

Supplementary files

Supplementary table A: Isometric endurance and peak isometric cervical strength scores for different playing positions. Absolute values are shown as mean force values in Newton (N) pr seconds (s) with standard deviation (SD).

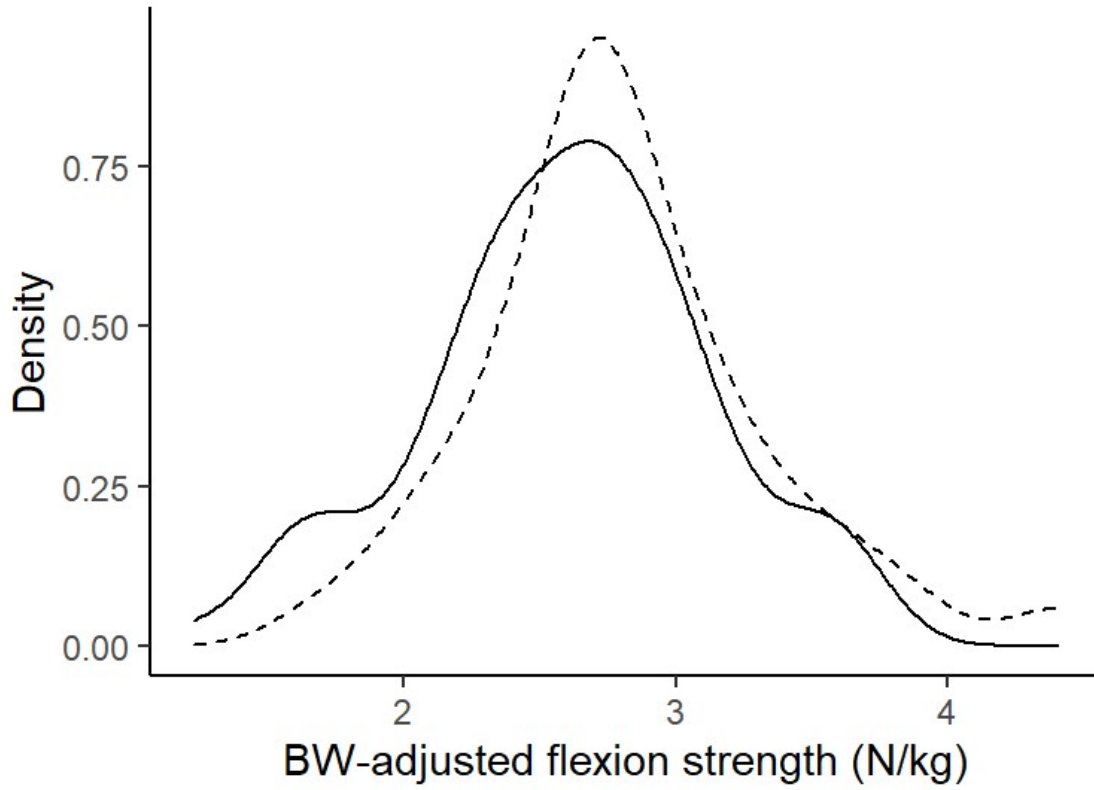
	All (n=136)	Backs (n=61)	Front row forwards (n=37)	Other forwards (n=38)	p-value
Isometric endurance (s)					
Extension	55.7 (17.1)	58.2 (16.9)	57.1 (19.9)	50.2 (13.4)	0.06
Flexion	52.9 (20.1)	52.5 (18.9)	54.7 (22.9)	51.8 (19.7)	0.81
Peak isometric strength (N)					
Flexion	275 (65)	247 (48)	319 (70)	276 (61)	<0.001
Extension	429 (104)	380 (82)	516 (116)	424 (62)	<0.001
Side flexion left	306 (73)	282 (68)	348 (70)	304 (66)	<0.001
Side flexion right	308 (70)	277 (65)	362 (59)	307 (53)	<0.001



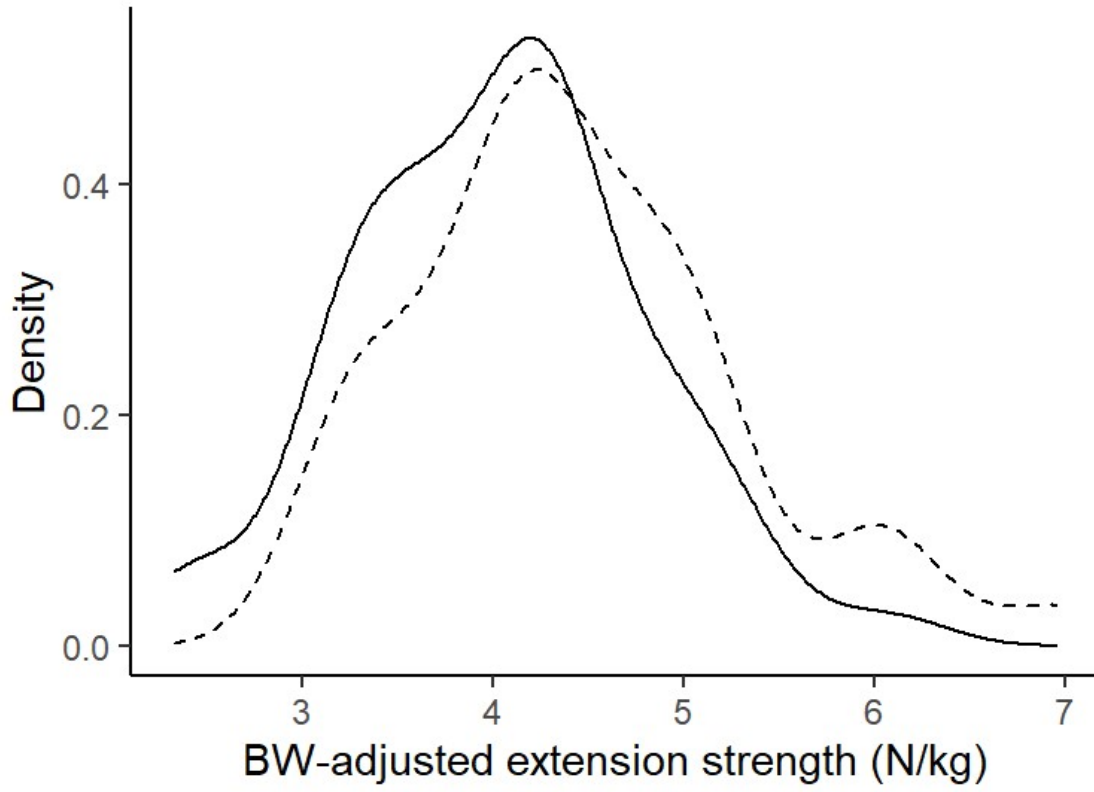
Supplementary FIGURE A. Peak isometric strength test (right lateral flexion). Players were seated in an upright position with the head kept in neutral position, hands by the side holding onto the seat base, feet hip width apart and flat on the floor throughout the test. A slack harness was placed around their forehead across the frontal and parietal bones above the ear line. The strain gauge was in line with the direction of movement. Flexion was performed with the same set up in the opposite direction.



Supplementary FIGURE B. Isometric endurance test with head harness for (i) flexion and (ii) extension.



Supplementary FIGURE C Distribution of peak isometric flexion strength in the injured (red) vs uninjured (black) groups Body Weight (BW) adjusted.



Supplementary FIGURE D Distribution of peak isometric extension strength in the injured (red) vs uninjured (black) groups Body Weight (BW) adjusted.

Appendix A

Concussion Screening Questionnaire

1. Have you ever had a concussion?

Yes

No

2. If yes, how many concussions were medically confirmed?

3. If yes, how many concussions were self-diagnosed?

4. Have you ever seen a specialist (Neurologist or other) with regard to a concussion you suffered?

Yes

No

5. Have you ever completed baseline concussion testing?

Yes

No

If yes what tool: SCAT3 Cogspport ImPACT Other: _____

6. Have you had more than two concussions in the past 12 months?

Yes

No

7. Have you ever been diagnosed with, or suffered from, any of the following?

Anxiety or depression

A learning disorder

ADD/ADHD

Migraine

Sleep disturbance

8. Has a member of your immediate family ever been diagnosed with, or suffered from, any of the following?

Anxiety or depression

A learning disorder

ADD/ADHD

Migraine

Sleep disturbance

9. Do you currently suffer from any of the following:

Headaches

Problems with memory

Dizziness

Difficulty concentrating

Blurred vision

Feeling 'foggy'

Poor balance

Mood swings

Difficulty Sleeping

Sensitivity to light

Nausea

10. Have you even had a concussion where symptoms lasted for more than 2 weeks?

Yes

No