Introduction & Objectives: Robotic-assisted radical prostatectomy (RARP) has become the most common approach to radical prostatectomy, thereby replacing laparoscopic radical prostatectomy (LRP). However, randomized evidence comparing these approaches is scarce. Aim of this review was to compare the postoperative functional outcomes of the two approaches.

Materials & Methods: We conducted a systematic review and individual patient data meta-analysis of randomized controlled trials (RCTs) comparing RARP to LRP using the Cochrane Handbook, the PRISMA and the AMSTAR-2 guidelines. Risk of bias was assessed using the Cochrane Risk of Bias Tool 2.0, quality of evidence was assessed using the GRADE approach. The primary outcomes were continence and potency at 12 months. Continence was defined as either the need for no pads at all (0pads) or as the need for no pads or a safety pad (0/safetypad). Potency was defined as an erection sufficient for intercourse.

Results: After preliminary search and analysis, we have identified 4 RCTs and were able to attain individual patient data of 2 trials. We were able to include 1030 patients into the quantitative analysis. At 12 months, the odds of being continent were in favor of RARP for both the 0pad (Odds ratio(OR) Confidence Interval (CI): 1.99 (0.90, 4.36)) and the 0/safetypad definition (OR (CI): 1.41 (0.99, 2.00)) but were not significantly different. For potent patients at baseline that received a nerve-sparing operation, the odds of being potent at 12 months were significantly increased in the RARP group (OR (CI): 3.80 (1.97, 7.33)). There were more R1 resections in the RARP group (OR (CI): 1.48 [1.01, 2.18]).

Conclusions: While there are no statistically significant differences in continence at 12 months, there are statistically significant differences in recovery of potency at 12 months for patients that receive a nerve-sparing operation. Patients that value their potency and are eligible for a nerve-sparing approach will profit from RARP.