

# Pain elimination patterns of different myofascial tissues

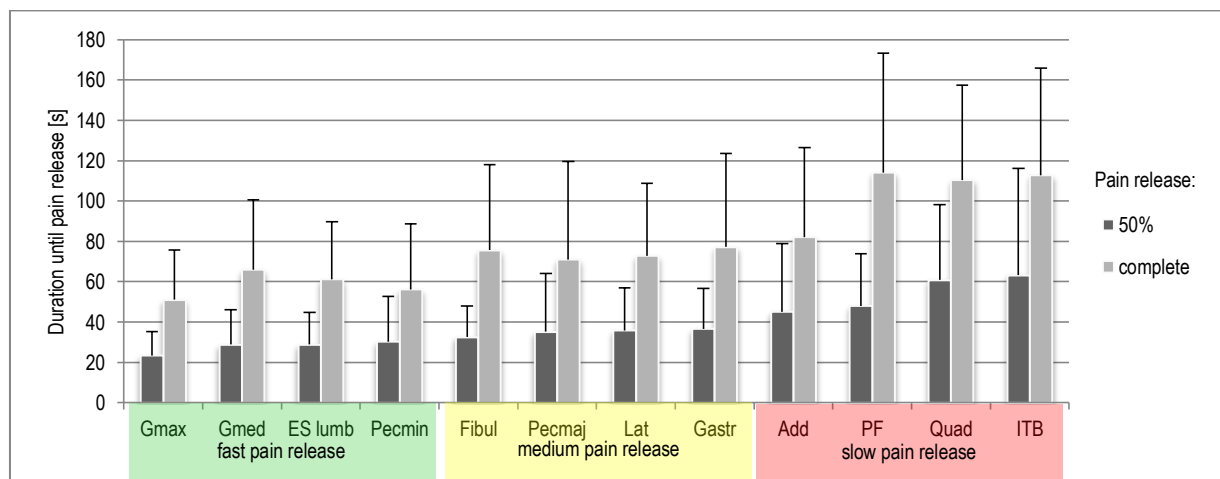
Frieder Krause, Jan Wilke, Lutz Vogt, Winfried Banzer

Goethe University Frankfurt, Department of Sports Medicine, Ginnheimer Landstr. 39,  
60487 Frankfurt am Main, phone: (+49) 69 798 245 44, e-mail: [krause@sport.uni-frankfurt.de](mailto:krause@sport.uni-frankfurt.de)

**BACKGROUND** According to recent definitions, a variety of fibrous collagenous tissues (e.g. aponeuroses, ligaments, myofasciae) are termed fascia [1]. However, histological and anatomical studies have revealed substantial differences in morphological and functional characteristics which are dependent on the body region. Numerous compression-based treatments directed to fascia aim to eliminate pain. Yet, in view of the location and tissue specific differences, the optimal treatment duration remains unclear. The present study was done to provide clinicians with a first orientation concerning the application of myofascial compression techniques.

**METHODS** Twenty-five healthy, asymptomatic subjects ( $29,4 \pm 9,3y$ ; 16w) were instructed in the application of standardized self-myofascial release (SMR) techniques. They exerted static pressure using a foam roller on a total of 12 locations at one randomized body side. These comprised both aponeurotic (plantar fascia (PF), iliotibial band (ITB)) and myofascial structures (small muscles like the pectoralis minor and gluteus medius as well as larger muscles like quadriceps femoris and gastrocnemius). Targeted subjective pain intensity was 6-7 on a 10cm visual analogue scale (VAS). Duration [s] until 50% and complete subjective pain elimination was documented. Structures were subdivided into terciles according to the duration until pain release (fast/medium/slow pain release).

**RESULTS** Mean time until 50% and complete pain release ranged from  $23,5 \pm 11,2s$  (gluteus maximus) to  $63,3 \pm 52,8s$  (ITB) resp.  $51,1 \pm 24,5s$  (gluteus maximus) to  $112,8 \pm 53,0s$  (ITB) (see Fig. 1).



**Figure 1:** Durations of pain release  $\pm$  SD [s] in the twelve examined myofascial tissue complexes.

**CONCLUSION** The duration of pain release varied considerably between the examined locations. Tissues with a more aponeurotic structure (PF, ITB) were found to be slow in pain release. Furthermore, while duration until pain release was rather short in small muscles (gluteus medius or pectoralis minor), larger ones (quadriceps or gastrocnemius) required more time. Further research is warranted to collect normative data on optimal treatment duration of myofascial compression techniques.

## REFERENCES

[1] Schleip R, Jäger H, Klingler W. What is 'fascia'? A review of different nomenclatures. *Journal of Bodywork and Movement Therapies*. 16 (4), 496–502; 2012