

**JYX**



**This is a self-archived version of an original article. This version may differ from the original in pagination and typographic details.**

**Author(s):** Mitchell, Ulrike H.; Owen, Patrick J.; Rantalainen, Timo; Belavý, Daniel L.

**Title:** Increased Joint Mobility Is Associated With Impaired Transversus Abdominis Contraction

**Year:** 2022

**Version:** Accepted version (Final draft)

**Copyright:** © 2021 by the National Strength & Conditioning Association.

**Rights:** In Copyright

**Rights url:** <http://rightsstatements.org/page/InC/1.0/?language=en>

**Please cite the original version:**

Mitchell, U. H., Owen, P. J., Rantalainen, T., & Belavý, D. L. (2022). Increased Joint Mobility Is Associated With Impaired Transversus Abdominis Contraction. *Journal of Strength and Conditioning Research*, 36(9), 2472-2478. <https://doi.org/10.1519/JSC.0000000000003752>

**Table 1. Percent change in transversus abdominis (TrA) and multifidus (MF) activity during contraction compared to rest.**

Variable	Percent change				
	All, N = 30	B = 0, N = 24	B > 0, n = 6	Male, N = 18	Female, N = 12
TrA thickness	19.2 (22.0)	16.9 (19.0)	28.4 (31.9)	13.9 (18.2)	27.2 (25.5)
TrA length	-14.8 (19.7)	-18.8 (16.1)	<b>1.0 (26.5)*</b>	-12.72 (21.4)	-18.0 (17.4)
MF anteroposterior thickness	6.1 (5.6)	6.2 (6.0)	5.6 (4.0)	7.0 (5.8)	4.7 (5.2)
MF mediolateral thickness	-1.9 (5.4)	-1.7 (5.9)	-2.5 (3.0)	-2.2 (5.6)	-1.5 (5.2)

Data are mean (standard deviation) averaged across all slices. \*  $p < 0.05$  compared to B=0. B=0: participants with a Beighton score of zero; B>0: participants with a Beighton score greater than zero.

**Table 2. Correlations between variables examined in the overall cohort (N = 30).**

Variable	Correlation for variable:									
	1	2	3	4	5	6	7	8	9	10
1. Transversus abdominis thickness	-									
2. Transversus abdominis length	-0.282	-								
3. Multifidus anteroposterior thickness	-0.147	0.122	-							
4. Multifidus mediolateral thickness	0.165	-0.181	-0.106	-						
5. [redacted for review] (BOM) score	0.038	<b>0.468†</b>	-0.152	-0.031	-					
6. BOM score (little fingers)	0.191	0.160	0.357	-0.083	0.297	-				
7. BOM score (thumbs)	-0.035	-0.015	-0.011	0.156	<b>0.403*</b>	0.141	-			
8. BOM score (elbows)	-0.145	<b>0.456*</b>	-0.241	-0.088	<b>0.763‡</b>	0.005	0.180	-		
9. BOM score (knees)	-0.069	0.107	-0.098	0.057	<b>0.520†</b>	0.048	-0.055	0.279	-	
10. BOM score (trunk)	0.213	0.354	-0.252	-0.014	<b>0.627‡</b>	-0.127	0.042	0.266	0.309	-

Data are Pearson's correlation coefficient. \*  $p < 0.05$ , †  $p < 0.01$ , ‡  $p < 0.001$ .