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**Title:** Sleep position trainer vs. tennis ball technique in positional OSA

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**Body:** Introduction: standard tennis ball techniques like the positional band (PB) can be as effective as CPAP in positional OSA (POSA) but compliance is low. Objectives: can compliance of positional therapy in POSA be improved with a new device, the sleep position trainer (SPT) Therapies: The SPT is a small in supine position vibrating device with position sensors placed on the ventral thorax. The PB is a belt with three inflatable airbags worn on the back preventing supine position. Methods: 55 new patients with POSA were randomized to SPT (29) or PB (26). Standard home-PSG was done at baseline and after 1-month therapy. Quebec Sleep Questionnaire (QSQ), ESS and VAS scores were taken. The SPT device was, in a non-vibrating mode, also build in the PB for measuring daily compliance Results: comparing PSG: AHI<sub>tot</sub>, AHI<sub>sup</sub>, %supTST was respectively 11.4, 30.7, 27.9% for SPT and 13.2, 37.3, 31.1% for PB. After 1 month the same parameters were respectively reduced to 3.9, 0.0, 0.0 for SPT and 5.8, 0.0, 0.0 for PB. After 1 month therapy no differences in QSQ, ESS, PSG sleep parameters were observed, however perceived therapeutic effectiveness by means of VAS was 74,5 for SPT and 55,2 for PB (P 0.02). Compliance decreased with time. At 1 month SPT and PB was used respectively in 70% and 42%. Compliance expressed as use >4 hours/night for > 5 days/week was 76% for SPT, 42% for PB (P 0.01). Dropouts were 7% in SPT, 28% in PB. Conclusions: SPT and PB effectively treat POSA when used. Only the SPT does have an acceptable compliance after 1 month.