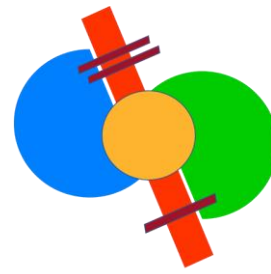




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Centro R.I.T.M.O.

*Ricerca e Innovazione in Traumatologia,  
chirurgia della Mano e Ortopedia  
«Giorgio Brunelli»*



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Regione  
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# Reliability of a new device to measure anterior knee laxity in outpatient setting

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# DISCLOSURES

## ***G. Milano***

- Arthrex, Inc: Paid consultant; Paid presenter or speaker; Research support
- CONMED Linvatec: Paid presenter
- FGP srl: Research support
- Greenbone: Research support
- Medacta: Research support

**All other authors have nothing to disclose**



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# BACKGROUND

Quantification of anterior tibial translation (ATT) is assessed through devices called “arthrometers”



- High price
- Not easy to handle
- *Reliability ???*
- *Diagnostic accuracy ???*



Rolimeter



SmartJoint



KT-1000

# AIM

To assess reliability of a new arthrometer

## *Hypothesis*

The new arthrometer BLU-DAT has a good inter- and intraraters reliability in outpatient setting



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# METHODS

- Prospective cohort study
  - 39 Patients (M:F=27:1)
  - ACL injury (Clinical + MRI)
  - 2 different examinator
  - Lachman Test under 3 different loads  
(for each load each examinator repeated the test 3 times)
    - 7 Kg (67 N)
    - 9 Kg (89 N)
    - MMT



# METHODS

## Outcome measures

- Primary
  - Inter-raters reliability of ATT
- Secondary
  - Intra-raters reliability of ATT

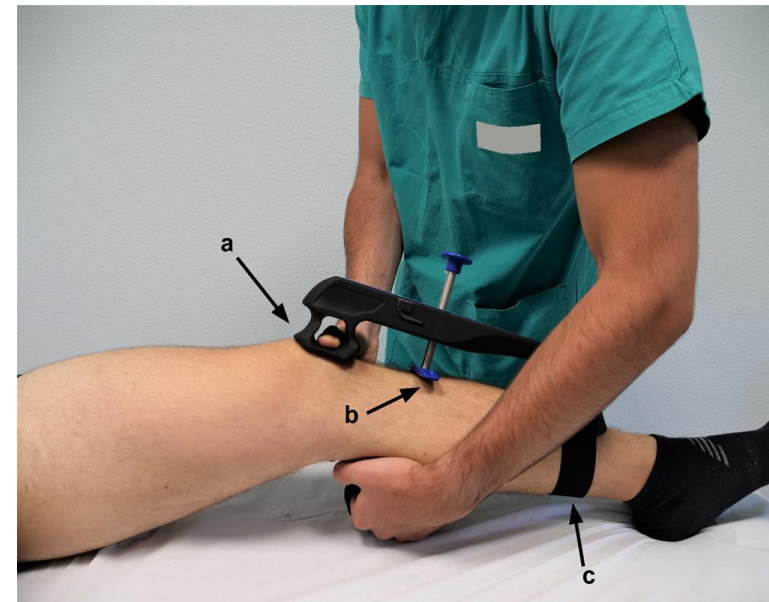
ICC	Agreement
<0	Absent
0-0.2	Poor
0.21 – 0.40	Fair
0.41 – 0.60	Moderate
0.61 – 0.80	Good
0.81- 1	Excellent



# BLU-DAT

The correct use and positioning during the Lachman Test:

- a) Concave **upper support** on the patella
- b) **Probe**, that measures the anterior translation, on the tibial tuberosity
- c) **Lower support** on the distal tibia



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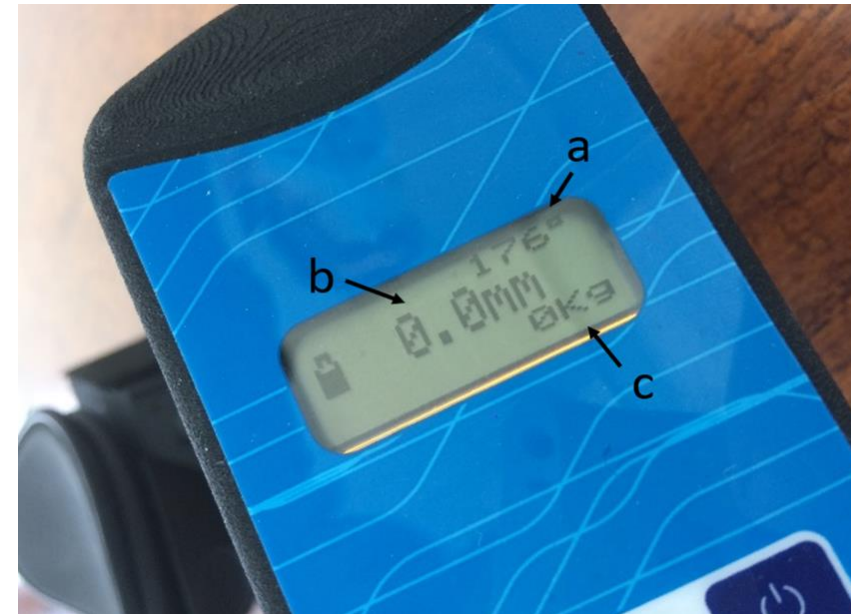


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# BLU-DAT

The BLU-DAT display

- a) **Knee flexion angle ( $^{\circ}$ )**
- b) **Anterior tibial translation (mm)**
- c) **Force applied (Kg Bluetooth-connected dynamometer placed in the hand applying the anterior thrust).**



Bluetooth-connected dynamometer placed in the hand applying the anterior thrust.





# RESULTS

## ICC for Inter-raters reliability

	ICC	Lower CI	Upper CI
7 KG	0.701	0.435	0.842
9 KG	0.845	0.707	0.919
MMT	0.834	0.685	0.913



# RESULTS

## ICC for Intra-raters reliability

	ICC	Lower CI	Upper CI
7 KG	0.781	0.583	0.885
9 KG	0.855	0.723	0.924
MMT	0.913	0.836	0.954



# CONCLUSIONS

The new arthrometer showed good inter and intra-rater reliability especially at MMT in testing anterior knee laxity



Easy to use

Independent of the side tested

Independent of examiner experience



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