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SDC 6: Description of the trunk stability testing manoeuvre and measures obtained from it (names and labels).

Trunk stability

The unstable sitting protocol described by Barbado et al. [1] was used to assess participant's ability to control trunk posture and motion while sitting. Briefly, after a familiarization / practice period (2 minutes), participants performed different static and dynamic tasks while sitting on an unstable seat:

- One static stability task without visual feedback (test 1) and another with visual feedback (test 2). In test 1 participants were asked to sit still in their preferred seated position on the unstable seat, while in test 2 participants were requested to adjust their centre of pressure position to a target point located in the centre of a screen placed in front of them.
- Three dynamic stability tasks with visual feedback, in which participants were asked to track the target point, which moved along three possible trajectories (anterior-posterior, medial-lateral and circular).

All tasks were performed twice. The duration of each trial was 70 seconds and the rest period between trials was 1 minute. Participants performed each trial with arms crossed over the chest. All participants were able to maintain the sitting position without grasping a support rail.

The mean radial error was used as a global measure to quantify the trunk performance during the trials. This variable was calculated as the mean of vector distance magnitude of the centre of pressure from the target point trials (trials with visual feedback) or from the participant's own mean centre of pressure position (trials without visual feedback).

Measures obtained from the Trunk stability test.

| Name | Labels |
|-------------|-------------------------------|
| USNF | <5.125, 5.125-6.46 or >6.46 |
| USWF | <4.74, 4.74-5.72 or >5.72 |
| USML | 7.345, 7.345-8.925 or >8.925 |
| USAP | <7.445, 7.445-8.87 or >8.87 |
| USCD | <9.47, 9.47-11.185 or >11.185 |
| GLOBAL | <6.88, 6.88-8.24 or >8.24 |

USNF: unstable sitting without feedback; USWF: unstable sitting with feedback; USML: unstable sitting while performing medial-lateral displacements with feedback; USAP: unstable sitting while performing anterior-posterior displacements with feedback; USCD: unstable sitting while performing circular displacements with feedback.

References

1. Barbado D, Lopez-Valenciano A, Juan-Recio C, Montero-Carretero C, van Dieën JH, Vera-Garcia FJ. Trunk stability, trunk strength and sport performance level in judo. *PloS one* 2016;11:e0156267.