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2.26 The passive forward-push test can determine postural strategies

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Deterioration of posturokinetic capacities, a major factor in falls of the elderly, could result from using the so-called hip strategy to maintain balance. We describe a quick and simple clinical test, which can determine whether the subject is using the hip strategy or not, and evaluated its reproducibility.

Eight young healthy adults were randomly tested twice (days 1 and 2) in two situations: with both feet fully supported on a large platform that allows use of the ankle strategy and with only their heels remaining in contact with a small platform that renders use of the hip strategy obligatory. The examiner then 'pushes' the upper back with the right hand while his left hand on the subject's pubis feels the responding movement. Eight naive examiners/observers (roles inversed day 2) used the forward-push test to determine which strategy each subject used; intra- and interexaminer and/or observer reproducibilities were assessed. Results showed that the forward-push test accurately distinguished between the two strategies ($p < 0.0001$, χ^2), with excellent reproducibilities: $\geq 87.5\%$ on the large platform and $\geq 93.8\%$ on the small one.

Separately, an independent, experienced examiner conducted the push-forward test on 8 other subjects with simultaneous recordings of pelvis and head movements (Bessou ataxiometer) and compared these results. The instrumental measurements obtained confirmed the clinical, forward-push test results.

The push-forward test is rapid, simple, discriminatory and reproducible, and should now be evaluated in specific populations, notably the elderly.