Posture analysis using position detector DTP2 in senescent women after the application of a targeted exercise program

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Abstract

During the years 2005, 2006, and 2007, we studied changes in the posture and spinal shape in three groups of younger female seniors (mean age 61, 63, and 66 years) using the diagnostic device DTP2 following the interventional procedure of a targeted exercise program (the Chinese therapeutic exercise known as "Hui chun gong"). The exercise influenced mainly the pelvic area; the trends suggesting improved posture and stability did not reach statistical significance in all cases. Since the exercise technique is technically difficult, improperly performed positions resulted in a zero effect rather than improvement.

Positive changes were always found in terms of improved stance stability and significant shift of the thoracic kyphosis towards the vertical axis, which suggests improved posture. Shoulder position showed a certain degree of inconsistency in terms of changes in shoulder asymmetry. Pelvic position also responded to the intervention procedures by shifting the asymmetry of the spinal angles after the 1st and 2nd phases of exercise, while a statistically significant offset of the left sided asymmetry was achieved after the 3rd phase. We found a reduced extent of titubation of the axial skeleton, which was evaluated to be an accompanying effect of the improved stance stability. In total, best results were manifested following the intervention in 2007, when the extent of titubation was decreased in the direction of both the x and y axes, a statistically significant positive change was found in the adjustment of symmetry of the posterior superior iliac spine, and a materially significant trend of a decrease in the axial values of lordoses and thoracic kyphosis was observed. The reasons for these changes can be found in an increased emphasis on the proper performance of exercise techniques and thus adjustment of muscle imbalances.

Subjective feelings of the senior patients were very beneficial, as they evaluated very positively the feeling of improved stance stability.

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