might generalize VV measurement after stroke, which requires analyzing VV clinimetric properties.

Objectives.— To analyze the reproducibility of the VV, and to determine the minimum number of trials required to reach a robust final result, comparatively in stroke patients and control subjects.

Materials and methods.— Twenty patients with a first and unique hemispheric stroke (61.9 ± 12 years; 10 left-10 right-sided; 2.6 ± 3 months since stroke), matched to 20 control subjects (54.4 ± 6 years) were recruited from a neuro-rehabilitation unit. The VV was assessed in a darkened room, subjects being seated, with head and trunk maintained upright. Subjects verbally indicated how to reset a luminous line presented on a computer screen to their subjective visual vertical. VV was measured twice, 5 days apart, with 10 trials performed each time. An average (orientation) and a standard deviation (uncertainty) were calculated. The minimum number of trials was the lowest number of consecutive trials leading to a final result similar (not significantly different) to that obtained with 10 trials, both for orientation and uncertainty. Non-parametric statistics were used for analyses.

Results.— The mean VV orientations were –3.7 ± 0.8° vs. –0.1 ± 0.8° (P < 0.01), and the mean VV uncertainty were 1.4 ± 0.1° vs. 0.8 ± 0.1° (P < 0.01), in stroke patients and control subjects, respectively. The test-retest reliability was high for patients for the orientation (r = 0.79; P = 0.001); acceptable for the uncertainty (r = 0.64; P = 0.002), and modest in control subjects due to very small variations in data (r = 0.45; P = 0.06). The minimum number of trials required to reach a stable and robust final result was 6 in controls as in stroke patients, both for VV orientation and uncertainty.

Conclusion.— VV orientation and uncertainty are reliable clinical criteria for assessing the sense of verticality in stroke patients, provided results are averaged on at least six trials.

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Simulating the effect of upper-body inertia on human balance recovery
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Hemiparetics use more their proximal muscles for controlling the upright stance than healthy subjects do
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Objective.— Upright stance maintenance in humans is achieved by complementary and different mechanisms. For instance, when feet are positioned side by side, the resultant center of pressure (CPRes) are displaced along the antero-posterior (AP) axis are achieved through pressure variations mechanisms occurring around the ankle joints whereas, along the medio-lateral (ML) axis, the main mechanisms is the body-weigh distribution which mainly involves the hip joint [1]. The posturographic analysis of hemiparetic patients shows, along the AP axis, a forward shift of the mean planar CP positions under the paretic leg and a backward shift under the non-paretic leg [2]. This gap, which favors the use of a loading-unloading for controlling the AP CPRes displacements, could be enhanced in hemiparetic patients.

Methods.— Posturographic measurements of 41 hemiparetic patients (first CVA, 16 and 25 with stroke on the left and right sides, respectively) were recorded with the instruction to stand still upright. Forty-one healthy