Forward bending of the trunk and low back pain among blue-collar workers

By
Morten Villumsen

Low back pain (LBP) has a high lifetime prevalence of up to 90%, and is a major global health problem, and seems to be occupationally related. The criticism of an important part of the literature regarding LBP concerns the frequent use of self-reported measures of physical exposure, which are acknowledged to be imprecise and have poor validity. Therefore, during this PhD, the relationship between forward bending and LBP among blue-collar workers was investigated using accelerometers. Using long-term objective measurements of forward bending, these studies are among the first to provide measurements during both work and leisure in large cohorts of blue-collar workers. A protocol was developed containing information on purpose and methodological approaches on how to capture physical activity (PA) (i.e. forward bending of the trunk) using objective measurements in a large scale field environment with respect to the PA context (work and leisure) among blue-collar workers in Denmark. The association between forward bending and low back pain was investigated among blue-collar workers in Denmark. Tendencies towards a negative association between duration of forward bending and LBP were shown, but did not reach statistical significance. In a larger cohort, no positive or negative associations between forward bending and LBP were found. However, the level of social support modifies the association between forward bending and LBP. Additionally, this thesis showed that there is a difference in the variability pattern of forward bending between work and leisure, but could not show an influence of LBP on this difference.
To fulfill the requirements for the Ph.D. degree, Morten Villumsen has submitted the thesis: Forward bending of the trunk and low back pain among blue-collar workers, to the Faculty Council of Medicine at Aalborg University.

The Faculty Council has appointed the following adjudication committee to evaluate the thesis and the associated lecture:

**Professor Mikael Forsman**  
Karolinska Institutet  
Sweden

**Professor Jack Dennerlein**  
Northeastern University  
USA

**Chairman:**  
Associate Professor Shellie Boudreau  
SMI, Aalborg University  
Denmark

**Moderator:**  
Professor Pascal Madeleine  
SMI, Aalborg University  
Denmark

The Ph.D. lecture is public and will take place on:

**Monday 15 February 2016 at 13:00**  
Aalborg University – Room D2-106  
Fredrik Bajers Vej 7 D2  
9220 Aalborg East

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**Program for Ph.D. lecture on**

**Monday 15 February 2016**

**by**

**Morten Villumsen**

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**Chairman:**  
Associate Professor Shellie Boudreau

**Moderator:**  
Professor Pascal Madeleine

13.00 Opening by the Moderator

13.05 Ph.D. lecture by Morten Villumsen

13.50 Break

14.00 Questions and comments from the Committee

14.00 Questions and comments from the audience at the Moderator’s discretion

16.00 (No later than)  
Conclusion of the session by the Moderator

After the session a reception will be arranged