Table 2: Mean ICC values for Stabilogram Diffusion Analysis.

	Anteroposterior		Mediolateral		Resultant	
Window size (s)	Control	Elderly	Control	Elderly	Control	Elderly
2.5	0.18	0.55*	0.31	0.34	0.30	0.56*
5	0.29	0.54*	0.42	0.58*	0.43	0.62*
10	0.44†	0.49	0.49	0.58	0.53	0.67*

Values are means calculated for all windows of each size.
*Significantly different from control subjects.
†Significantly different from 5-s window.

The DFA method yielded similar results to those of the SDA method in that time has a significant effect on H_{DFA}. However, in contrast to the results for H_S, H_{DFA} increased with time. In addition, these results were evident for both control and elderly subjects. These results were, however, due to the initial value at FC2, which was much lower than the subsequent values. Given this result it would be worth starting any analysis from FC2 + 1 s in order to remove any effect of time on H_{DFA}. The interpretation of H_{DFA} depends on the values detected. Values of H_{DFA} greater than 0.5 are indicative of a persistent times series, with higher values due to a smoother time series, with a corresponding decrease in variability [38]. As values of H tend towards 1, the signal is smoother with a higher correlation between successive points [39]. High values of H_{DFA} would, therefore, be indicative of increased postural stability. Another interpretation is possible for H_{DFA} for lower values, whereby H_{DFA} less than 0.5 is indicative of an anti-persistent signal. For such data the variation between successive points in the time series is more likely to change direction than to continue in the same direction, thus reflecting a more tightly controlled time series.

Reliability analysis

In terms of reliability, the values reported varied according to the window size, the displacement direction, and the subject group, but did not vary with time. In other words, the values of H_S and H_{DFA} for the initial part of the signal were just as reliable as those for the later part where greater postural stability was observed. In respect to the effect of window size, higher ICC values were observed for the 5-s and 10-s window lengths for both SDA and DFA methods. Such a finding was expected given that previous studies of diverse physiological and behavioral time series have typically shown greater variability when less data points are used. Eke and colleagues recommended using time series with at least 2^{12} (4096) data points due to the unreliable results obtained with shorter time series [32]. However, recent results have demonstrated that, despite an increased variability, time series as short as 2^8 (256) points still produced acceptable results [40]. Furthermore, the mean of four short time series of 256 points was shown to provide a better estimate of H than a single time series of 1024 points. The results of the reliability analysis of the present study confirm the results of Delignières, in that ICC values as high as 0.72 were obtained for 5-s time series containing only 500 data points.

Given the low ICC values obtained for the 2.5-s window length, all subsequent comparisons of reliability are discussed for only the 5 and 10-s windows. In respect to differences in reliability for the two groups, it can be seen that elderly subjects were far more reliable than were the control subjects. The ICC values for elderly subjects were consistently considered to be "fair to good", bordering on "excellent" using the scale developed by Fleiss [41], with values varying from 0.49 to 0.75. In contrast, the ICC values for the control subjects were consistently lower than

Table 3: Mean ICC values for Detrended Fluctuation Analysis.

	Anteroposterior		Mediolateral		Resultant	
Window size (s)	Control	Elderly	Control	Elderly	Control	Elderly
2.5	0.20†	0.56*†	0.27†	0.34	0.24	0.54*
5	0.40§	0.72*§	0.41	0.52	0.32§	0.56*
10	0.48	0.75*§	0.52	0.62	0.43	0.68*

Values are means calculated for all windows of each size.
*Significantly different from control subjects.
†Significantly different from 5-s window.
§Significantly different from the SDA values reported in Table 2.