

INTEREST OF A SPECIFIC TRAINING DEVICE FOR LOW BACK EXTENSOR MUSCLES IN CHRONIC LOW BACK PAIN PATIENTS



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I. INTRODUCTION

Trunk muscle dysfunction is one of the potential risk factors in the development, persistence or recurrence of low back pain (LBP). Therefore, this study aims to assess the clinical effectiveness in patients with chronic LBP of a strength training programme of the low back extensor muscles performed by means of a new device which uses the principle of posterior translation of the pelvis in a seated, forward-tilted position.

TABLE 1: Training sessions on the itensic b-effect device (Proxomed, Alzenau, Germany).

SESSION	ANTERIOR TILT LEVEL	SETS	REPETITIONS
1	10°	3	30
2	10°	4	30
3	10°	5	30
4	17°	3	20
5	17°	4	20
6	17°	5	20
7	22°	3	13
8	22°	4	13
9	22°	5	13

III. RESULTS

Whereas the baseline outcomes were similar between groups, **current pain** intensity, **maximal pain** intensity during the last 7 days, and **functional disability** (RMDQ score) were better improved in the TG than in the CG.

Regarding **lumbopelvic sensorimotor control**, both groups improved with training but more significantly in the TG (CG P<.01; TG, P<.001) . After the end of the programme, the median score of the TG reaches 5.5. This cutoff is considered as the boundary between good (greater than 5.5) and poor (5.5 or less) performance (Elgueta-Cancino et al. 2015).

Finally, there was no significant change in trunk extensor endurance in either TG or CT.

REFERENCES

Elgueta-Cancino et al. "Validation of a Clinical Test of Thoracolumbar Dissociation in Chronic Low Back" Pain. J Orthop Sports Phys Ther. 2015 Sep;45(9):703-12.

II. MATERIALS AND METHODS

40 patients with chronic LBP (26 females and 14 males) attending the multidisciplinary rehabilitation programme of the spine clinic of the CHUOA Liege were assigned to a control (CG) or a treatment group (TG).

All patients (CG and TG) attended 9 two-hour sessions (2 sessions per week) including education and practical (low load exercises) group lessons.

The TG attended additionally 9 training sessions (± 10 min) on the itensic b-effect device (Proxomed, Alzenau, Germany) during which intensity of effort was progressively increased by increasing the anterior tilt of the device (**Figure 1**) and adapting the number of sets and repetitions (**Table 1**).

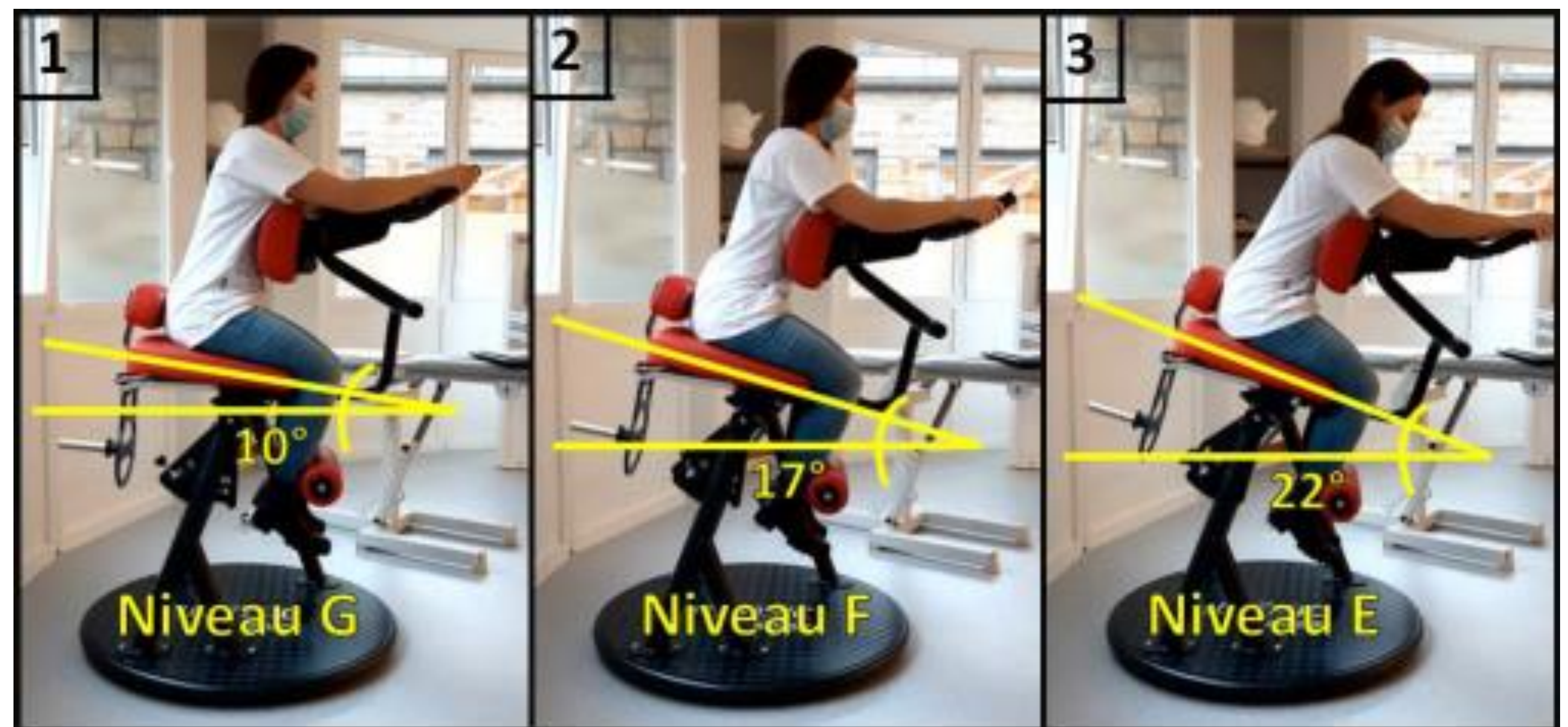


Figure 1 : The 3 anterior tilt levels used to progressively increase intensity of effort on the itensic b-effect device (Proxomed, Alzenau, Germany).

Pain intensity (numerical rating scale), lumbar mobility, lumbopelvic sensorimotor control (clinical test of thoracolumbar dissociation), isometric endurance of trunk extensors (Sorensen test), perception of effort (Borg Rating of Perceived Exertion Scale) and functional disability [(Roland and Morris Disability Questionnaire (RMDQ))] were assessed at baseline and after the end of the programme.

IV. CONCLUSIONS AND IMPLICATIONS

Adding a training programme using this new device to the education group sessions in the management of chronic LBP patients seems relevant and effective. Further studies involving a larger number of participants and training sessions should confirm our results and investigate the physiological changes in the lumbopelvic muscles after such a programme.



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