# The Jurdan Sprint Table Test using smartphone video analysis: reliability and use in an elite football team

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**Hamstring injury** | **Sprint mechanics** | **Reliability** | **Flexibility assessment** | **Pelvis-hip coordination** | **Elite football** | **Screening protocols** | **Return-to-play** | **Injury prevention**

## Headline

An average English Premier League team is estimated to lose approximately £45 million per season due to injury-related performance declines (Eliakim 2020). One of the most challenging injuries in professional football is the hamstring muscle injury, which constitutes 12–15% of all football-related injuries (Ekstrand 2020 & 2022). Beyond their high incidence, hamstring injuries are also characterised by a substantial risk of recurrence. Previous work by Ekstrand and others has shown that hamstring re-injury rates typically range between 18–26% within a single season, with more than two-thirds of recurrences occurring within the first two months following return to play (Ekstrand 2022). This highlights the early post-RTP period as a critical window for prevention. Developing strategies aimed at reducing hamstring injury occurrence and speeding up the return to play (RTP) and competition is, without surprise, of primary interest to all practitioners working with elite teams.

Since there are likely multiple factors that may influence hamstring muscle injury risk in football (Green, 2020), it is intuitive that optimal hamstring screening protocols should also be multifactorial (Lahti, 2021, 2022). Practitioners generally screen and examine posterior chain strength, lumbopelvic control, range of motion (e.g., active straight leg raise -ASLR-, Thomas test, and more recently the Static Jurdan test, a combination of the latter that is aimed at quantifying the interaction between the hamstring and the opposite thighs hip flexors), and at last sprint mechanical output (Lahti, 2021, 2022). Most of these measures are quick to implement, don't require extensive material, and can be performed within the day-to-day of elite teams in between matches.

In addition to the above series of tests, the Jurdan Sprint Table Test (JSTT) has been recently developed by Jurdan Mendiguchia (Astrella 2025). It is aimed at reproducing the same interaction between legs through the pelvic segment that takes place during sprinting, which is one of the main injury mechanisms for hamstrings (Danielsson 2020). More precisely, it provides practitioners with information about the hamstring-pelvis-contralateral iliopsoas structure and its ability to support the strain imposed by maximal sprints and accelerations (Figure 1). Therefore, 1) assuming that the strain is a determining factor of tissue damage (Danielsson 2020, Chaudhari 2014, Fiorentino 2014, Mendiguchia 2020, 2022 & 2024), and 2) considering the association between the response of the hamstring-pelvis-contralateral iliopsoas structure during both the JSTT and overground sprint acceleration, practitioners can assess the state of that structure in a well-controlled and safe environment (i.e., physio table) before any maximal sprint action of high strain may be performed (i.e., pre-season, end of RTP).

Despite the increasing relevance and use of this test in the clinical setting and in elite teams across the globe, information on its reliability is limited to kinematic data captured with inertial measurement units in a highly controlled setting, specifically for the contralateral thigh elevation angle during the JSTT (TE = 1.3°, CV = 15%; Astrella 2025). Reliability information in the day-to-day conditions of elite teams while using smartphone cameras and rotating examiners is lacking, and there is no published evidence of use cases at the elite level.

## Aim

The aims of the present study were 1) to examine the reproducibility of the JSTT in the real-world setting of an elite team, where collection methods may not always be perfect (e.g., changes in test location, use of tripods or not), and when examiners may vary between a test and another (i.e., staff rotation) (Fourchet 2013), 2) understand the JSTT relationship with other (static) measures aimed at quantifying the interaction between the hamstring and the opposite thighs hip flexors such as the Static Jurdan test and 3) examine the applicability of the test in players presenting negative vs. positive tests results in relation to hamstring injury incidence through a competitive season.

## Methods

### Jurdan Sprint Table Test

The JSTT was developed by Jurdan Mendiguchia and has been used in his clinic since 2012 (Astrella 2025). It aims to capture sprint-like lower limb mechanics without actual sprinting, and to probe how the biceps femoris and iliopsoas handle high-speed strain. In the test, the player lies supine on a physio table and lifts one straight leg as fast as possible into hip flexion (around 250-300°/sec) while the other leg stays on the table. Unlike the Askling tests (Askling 2010), the pelvis and the contralateral leg are not fixed during the JSTT, allowing free pelvic motion and contralateral limb behaviour. While the original JSTT protocol recommends lightly cinching the knee of the active (kicking) leg to limit knee flexion to approximately 5° for standardisation purposes, no knee brace was used in the present real-world setting, reflecting routine practice in an elite team environment. This approach represents a deliberate next step from traditional physiotherapy paradigms, in which segment fixation is commonly taught to improve measurement accuracy, but which may also limit the expression of natural multi-segment movement strategies that are relevant during high-speed athletic tasks.

In the present study, the primary outcome variable was the contralateral thigh elevation angle, defined as the angle between the femoral axis of the contralateral limb and the horizontal plane at the moment when the active leg crossed 90° (Figure 2). This standardised reference point was selected to facilitate practical interindividual comparisons. Because all participants are able to raise the active leg rapidly beyond 90°, using this instant ensures that observed differences primarily reflect pelvis–femur system behaviour rather than differences in active-leg range of motion or movement strategy. At this standardised position, contralateral thigh elevation is closely related to the subject's static pelvic orientation, such that greater contralateral thigh elevation reflects a greater degree of anterior pelvic tilt.

While using wireless inertial measurement units is an accurate approach to assess limb movements and positions (Astrella 2025), this may not always be accessible to teams. The use of cameras and associated video/photo analysis software has proven to be an efficient alternative setup for assessing kinematic variables in the elite team context (Lahti 2021, 2022).

Tests were filmed using staff's iPhones (6 to 11 and IOS versions available at the time of testing) and subsequently analysed using Kinovea (`https://www.kinovea.org`) to measure the hip flexion angle. Before any measurement, a calibration of the horizontal is performed, taking into account the surface used (e.g., physio table, jump boxes). Since every time the tripod is moved, the horizontal line may change, it is necessary to set it manually in Kinovea, not to over/underestimate the final angle. Note that throughout the use of the test across two seasons, our protocol has evolved - we have more recently marked the trochanter with tape (i.e., white tape for darker skin/black underwear, black tape for lighter skin/with underwear), which helps to standardise measurements.

Angles were assessed on each side and reclassified as dominant vs. non-dominant leg raised. For example, if a right-footed player is kicking/raising his right leg, the elevation angle of the left contralateral, passive tight is used as the outcome for the evaluation of the dominant leg, and vice versa. If the angle is greater than 10-15° (present results will be used to (re)-define and clarify this cut-off), the test is deemed positive (Figure 3). Videos are available here for viewing and show both positive and negative tests (`https://www.youtube.com/watch?v=AjPMT8CwOOU`).

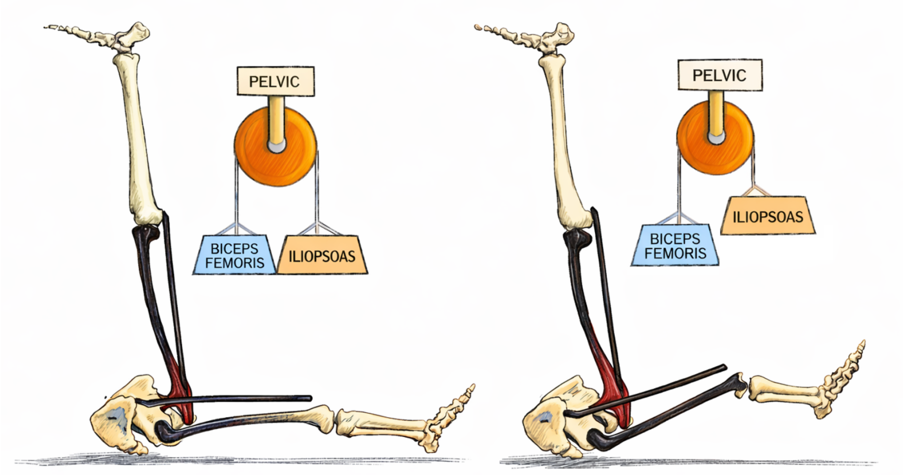


**Fig. 1. Representation of the pelvis as an anatomical lever modulating the dynamic interaction between the biceps femoris and iliopsoas during high-speed movement. The schematic illustrates how pelvic motion may redistribute strain and coordinate energy transfer between the posterior (hamstring) and anterior (hip flexor) chains. This mechanism reflects the integrated neuromechanical behavior of the femur–pelvis system during tasks like the JSTT or sprinting, highlighting the pelvis's role as a central structure coordinating bilateral muscle–tendon unit function. Figure adapted from Astrella 2025 with permissions.**

### Reliability

Tests were repeated between 2 and 4 times across 2 seasons, i.e., in July within 2-3 days after the start of the pre-season (2021 and 2022), and during the second pre-season in January 2021 (post-Christmas break) or December 2022 (World Cup break) in the main squad players of a French professional team (Ligue 1). In total, 35 different players (24 ± 4 yrs) were screened, with an average player testing number throughout the 1.5 seasons of 2 (range 1 to 4).

Tests were performed before training in the morning (10-11 am) during a normal training week, following 2 days of moderate-intensity training. Because of the elite nature of the team and logistical constraints, there were changes in operators (i.e., staff rotations) and testing conditions (use of tripods or not) between testing days.

Data were then analysed using a specifically-designed spreadsheet (Hopkins 2015) to calculate absolute reliability, i.e., typical error (TE), expressed both as a CV (%) and in standardised units (Cohens'd). The intraclass correlation coefficient was also provided as a measure of relative reliability.

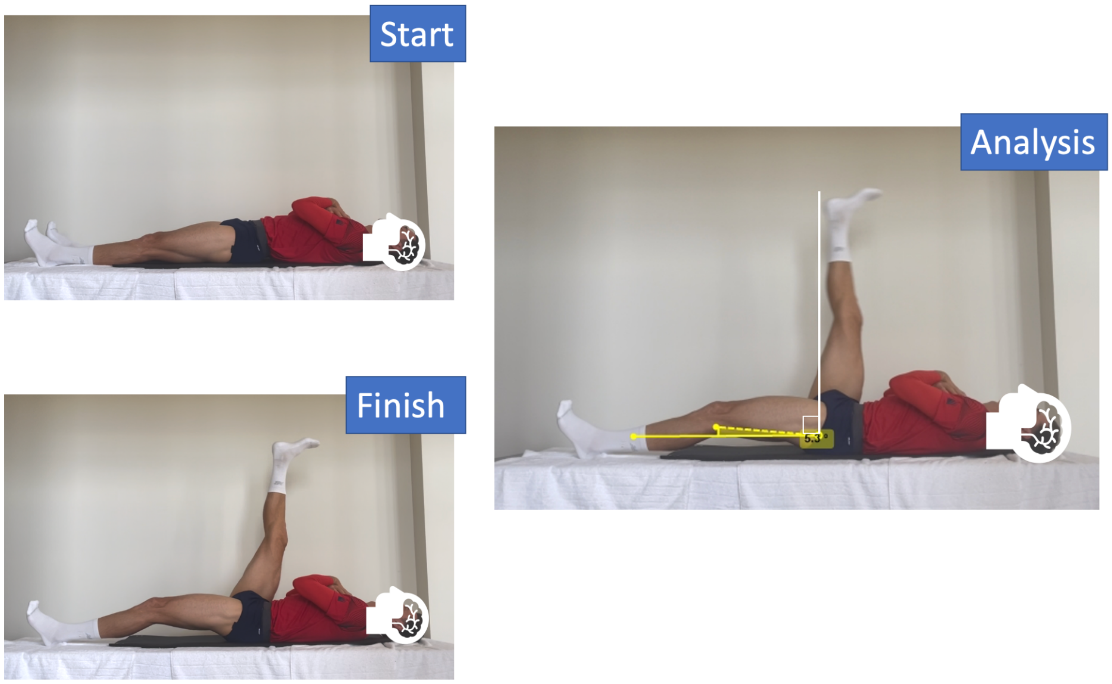


**Fig. 2.** **Jurdan Sprint Table Test keyframes. Upper left: start of the test: both legs relaxed on the table. Middle right: frame used for analysis, i.e., when the active leg crosses the perpendicular of the table (heel vs trochanter mark axis). Lower left: Finish - end of the movement (the fact that the heel goes behind the perpendicular axis ensures the movement has been maximal in terms of speed and amplitude) (Adapted from Astrella 2025).**

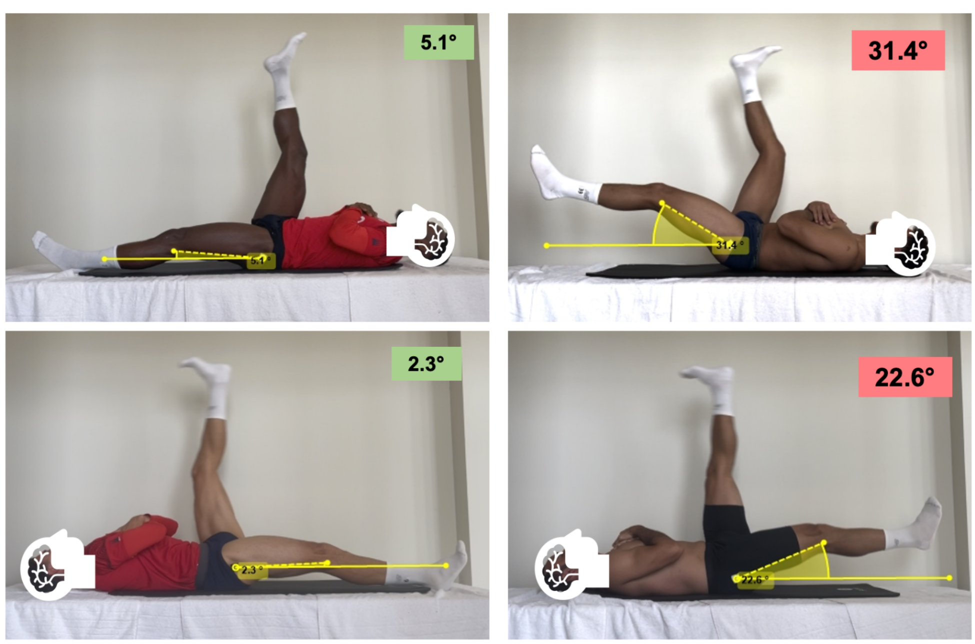


**Fig. 3.** **Examples of negative (left) and positive (right) tests.**


**Fig. 4. Static Jurdan test. Frame selected for analysis showing the two angles used to calculate the static inter-limb opening index (i.e., shin angle of the elevated leg minus contralateral thigh angle (60.4 - (-6.5) = 66.9°); "right-leg-raised condition" in the present example). As per the JSTT, the horizontal was calibrated in Kinovea using the physio table.**

### Relationship with Static Jurdan tests

On the same occasion when the JSTT was realised, players also realised (immediately before, actually) the Static Jurdan test (Lahti 2021, 2022) (Figure 4). The Static Jurdan test position and execution can be considered a combination of the modified Thomas test and the active knee extension test. Initially, the player lies supine after sitting on the edge of the table. Then, one leg is passively kept over the table while the opposite performs an active knee extension. The start position is where the player is told to hold their lumbar spine in contact with the table. The lumbar position is verified kinaesthetically by the clinician in the starting position. Then, the player is asked to maintain the thigh at 90° while performing the active knee extension (verified visually). The outcome variable was the static inter-limb opening index, calculated as the sum of the shin angle of the elevated (actively extended) leg and the contralateral thigh angle, both referenced to the horizontal plane. Results were assessed for each leg raised (i.e., right and left), and then also re-classified as a dominant vs. non-dominant leg raised.

### Case studies

Additional tests were performed as part of the RTP process for some injured players during the season. Measures taken post-hamstring injuries were compared with pre-injuries (baseline) data.

## Results

### Descriptive data

Among the 35 different players tested over the period examined, the JSTT was performed a 55 occasion on both sides. Across these 110 tests, the average contralateral thigh elevation angle were: Left JSTT mean = 12.9°, median = 11.9°, SD = 7.1°, range = 1.0–39.8 and right JSTT mean = 13.0°, median = 13.1°, SD = 7.2°, range = 0.6 – 40.7° (Figure 5), with no between-leg differences (Table 1), and no between-trial differences (all confidence intervals overlapping).

### Reliability

Among the 35 different players tested over the period examined, we retained the data of 22 players who had 2 repeated measures in standardised conditions. The reliability of the contralateral tight elevation angles was as follows: typical error: 5° (90% CI: 4-6); Cohen's d: 0.86 (0.72 - 1.04), CV: 49.3% (40.8 - 60.8); ICC: 0.65 (0.48 - 0.77).

### Effect of limb dominance

For this analysis, data were extended to a pool of 63 pairs of data (i.e., 19 player pairs with both Static Jurdan Test and JSTT data were added to the 44 pairs of repeated JSTT used for the reliability analysis). When looking at angles in relation to leg dominance, there was no clear difference between limbs, and this was consistent for both tests (Table 1).

When examining which side showed a greater restriction of the pelvis–femur–contralateral limb complex between the dominant and non-dominant leg (when raised), results were mixed with no clear effect of limb dominance. There was, however, a tendency for the dominant side to present a more restricted inter-limb opening behavior during the JSTT (59% and 54% of cases for left- and right-footed players, respectively), while the opposite tendency was observed during the Static Jurdan test (41% and 46% for left- and right-footed players, respectively) (Table 2). These findings should be interpreted as reflecting differences in multi-segment configuration and control rather than mechanical stiffness in the strict sense.

### Correlation between the JSTT and Static Jurdan test results

When between-test associations were examined (using the inter-limb opening index from the Static Jurdan test and the contralateral thigh elevation angle from the JSTT, Figures 7 and 8), correlations were all small (r = 0.19 - 0.23).

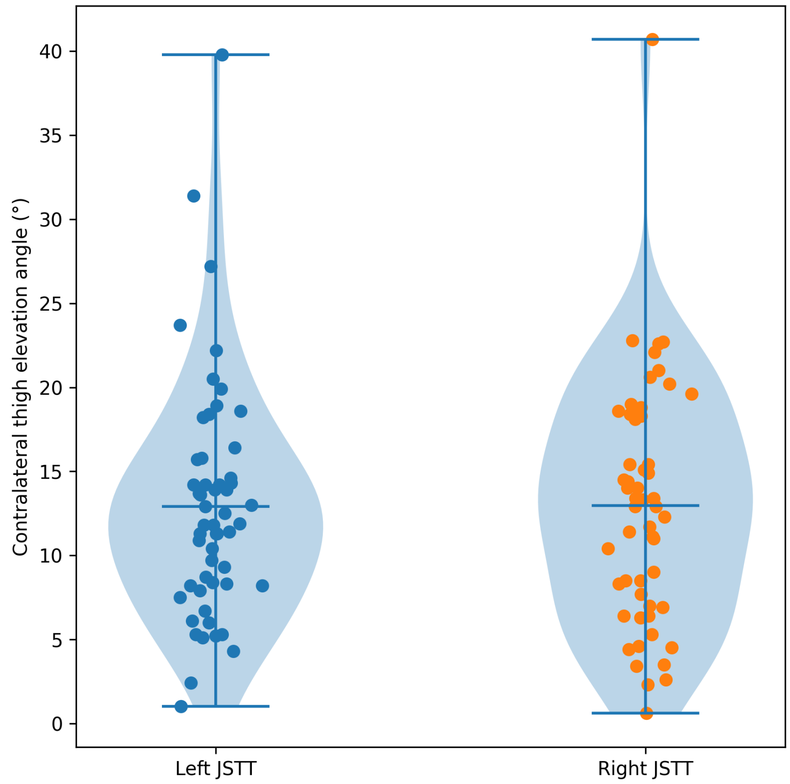


**Fig. 5. Violin plot showing the distribution of the contralateral thigh elevation angle across the 110 measures. The width of each curve corresponds to the approximate frequency of data points in each angle.**

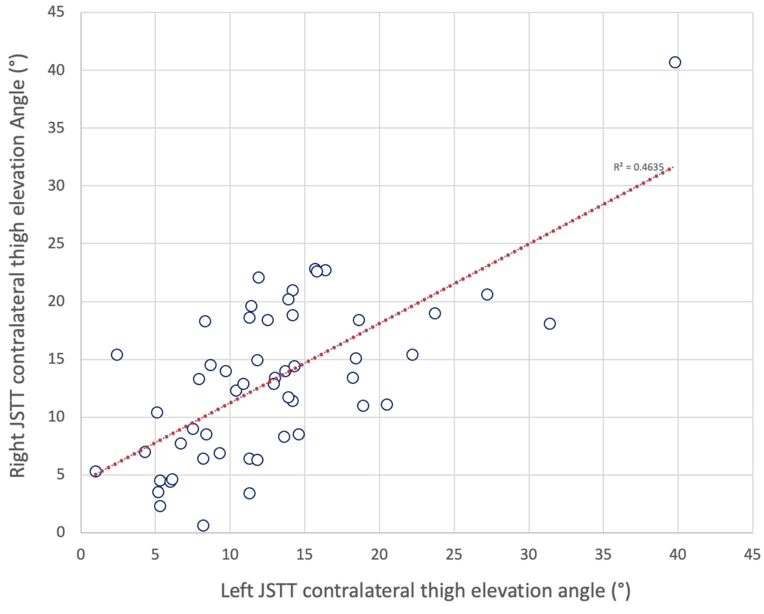


**Fig. 6. Correlation between JSTT contralateral tight elevation angles during the same testing session; r = 0.64 (90% CI 0.48 - 0.76) (n = 55).**

**Table 1.** **Results (angles) for the two tests as a function of player leg/foot dominance.**

| **Test** | Dominant Leg | Angle when Dominant Leg up (°) | Angle when non-dominant Leg up (°) |
|---|---|---|---|
| Jurdan Sprint Table Tests Contralateral tight elevation angle | Left-footed | 14.0 ± 5.7 | 15.0 ± 6.2 |
| | Right-footed | 11.2 ± 7.1 | 12.2 ± 7.7 |
| Static Jurdan Test inter-limb opening index | Left-footed | 64.8 ± 11.0 | 62.1 ± 12.0 |
| | Right-footed | 65.2 ± 15.0 | 62.6 ± 15.0 |

**Table 2.** **Proportion of cases (%) in which the dominant or non-dominant side exhibited a greater restriction of the pelvis–femur–contralateral limb complex (i.e., lower inter-limb opening) when the dominant versus non-dominant leg was raised during both the Static Jurdan test (static condition) and the JSTT (dynamic condition), for left- and right-footed players.**

| | Static Jurdan Test | Jurdan Sprint Table Tests |
|---|---|---|
| Left-footed | 41% | 59% |
| Right-footed | 46% | 54% |

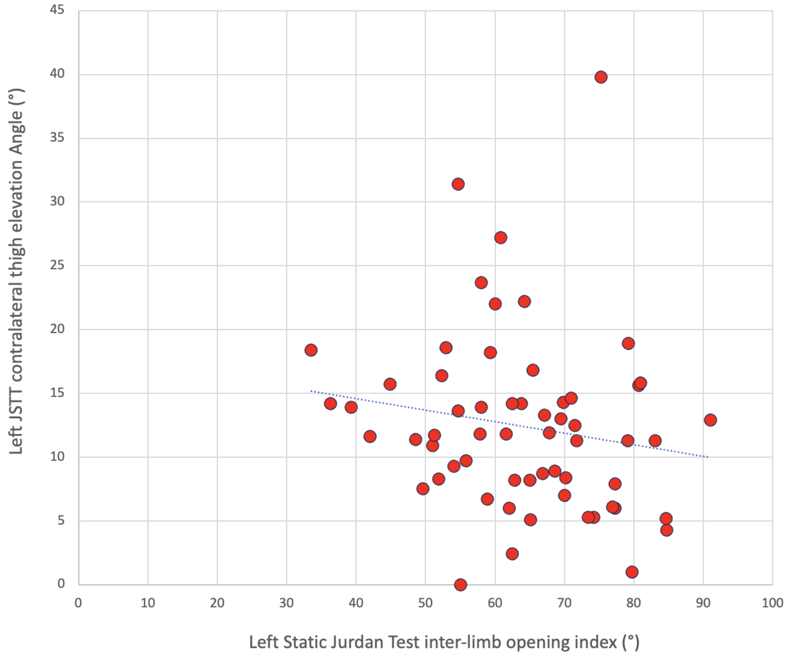


**Fig. 7.** **Relationship between the inter-limb opening index obtained during the Static Jurdan test and the contralateral thigh elevation angle obtained during the JSTT, for the left-leg-raised condition. Each point represents one test occasion. The dashed line represents the linear trend; r = 0.19 (- 0.02; - 0.38) (n = 63).**

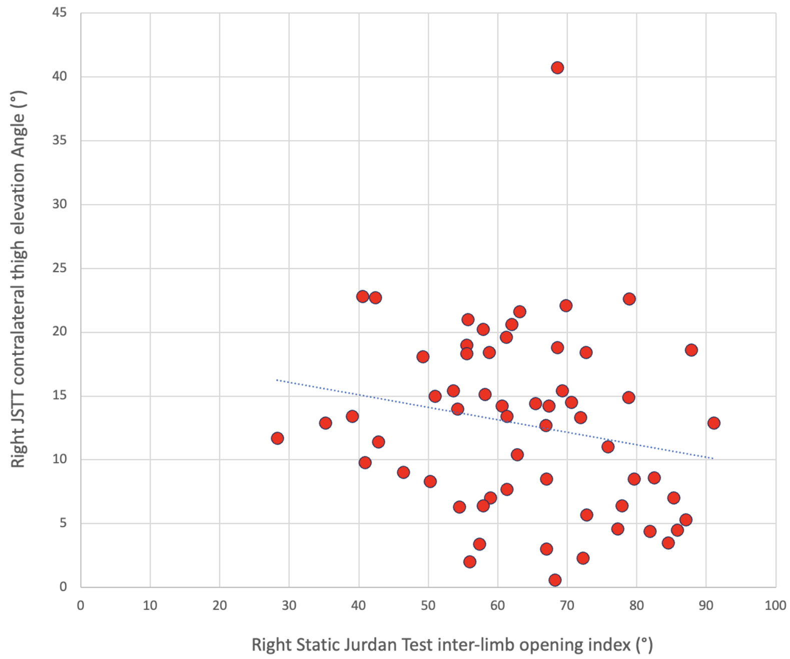


**Fig. 8. Relationship between the inter-limb opening index obtained during the Static Jurdan test and the contralateral thigh elevation angle obtained during the JSTT, for the right-leg-raised condition. Each point represents one test occasion. The dashed line represents the linear trend; r = 0.16 (- 0.05; 0.36) (n = 63).**

### Case study 1

Example of a player who presented a **borderline JSTT response** at the end of the RTP phase and suffered from a reinjury a few days after (grade 1 of the right biceps femoris following a previous grade 1 of the same biceps femoris contracted 15 days earlier - different location of the injury though). He nevertheless had completed and validated all typical return-to-play (RTP) criteria (i.e., hamstring eccentric strength, full active range of motion, >95% maximal running speed reached a few times on the pitch, and appropriate load progression during the 2 weeks in between the injury and the match when the reinjury occurred). He then remained injury-free up to the time of the 4th assessment (Figure 9).

### Case study 2

This is the example of a player who had a **negative JSTT response** at the end of the pre-season but still got injured a few months after (data close to the injury date were not available). His response was negative again at the end of the RTP phase following an injury (Left Hamstring, Grade 2b), and remained healthy consecutively (up to the point of the writing on the manuscript at least) (Figure 10).

### Case study 3

This is the example of two players who had **borderline** JSTT responses during the initial pre-season screening, and got injured later in the season (both Left Hamstring, Grade 2b and 2c for players in the upper and lower panel, respectively), and kept presenting this **borderline** response at the end of the RTP phase. They still remained healthy consecutively (up to the point of the writing on the manuscript at least) (Figure 11). The follow-up tests performed 1-2 months after the injuries highlighted the need to keep working on the player's anterior/contralateral posterior chain flexibility, range of motion and control.

## Discussion

Hamstring injury risk is widely recognised as multifactorial, and no single test or variable can capture the full complexity of injury mechanisms (Green 2020; Lahti, 2021, 2022). Any screening or assessment approach should therefore be considered complementary to other key sources of information, including muscle strength, neuromuscular control, training load, and fatigue-related factors. Within this broader framework, contralateral thigh elevation provides an indirect indication of the subject's static pelvic tilt (Figure 1). Given that pelvic orientation is a key segment influencing strain during sprinting (Mendiguchia 2020, 2022 & 2024), and that static pelvic tilt has been shown to relate to dynamic pelvic positions during high-speed running, this measure allows the JSTT to screen both inter-limb range of motion and pelvic orientation within a single assessment.

It also remains unclear whether maximal inter-limb opening is consistently reached at a specific phase of the sprinting cycle, or whether all involved muscles and tendons are exposed to maximal strain at their absolute maximal lengths (Thelen 2025). Nevertheless, greater dissociation between the limbs and larger achievable ranges of motion are likely to reduce relative strain for a given task. From this perspective, the fact that maximal extension may not be reached during sprinting does not negate the relevance of assessing inter-limb configuration and pelvic behaviour, as these characteristics may still meaningfully influence strain distribution during high-speed running.

This study is the first to examine the reliability of the Jurdan Sprint Table Test (JSTT) using accessible iPhone cameras and standard image analysis techniques. Furthermore, we present novel data to enhance the understanding of the JSTT's utility in evaluating the hamstring-pelvis-contralateral iliopsoas complex, specifically its capacity to withstand the forces generated during maximal sprinting and acceleration. This assessment is contextualised by considering the player's leg symmetries and limb dominance. Finally, we demonstrate how the test results can be employed throughout a season to monitor players and to inform and guide the Return to Play (RTP) process.

### Reliability

The first results indicate moderate test reliability in this specific context (Cohen's d = 0.86), with a typical error (TE) for the contralateral thigh elevation angle of 5° (90% CI: 4–6°). This error, obtained in a real-life practice setting, is larger than values reported for wireless inertial measurement units (TE = 1.3°, CV = 15%; Astrella 2025). The higher error likely reflects the accumulation of several sources, including camera angle and parallax, image quality, marker placement, point selection in Kinovea, and the user's measurements. This level of error is also slightly greater than that described for similar tests: 1) those used both in the literature and in the clinical/elite team setting, i.e., the typical hamstring/posterior chain flexibility tests (Fourchet 2013, Lathi 2021) and 2) the more standardized Askling test with knee braces on the active leg, and the contralateral leg attached to the table (Askling 2010). Importantly, while there were some frequent changes in operators and analysers due to staff rotations and variations in their availability (Figure 11), this 'human factor' was shown not to substantially affect reliability measures when testing and analysis procedures are well-defined (Fourchet 2013).

Our present data suggest that changes in the contralateral thigh elevation angle greater than 5° may need to start to raise practitioners' attention, with changes >10° (2 x TE) being considered as clearly substantial at the individual player level (Hopkins 2004). When it comes to defining thresholds for ' at-risk players', more research is required - but the 10-15° range has been suggested empirically. This also corresponds to the average angle reported in the present group of players (i.e., 13°, Figure 4) - so practitioners could work around this mean value ± 10° (2 x TE). A clear difference from the mean group response (taken as a benchmark) would then be >23°.

During 2021–2023, wearable inertial measurement units like those reported by Astrella 2025 were not available in our club context, so we relied on video-based tools (e.g., Kinovea). Newer inertial systems can now simplify procedures and improve reliability, but iPhones and similar smartphones will likely remain the most accessible and practical option in typical club settings.


**Fig. 9.** **Upper Left: pre-season. Upper right: end of RTP post first injury, 2 days before re-injury. Lower left: end of RTP post 2nd. Lower right: 110 days post second injury and no injury, and so far, RTP: return to play. Note the difference in test set-up (e.g., player's clothes, table, place, side, use of markers), reflective of the dynamic environment of an elite team.**


**Fig. 10.** **Left: pre-season. Middle: end of RTP post-injury, Right: 39 days post-injury and no injury and so far, RTP: return to play.**

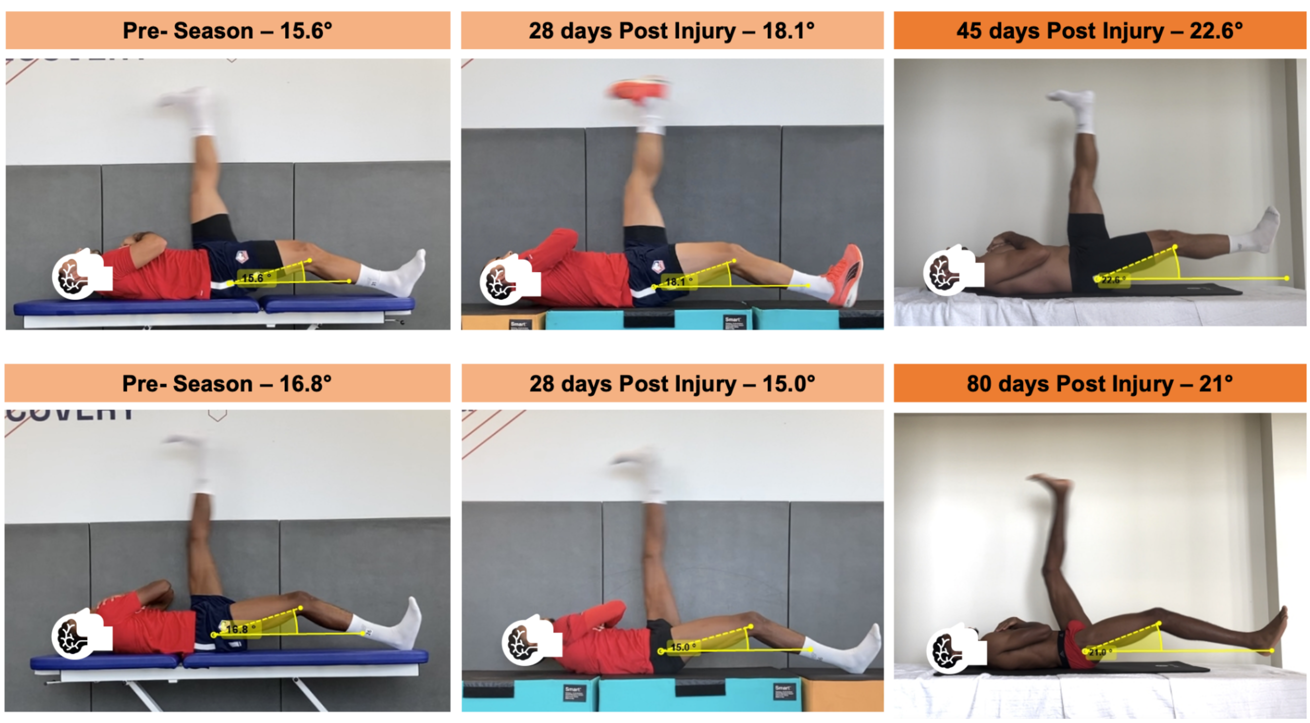


**Fig. 11.** **Example of two players who contracted a left Hamstring injury (Grade 2b and 2c for players in the upper and lower panel, respectively). Left: pre-season. Middle: end of RTP post-injury, Right: post-injury and no injury, and so far, RTP: return to play. Note the difference in test set-up (player's clothes, table, place, use of markers), reflective of the dynamic environment of an elite team.**

### Leg symmetries and leg dominance

The correlation between right and leg JSTT contralateral thigh elevation angles during the same testing session was large (r = 0.64, Figure 6) but not perfect, suggesting that despite an overall trend (players with good vs. poor overall contralateral leg dissociation/activation), the JSTT response is likely leg (side) specific. While between-leg asymmetries are often reported in relation to strength (Nicholson 2022, Rahnama 2005), whether laterality and leg preference affect range of motion, motor control and flexibility is less straightforward, and to our knowledge, only passive stretching has been examined so far (Rahnama 2005). With the present data set, the contralateral thigh elevation angle during the JSTT (as per the static inter-limb opening index obtained during the Static Jurdan test, Table 1) was not affected by leg dominance, suggesting that the observed between-leg difference (Figure 5) may be explained by other factors than simply laterality.

Another important and novel finding of the present study was the small correlations observed between the outcomes of the Static Jurdan test and the JSTT when analysed by side (r = 0.16 - 0.19, Figures 7 and 8). Although both tests were designed to examine the interaction between the hamstrings and the contralateral hip flexors, they differ fundamentally in execution, with the Static Jurdan test being performed under static conditions and the JSTT at high speed.

A key limitation when interpreting these associations is that, in the present study, the JSTT outcome was limited to the contralateral thigh elevation angle, rather than a full inter-limb opening index as described elsewhere (Astrella 2025). Proper comparison between both tests would ideally require quantifying maximal inter-limb opening during the JSTT, as slight flexion of the active leg (particularly at high speed) cannot be ruled out and may influence inter-limb configuration independently of contralateral thigh elevation alone. Due to the applied, video-based iPhone approach used in an elite team setting, this level of precision was not achievable, and addressing this limitation should be the focus of future work aiming to fully characterise the relationship between both tests.

Despite this limitation, we believe that the present comparison remains valuable from a practical perspective. It reflects what is currently feasible in elite environments and highlights that the main outcomes of the Static Jurdan test and the JSTT may capture complementary information rather than redundant constructs. For example, the JSTT contralateral thigh elevation does not reflect range of motion alone; due to its established relationship with anterior pelvic tilt, it also provides an indirect assessment of pelvic orientation. Given the central role of pelvic mechanics in hamstring strain during high-speed running (Mendiguchia 2020, 2022, 2024), the JSTT may therefore offer an ecologically valid and dynamic proxy of pelvis-related strain exposure that is not captured by static clinical assessments. Furthermore, following a hamstring injury, clinicians may initially rely on the Static Jurdan test before progressing to the more demanding JSTT at later stages of rehabilitation.

Interestingly also, while both tests involve the same leg patterns, i.e., one leg raised, and the opposite leg down and relaxed, there was a tendency for the dominant side to present a more restricted inter-limb opening behavior during the JSTT (59% and 54% of cases for left- and right-footed players, respectively), while the opposite tendency was observed during the Static Jurdan test (41% and 46% for left- and right-footed players, respectively) (Table 2). Since the current setup, which is limited to cameras and angle measures, cannot confirm if the speed of movement explains these results, future studies should investigate muscle (co)activation patterns using electromyography (EMG) to further clarify these interesting findings.

### Use case of the test during the season and guide the RTP process

While acknowledging the multifactorial nature of injuries, and with data clearly limited to only a few case studies, our data may suggest that JSTT results may add some level of sensibility to the current multifactorial screening protocols (i.e., player getting injured again despite all typical RTP criteria being validated except the JSTT contralateral thigh elevation angle, Figure 9; player showing negative test responses and remaining healthy, Figure 10). It is important to note, however, that the interpretation of any single risk factor is rarely straightforward. As illustrated in Figure 11, players may remain injury-free even with borderline or positive test results. Therefore, a final interpretation of a player's status and subsequent training decisions must always take into account the cumulative influence of all other relevant risk factors (e.g., age, injury history, acute load, strength). It is, however, intuitive that for all players having borderline values, interventions targeting players' anterior/contralateral posterior chain mobility and (pelvic) control should be programmed more than the usual (>2-3 times a week, Buchheit 2021) and even more when their contralateral thigh elevation angles increase. Future studies on larger sample sizes are obviously required to confirm the present suggestions.

### Future directions

While future research is required to look at 1) the reliability of the test in a more controlled setting (e.g., physio table vs. jump box, consistent use of markers on the skin) and 2) the effect of change in operators and analysers (Fourchet 2013). An important area of development and innovation includes the automation of the assessment using either improved video processing (e.g., motion capture systems, smartphone Apps) (Duan 2022) and/or direct measures of the movement of the limbs with mounted sensors (Ammann 2020, Astrella 2025). While those innovations may first help measure the contralateral thigh elevation angle, they could also ensure that the test is performed at maximal velocity (i.e., capturing the velocity of the active leg simultaneously when raised).

### Practical applications

- The Jurdan Sprint Table Test (JSTT) is a dynamic, table-based assessment performed at high speed that evaluates pelvis–femur–contralateral limb interaction by measuring contralateral thigh elevation at a standardised 90° active-leg position, providing insight into inter-limb range of motion and pelvic orientation relevant to sprinting and hamstring strain.
- While the Static Jurdan test may be used early to assess inter-limb configuration under low-demand conditions, the JSTT represents a logical progression at later stages to evaluate pelvic–femoral behaviour at high speed.
- The JSTT shows a moderate level of reliability for the contralateral thigh elevation angle (and a TE of 5°), even in the complex context of elite football, when testing conditions and data analysis processes may evolve and are not always optimal and standardised.
- The JSTT can be performed in about 60 s (analysed in another 120 s) and only requires a smartphone.
- Since inertial measurement units (e.g., Astrella 2025) were not available during our 2021–2023 data collection, we used video-based tools, and even though IMUs now improve automation and reliability
- Based on our current team data (video-based measurements) and past practice, a test is considered positive when the contralateral thigh elevation angle exceeds approximately 15°. This threshold should be interpreted as an orientative, practice-based criterion rather than a diagnostic cut-off, and always within a multifactorial decision-making framework.
- Anecdotally, performing daily posterior/anterior chain flexibility and (pelvic) control routines has been shown to be successful at improving the test results, i.e., lower contralateral thigh elevation angle, which may overall decrease the risk of (re)injury.
- Further research is definitely needed to examine the actual link between JSTT responses and hamstring injury (re)occurrence.

- Leg dominance doesn't seem to influence the results of the JSTT, which suggests that intervention should be targeted based on the actual test results, regardless of the player's preferred leg.
- The role of asymmetries between legs and whether posterior vs anterior chains may be more prone to injuries in the case of positive test responses is also an area of future research that may guide prevention interventions.

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