way of measurement in neurological diseases including fibromyalgia, whereas the impact of RET on locomotion remains unknown.

**Participant.** Sixteen patients meeting ACR criteria for FM were included.

**Methods.** Patients performed 12 weeks of ergocycle exercise training, according to the American College of Sports Medicine recommendations, associated with balneotherapy and relaxation. Gait analysis was performed by a validated ambulatory accelerometric method (Locometrix). Gait markers were: walking velocity (m/s), stride length (m), stride frequency (Hz), stride regularity (dimensionless), and cranio-caudal power (W/kg), which are considered as a measurement of kinesia. In addition, Timed Up and Go test (TUG) and One Leg Balance Test with eyes open (EO) and with eyes closed (EC) were performed.

**Analysis.** Using non-parametric statistics, an intention to treat model was used to analyze the results.

**Results.** Timed Up and Go test scores were respectively (before; just after and after 6 months): 9.5 ± 2.4; 8.1 ± 1.7 (P < 0.05) and 8.6 ± 2.1 (NS); OLB scores were with EO: 38.4 ± 30.1; 47.3 ± 43.1 (NS) and 39.0 ± 38.6 (NS) and with EC: 7.4 ± 5.4; 10.7 ± 9.8 (P < 0.05) and 7.4 ± 3.7 (NS). The mean walking velocities were respectively 1.1 ± 0.1; 1.2 ± 0.1 (P < 0.05) and 1.2 ± 0.1 (P < 0.05). Stride frequencies were 0.95 ± 0.09; 0.98 ± 0.07 (P < 0.05) and 0.96 ± 0.07 (NS) and stride lengths were 1.12 ± 0.05; 1.17 ± 0.08 (P < 0.05) and 1.21 ± 0.1 (P < 0.01). Stride regularities were 293 ± 28; 312 ± 35 and 287 ± 41. The cranio-caudal powers were 3.1 ± 1.5; 4.4 ± 1.5 (P < 0.05) and 3.5 ± 1.2 W/Kg (NS).

**Discussion.** Benefits regarding balance, acquired during a 12-week rehabilitation protocol, were not maintained after 3 months. Concerning the gait, only 2 parameters remained improved. This study shows the necessity of finding methods to assure continuity of acquired benefits.


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**CO09-008–EN**

**VO2max in chronic pain patients: Comparative analysis with objective and subjective parameters**

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**Keywords:** VO2max; Aerobic fitness; Deconditioning; Chronic pain

**Introduction.** Aerobic deconditioning is one of the physical factors associated with chronic pain particularly in chronic low back pain. Conflicting results have been found in chronic pain patients. The principal aim of this study was to evaluate consequences of a functional restoration program on the secretion of ACTH and peripheral plasmatic levels of cortisol.

**Patients and methods.** One hundred and eighteen patients (67 women; 51 men) were included in this prospective study between January 2008 and December 2008. Sixty-one patients had a chronic low back pain and 57 patients with a thoracic outlet syndrome unamenable to an ambulatory treatment, constantly associated with a severe disability (mean age 42.4 ± 9.8 years). All the patients were treated with a progressive aerobic restoration program, during 4 weeks. Plasma levels of ACTH, cortisol, TSH, cholesterol and triglycerides have been measured at the entry and at the end of the program.

**Results.** At the entry, a significant correlation was found between the plasma levels of ACTH and weight gain during the pain period (r = 0.33; P < 0.0002). The functional restoration program was associated with a significant decrease of the levels of ACTH, cortisol, cholesterol and triglycerides. Between the beginning and the end of the program, the decrease in ACTH levels was significantly correlated with the decrease in cortisol levels (r = 0.25; P < 0.008); moreover, at the end of the program, the ACTH and cortisol levels were significantly correlated (r = 0.41; P < 0.0001). The decreases in ACTH levels were significantly correlated with the degree of deconditionning, as expressed by the muscular intolerance.

**Discussion.** The data of this study are in agreement with the fact that hypotalamic-pituitary abnormalities occur during chronic pain syndromes. The weight gain is not only associated with inactivity but also with central neuro-endocrine disorders. These central abnormalities seem to be corrected by a functional restoration program. This central nervous correction must be considered in the indications for such a program.


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**CO09-009–EN**

**Functional restoration program: Impacts on the hypothalamic-pituitary axis**

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**Keywords:** Hypothalamic-pituitary axis; Functional restoration program; Chronic pain

**Introduction.** Different abnormalities of the hypothalamic-pituitary axis have been found in chronic pain patients. The principal aim of this study was to evaluate consequences of a functional restoration program on the secretion of ACTH and peripheral plasmatic levels of cortisol.

**Patients and methods.** One hundred and eighteen patients (67 women; 51 men) were included in this prospective study between January 2008 and December 2008. Sixty-one patients had a chronic low back pain and 57 patients with a thoracic outlet syndrome unamenable to an ambulatory treatment, constantly associated with a severe disability (mean age 42.4 ± 9.8 years). All the patients were treated with a progressive aerobic restoration program, during 4 weeks. Plasma levels of ACTH, cortisol, TSH, cholesterol and triglycerides have been measured at the entry and at the end of the program.

**Results.** At the entry, a significant correlation was found between the plasma levels of ACTH and weight gain during the pain period (r = 0.33; P < 0.0002). The functional restoration program was associated with a significant decrease of the levels of ACTH, cortisol, cholesterol and triglycerides. Between the beginning and the end of the program, the decrease in ACTH levels was significantly correlated with the decrease in cortisol levels (r = 0.25; P < 0.008); moreover, at the end of the program, the ACTH and cortisol levels were significantly correlated (r = 0.41; P < 0.0001). The decreases in ACTH levels were significantly correlated with the degree of deconditionning, as expressed by the muscular intolerance.

**Discussion.** The data of this study are in agreement with the fact that hypotalamic-pituitary abnormalities occur during chronic pain syndromes. The weight gain is not only associated with inactivity but also with central neuro-endocrine disorders. These central abnormalities seem to be corrected by a functional restoration program. This central nervous correction must be considered in the indications for such a program.


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**Douloure/unités d’évaluation et de réadaptation de la douleur (UERD) en MPR**

Résumé non communiqué.