ism. The model is supported by data. This is the first report from a 2-year replication and extension study reporting outcomes from the first 5 months.
*Study Design:* Randomized controlled design: (single blinded). 103 pre-school children with autism were randomly assigned to treatment and control conditions. Treatment group received 5 months of the Qigong Sensory Treatment Dual massage intervention in which parents gave daily treatment and trained therapists gave weekly treatment and parent support. Evaluation was conducted by trained professionals who were blind to group and parents.
*Study Participants and Setting:* Participants were between the ages of 3 and 6 and receiving early intervention services for autism. Treatment was provided daily in the home by parents and weekly in the home or office by trained therapists. Ongoing parent support and training was provided by trained therapists in 20 weekly home or office visits.
*Materials/Methods:* Treatment was with a massage protocol based on Chinese medicine directed at tactile abnormalities. The protocol is called Qigong Sensory Treatment for autism and is formalized in a parent-training handbook. Parents received an initial 3-hour training, followed by ongoing training and support provided in 20 weekly visits with trained therapists. Pre and post-testing was done with validated measures including the Childhood Autism Rating Scale, the Autism Behavior Checklist, the Preschool Language Scale, the Sense and Self-Regulation Checklist and the Autism Parenting Stress Index.
*Results:* Five-month outcomes replicated earlier studies and showed decreased severity of autism ($F$ 5.17(2,81) $p = 0.008$), decreased tactile, and other sensory symptoms (F15.16(1,82) $p < 0.000$), decreased self-regulatory difficulties/delays (F17.9 (1,82) $p < 0.000$), decreased autistic behavior (F8.11(1,82) $p = 0.006$), decreased parenting stress (F17.2(1,82) $p < 0.000$), and increased receptive language (F(1,82) $p = 0.03$). Treatment was effective in both low- and high-functioning children.
*Conclusions/Significance:* Results of this study replicate earlier studies and show decreased tactile abnormalities, improved self-regulatory abnormalities, decreased severity of autism overall, as well as improvement of behavior, communication and sensory symptoms. This program can be recommended to parents and early intervention programs and is suitable for implementation at the time of autism diagnosis. Results lend support to a model for autism proposing that tactile abnormalities and global delay of early self-regulation contribute to severity of autism. A full diagnostic evaluation of the sense of touch has not yet been carried out in autism. The authors urge that this be awarded priority on the national autism research agenda.

## G3
## Early vibration assisted physiotherapy in children with cerebral palsy (12–24mo of age) – pilot RCT

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*Background/Objectives:* Promising results regarding the improvement of strength (muscle and bone) have been reported for vibration assisted physiotherapy in a recent review on interventions for children with cerebral palsy (CP) (Novak et al. 2013). In several retrospective analyses of a functional interval-rehabilitation program combined with 6 months home-based vibration training (Stark et al. 2010, Stark et al. 2013, Hoyer-Kuhn et al. 2014, Stark et al. 2015) our group has shown similar positive results for the improvement of mobility. Evidence suggests that early intervention is more effective. In this pilot trial we aim to investigate the feasibility, safety and possible effectiveness of early vibration assisted physiotherapy on motor development in young children with CP between 12 and 24 months of age.
*Study Design:* Randomized controlled crossover trial.
*Study Participants and Setting:* 24 children with CP, GMFCS Level II—IV (mean age 19.0 ± 3.1mo, 11 girls, 13 boys) were recruited at the Children's University Hospital Cologne, Germany.
*Materials/Methods:* The intervention included 2 weeks of introduction and 12 weeks of vibration assisted physiotherapyt (total 14wks of training). The control intervention was 14 weeks of standard of care. The follow-up was 14 weeks for the intervention group. The control group started 14 weeks of training after the 14-week waiting-control-phase. The training device was a side-alternating neuromuscular stimulation system with a tilt table. Frequencies: 5–27 Hz, Amplitude 0–2.5 mm. Primary efficacy endpoint was the change of gross motor function (GMFM-66) from week 1 (T0) to week 14 (T1). Secondary endpoints were the domains "mobility" and "self-care", measured by the PEDI. Safety parameters were recorded according to official guidelines.
*Results:* Four children improved their GMFCS-Level in the training-group and 2 in the control group. Both groups improved their mobility in the GMFM-66; the control group slightly better (difference T0-T1: control = 3.3 points, training ITT = 2.4 points). The training group developed better in the PEDI domains: the difference between groups was 4.9 points for "mobility" ($p = 0.15$) and 1.8 points for "self-care" ($p = 0.21$). None of the changes was significant. Safety parameters were equal in both groups. No drop-outs were recorded and the training compliance and motivation of the participating families was very high.
*Conclusions/Significance:* The early vibration assisted therapy in children with CP has been feasible and safe. The PEDI domains developed better in the intervention-group. After the short training period (14wks) the vibration assisted therapy had no significant effect on the mobility between groups. It can be discussed whether this was due to the very standardized treatment protocol compared to the individualized, functional therapy in our previous work, the small sample or the short training period. The compliance of the patients and their families was very high.