

Additional file 1

2x2 contingency tables of the results of the index (clinical) test by lumbar region, versus the results of the reference standard.

Accuracy of PAIVMs for detecting rotation LSI within a lumbar region (upper and lower lumbar regions)

	Reference standard +	Reference standard -	Row totals			
Dx test +	3	24	27	Sensitivity (95%CI) =	0.333	(0.121 0.646)
Dx test -	6	173	179	Specificity (95%CI) =	0.878	(0.825 0.917)
Column totals	9	197	206	LR - (95%CI) =	0.76	(0.48 1.21)
				LR+ (95%CI) =	2.74	(1.01 7.42)

Accuracy of Flexion PPIVMs for detecting rotation LSI within a lumbar region (upper and lower lumbar regions)

	Reference standard +	Reference standard -	Row totals			
Dx test +	0.5*	2.5	3	Sensitivity (95%CI) =	0.050	(0.005 0.345)
Dx test -	9.5	203.5	213	Specificity (95%CI) =	0.988	(0.962 0.996)
Column totals	10	206	216	LR - (95%CI) =	0.96	(0.83 1.11)
				LR+ (95%CI) =	4.12	(0.21 80.25)

Accuracy of Extension PPIVMs for detecting rotation LSI within a lumbar region (upper and lower lumbar regions)

	Reference standard +	Reference standard -	Row totals			
Dx test +	2	5	7	Sensitivity (95%CI) =	0.222	(0.063 0.547)
Dx test -	7	184	191	Specificity (95%CI) =	0.974	(0.940 0.989)
Column totals	9	189	198	LR - (95%CI) =	0.80	(0.56 1.13)
				LR+ (95%CI) =	8.40	(1.88 37.55)

Accuracy of PAIVMs for detecting translation LSI within a lumbar region (upper and lower lumbar regions)

	Reference standard +	Reference standard -	Row totals			
Dx test +	6	21	27	Sensitivity (95%CI) =	0.286	(0.138 0.500)
Dx test -	15	164	179	Specificity (95%CI) =	0.886	(0.833 0.925)
Column totals	21	185	206	LR - (95%CI) =	0.81	(0.61 1.06)
				LR+ (95%CI) =	2.52	(1.15 5.53)

Accuracy of Flexion PPIVMs for detecting translation LSI within a lumbar region (upper and lower lumbar regions)

	Reference standard +	Reference standard -	Row totals			
Dx test +	1	1	2	Sensitivity (95%CI) =	0.045	(0.008 0.218)
Dx test -	21	191	212	Specificity (95%CI) =	0.995	(0.971 0.999)
Column totals	22	192	214	LR - (95%CI) =	0.96	(0.88 1.05)
				LR+ (95%CI) =	8.73	(0.57 134.69)

Accuracy of Extension PPIVMs for detecting translation LSI within a lumbar region (upper and lower lumbar regions)

	Reference standard +	Reference standard -	Row totals			
Dx test +	3	4	7	Sensitivity (95%CI) =	0.158	(0.055 0.376)
Dx test -	16	175	191	Specificity (95%CI) =	0.978	(0.944 0.991)
Column totals	19	179	198	LR - (95%CI) =	0.86	(0.71 1.05)
				LR+ (95%CI) =	7.07	(1.71 29.24)

Notes: PAIVMs = central posteroanterior passive accessory intervertebral motion tests; PPIVMs = passive physiological intervertebral motion tests; LSI = lumbar segmental instability; Dx test = result of the clinical test; CI = 95% confidence interval; LR+ = likelihood ratio for a positive test; LR- = likelihood ratio for a negative test. Row and column totals differ from expected total (246) due to listwise deletion in the event of any missing values in either clinical or radiographic data. *0.5 added to all cells in the event of a zero in any cell.

2x2 contingency tables of the results of the index (clinical) test by lumbar segmental level, versus the results of the reference standard

Accuracy of PAIVMs for detecting rotation LSI by segment

	Reference standard +	Reference standard -	Row totals			
Dx test +	1	23	24	Sensitivity (95%CI) =	0.167	(0.030 0.564)
Dx test -	5	405	410	Specificity (95%CI) =	0.946	(0.921 0.964)
Column totals	6	428	434	LR - (95%CI) =	0.88	(0.62 1.26)
				LR+ (95%CI) =	3.10	(0.50 19.39)

Accuracy of Flexion PPIVMs for detecting rotation LSI by segment

	Reference standard +	Reference standard -	Row totals			
Dx test +	0.5*	2.5	3	Sensitivity (95%CI) =	0.071	(0.008 0.439)
Dx test -	6.5	442.5	449	Specificity (95%CI) =	0.994	(0.982 0.998)
Column totals	7	445	452	LR - (95%CI) =	0.93	(0.76 1.15)
				LR+ (95%CI) =	12.71	(0.67 241.27)

Accuracy of Extension PPIVMs for detecting rotation LSI by segment

	Reference standard +	Reference standard -	Row totals			
Dx test +	0.5*	4.5	5	Sensitivity (95%CI) =	0.071	(0.008 0.439)
Dx test -	6.5	409.5	416	Specificity (95%CI) =	0.989	(0.974 0.996)
Column totals	7	414	421	LR - (95%CI) =	0.940	(0.76 1.15)
				LR+ (95%CI) =	6.75	(0.39 110.76)

Accuracy of PAIVMs for detecting translation LSI by segment

	Reference standard +	Reference standard -	Row totals			
Dx test +	3	21	24	Sensitivity (95%CI) =	0.188	(0.066 0.430)
Dx test -	13	397	410	Specificity (95%CI) =	0.950	(0.924 0.967)
Column totals	16	418	434	LR - (95%CI) =	0.86	(0.68 1.08)
				LR+ (95%CI) =	3.73	(1.24 11.23)

Accuracy of Flexion PPIVMs for detecting translation LSI by segment

	Reference standard +	Reference standard -	Row totals			
Dx test +	0.5*	2.5	3	Sensitivity (95%CI) =	0.028	(0.003 0.219)
Dx test -	17.5	431.5	449	Specificity (95%CI) =	0.994	(0.982 0.998)
Column totals	18	434	452	LR - (95%CI) =	0.98	(0.90 1.06)
				LR+ (95%CI) =	4.82	(0.24 96.82)

Accuracy of Extension PPIVMs for detecting translation LSI by segment

	Reference standard +	Reference standard -	Row totals			
Dx test +	0.5*	0.5	1	Sensitivity (95%CI) =	0.033	(0.003 0.253)
Dx test -	14.5	401.5	416	Specificity (95%CI) =	0.999	(0.988 1.000)
Column totals	15	402	417	LR - (95%CI) =	0.97	(0.88 1.06)
				LR+ (95%CI) =	26.8	(0.55 1305.5)

Notes: PAIVMs = central posteroanterior passive accessory intervertebral motion tests; PPIVMs = passive physiological intervertebral motion tests; LSI = lumbar segmental instability; Dx test = result of the clinical test; CI = 95% confidence interval; LR+ = likelihood ratio for a positive test; LR- = likelihood ratio for a negative test. Row and column totals differ from expected total (246) due to listwise deletion in the event of any missing values in either clinical or radiographic data. *0.5 added to all cells in the event of a zero in any cell.