# Evidence Navigator: Radical Prostatectomy

**Systematic literature review summary**
**as of December 31, 2022**

INTUITIVE

# Purpose

The Evidence Navigator is a slide presentation representing a summary of the meta-analysis of the highest level of evidence available specific to a given procedure and published as of a particular date. It is created by the Global Evidence Management team within Global Access, Value and Economics (GAVE). It includes information that is available in the public domain. It is a systematic review and meta-analysis of the peer-reviewed literature based on a timeframe within which a literature search has been conducted according to a set of concise inclusion and exclusion criteria. The results of the meta-analysis are presented in the form of forest plots summarized for each outcome according to a comparator and surgical approach of interest. The summary results are reflective of a specific period in time and are subject to change with increasing literature. All of the robotic-assisted surgery procedures mentioned within the Evidence Navigator were performed using a da Vinci® surgical system.

# Statistical analysis

All summary measures are shown as odds ratios, risk ratios or risk differences when describing binary outcomes, or as weighted mean differences or standardized mean differences when describing continuous outcomes. Weighting is based on the study sample size and variability of the outcome. A random effect model is used if heterogeneity is statistically significant, otherwise a fixed effect model is used. The Mantel Haenszel summary statistic is used for the overall results. The meta-analysis is performed with RevMan 5.4 (Review Manager, Version 5.4. Copenhagen: The Nordic Cochrane Centre, The Cochrane Collaboration, 2014) or R software (R Foundation for Statistical Computing, Vienna, Austria.URL https://www.R-project.org/).

# Interpretation notes

When the effect size is measured as a standardized mean difference (SMD), or a risk difference (RD), it is not possible to provide a quantitative conclusion. In such cases, a qualitative conclusion is given with reference to its statistical significance. In some instances, studies may contain some overlapping patient populations. A redundancy check is performed in order to minimize this overlap and bias due to over-reporting.

# Glossary

| | |
|---|---|
| **RAS** | robotic-assisted surgery |
| **Lap** | laparoscopic surgery |
| **LOE** | level of evidence |
| **HTA** | health technology assessment |
| **RCT** | randomized controlled trial |
| **OR** | odds ratio |
| **MD** | mean difference |
| **LNY** | lymph node yield |

| | |
|---|---|
| **WMD** | weighted mean difference |
| **RD** | risk difference |
| **SMD** | standardized mean difference |
| **95% CI** | 95% confidence interval |
| **$I^2$** | test statistic for heterogeneity |
| **EBL** | estimated blood loss |
| **LOS** | length of hospital stay |
| **PSM** | positive surgical margins |

# Evidence Navigator: Radical Prostatectomy Summary Slides

**Systematic literature review summary**
**as of December 31, 2022**

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WHAT DOES THE LITERATURE SHOW?

# Systematic literature review & meta-analysis: **Radical prostatectomy— clinical outcomes**

## Inclusion criteria

Robotic-assisted radical prostatectomy performed with a da Vinci® surgical system

January 1, 2010 – December 31, 2022

Level of Evidence = 1b, 2b, 2c

RCT, prospective cohort studies, or large database study (with n≥20 in each cohort)

## Exclusion criteria

Not in English

Paper reports on a pediatric population

Publication is an HTA not published in a peer-reviewed journal

Alternate technique/approach (e.g. single-port)

No stratified analysis by study arm

Radical prostatectomy data mixed with other procedures

Original research study does not provide quantitative results

Original research publication includes redundant patient population and similar conclusions

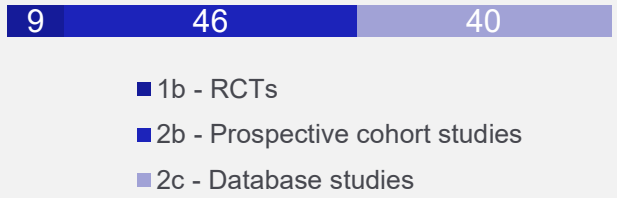
## 95 publications including

Robotic-assisted patients: **669,924**

Laparoscopic patients: **59,442**

Open patients: **573,660**

### Level of evidence



WHAT DOES THE LITERATURE SHOW?

# Systematic literature review & meta-analysis key points: **Robotic-assisted vs. laparoscopic radical prostatectomy**

## Favors robotic-assisted

- ↓ Blood transfusions by **44%**
- ↓ Length of stay by **0.5 days**
- ↓ 30-day postoperative complications by **28%**
- ↓ 30-day readmissions by **37%**
- ↓ 30-day mortality by **86%**
- ↓ Urinary incontinence at 6 months by **26%**
- ↓ Urinary incontinence at 12 months by **22%**
- ↓ Erectile dysfunction at 12 months by **45%**

## Comparable outcomes

- ≈ Operative time
- ≈ Conversions
- ≈ Estimated blood loss
- ≈ Lymph node yield
- ≈ Positive surgical margins
- ≈ Intraoperative complications
- ≈ 30-day reoperations
- ≈ Erectile dysfunction at 6 months

## Favors laparoscopic

None

Data collected through: December 31, 2022

Significant difference favoring robotic-assisted surgery

No significant difference; comparable outcomes

Significant difference favoring laparoscopic surgery

WHAT DOES THE LITERATURE SHOW?

# Systematic literature review & meta-analysis key points: **Robotic-assisted vs. open radical prostatectomy**

## Favors robotic-assisted

- ↓ Estimated blood loss by **448 mL**
- ↓ Blood transfusions by **82%**
- ↑ Lymph node yield by **2 nodes**
- ↓ Positive surgical margins by **19%**
- ↓ Intraoperative complications by **42%**
- ↓ Length of stay by **1.4 days**
- ↓ 30-day postoperative complications by **47%**
- ↓ 30-day readmissions by **39%**
- ↓ 30-day mortality by **60%**
- ↓ Time to continence by **1.9 months**
- ↓ Urinary incontinence at 6 months by **22%**
- ↓ Erectile dysfunction at 6 months by **59%**
- ↓ Erectile dysfunction at 12 months by **34%**

## Comparable outcomes

- ≈ 30-day reoperations
- ≈ Urinary incontinence at 12 months

## Favors open

- ↓ Operative time by **49 minutes**

Significant difference favoring robotic-assisted surgery

No significant difference; comparable outcomes

Significant difference favoring open surgery

Data collected through: December 31, 2022

# Evidence Navigator: Radical Prostatectomy Technical Slides

**Systematic literature review summary**
**as of December 31, 2022**

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# radical prostatectomy: Literature search methods

as of December 31, 2022

Monthly searches were conducted in PubMed, Scopus and Embase.

All citations were exported into a reference management system. Duplications were removed. Titles, abstracts and keywords were reviewed for literature review inclusion by Global Evidence Management team.

All robotic-assisted radical prostatectomies were performed with da Vinci® surgical systems. Publications were identified according to inclusion and exclusion criteria described.

Meta-analysis was performed using RevMan or R software.

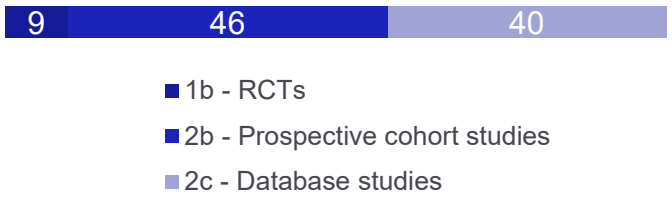
**95 publications**

669,924 patients who underwent RAS

59,442 patients who underwent laparoscopic surgery

573,660 patients who underwent open surgery

**Level of evidence**




| Criteria phase | Details |
|---|---|
| **Identification phase** | All unique PubMed, Scopus, and Embase references identified<br>N=24,042<br>December 31, 2022 |
| **Inclusion criteria** | |
| 1. Robotic-assisted radical prostatectomy for cancer | Da Vinci® robotic-assisted radical prostatectomy<br>N=6,767 (excluded N=17,275) |
| 2. Year ≥ 2010 | Articles published ≥ 2010<br>N=6,748 (excluded N=19) |
| 3. LOE = 1b, 2b, 2c | Articles with LOE = 1b, 2b, 2c<br>N=418 (excluded N=6,330) |
| 4. Study is an RCT, prospective study or large database with comparative cohorts (robotic-assisted vs. laparoscopic and/or open surgery), with n≥20 in each cohort | Comparator cohorts<br>N=394 (excluded N=24) |
| **Exclusion criteria** | **N=299 excluded publications:** |
| 1. Not in English | N=1 (EC#1) |
| 2. Paper reports on a pediatric population | N=0 (EC#2) |
| 3. Publication is an HTA that was not published in a peer-reviewed journal | N=0 (EC#3) |
| 4. Alternate technique/approach (e.g. single-port) | N=1 (EC#4) |
| 5. No stratified analysis by study arm (e.g., combines results from robotic, laparoscopic and/or open cohorts) | N=169 (EC#5) |
| 6. Radical prostatectomy data mixed with other procedures (e.g., data from multiple surgical procedures combined) | N=3 (EC#6) |
| 7. Original research study does not provide quantitative results for at least one of the findings relative to the outcomes of interest (i.e., operative time, conversions, estimated blood loss and/or transfusions, complications, length of hospital stay, mortality, etc.) | N=106 (EC#7) |
| 8. Original research publication includes redundant patient population and similar conclusions | N=19 (EC#8) |

**radical prostatectomy publications: N=95**

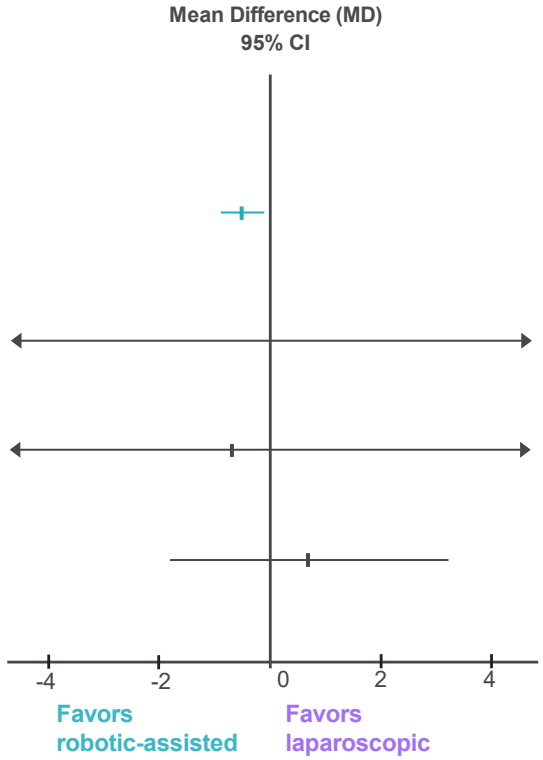
# Robotic-assisted vs. laparoscopic radical prostatectomy (1 of 3)

## Summary as of December 31, 2022

Significant difference favoring robotic-assisted surgery | No significant difference; comparable outcomes | Significant difference favoring laparoscopic surgery

Compared to laparoscopic radical prostatectomy, the evidence for **robotic-assisted radical prostatectomy using the da Vinci surgical system** demonstrates:

- Significantly shorter hospital length of stay by an average of 0.5 days
- Comparable estimated blood loss
- Comparable operative time
- Comparable lymph node yield




| Outcome | Robotic-assisted, n | Laparoscopic, n | Effect size 95% CI | P-value |
|---|---|---|---|---|
| Radical prostatectomy continuous variables (to December 31, 2022) | | | | |
| **LOS, days** [1, 2, 6, 24, 27, 37, 42, 63, 79, 91, 92, 94, 95] | | | | |
| Subtotal | 76129 | 12128 | MD: -0.49 [-0.86, -0.12] | p<0.01 |
| Random, Heterogeneity: p<0.01; $I^2$ = 99% | | | | |
| **EBL, mL** [9, 63, 75, 77, 91, 94] | | | | |
| Subtotal | 991 | 716 | MD: -5.46 [-30.52, 19.60] | p=0.67 |
| Random, Heterogeneity: p<0.01; $I^2$ = 79% | | | | |
| **Operative time, min** [9, 24, 63, 75, 77, 79, 91, 94] | | | | |
| Subtotal | 3507 | 3351 | MD: -0.68 [-12.03, 10.68] | p=0.91 |
| Random, Heterogeneity: p<0.01; $I^2$ = 94% | | | | |
| **LNY (Lap-RAS), n** [2, 62] | | | | |
| Subtotal | 3206 | 1182 | MD: 0.70 [-1.80, 3.20] | p=0.58 |
| L-R Random, Heterogeneity: p<0.01; $I^2$ =98% | | | | |

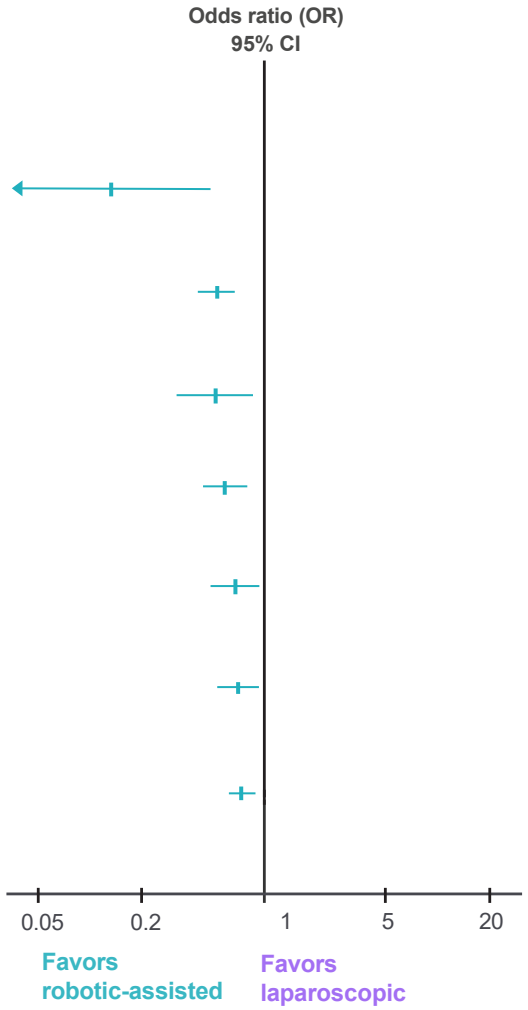
# Robotic-assisted vs. laparoscopic radical prostatectomy (2 of 3)

## Summary as of December 31, 2022

Significant difference favoring robotic-assisted surgery | No significant difference; comparable outcomes | Significant difference favoring laparoscopic surgery

Compared to laparoscopic radical prostatectomy, the evidence for **robotic-assisted radical prostatectomy using the da Vinci surgical system** demonstrates:

- 86% lower likelihood of mortality within 30 days of surgery
- 45% less likely to experience erectile dysfunction at 12 months
- 44% less likely to receive a blood transfusion
- 37% less likely to experience a readmission within 30 days of surgery
- 28% less likely to experience a postoperative complication within 30 days of surgery
- 26% less likely to experience urinary incontinence at 6 months
- 22% less likely to experience urinary incontinence at 12 months




| Outcome | Robotic-assisted, n | Laparoscopic, n | Effect size 95% CI | P-value |
|---|---|---|---|---|
| Radical prostatectomy binary variables (to December 31, 2022) | | | | |
| **Mortality, n(%)** [1, 4, 37, 63, 76, 77, 95] | | | | |
| Subtotal | 45952 | 5900 | OR: 0.14 [0.04, 0.51] | p<0.01 |
| Fixed, Heterogeneity: p=0.45; $I^2$=0% | | | | |
| **Erectile dysfunction at 12 mo., n(%)** [3, 4, 9, 24, 62, 78, 91, 92] | | | | |
| Subtotal | 1945 | 827 | OR: 0.55 [0.34, 0.90] | p=0.02 |
| Random, Heterogeneity: p<0.01; $I^2$=79% | | | | |
| **Transfusions, n(%)** [2, 4, 6, 24, 28, 37, 39, 42, 76, 79, 92, 94] | | | | |
| Subtotal | 61493 | 39975 | OR: 0.56 [0.44, 0.71] | p<0.01 |
| Random, Heterogeneity: p=0.03; $I^2$=49% | | | | |
| **Readmissions, n(%)** [37, 47, 60] | | | | |
| Subtotal | 39911 | 8332 | OR: 0.63 [0.47, 0.83] | p<0.01 |
| Random, Heterogeneity: p<0.01; $I^2$=84% | | | | |
| **Postoperative complications, n(%)** [4, 5, 24, 26, 37, 42, 63, 76, 77, 79, 94, 95] | | | | |
| Subtotal | 34708 | 8914 | OR: 0.72 [0.53, 0.98] | p=0.04 |
| Random, Heterogeneity: p<0.01; $I^2$=80% | | | | |
| **Urinary incontinence at 6 mo., n(%)** [3, 4, 62, 78, 91, 94] | | | | |
| Subtotal | 1109 | 524 | OR: 0.74 [0.58, 0.94] | p=0.02 |
| Fixed, Heterogeneity: p=0.34; $I^2$=12% | | | | |
| **Urinary incontinence at 12 mo., n(%)** [3, 4, 9, 24, 62, 78, 91, 92] | | | | |
| Subtotal | 2428 | 1122 | OR: 0.78 [0.66, 0.92] | p<0.01 |
| Random, Heterogeneity: p<0.01; $I^2$=79% | | | | |

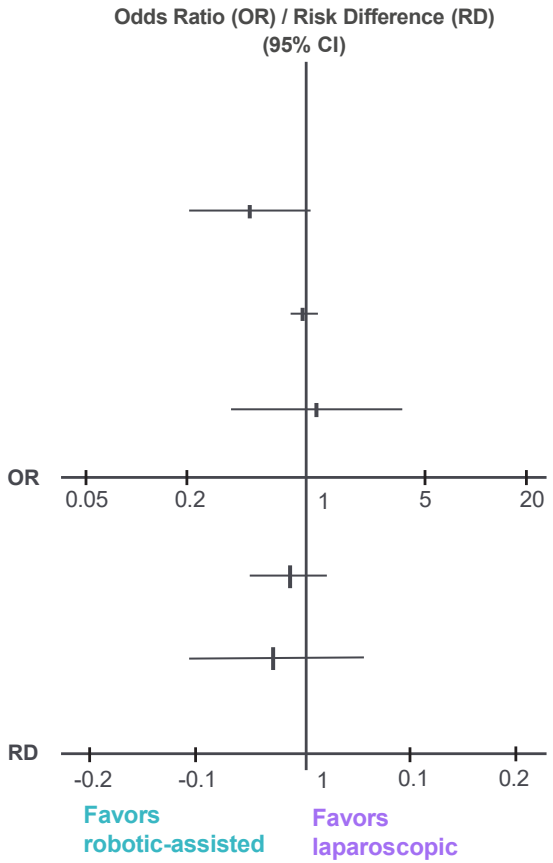
# Robotic-assisted vs. laparoscopic radical prostatectomy (3 of 3)

## Summary as of December 31, 2022

Significant difference favoring robotic-assisted surgery | No significant difference; comparable outcomes | Significant difference favoring laparoscopic surgery

Compared to laparoscopic radical prostatectomy, the evidence for **robotic-assisted radical prostatectomy using the da Vinci surgical system** demonstrates:

- Comparable erectile dysfunction rate at 6 months
- Comparable positive surgical margin rate
- Comparable reoperation rate within 30 days of surgery
- Comparable risk of conversion to open surgery
- Comparable risk of intraoperative complications




| Outcome | Robotic-assisted, n | Laparoscopic, n | Effect size 95% CI | P-value |
|---|---|---|---|---|
| Radical prostatectomy binary variables (to December 31, 2022) | | | | |
| **Erectile dysfunction at 6 mo., n(%)** [3, 4, 62, 78, 94] | | | | |
| Subtotal | 695 | 288 | OR: 0.47 [0.21, 1.05] | p=0.07 |
| Random, Heterogeneity: p<0.01; $I^2$=82% | | | | |
| **Positive surgical margins, n(%)** [4, 5, 9, 16, 24, 37, 39, 42, 63, 70, 73, 77, 84, 91, 94] | | | | |
| Subtotal | 36514 | 7454 | OR: 0.97 [0.81, 1.16] | p=0.72 |
| Random, Heterogeneity: p<0.01; $I^2$=76% | | | | |
| **Reoperations, n(%)** [24, 77] | | | | |
| Subtotal | 952 | 351 | OR: 1.17 [0.38, 3.62] | p=0.79 |
| Fixed, Heterogeneity: p=0.4; $I^2$=0% | | | | |
| **Conversions, n(%)** [4, 11, 26, 42, 77, 89, 94] | | | | |
| Subtotal | 83886 | 6766 | RD: -0.0112 [-0.0452, 0.022] | p=0.52 |
| Random, Heterogeneity: p<0.01; $I^2$=98% | | | | |
| **Intraoperative complications, n(%)** [42, 63] | | | | |
| Subtotal | 382 | 918 | RD: -0.0260 [-0.1061, 0.0541] | p=0.52 |
| Random, Heterogeneity: p<0.01; $I^2$=88% | | | | |

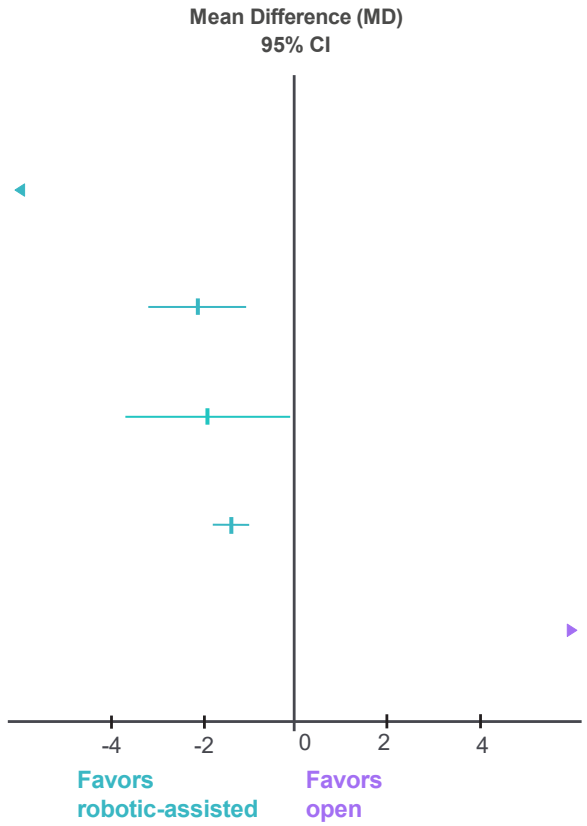
# Robotic-assisted vs. open radical prostatectomy (1 of 3)

## Summary as of December 31, 2022

Significant difference favoring robotic-assisted surgery | No significant difference; comparable outcomes | Significant difference favoring open surgery

Compared to open radical prostatectomy, the evidence for **robotic-assisted radical prostatectomy using the da Vinci surgical system** demonstrates:

- Significantly less estimated blood loss by an average of 448 mL
- Significantly higher lymph node yield by an average of 2 nodes
- Significantly shorter time to continence by an average of 1.9 months
- Significantly shorter hospital length of stay by an average of 1.4 days
- Significantly longer operative time by an average of 49 minutes




| Outcome | Robotic-assisted, n | Open, n | Effect size 95% CI | P-value |
|---|---|---|---|---|
| Radical prostatectomy continuous variables (to December 31, 2022) | | | | |
| **EBL, mL** [7, 10, 15-17, 22, 29, 32, 34, 38, 41, 45, 46, 51, 55, 58, 61, 67, 86, 94] | | | | |
| Subtotal | 10063 | 4649 | MD: -448.12 [-550.93, -345.30] | p<0.01 |
| Random, Heterogeneity: p<0.01; I² = 97% | | | | |
| **LNY (Open-RAS), n** [2, 31, 34, 71, 82, 93] | | | | |
| Subtotal | 4885 | 2650 | MD: -2.01 [-3.05, -0.98] | p<0.01 |
| O-R Random, Heterogeneity: p<0.01; I² =88% | | | | |
| **Time to continence, months** [45, 67] | | | | |
| Subtotal | 207 | 107 | MD: -1.90 [-3.66, -0.13] | p=0.03 |
| Random, Heterogeneity: p<0.01; I² = 97% | | | | |
| **LOS, days** [2, 6, 16, 19, 21, 23, 24, 27, 29, 34, 35, 37, 38, 42, 45, 46, 48, 52, 55, 58, 61, 64, 67, 79, 82, 86, 92, 93, 95] | | | | |
| Subtotal | 168748 | 98289 | MD: -1.41 [-1.81, -1.02] | p<0.01 |
| Random, Heterogeneity: p=0; I² = 100% | | | | |
| **Operative time, min** [7, 10, 15, 17, 19-21, 24, 29, 32, 34, 38, 45, 51, 58, 59, 61, 66, 71, 74, 79, 82, 83, 86, 93] | | | | |
| Subtotal | 44109 | 46870 | MD: 48.79 [31.76, 65.82] | p<0.01 |
| Random, Heterogeneity: p=0; I² = 100% | | | | |

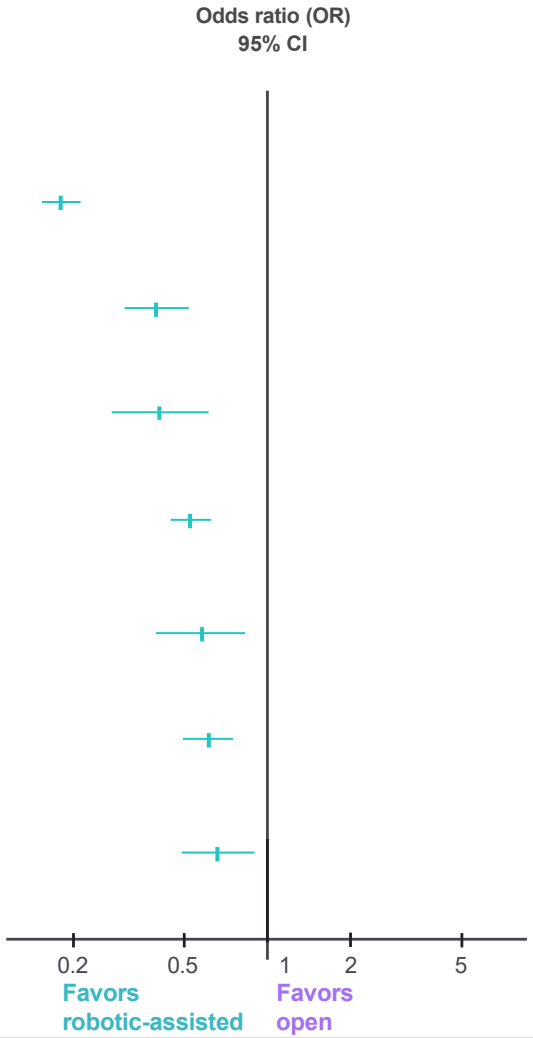
# Robotic-assisted vs. open radical prostatectomy (2 of 3)

## Summary as of December 31, 2022

Significant difference favoring robotic-assisted surgery | No significant difference; comparable outcomes | Significant difference favoring open surgery

Compared to open radical prostatectomy, the evidence for **robotic-assisted radical prostatectomy using the da Vinci surgical system** demonstrates:

- 82% less likely to receive a transfusion
- 60% lower likelihood of mortality within 30 days of surgery
- 59% less likely to experience erectile dysfunction at 6 months
- 47% less likely to experience a postoperative complication within 30 days of surgery
- 42% less likely to experience an intraoperative complication
- 39% less likely to experience a readmission within 30 days of surgery
- 34% less likely to experience erectile dysfunction at 12 months




| Outcome | Robotic-assisted, n | Open, n | Effect size 95% CI | P-value |
|---|---|---|---|---|
| Radical prostatectomy binary variables (to December 31, 2022) | | | | |
| **Transfusions, n(%)** 2, 6-8, 12, 13, 16, 17, 19-21, 23, 24, 28, 32, 34, 37-39, 41, 42, 58, 59, 64, 65, 67, 76, 79, 81, 85, 92, 93, 95 | | | | |
| Subtotal | 194691 | 284388 | OR: 0.18 [0.16, 0.21] | p<0.01 |
| Random, Heterogeneity: p<0.01; $I^2$=86% | | | | |
| **Mortality, n(%)** 13, 19, 20, 28, 34, 37, 56-59, 61, 64, 65, 76, 81, 86, 88, 93, 95 | | | | |
| Subtotal | 198152 | 293386 | OR: 0.40 [0.31, 0.52] | p<0.01 |
| Fixed, Heterogeneity: p=0.31; $I^2$=13% | | | | |
| **Erectile dysfunction at 6 mo., n(%)** 3, 18, 22, 40, 53, 80 | | | | |
| Subtotal | 2817 | 2388 | OR: 0.41 [0.28, 0.61] | p<0.01 |
| Random, Heterogeneity: p<0.01; $I^2$=79% | | | | |
| **Postoperative complications, n(%)** 19, 20, 23, 24, 34, 37, 42, 45, 49, 55, 58, 59, 61, 64, 65, 67, 69, 71, 76, 79, 81, 93, 95 | | | | |
| Subtotal | 209460 | 206754 | OR: 0.53 [0.45, 0.62] | p<0.01 |
| Random, Heterogeneity: p<0.01; $I^2$=97% | | | | |
| **Intraoperative complications, n(%)** 34, 42, 64, 65, 81, 93 | | | | |
| Subtotal | 80389 | 60984 | OR: 0.58 [0.41, 0.82] | p<0.01 |
| Random, Heterogeneity: p<0.01; $I^2$=80% | | | | |
| **Readmissions, n(%)** 16, 23, 34, 37, 47, 57, 59-61, 67, 88, 93 | | | | |
| Subtotal | 74199 | 36793 | OR: 0.61 [0.50, 0.75] | p<0.01 |
| Random, Heterogeneity: p<0.01; $I^2$=85% | | | | |
| **Erectile dysfunction at 12 mo., n(%)** 3, 18, 20, 22, 24, 29, 40, 45, 53, 54, 68, 92 | | | | |
| Subtotal | 8613 | 5469 | OR: 0.66 [0.49, 0.89] | p<0.01 |
| Random, Heterogeneity: p<0.01; $I^2$=90% | | | | |

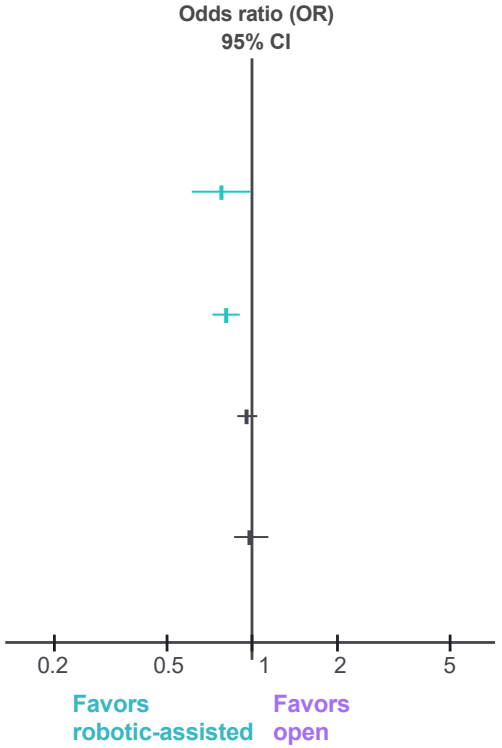
# Robotic-assisted vs. open radical prostatectomy (3 of 3)

## Summary as of December 31, 2022

Significant difference favoring robotic-assisted surgery | No significant difference; comparable outcomes | Significant difference favoring open surgery

Compared to open radical prostatectomy, the evidence for **robotic-assisted radical prostatectomy using the da Vinci surgical system** demonstrates:

- 22% less likely to experience urinary incontinence at 6 months
- 19% lower likelihood of a positive surgical margin
- Comparable urinary incontinence rate at 12 months
- Comparable reoperation rate within 30 days of surgery




| Outcome | Robotic-assisted, n | Open, n | Effect size 95% CI | P-value |
|---|---|---|---|---|
| Radical prostatectomy binary variables (to December 31, 2022) | | | | |
| **Urinary incontinence at 6 mo., n(%)** [3, 18, 22, 25, 51, 53, 67, 80] | | | | |
| Subtotal | 2871 | 2668 | OR: 0.78 [0.62, 0.98] | p=0.04 |
| Random, Heterogeneity: p=0.03; $I^2$=54% | | | | |
| **Positive surgical margins, n(%)** [2, 7, 12, 15, 16, 20, 22, 24, 25, 29-31, 33, 37, 39-45, 50, 51, 53, 54, 57, 58, 61, 67-71, 84, 88, 93] | | | | |
| Subtotal | 88319 | 52921 | OR: 0.81 [0.73, 0.90] | p<0.01 |
| Random, Heterogeneity: p<0.01; $I^2$=90% | | | | |
| **Urinary incontinence at 12 mo., n(%)** [3, 18, 20, 22, 24, 25, 29, 30, 45, 51, 53, 54, 67, 68, 92] | | | | |
| Subtotal | 10252 | 6411 | OR: 0.97 [0.90, 1.05] | p=0.43 |
| Fixed, Heterogeneity: p=0.06; $I^2$=39% | | | | |
| **Reoperations, n(%)** [13, 20, 24, 28, 58, 59, 61, 67, 86] | | | | |
| Subtotal | 33210 | 151636 | OR: 0.99 [0.87, 1.13] | p=0.9 |
| Fixed, Heterogeneity: p=0.39; $I^2$=6% | | | | |

# Radical prostatectomy bibliography (1 of 5)

December 31, 2022


1. Anderson, J. E., D. C. Chang, J. K. Parsons and M. A. Talamini (2012). "The first national examination of outcomes and trends in robotic surgery in the United States." J Am Coll Surg 215(1): 107-114; discussion 114-106.
2. Aning, J. J., G. S. Reilly, S. Fowler, B. Challacombe, J. S. McGrath, P. Sooriakumaran and B. S. o. Oncology (2019). "Perioperative and oncological outcomes of radical radical prostatectomy for high-risk prostate cancer in the UK: an analysis of surgeon-reported data." BJU Int 124(3): 441-448.
3. Antonelli, A., C. Palumbo, M. Noale, A. Porreca, S. Maggi, C. Simeone, P. Bassi, F. Bertoni, S. Bracarda, M. Buglione, G. N. Conti, R. Corvo, M. Gacci, V. Mirone, R. Montironi, L. Triggiani, A. Tubaro, W. Artibani and I. T. C. N. R. s. g. Pros (2019). "Impact of Surgical Approach on Patient-Reported Outcomes after Radical radical prostatectomy: A Propensity Score-Weighted Analysis from a Multicenter, Prospective, Observational Study (The Pros-IT CNR Study)." Urol Int 103(1): 8-18.
4. Asimakopoulos, A. D., C. T. Pereira Fraga, F. Annino, P. Pasqualetti, A. A. Calado and C. Mugnier (2011). "Randomized comparison between laparoscopic and robot-assisted nerve-sparing radical radical prostatectomy." J Sex Med 8(5): 1503-1512.
5. Asimakopoulos, A. D., R. Miano, N. Di Lorenzo, E. Spera, G. Vespasiani and C. Mugnier (2013). "Laparoscopic versus robot-assisted bilateral nerve-sparing radical radical prostatectomy: comparison of pentafecta rates for a single surgeon." Surg Endosc 27(11): 4297-4304.
6. Basto, M., N. Sathianathen, L. Te Marvelde, S. Ryan, J. Goad, N. Lawrentschuk, A. J. Costello, D. A. Moon, A. G. Heriot, J. Butler and D. G. Murphy (2016). "Patterns-of-care and health economic analysis of robot-assisted radical radical prostatectomy in the Australian public health system." BJU Int 117(6): 930-939.
7. Beck, S., L. Zins, C. Holthusen, C. Rademacher, F. von Breunig, P. Tennstedt, A. Haese, M. Graefen, C. Zöllner and M. Fischer (2020). "Comparison of Cognitive Function After Robot-Assisted radical prostatectomy and Open Retropubic Radical radical prostatectomy: A Prospective Observational Single-Center Study." Urology 139: 110-117.
8. Beilstein, C. M., M. Huber, M. A. Furrer, L. M. Löffel, P. Y. Wuethrich and D. Engel (2022). "Impact of analgesic techniques on early quality of recovery after radical prostatectomy: A 3-arm, randomized trial." European Journal of Pain (United Kingdom) 26(9): 1990-2002.
9. Berge, V., R. E. Berg, J. R. Hoff, N. Wessel, L. M. Diep, S. J. Karlsen and L. M. Eri (2013). "A prospective study of transition from laparoscopic to robot-assisted radical radical prostatectomy: quality of life outcomes after 36-month follow-up." Urology 81(4): 781-786.
10. Bier, S., J. Hennenlotter, S. Rausch, S. Aufderklamm, J. C. Martzog, A. Stenzl, C. Schwentner and T. Todenhofer (2016). "Return to Work and Normal Daily Life Activity after Open and Robot-Assisted Radical radical prostatectomy--A Single Surgeon Analysis." Urol Int 96(3): 280-286.
11. Binhas, M., L. Salomon, F. Roudot-Thoraval, C. Armand, B. Plaud and J. Marty (2012). "Radical radical prostatectomy with robot-assisted radical radical prostatectomy and laparoscopic radical radical prostatectomy under low-dose aspirin does not significantly increase blood loss." Urology 79(3): 591-595.
12. Breyer, B. N., C. B. Davis, J. E. Cowan, C. J. Kane and P. R. Carroll (2010). "Incidence of bladder neck contracture after robot-assisted laparoscopic and open radical radical prostatectomy." BJU Int 106(11): 1734-1738.
13. Carlsson, S., A. E. Nilsson, M. C. Schumacher, M. N. Jonsson, D. S. Volz, G. Steineck and P. N. Wiklund (2010). "Surgery-related complications in 1253 robot-assisted and 485 open retropubic radical prostatectomies at the Karolinska University Hospital, Sweden." Urology 75(5): 1092-1097.
14. Carter, S. C., S. Lipsitz, Y. C. Shih, P. L. Nguyen, Q. D. Trinh and J. C. Hu (2014). "Population-Based Determinants of Radical radical prostatectomy Operative Time." BJU International 113(5b): E112-118.
15. Cazzaniga, W., R. A. Godtman, S. Carlsson, G. Ahlgren, E. Johansson, D. Robinson, J. Hugosson and P. Stattin (2019). "Population-based, nationwide registration of prostatectomies in Sweden." Journal of Surgical Oncology 120(4): 803-812.
16. Chang, P., A. A. Wagner, M. M. Regan, J. A. Smith, C. S. Saigal, M. S. Litwin, J. C. Hu, M. R. Cooperberg, P. R. Carroll, E. A. Klein, A. S. Kibel, G. L. Andriole, M. Han, A. W. Partin, D. P. Wood, C. M. Crociani, T. K. Greenfield, D. Patil, L. A. Hembroff, K. Davis, L. Stork, D. E. Spratt, J. T. Wei and M. G. Sanda (2022). "Prospective Multicenter Comparison of Open and Robotic Radical radical prostatectomy: The PROST-QA/RP2 Consortium." The Journal of urology 207(1): 127-136.
17. Cheetham, P. J., D. J. Lee, A. Rose-Morris, S. F. Brewster and K. K. Badani (2010). "Does the presence of robotic surgery affect demographics in patients choosing to undergo radical radical prostatectomy? A multi-center contemporary analysis." Journal of Robotic Surgery 4: 155-160.
18. Coughlin, G. D., J. W. Yaxley, S. K. Chambers, S. Occhipinti, H. Samaratunga, L. Zajdlewicz, P. Teloken, N. Dunglison, S. Williams, M. F. Lavin and R. A. Gardiner (2018). "Robot-assisted laparoscopic radical prostatectomy versus open radical retropubic radical prostatectomy: 24-month outcomes from a randomised controlled study." Lancet Oncol 19(8): 1051-1060.
19. Davis, J. W., U. S. Kreaden, J. Gabbert and R. Thomas (2014). "Learning curve assessment of robot-assisted radical radical prostatectomy compared with open-surgery controls from the premier perspective database." J Endourol 28(5): 560-566.
20. Di Pierro, G. B., P. Baumeister, P. Stucki, J. Beatrice, H. Danuser and A. Mattei (2011). "A prospective trial comparing consecutive series of open retropubic and robot-assisted laparoscopic radical radical prostatectomy in a centre with a limited caseload." Eur Urol 59(1): 1-6.

# Radical prostatectomy bibliography (2 of 5)

December 31, 2022


21. Doumerc, N., C. Yuen, R. Savdie, M. B. Rahman, K. K. Rasiah, R. Pe Benito, W. Delprado, J. Matthews, A. M. Haynes and P. D. Stricker (2010). "Should experienced open prostatic surgeons convert to robotic surgery? The real learning curve for one surgeon over 3 years." BJU Int 106(3): 378-384.
22. Fode, M., J. Sonksen and H. Jakobsen (2014). "Radical radical prostatectomy: initial experience with robot-assisted laparoscopic procedures at a large university hospital." Scand J Urol 48(3): 252-258.
23. Gandaglia, G., J. D. Sammon, S. L. Chang, T. K. Choueiri, J. C. Hu, P. I. Karakiewicz, A. S. Kibel, S. P. Kim, R. Konijeti, F. Montorsi, P. L. Nguyen, S. Sukumar, M. Menon, M. Sun and Q. D. Trinh (2014). "Comparative effectiveness of robot-assisted and open radical radical prostatectomy in the postdissemination era." J Clin Oncol 32(14): 1419-1426.
24. García Cortés, Á., J. Colombás Vives, C. Gutiérrez Castañé, S. Chiva San Román, P. Doménech López, F. J. Ancizu Marckert, M. Hevia Suárez, I. Merino Narro, J. M. Velis Campillo, F. Guillén Grima, M. Torres Roca, F. Diez-Caballero y Alonso, D. Rosell Costa, F. Villacampa Aubá, F. R. de Fata Chillón, G. Andrés Boville, G. Barbas Bernardos, B. Miñana López, J. E. Robles García and J. I. Pascual Piédrola (2022). "Comparison of surgical approaches to radical radical prostatectomy in our series beyond oncological and functional outcomes." Actas Urologicas Espanolas 46(5): 275-284.
25. Geraerts, I., H. Van Poppel, N. Devoogdt, B. Van Cleynenbreugel, S. Joniau and M. Van Kampen (2013). "Prospective evaluation of urinary incontinence, voiding symptoms and quality of life after open and robot-assisted radical radical prostatectomy." BJU Int 112(7): 936-943.
26. Gozen, A. S., Y. Akin, M. Akgul, C. Yazici, J. Klein and J. Rassweiler (2014). "A Novel Practical Trocar Placement Technique for Extraperitoneal Laparoscopic and Robotic-Assisted Laparoscopic Radical radical prostatectomy in Patients with Lower Midline Abdominal Incisions." J Laparoendosc Adv Surg Tech A 24(6): 417-421.
27. Gray, W. K., J. Day, T. W. R. Briggs and S. Harrison (2022). "An observational study of volume-outcome effecs for robot-assisted radical radical prostatectomy in England." BJU international 129(1): 93-103.
28. Groeben, C., R. Koch, M. Baunacke, M. P. Wirth and J. Huber (2017). "High volume is the key for improving in-hospital outcomes after radical radical prostatectomy: a total population analysis in Germany from 2006 to 2013." World J Urol 35(7): 1045-1053.
29. Haglind, E., S. Carlsson, J. Stranne, A. Wallerstedt, U. Wilderang, T. Thorsteinsdottir, M. Lagerkvist, J. E. Damber, A. Bjartell, J. Hugosson, P. Wiklund, G. Steineck and L. s. committee (2015). "Urinary Incontinence and Erectile Dysfunction After Robotic Versus Open Radical radical prostatectomy: A Prospective, Controlled, Nonrandomised Trial." Eur Urol 68(2): 216-225.
30. Hagman, A., A. Lantz, S. Carlsson, J. Höijer, J. Stranne, S. I. Tyritzis, E. Haglind, A. Bjartell, J. Hugosson, O. Akre, G. Steineck and P. Wiklund (2021). "Urinary continence recovery and oncological outcomes after surgery for prostate cancer analysed by risk category: results from the LAParoscopic radical prostatectomy robot and open trial." World Journal of Urology 39(9): 3239-3249.
31. Herlemann, A., J. E. Cowan, P. R. Carroll and M. R. Cooperberg (2018). "Community-based Outcomes of Open versus Robot-assisted Radical radical prostatectomy." Eur Urol 73(2): 215-223.
32. Hong, J. Y., J. Y. Kim, Y. D. Choi, K. H. Rha, S. J. Yoon and H. K. Kil (2010). "Incidence of venous gas embolism during robotic-assisted laparoscopic radical radical prostatectomy is lower than that during radical retropubic radical prostatectomy." Br J Anaesth 105(6): 777-781.
33. Hu, J. C., G. Gandaglia, P. I. Karakiewicz, P. L. Nguyen, Q.-D. Trinh, Y.-C. T. Shih, F. Abdollah, K. Chamie, J. L. Wright and P. A. Ganz (2014). "Comparative Effectiveness of Robot-assisted Versus Open Radical radical prostatectomy Cancer Control." European Urology 66: 666-672.
34. Huang, M. M., Z. T. Su, R. E. N. Becker, C. P. Pavlovich, A. W. Partin, M. E. Allaf and H. D. Patel (2021). "Complications After Open and Robotic-Assisted Radical radical prostatectomy and Association with Post-Operative Opioid Use: An Analysis of Data from the PREVENTER Trial." BJU international 127(2): 190-197.
35. Hyams, E. S., J. K. Mullins, P. M. Pierorazio, A. W. Partin, M. E. Allaf and B. R. Matlaga (2013). "Impact of robotic technique and surgical volume on the cost of radical radical prostatectomy." J Endourol 27(3): 298-303.
36. Inoue, S., T. Hayashi, J. Teishima and A. Matsubara (2020). "Comparative analysis of robot-assisted, laparoscopic, and open radical radical prostatectomy regarding lower urinary tract symptoms: A longitudinal study." Urological Science 31(1): 21-27.
37. John, J. B., J. Pascoe, S. Fowler, T. Walton, M. Johnson, J. Aning, B. Challacombe, R. Bufacchi, A. J. Dickinson and J. S. McGrath (2022). "A 'real-world' standard for radical radical prostatectomy: Analysis of the British Association of Urological Surgeons Complex Operations Reports, 2016–2018." Journal of Clinical Urology 16(5): 432-443.
38. Karaveli, A., A. S. Kavakli, O. Cakin, G. Aykal, A. Yildiz and M. Ates (2022). "Comparison of plasma neutrophil gelatinase-associated lipocalin (NGAL) levels after robot-assisted laparoscopic and retropubic radical radical prostatectomy: an observational study." Braz J Anesthesiol 72(1): 21-28.
39. Khadhouri, S., C. Miller, S. Fowler, L. Hounsome, A. McNeill, J. Adshead, J. S. McGrath and B. S. o. Oncology (2018). "The British Association of Urological Surgeons (BAUS) radical radical prostatectomy audit 2014/2015 - an update on current practice and outcomes by centre and surgeon case-volume." BJU Int 121(6): 886-892

# Radical prostatectomy bibliography (3 of 5)

December 31, 2022


40. Kim, S. C. S., C.; Kim, W.; Kang, T.; Park, J.; Jeong, I. G.; Lee, S.; Cho, Y. M.; Ahn, H. (2011). "Factors Determining Functional Outcomes After Radical radical prostatectomy: Robot-Assisted Versus Retropubic." European Urology 60(3): 413-419.
41. Kordan, Y., D. A. Barocas, H. O. Altamar, P. E. Clark, S. S. Chang, R. Davis, S. D. Herrell, R. Baumgartner, V. Mishra, R. C. Chan, J. A. Smith, Jr. and M. S. Cookson (2010). "Comparison of transfusion requirements between open and robotic-assisted laparoscopic radical radical prostatectomy." BJU Int 106(7): 1036-1040.
42. Laird, A., S. Fowler, D. W. Good, G. D. Stewart, V. Srinivasan, D. Cahill, S. F. Brewster, S. A. McNeill and S. British Association of Urological (2015). "Contemporary practice and technique-related outcomes for radical radical prostatectomy in the UK: a report of national outcomes." BJU Int 115(5): 753-763.
43. Lantz, A., D. Bock, O. Akre, E. Angenete, A. Bjartell, S. Carlsson, K. K. Modig, M. Nyberg, K. S. Kollberg, G. Steineck, J. Stranne, P. Wiklund and E. Haglind (2021). "Functional and Oncological Outcomes After Open Versus Robot-assisted Laparoscopic Radical radical prostatectomy for Localised Prostate Cancer: 8-Year Follow-up." European Urology 80(5): 650-660.
44. Loeb, S., J. I. Epstein, A. E. Ross, L. Schultz, E. B. Humphreys and J. P. Jarow (2010). "Benign prostate glands at the bladder neck margin in robotic vs open radical radical prostatectomy." BJU Int 105(10): 1446-1449.
45. Ludovico, G. M., G. Dachille, G. Pagliarulo, C. D'Elia, N. Mondaini, M. Gacci, B. Detti, G. Malossini, R. Bartoletti and T. Cai (2013). "Bilateral nerve sparing robotic-assisted radical radical prostatectomy is associated with faster continence recovery but not with erectile function recovery compared with retropubic open radical prostatectomy: the need for accurate selection of patients." Oncol Rep 29(6): 2445-2450.
46. Martinschek, A., L. Stumm, M. Ritter, E. Heinrich, C. Bolenz and L. Trojan (2017). "Prospective, Controlled Study of Invasiveness and Post-Aggression Metabolism in Patients Undergoing Robotic-Assisted Radical radical prostatectomy." Urol Int 99(2): 201-206.
47. Maynou, L., W. T. Mehtsun, V. Serra-Sastre and I. Papanicolas (2021). "Patterns of adoption of robotic radical radical prostatectomy in the United States and England." Health Services Research 56 Suppl 3: 1441-1461.
48. Nabi, J., D. F. Friedlander, X. Chen, A. P. Cole, J. C. Hu, A. S. Kibel, P. Dasgupta and Q. D. Trinh (2020). "Assessment of Out-of-Pocket Costs for Robotic Cancer Surgery in US Adults." JAMA network open 3(1): e1919185.
49. Ning, C., X. Hu, F. Liu, J. Lin, J. Zhang, Z. Wang and Y. Zhu (2019). "Post-surgical outcomes of patients with chronic kidney disease and end stage renal disease undergoing radical radical prostatectomy: 10-year results from the US National Inpatient Sample." BMC Nephrology 20(1): 278.
50. Nyberg, M., O. Akre, D. Bock, S. V. Carlsson, S. Carlsson, J. Hugosson, A. Lantz, G. Steineck, J. Stranne, S. Tyritzis, P. Wiklund, E. Haglind and A. Bjartell (2020). "Risk of Recurrent Disease 6 Years After Open or Robotic-assisted Radical radical prostatectomy in the Prospective Controlled Trial LAPPRO." European Urology Open Science 20: 54-61.
51. Ohara, E., N. Kawamorita, Y. Satake, Y. Kaiho, K. Mitsuzuka, H. Saito, S. Ishidoya, Y. Arai and A. Ito (2022). "Minimal residual membranous urethral length and membranous urethral length predict poor recovery from incontinence after robot-assisted radical radical prostatectomy and after open radical radical prostatectomy." International Journal of Urology 29(12): 1517-1523.
52. Okhawere, K. E., I. F. Shih, S. H. Lee, Y. Li, J. A. Wong and K. K. Badani (2021). "Comparison of 1-Year Health Care Costs and Use Associated with Open vs Robotic-Assisted Radical radical prostatectomy." JAMA Network Open 4(3): e212265.
53. O'Neil, B., T. Koyama, J. Alvarez, R. M. Conwill, P. C. Albertsen, M. R. Cooperberg, M. Goodman, S. Greenfield, A. S. Hamilton, K. E. Hoffman, R. M. Hoffman, S. H. Kaplan, J. L. Stanford, A. M. Stroup, L. E. Paddock, X. C. Wu, R. A. Stephenson, M. J. Resnick, D. A. Barocas and D. F. Penson (2016). "The Comparative Harms of Open and Robotic radical prostatectomy in Population Based Samples." J Urol 195(2): 321-329.
54. Ong, W. L., S. M. Evans, T. Spelman, P. A. Kearns, D. G. Murphy and J. L. Millar (2016). "Comparison of oncological and health-related quality of life outcomes between open and robot-assisted radical radical prostatectomy for localised prostate cancer - findings from the population-based Victorian Prostate Cancer Registry." BJU Int 118(4): 563-569.
55. Patel, H. D., A. Srivastava, N. D. Patel, F. A. Faisal, W. Ludwig, G. A. Joice, Z. R. Schwen, M. E. Allaf, M. Han and A. S. Herati (2019). "A Prospective Cohort Study of Postdischarge Opioid Practices After Radical radical prostatectomy: The ORIOLES Initiative." Eur Urol 75(2): 215-218.
56. Patel, H. D., F. A. Faisal, N. D. Patel, C. P. Pavlovich, M. E. Allaf, M. Han and A. S. Herati (2020). "Effect of a prospective opioid reduction intervention on opioid prescribing and use after radical radical prostatectomy: results of the Opioid Reduction Intervention for Open, Laparoscopic, and Endoscopic Surgery (ORIOLES) Initiative." BJU Int 125(3): 426-432.
57. Pearce, S. M., J. J. Pariser, T. Karrison, S. G. Patel and S. E. Eggener (2016). "Comparison of Perioperative and Early Oncologic Outcomes between Open and Robotic Assisted Laparoscopic radical prostatectomy in a Contemporary Population Based Cohort." J Urol 196(1): 76-81.
58. Philippou, P., E. Waine and E. Rowe (2012). "Robot-assisted laparoscopic radical prostatectomy versus open: comparison of the learning curve of a single surgeon." J Endourol 26(8): 1002-1008.
59. Pilecki, M. A., B. B. McGuire, U. Jain, J. Y. Kim and R. B. Nadler (2014). "National multi-institutional comparison of 30-day postoperative complication and readmission rates between open retropubic radical radical prostatectomy and robot-assisted laparoscopic radical prostatectomy using NSQIP." J Endourol 28(4): 430-436.

# Radical prostatectomy bibliography (4 of 5)

December 31, 2022


60. Ploussard, G., A. Grabia, E. Barret, J. B. Beauval, L. Brureau, G. Créhange, C. Dariane, G. Fiard, G. Fromont, M. Gauthé, R. Mathieu, R. Renard-Penna, G. Roubaud, A. Ruffion, P. Sargos, M. Rouprêt and C. E. Lequeu (2022). "Annual nationwide analysis of costs and post-operative outcomes after radical radical prostatectomy according to the surgical approach (open, laparoscopic, and robotic)." World J Urol 40(2): 419-425.
61. Porcaro, A. B., N. De Luyk, P. Corsi, M. Sebben, A. Tafuri, D. Inverardi, D. De Marchi, I. Tamanini, M. Brunelli, M. A. Cerruto, G. L. Salvagno, G. C. Guidi and W. Artibani (2016). "Robotic assisted radical radical prostatectomy accelerates postoperative stress recovery: Final results of a contemporary prospective study assessing pathophysiology of cortisol peri-operative kinetics in prostate cancer surgery." Asian Journal of Urology 3(2): 88-95.
62. Porpiglia, F., C. Fiori, R. Bertolo, M. Manfredi, F. Mele, E. Checcucci, S. De Luca, R. Passera and R. M. Scarpa (2018). "Five-year Outcomes for a Prospective Randomised Controlled Trial Comparing Laparoscopic and Robot-assisted Radical radical prostatectomy." Eur Urol Focus 4(1): 80-86.
63. Porpiglia, F., I. Morra, M. Lucci Chiarissi, M. Manfredi, F. Mele, S. Grande, F. Ragni, M. Poggio and C. Fiori (2013). "Randomised controlled trial comparing laparoscopic and robot-assisted radical radical prostatectomy." Eur Urol 63(4): 606-614.
64. Preisser, F., S. Nazzani, E. Mazzone, S. Knipper, M. Bandini, Z. Tian, A. Haese, F. Saad, K. C. Zorn, F. Montorsi, S. F. Shariat, M. Graefen, D. Tilki and P. I. Karakiewicz (2019). "Regional differences in total hospital charges between open and robotically assisted radical radical prostatectomy in the United States." World J Urol 37(7): 1305-1313.
65. Qin, Y., H. Han, Y. Xue, C. Wu, X. Wei, Y. Liu, Y. Cao, Y. Ruan and J. He (2020). "Comparison and trend of perioperative outcomes between robot-assisted radical radical prostatectomy and open radical radical prostatectomy: nationwide inpatient sample 2009-2014." International braz j urol : official journal of the Brazilian Society of Urology 46(5): 754-771.
66. Quinto, D., S. T. Reis, L. J. Zampolli, R. Pimenta, V. R. Guimarães, N. I. Viana, G. A. dos Santos, M. P. Gimenez, K. R. Leite, H. Zampolli, J. A. S. da Cruz, M. Srougi and C. C. Passerotti (2021). "Robotically assisted laparoscopic radical radical prostatectomy induces lower tissue trauma than radical retropubic radical prostatectomy." Journal of Robotic Surgery 15(1): 147-151.
67. Raheem, A. A., A. Hagras, A. Ghaith, M. J. Alenzi, A. Elghiaty, T. Gameel, I. Alowidah, W. S. Ham, Y. D. Choi, A. H. El-Bahnasy, A. Omar, M. El-Bendary and K. H. Rha (2020). "Retzius-sparing robot-assisted radical radical prostatectomy versus open retropubic radical radical prostatectomy: a prospective comparative study with 19-month follow-up." Minerva Urol Nefrol 72(5): 586-594.
68. Rechtman, M., A. Forbes, J. L. Millar, M. Evans, L. Dodds, D. G. Murphy and S. M. Evans (2022). "Comparison of urinary and sexual patient-reported outcomes between open radical radical prostatectomy and robot-assisted radical radical prostatectomy: a propensity score matched, population-based study in Victoria." BMC Urol 22(1): 18.
69. Reisz, P. A., A. A. Laviana, Z. Zhao, L. C. Huang, T. Koyama, R. Conwill, K. Hoffman, M. Goodman, A. S. Hamilton, X. C. Wu, L. E. Paddock, A. Stroup, M. R. Cooperberg, M. Hashibe, B. B. O'Neil, S. H. Kaplan, S. Greenfield, D. F. Penson and D. A. Barocas (2020). "Assessing the Quality of Surgical Care for Clinically Localized Prostate Cancer: Results from the CEASAR Study." J Urol 204(6): 1236-1241.
70. Retel, V. P., C. Bouchardy, M. Usel, I. Neyroud-Caspar, F. Schmidlin, G. Wirth, C. Iselin, R. Miralbell and E. Rapiti (2014). "Determinants and effects of positive surgical margins after radical prostatectomy on prostate cancer mortality: a population-based study." BMC Urol 14(1): 86.
71. Roscigno, M., G. La Croce, R. Naspro, M. Nicolai, M. Manica, M. Scarcello, D. Chinaglia and L. F. Da Pozzo (2019). "Extended pelvic lymph node dissection during radical radical prostatectomy: comparison between initial robotic experience of a high volume open surgeon and his contemporary open series." Minerva Urol Nefrol 71(6): 597-604.
72. Salciccia, S., D. Rosati, P. Viscuso, V. Canale, E. Scarrone, M. Frisenda, R. Catuzzi, M. Moriconi, V. Asero, S. Signore, M. De Dominicis, P. Emiliozzi, A. Carbone, A. L. Pastore, A. Fuschi, G. B. Di Pierro, A. Gentilucci, S. Cattarino, G. Mariotti, G. M. Busetto, M. Ferro, E. De Berardinis, G. P. Ricciuti, V. Panebianco, F. M. Magliocca, F. Del Giudice, M. Maggi and A. Sciarra (2021). "Influence of operative time and blood loss on surgical margins and functional outcomes for laparoscopic versus robotic-assisted radical radical prostatectomy: a prospective analysis." Cent European J Urol 74(4): 503-515.
73. Sciarra, A., M. Frisenda, M. Maggi, F. M. Magliocca, A. Ciardi, V. Panebianco, E. Berardinis, S. Salciccia, G. B. Di Pierro, A. Gentilucci, F. Del Giudice, G. M. Busetto and A. Tufano (2021). "Prospective comparative trial on nerve-sparing radical radical prostatectomy using a robot-assisted versus laparoscopic technique: expectation versus satisfaction and impact on surgical margins." Cent European J Urol 74(2): 169-177.
74. Simon, R. M., L. E. Howard, D. M. Moreira, M. K. Terris, C. J. Kane, W. J. Aronson, C. L. Amling, M. R. Cooperberg and S. J. Freedland (2017). "Predictors of operative time during radical retropubic radical prostatectomy and robot-assisted laparoscopic radical prostatectomy." Int J Urol 24(8): 618-623.
75. Sofra, M., A. Antenucci, M. Gallucci, C. Mandoj, R. Papalia, C. Claroni, I. Monteferrante, G. Torregiani, V. Gianaroli, I. Sperduti, L. Tomao and E. Forastiere (2014). "Perioperative changes in pro and anticoagulant factors in prostate cancer patients undergoing laparoscopic and robotic radical radical prostatectomy with different anaesthetic techniques." J Exp Clin Cancer Res 33(1): 63.
76. Stolzenburg, J. U., I. Kyriazis, C. Fahlenbrach, C. Gilfrich, C. Gunster, E. Jeschke, G. Popken, L. Weissbach, C. von Zastrow and H. Leicht (2016). "National trends and differences in morbidity among surgical approaches for radical radical prostatectomy in Germany." World J Urol 34(11): 1515-1520.

# Radical prostatectomy bibliography (5 of 5)

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77. Stolzenburg, J. U., S. Holze, P. Neuhaus, I. Kyriazis, H. M. Do, A. Dietel, M. C. Truss, C. I. Grzella, D. Teber, M. Hohenfellner, R. Rabenalt, P. Albers and M. Mende (2021). "Robotic-assisted Versus Laparoscopic Surgery: Outcomes from the First Multicentre, Randomised, Patient-blinded Controlled Trial in Radical radical prostatectomy (LAP-01)." Eur Urol 79(6): 750-759.
78. Stolzenburg, J. U., S. Holze, V. K. A. Arthanareeswaran, P. Neuhaus, H. M. Do, C. M. Haney, A. Dietel, M. C. Truss, K. D. Stützel, D. Teber, M. Hohenfellner, R. Rabenalt, P. Albers and M. Mende (2022). "Robotic-assisted Versus Laparoscopic Radical radical prostatectomy: 12-month Outcomes of the Multicentre Randomised Controlled LAP-01 Trial." European Urology Focus 8(6): 1583-1590.
79. Sugihara, T., H. Yasunaga, H. Horiguchi, H. Matsui, T. Fujimura, H. Nishimatsu, H. Fukuhara, H. Kume, Y. Changhong, M. W. Kattan, K. Fushimi and Y. Homma (2014). "Robot-assisted versus other types of radical radical prostatectomy: population-based safety and cost comparison in Japan, 2012-2013." Cancer Sci 105(11): 1421-1426.
80. Thompson, J. E., S. Egger, M. Bohm, A. R. Siriwardana, A. M. Haynes, J. Matthews, M. J. Scheltema and P. D. Stricker (2018). "Superior Biochemical Recurrence and Long-term Quality-of-life Outcomes Are Achievable with Robotic Radical radical prostatectomy After a Long Learning Curve-Updated Analysis of a Prospective Single-surgeon Cohort of 2206 Consecutive Cases." Eur Urol 73(5): 664-671.
81. Trinh, Q. D., J. Sammon, M. Sun, P. Ravi, K. R. Ghani, M. Bianchi, W. Jeong, S. F. Shariat, J. Hansen, J. Schmitges, C. Jeldres, C. G. Rogers, J. O. Peabody, F. Montorsi, M. Menon and P. I. Karakiewicz (2012). "Perioperative outcomes of robot-assisted radical radical prostatectomy compared with open radical radical prostatectomy: results from the nationwide inpatient sample." Eur Urol 61(4): 679-685.
82. Tyritzis, S. I., U. Wilderang, W. Lantz Alpha, G. Steineck, J. Hugosson, A. Bjartell, J. Stranne, E. Haglind and N. P. Wiklund (2020). "Hospital readmissions after limited vs. extended lymph node dissection during open and robot-assisted radical radical prostatectomy." Urol Oncol 38(1): 5 e1-5 e8.
83. von Bodman, C., M. Brock, F. Roghmann, A. Byers, B. Loppenberg, K. Braun, J. Pastor, F. Sommerer, J. Noldus and R. J. Palisaar (2013). "Intraoperative frozen section of the prostate decreases positive margin rate while ensuring nerve sparing procedure during radical radical prostatectomy." J Urol 190(2): 515-520.
84. Wah, W., N. Papa, M. Evans, S. Ahern and A. Earnest (2021). "A multi-level spatio-temporal analysis on prostate cancer outcomes." Cancer Epidemiology 72: 101939.
85. Wallerstedt Lantz, A., J. Stranne, S. I. Tyritzis, D. Bock, D. Wallin, H. Nilsson, S. Carlsson, T. Thorsteinsdottir, O. Gustafsson, J. Hugosson, A. Bjartell, P. Wiklund, G. Steineck and E. Haglind (2019). "90-Day readmission after radical radical prostatectomy-a prospective comparison between robot-assisted and open surgery." Scand J Urol 53(1): 26-33.
86. Wallerstedt, A., S. I. Tyritzis, T. Thorsteinsdottir, S. Carlsson, J. Stranne, O. Gustafsson, J. Hugosson, A. Bjartell, U. Wilderang, N. P. Wiklund, G. Steineck, E. Haglind and L. s. committee (2015). "Short-term results after robot-assisted laparoscopic radical radical prostatectomy compared to open radical radical prostatectomy." Eur Urol 67(4): 660-670.
87. Wang, M., Y. F. Yang, B. D. Guo, H. M. Hou, L. F. Meng, X. Wang, M. Amankwah, B. Q. Liu, C. Y. Jin, M. Liu and J. Y. Wang (2021). "The impact of atrial fibrillation on outcomes in patients undergoing radical radical prostatectomy." World J Urol 39(5): 1509-1519.
88. Wang, Y., H. Gieschen, M. Greenberger, X. Yu, G. Tian, N. VanderWalde, T. Stockstill, M. Farmer, L. Rinker, E. W. Izaguirre, B. Somer and M. T. Ballo (2021). "Survival After Robotic-Assisted radical prostatectomy for Localized Prostate Cancer: An Epidemiologic Study." Annals of surgery 274(6): e507-e514.
89. 1Weiner, A. B., P. Murthy, K. A. Richards, S. G. Patel and S. E. Eggener (2015). "Population based analysis of incidence and predictors of open conversion during minimally invasive radical radical prostatectomy." J Urol 193(3): 826-831.
90. Wen, T., C. M. Deibert, F. S. Siringo and B. A. Spencer (2014). "Positioning-related complications of minimally invasive radical prostatectomies." J Endourol 28(6): 660-667.
91. Willis, D. L., M. L. Gonzalgo, M. Brotzman, Z. Feng, B. Trock and L. M. Su (2012). "Comparison of outcomes between pure laparoscopic vs robot-assisted laparoscopic radical radical prostatectomy: a study of comparative effectiveness based upon validated quality of life outcomes." BJU International 109(6): 898-905.
92. Wu, S. Y., C. L. Chang, C. I. Chen and C. C. Huang (2021). "Comparison of Acute and Chronic Surgical Complications following Robot-Assisted, Laparoscopic, and Traditional Open Radical radical prostatectomy among Men in Taiwan." JAMA Network Open 4(8).
93. Yaxley, J. W., G. D. Coughlin, S. K. Chambers, S. Occhipinti, H. Samaratunga, L. Zajdlewicz, N. Dunglison, R. Carter, S. Williams, D. J. Payton, J. Perry-Keene, M. F. Lavin and R. A. Gardiner (2016). "Robot-assisted laparoscopic radical prostatectomy versus open radical retropubic radical prostatectomy: early outcomes from a randomised controlled phase 3 study." Lancet 388(10049): 1057-1066.
94. Yilmazel, F. K., E. Sam, A. E. Cinislioglu, I. H. Tor, F. Akkas, F. Bedir, I. Karabulut, H. R. Aydin, S. Adanur and O. Polat (2022). "Comparison of Perioperative, Oncological, and Functional Outcomes of Three-Dimensional Versus Robot-Assisted Laparoscopic Radical radical prostatectomy: A Preliminary Study." Journal of laparoendoscopic & advanced surgical techniques. Part A 32(3): 304-309.
95. Yu, H. Y., N. D. Hevelone, S. R. Lipsitz, K. J. Kowalczyk and J. C. Hu (2012). "Use, costs and comparative effectiveness of robotic assisted, laparoscopic and open urological surgery." J Urol 187(4): 1392-1398.

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