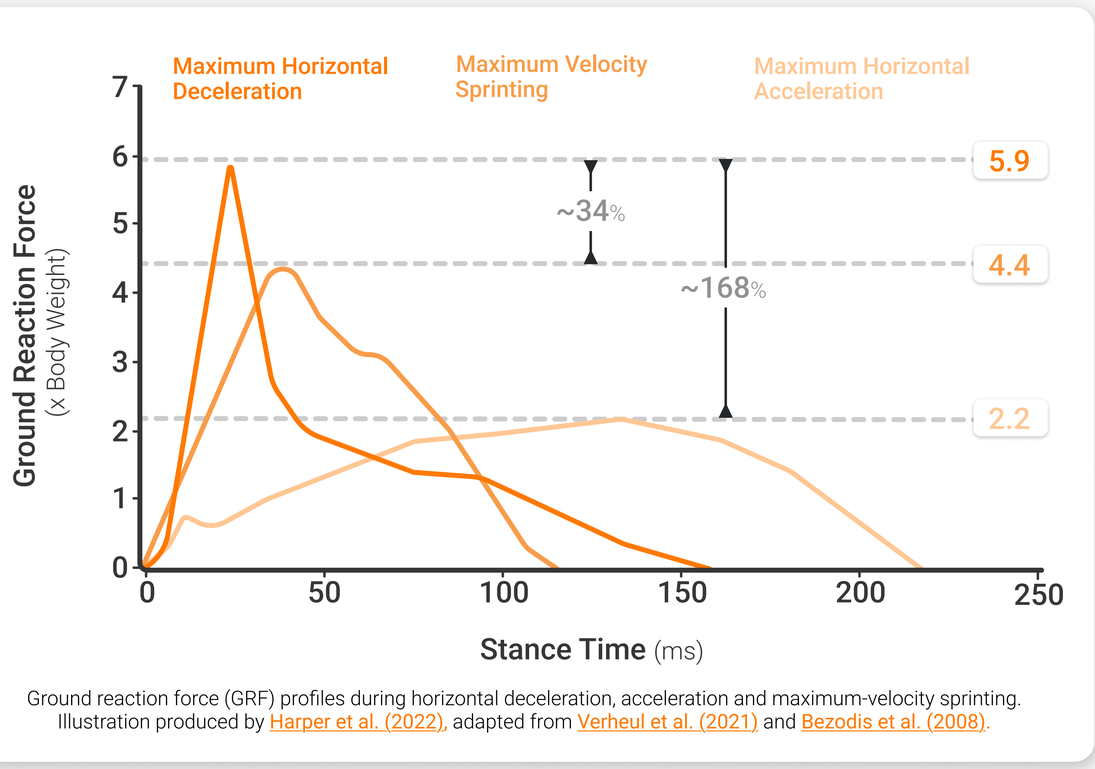
Calculating the **Curve Sprint Deceleration (CSD) Deficit**



Curve Sprint Test



Curve Sprint Test
(Deceleration Deficit)



Ground reaction force (GRF) profiles during horizontal deceleration, acceleration and maximum-velocity sprinting. Illustration produced by Harper et al. (2022), adapted from Verheul et al. (2021) and Bezodis et al. (2008).

$$\textbf{CSD Deficit} = \left(\frac{(\textit{Time with stop} \times \mathbf{100})}{(\textit{Time without stop})}\right) - \mathbf{100}$$

Using a standardized curve and SmartSpeed Gates at start and finish, practitioners can calculate the CSD Deficit to **characterize athletes with better and worse braking abilities.**

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