Introduction: The multifactorial nature of low back pain (LBP) is well recognized with respect to its causes and associated factors. Explanatory models for LBP built on analyses that are suited to deal with a large number of correlated factors are lacking. Since adult LBP might originate in childhood/adolescence, thorough understanding of idiopathic adolescent LBP is needed. This study provides a comprehensive multivariable approach to explain LBP in young adolescents before pubertal peak growth. It explores which factors from multiple domains are independently associated with LBP, thereby using a novel multivariable analysis method that is well suited to deal with large numbers of correlated factors relative to sample size.

Purpose/Aim: To investigate the factors related to the 1-month period prevalence of LBP in young adolescents, thereby considering potential correlates from the physical, sociodemographic, lifestyle, psychosocial and comorbid pain domains.

Materials and Methods: A school-based cross-sectional study was conducted of 842 adolescents before pubertal peak growth in Flanders, Belgium. Study participants (girls aged 10.6±0.47 years; boys aged 12.6±0.54 years) underwent physical examination and completed questionnaires to obtain 69 putative (phenotypic) risk factors for LBP. With consideration for potential sex differences in associations, multivariable analysis was used to simultaneously evaluate contributions of all variables collected in the 5 domains of interest.

Results: A significantly higher odds of LBP was shown for having high levels of psychosomatic complaints (odds ratio [OR], 4.4; 95% confidence interval [CI]: 1.6-11.9; p=.004; variable importance score (VIS)=0.99), a high lumbar lordotic apex (OR, 0.7; 95% CI, 0.5-1.0; p=.04; VIS=0.85), retroverted pelvis in habitual standing (OR, 0.9; 95% CI, 0.9-1.0; p=.03; VIS=0.71), introverted personality (OR, 0.9; 95% CI, 0.8-1.0; p=.002; VIS=0.93) and high levels of negative over positive affect. All the study variables accounted for 21% of the variance in LBP.

Conclusions: Psychosomatic symptoms had the strongest association with 1-month period prevalence of LBP in young adolescents, followed by factors from the physical and psychosocial domains. The role that "physical factors" play in non-adult spinal pain may have been underestimated by previous studies. The lifestyle and sociodemographic domains did not turn out to be important in explaining LBP prevalence. A substantial proportion of unexplained variation in LBP was found. As this is a cross-sectional analysis, conclusions regarding temporal or causal relationships between LBP and putative risk factors cannot be made. The results of this study, however, add much to our understanding of the relative importance and predictive ability of (pre-defined groups of) factors associated with LBP in otherwise healthy pre-/early adolescents.

Keywords: Low back pain, adolescence, pubertal peak growth, multivariate analysis, Lasso logistic regression analysis

P86 - THE IMMEDIATE EFFECT OF MULTIPLE MECHANICAL IMPULSES ON ELECTROMYOGRAPHY AND PAIN PRESSURE THRESHOLD OF LUMBAR LATENT TRIGGER POINTS: AN EXPERIMENTAL STUDY

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Introduction: Myofascial pain is a common syndrome, which has not been studied extensively in
the low back. Despite a variety of manual and instrument assisted interventions available, little work has targeted the possible effects of fast mechanical impulses on myofascial trigger points (MTrPs) with regards to its sensitivity and electrical activity.

**Purpose:** The purpose of this experimental study was to quantify the immediate effect of one session of fast repeated mechanical impulses of 200N to latent MTrPs and to normal muscle tissue with pressure pain threshold (PPT) and surface electromyography (sEMG) as outcome measures.

**Methods:** In 41 asymptomatic subjects between 17-40 years of age the lumbar musculature was searched for a latent MTrP by a trained clinician. Using 3 disposable pre-gelled electrodes bilaterally, sEMG was recorded continuously from muscle containing either latent or no MTrP. Both the trigger point group and control group received the intervention and were blinded to group allocation. The immediate effect of mechanical impulses was assessed by sEMG and PPT before and after intervention using Wilcoxon matched-pairs signed-ranks test, Mann-Whitney U test and paired t-tests.

**Results:** The PPT increased significantly across both groups (p < 0.01) after intervention. The proportionate increase (14.6%) was comparable in both MTrP and control groups. The electrical activity on the MTrP side was not significantly higher in the MTrP group compared to the contralateral side. The decrease of resting electrical activity after intervention was significant in the MTrP group on the side of the latent MTrP (P = 0.001) as well as the contralateral side (p=0.022), and not significant in the control group on either side (p=0.33 and p=0.93).

**Conclusion:** In this study, the immediate effect of one session of mechanical impulses was associated with a significant increase in PPT for both groups and a significant decrease in the resting electrical activity of the lumbar muscles only in the MTrP group. It is unknown if these effects have clinical significance.

**Keywords:** low back pain, myofascial pain syndromes, trigger points, electromyography, pain threshold

**Conflicts of Interest:** none

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**P87 - VALIDITY AND RESPONSIVENESS OF THE DUTCH VERSION OF THE MODIFIED OSWESTRY DISABILITY INDEX**

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**Introduction:** Question eight (sex life disability) of the Oswestry Disability Questionnaire (ODI) has been found unacceptable in some cultures and is frequently found to be left blank. A modified version (MODI) developed by Fritz et al. replaced this question for a question regarding employment and homemaking ability. The English version of the MODI shows good clinimetric properties. There are no reported results of the clinimetric properties of a Dutch version of the MODI.

**Purpose/Aim:** The aim of our study is to translate the MODI into a Dutch version and investigated its validity and responsiveness.

**Materials and Methods:** The translation of the MODI happened in four steps: a forward translation, a consensus version was made, back translation and the approval of an expert committee on the final version. Pearson correlations between the ODI, Quebec Back Pain and Disability Questionnaire (QBDS), Roland Morris Disability Questionnaire (RMDS) and Visual analogue scale for pain (VAS)