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## Adductor co-contraction during abduction: a friend or foe

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### Citation

Overbeek, C. L. (2022, December 8). *Adductor co-contraction during abduction: a friend or foe*. Retrieved from <https://hdl.handle.net/1887/3494274>

Version: Publisher's Version

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**Note:** To cite this publication please use the final published version (if applicable).

## **Adductor co-contraction during abduction: A Friend or Foe**

An electromyography assessment and analysis of factors that may determine adaptation in asymptomatic individuals and patients with Subacromial Pain Syndrome.

*Celeste Laurena Overbeek*

1. Co-contraction of arm adductors during an abduction movement is a physiological finding in the ageing shoulder (this thesis, chapter 1)
2. Repetitive irritation of subacromial tissues in SAPS is the result of reduced adductor co-contraction (this thesis, chapter 2)
3. An increase in adductor co-contraction is associated with a long-term reduction of complaints in patients with SAPS (this thesis, chapter 3)
4. A deficit in shoulder motor redundancy (i.e. entropy), may explain sub-optimal adaptation of motor patterns in patients with SAPS (this thesis, chapter 6)
5. In the rehabilitation of patients with SAPS, the patient's psychosocial wellbeing is fundamental (this thesis, chapter 8)
6. Degeneration without adaptation leads to pathology
7. Adaptation to pain has many short term benefits but with potential long term consequences (Hodges PW, Tucker K. Moving differently in pain: a new theory to explain the adaptation to pain. *Pain.* 2011 Mar;152(3 Suppl):S90-S98. doi: 10.1016/j.pain.2010.10.020. Epub 2010 Nov 18. PMID: 21087823)
8. This journey toward the goal of biologic understanding does not have a clear end point, because there is always room to understand the biology in a deeper way (K.J. Rothman, *Epidemiology: an introduction*, 2nd edition, Chapter 7, blz. 139)
9. Whether it concerns the scapulothoracic or glenohumeral dynamic configuration, patients with SAPS need to learn how to increase the subacromial space for reduction of complaints.
10. De eenvoud van een conclusie zit hem in de entropie van de redenering.