

reproductibilité a été mesurée au moyen du coefficient de corrélation intra-classe (ICC), de l'erreur standard de mesure (SEM), de la plus petite différence détectable (SDD) et de la représentation graphique de Bland et Altman.

**Résultats.**— La reproductibilité intra-observateur varie de bonne à excellente (ICC compris entre 0,64 et 0,95) pour l'élévation analytique du bras et pour les AVQ. La reproductibilité inter-observateur varie de passable à excellente pour l'élévation analytique du bras (ICC compris entre 0,49 et 0,92) et de médiocre à excellente pour les AVQ (ICC compris entre 0,35 et 0,89). La reproductibilité de la protraction/rétraction scapulaire montre les ICC les plus faibles. Les SEM et SDD demeurent faibles et la représentation graphique de Bland et Altman montre un bon accord entre une mesure et sa répétition.

**Conclusion.**— En intra-observateur, la mesure dynamique de la cinématique de la scapula peut-être utilisée en pratique clinique et en recherche. La reproductibilité inter-observateur de la protraction/rétraction scapulaire doit être améliorée.

*Pour en savoir plus*

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### English version

P053-e

## Organization of postural equilibrium in several planes in ballet dancers

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**Keywords:** Balance; Dance; Adaptive strategies

**Aim.**— This study analyzed the balance strategies of ballet dancers during postural equilibrium in three single leg balance conditions with and without vision and regard to age.

**Material and method.**— Dancers participating formed two groups of 20 dancers each, one aged between 8 and 16 years (young group) and the other aged between 17 and 30 years (adult group). Ground reaction forces-GRF (mediolateral [ML], anteroposterior [AP] components, vertical [V]) were recorded. Results analysis enabled us to extract some spatiotemporal data for each component of the GRF (number of GRF oscillations, variability and impulses). Three trials were tested for each condition. The significance level was set at  $P < 0.05$  for all tests.

**Results.**— Young dancers are characterized, compared to adult dancers, by an instability combined with an increase of oscillations number and a decrease variability mainly visible on the ML component. In the two groups, the absence of vision implies an increase of AP, ML and V impulses and GRF variability. Balance with the gesturing limb to the rear increases the age and vision effect compared to balances with the limb forward or to the side.

**Discussion.**— Young dancers are less efficient at controlling their balance than adult dancers. This observation may be related to the number of hours practicing dance, which differs between groups. The dancers have a visual dependence to control the postural balance.

*Further reading*

Bruyneel AV, Bertrand M, Mesure S. Organization of postural equilibrium in several planes in ballet dancers. *Neurosci Lett* 2010;26;485(3):228–32.

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## Correlation between Timed Up and Go test performance and kinematic and kinetic gait parameters in stroke patients

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**Keywords:** Timed up and go; Hemiparesis; Gait analysis; Predictive factors  
**Background and purpose.**— The Timed Up and Go test (TUG) is a test of functional mobility routinely used in the assessment of hemiparetic patients in clinical practice. This test, easy and rapid to perform, is composed of various motor tasks (stand up, walk, turn, sit down), which frequently occur in daily life. To our knowledge, the relationships between the results of clinical test frequently performed and results of 3D gait analysis which constitute the gold standard to assess accurately gait parameters of hemiplegic patients have until now never been assessed. The aim of this study was thus to determine if, in hemiparetic patients, TUG performance was related to specific spatio-temporal, kinematic and kinetic gait parameters of hemiplegic patients obtained using 3D gait analysis.

**Methods.**— Sixty hemiparetic patients performed the TUG test and underwent 3D gait analysis and clinical evaluation in randomized order.

**Results.**— The percentage of the gait cycle spent in single support phase was the most correlated factor with hemiparetic TUG performance and explained 67% of the variance. Our results also suggest that TUG performance is mainly related to paretic lower limb motor abilities.

**Conclusion.**— The present findings suggest that TUG performance in hemiparetic patients mainly depends on the motor ability of the paretic lower limb and especially on the patient's ability to spent percentage of the gait cycle in single support phase on the paretic lower limb. This clinical test also provides an indirect indication of certain gait parameters that cannot be evaluated in clinical routine.

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P055-e

## Static disorders in hemiplegic patients: Evaluation on dual-plate force platform

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**Keywords:** Hemiplegic; Dual-plate force platform; Center of pressure; Spasticity; Anteriorisation

**Objective.**— Description of static disorders of stroke patients using a dual-plate force platform.

**Patients and methods.**— Descriptive study, monocentric, including patients with a time post stroke.

**Results.**— Fifteen patients were included with these features: 10 right hemiplegic stroke patients and five left, a majority of ischemic stroke (11/15) and supratentorial location (13/15), mean age being 62 and mean Barthel's score 74. 6 patients were spastic, 12 had a sensitivity disorder and three were hemi-neglect. The qualitative analysis found an anteriorisation of hemiplegic side COP for 10 patients, a shortening of the length for 13 patients and a decrease of the surface for 11 patients. The shortening of the hemiplegic side COP compared to the healthy side COP was significant (mean difference of 370 mm,  $P < 0.05$ ) but not the anteriorisation or the reduction of surface. The weight-bearing asymmetry between the two sides is significant: 63% of body weight for the healthy side and 37% for hemiplegic side,  $P < 0.05$ .