Appendix SI.

Non-tabulated outcomes

In order for an outcome measure to be tabulated, it had to be reported in a minimum of 3 studies. Due to this guideline, outcome measures from 3 of the included studies were not tabulated (8, 36, 37). Two of these studies evaluated postural changes and the effect of various kinematics on walking ability (8, 36). Koyama et al. (36) experienced an mean rate of 0.96±0.62 unexpected postural changes per h per subject. An anterior breakdown causing forward flexion of the hips was the most common incident and was attributed to poor timing of the forward movement of the walker; hence causing near collisions with the exoskeleton. Unexpected postural changes were more common in T6 than in T12 injuries, probably due to improved posture control, particularly that of erector spinae in the lower lesion group. Talaty et al. (8) found a wide range of walking velocities from 0.10 to 0.50 m/s across their 12 participants. A posture comprising of increased hip extension throughout the gait phase, early trunk flexion and late knee flexion appeared to be associated with faster walking velocities. Increased dorsiflexion and plantarflexion were also evident in the fast walking group (0.42–0.50 m/s), probably assisting with foot clearance and toe off, respectively. Unfortunately, no inferential statistics were conducted. Karelis et al. (37) was the only study to evaluate body composition and bone mineral density changes. Observed body composition changes included an increase in leg and appendicular lean body mass with a concomitant decrease in total, leg and appendicular fat mass. Tibial bone density increased by 14.50%, a finding which was not statistically significant, but clinically relevant in a population who generally experiences a steady decline in their bone density.

STROBE quality of studies

All the articles, except 1 (18), failed to address sources of bias within the study. Approximately half of the studies failed to include statements regarding how the sample size was determined (44.4%) and did not mention the study design in the title/abstract or early in the article (55.5%). Seven studies did not provide a setting/location for the testing. Eighty-nine percent of the articles included inclusion criteria, whereas only 78% mentioned the exclusion criteria. Eligibility and exclusion procedures at each step of the protocol were poorly explained in 59.2% of the articles. The majority of the articles included sufficient information on the chosen statistical analyses; however, 5 studies did not present statistical methods. The generalizability of the results was omitted for 41% of the studies. Objectives, outcomes and testing procedures were very well explained in most studies, as were the participant characteristics, results and conclusion (Table SI[1]).