Objective. To determine the effect of rectus femoris transfer or distal rectus femoris intralenghtening for the correction of Stiff Knee Gait (SKG) in children with cerebral palsy.

Background. Rectus femoris transfer is used to treat SKG. Studies report suggest the transfer does not generate a knee flexor moment. Rectus Femoris lengthening or tenotomy has been report as treatment for SKG.

Methods. The metanalysis is reported in compliance with the PRISMA statement. It was prospectiveley registered in the PROSPERO registry (CRD42018087551). Pubmed, Embase, Cochrane database, Scopus, Science Direct and Pascal were searched. Studies were collected up to September 2018. Interventions had to include RF transfer or RF intramuscular lengthening or distal RF resection. Two reviewers assessed the methodological quality of included studies using a methodological index for non randomized studies (MINORS). Pre and 1 year postoperative motion analysis data were extracted. Effect size was measured using standardized mean difference (SMD).

Results. Of 695 studies identified, 18 were included in this review. One was prospective randomized, 17 were retrospective cohort. Data pooling of peak knee flexion (PKF_{SW}) in patients with rectus femoris transfer (RFT) showed a significant improvement of 4.38° (SMD = 0.87). Data pooling of knee range of motion (KROM) after RFT showed a significant improvement of 9.48° (SMD = 1.31). Improvement of PKF_{SW} after rectus femoris lengthening was not significant (SMD = 0.37).

Conclusion. RF surgery remain an effective surgery for SKG. The effect size for tenotomy was lower in 2 parameters. The heterogeneity of tenotomy technique could explain these results. We would prefer perform a complete tendon resection than an usual distal release.