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**Article:**

Catto, JWF, Khetrapal, P, Ricciardi, F et al. (2022) Effect of robot-assisted radical cystectomy with intracorporeal urinary diversion vs open radical cystectomy on 90-day morbidity and mortality among patients with bladder cancer : a randomized clinical trial. JAMA, 327 (21). pp. 2092-2103. ISSN: 0098-7484

<https://doi.org/10.1001/jama.2022.7393>

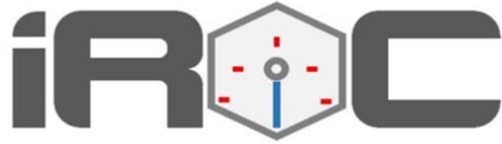
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4 **Effect of robot-assisted radical cystectomy with intracorporeal urinary diversion vs open**  
5 **radical cystectomy on 90-day morbidity and mortality: a randomized clinical trial**  
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**Supplementary Table 1: Reporting of secondary outcomes collected in this study.**

<b>Primary</b>	
REPORTED	To compare the number of days alive and out of hospital within 90 days of surgery in patients undergoing iRARC and ORC.
<b>Secondary</b>	
<b>Recovery</b>	
REPORTED	1. Overall functional recovery: Self-administered WHODAS-2 (12 point) questionnaire at baseline (pre-operative), 5 weeks, 12 weeks, 26 weeks, 52 weeks and 78 weeks after surgery.
REPORTED	2. Cystectomy specific impact upon HRQOL: EORTC QLQ-BLM30 questionnaire at baseline (pre-operative), 5 weeks, 12 weeks, 26 weeks 52 weeks and 78 weeks after surgery.
REPORTED	3. Quantified activity levels: Total steps taken over 7 consecutive days (measured using a wearable tracking device e.g. Fitbit test) at baseline (pre-operative), 5 days post-op, 5 weeks, 12 weeks, 26 weeks and 52 weeks.
REPORTED	4. 30 Second Chair to Stand test: Number times the patient can stand from sitting in a 30 second interval. This will be counted in the outpatient’s clinic at baseline (pre-operative), 5 weeks, 12 weeks, 26 weeks and 52 weeks.
REPORTED	5. Qualitative and economic analysis: EQ-5D-5L at baseline, 5 weeks, 12 weeks, 26 weeks, 52 and 78 weeks.
<b>Perioperative morbidity</b>	
REPORTED	1. Adverse events recorded using the Clavien-Dindo classification should only be Grade III and above.
REPORTED	2. Re-admission to hospital within 90 days of surgery.
REPORTED	3. Intra and post-operative blood transfusion rates
	4. Length of days in critical care
REPORTED	5. Rate of radiological or surgical intervention.
	6. Readmission to ITU
REPORTED	7. 30 and 90-day mortality rate
	8. Conversion from iRARC to open ORC
	9. Conversion from intra-corporeal to extra-corporeal reconstruction.
<b>Oncological outcomes</b>	
REPORTED	1. The number of retrieved lymph nodes in the pathological specimen.
REPORTED	2. Positive margin rate in the pathological specimen.
REPORTED	3. Port site recurrence free survival
REPORTED	4. Location of recurrence/metastases
REPORTED	5. Overall and Cancer free survival at 12 and 18 months
<b>Surgeon fatigue</b>	
	SURG-TLX tool

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45 **Supplementary Table 2: Reasons for readmission by 5 and 12 weeks after the date of**  
 46 **surgery.**

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Readmission by 5 weeks	Robotic (n=31)	Open (n=42)
22. Infectious - Urosepsis	7 (53.8%)	6 (46.2%)
12. Gastrointestinal - Constipation	0 (0%)	4 (100%)
62. Wound - Wound infection	1 (25.0%)	3 (75.0%)
21. Infectious - Systemic sepsis	1 (33.3%)	2 (66.7%)
17. Gastrointestinal - Small bowel obstruction	1 (50.0%)	1 (50.0%)
20. Infectious - Fever of unknown origin	1 (50.0%)	1 (50.0%)
23. Infectious - Urinary tract infection	1 (50.0%)	1 (50.0%)
56. Thromboembolic - DVT	0 (0%)	2 (100%)
10. Gastrointestinal - Anastomotic bowel leak	1 (100%)	0 (0%)
24. Genitourinary - Renal failure	1 (100%)	0 (0%)
27. Genitourinary - Urethral obstruction / RUT	1 (100%)	0 (0%)
28. Genitourinary - Urinary leak	1 (100%)	0 (0%)
40. Miscellaneous - Dehydration	0 (0%)	1 (100%)
57. Thromboembolic - Pulmonary embolism	1 (100%)	0 (0%)
60. Wound - Wound dehiscence deep (facial)	0 (0%)	1 (100%)
65. Other (specify)*	14 (41.2%)	20 (58.8%)

\* Other for Robotic Cystectomy: Hydronephrosis, IVC filter removal, Renal impairment and obstruction, Pain, Nephrostomy problem, Neobladder leak, Pulmonary collapse, Pain, Nephrostomy removal

\* Other for Open Cystectomy: Obstructed Common Bile Duct, Acute abdomen, Collection, Urosepsis and hydronephrosis, Anorexia, Pain and anorexia, TWOC, Pneumonia, Weight loss, Dehiscence, Sepsis, Lymphatic vaginal leak, Intra-abdominal infection, Hyperkalaemia & Acute kidney injury, Replacement of ureteric stent, Bladder retraining, Sepsis, DVT and Pulmonary Embolus, Renal impairment, Dehydration

<b>Readmission by 12 weeks</b>	<b>Robotic (n=13)</b>	<b>Open (n=32)</b>
22. Infectious - Urosepsis	2 (40.0%)	3 (60.0%)
23. Infectious - Urinary tract infection	1 (20.0%)	4 (80.0%)
17. Gastrointestinal - Small bowel obstruction	3 (75.0%)	1 (25.0%)
62. Wound - Wound infection	1 (33.3%)	2 (66.7%)
14. Gastrointestinal - Emesis	1 (50.0%)	1 (50.0%)
51. Surgical - Incisional hernia	1 (50.0%)	1 (50.0%)
12. Gastrointestinal - Constipation	0 (0%)	1 (100%)
16. Gastrointestinal - Ileus	0 (0%)	1 (100%)
19. Infectious - Abscess	0 (0%)	1 (100%)
41. Miscellaneous - Lymphocele	0 (0%)	1 (100%)
57. Thromboembolic - Pulmonary embolism	0 (0%)	1 (100%)
60. Wound - Wound dehiscence deep (fascial)	0 (0%)	1 (100%)
65. Other (specify)*	4 (22.2%)	14 (77.8%)

\* Other for Robotic Cystectomy: Enterocutaneous fistula with pelvic collection, Interval urethrectomy, Renal impairment, TWOC

\* Other for Open Cystectomy: Cancer Recurrence, Metabolic acidosis, Removal of nephrostomy tube, Acute pyelonephritis, Completion Urethrectomy, Pain and anorexia, DVT and Pulmonary Embolus, Pulmonary Embolus and pelvic collection, Renal impairment, DVT, Hypomagnesaemia, Renal impairment, Pulmonary embolism, Kidney stone

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54 **Supplementary Table 3: Type of complication (full description) by group**

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<b>Randomised group</b>		<b>Robotic (n=161)</b>	<b>Open (n=156)</b>
<b>Surgical complications (full description), n (%)</b>			
1.	Bleeding - Anaemia requiring transfusion	1 (0.6%)	1 (0.6%)
2.	Bleeding - Post-operative bleeding other than GI	0 (0%)	0 (0%)
3.	Bleeding - Wound hematoma	0 (0%)	0 (0%)
4.	Cardiac - Angina	0 (0%)	0 (0%)
5.	Cardiac - Arrhythmia	4 (2.5%)	2 (1.3%)
6.	Cardiac - Congestive heart failure	0 (0%)	0 (0%)
7.	Cardiac - Hypertension	3 (1.9%)	0 (0%)
8.	Cardiac - Hypotension	0 (0%)	3 (1.9%)
9.	Cardiac - Myocardial infarction	0 (0%)	1 (0.6%)
10.	Gastrointestinal - Anastomotic bowel leak	3 (1.9%)	1 (0.6%)
11.	Gastrointestinal - Clostridium difficile colitis	3 (1.9%)	1 (0.6%)
12.	Gastrointestinal - Constipation	8 (5%)	11 (7.1%)
13.	Gastrointestinal - Diarrhoea	4 (2.5%)	4 (2.6%)
14.	Gastrointestinal - Emesis	7 (4.3%)	7 (4.5%)
15.	Gastrointestinal - Gastrointestinal bleeding	0 (0%)	0 (0%)
16.	Gastrointestinal - Ileus	16 (9.9%)	17 (10.9%)
17.	Gastrointestinal - Small bowel obstruction	5 (3.1%)	3 (1.9%)
18.	Gastrointestinal - Uretero-ileal obstruction	0 (0%)	0 (0%)
19.	Infection - Abscess	0 (0%)	3 (1.9%)
20.	Infection - Fever of unknown origin	2 (1.2%)	6 (3.8%)
21.	Infection - Systemic sepsis	3 (1.9%)	7 (4.5%)
22.	Infection - Urosepsis	12 (7.5%)	13 (8.3%)
23.	Infection - Urinary tract infection	21 (13%)	23 (14.7%)
24.	Genitourinary - Renal failure	8 (5%)	11 (7.1%)
25.	Genitourinary - Haematuria	0 (0%)	1 (0.6%)
26.	Genitourinary - Stomal ischemia	0 (0%)	0 (0%)
27.	Genitourinary - Ureteral obstruction / RUT	4 (2.5%)	1 (0.6%)
28.	Genitourinary - Urinary leak	7 (4.3%)	4 (2.6%)
29.	Genitourinary - Urinary fistula	0 (0%)	0 (0%)
30.	Genitourinary - Urinary retention	0 (0%)	0 (0%)
31.	Neurological - CVA	0 (0%)	0 (0%)
32.	Neurological - Delirium/agitation	5 (3.1%)	6 (3.8%)
33.	Neurological - Loss of consciousness	0 (0%)	0 (0%)
34.	Neurological - Peripheral neuropathy	1 (0.6%)	3 (1.9%)
35.	Neurological - Seizure	0 (0%)	0 (0%)
36.	Neurological - TIA	0 (0%)	0 (0%)
37.	Neurological - Vertigo	0 (0%)	1 (0.6%)
38.	Miscellaneous - Acidosis	0 (0%)	1 (0.6%)
39.	Miscellaneous - Decubitis ulcer	0 (0%)	0 (0%)
40.	Miscellaneous - Dehydration	0 (0%)	2 (1.3%)
41.	Miscellaneous - Lymphocele	3 (1.9%)	5 (3.2%)
42.	Miscellaneous - Peripheral arterial ischaemia	0 (0%)	0 (0%)
43.	Miscellaneous - Psychological illness	1 (0.6%)	1 (0.6%)
44.	Miscellaneous - Thrombocytopenia	0 (0%)	0 (0%)
45.	Pulmonary - Atelectasis	0 (0%)	0 (0%)
46.	Pulmonary - Pleural effusion	0 (0%)	0 (0%)

<b>Randomised group</b>	<b>Robotic (n=161)</b>	<b>Open (n=156)</b>
47. Pulmonary - Pneumonia	7 (4.3%)	4 (2.6%)
48. Pulmonary - Pneumothorax	0 (0%)	0 (0%)
49. Pulmonary - Respiratory distress	0 (0%)	0 (0%)
50. Surgical - Bowel injury	0 (0%)	0 (0%)
51. Surgical - Incisional hernia	5 (3.1%)	3 (1.9%)
52. Surgical - Port-site hernia	1 (0.6%)	0 (0%)
53. Surgical - Retained foreign body	0 (0%)	0 (0%)
54. Surgical - Vascular injury	0 (0%)	0 (0%)
55. Surgical - Visceral injury	0 (0%)	0 (0%)
56. Thromboembolic - DVT	0 (0%)	1 (0.6%)
57. Thromboembolic - Pulmonary embolism	3 (1.9%)	11 (7.1%)
58. Thromboembolic - Superficial phlebitis	0 (0%)	1 (0.6%)
59. Wound - Hernia	0 (0%)	1 (0.6%)
60. Wound - Wound dehiscence deep (facial)	1 (0.6%)	4 (2.6%)
61. Wound - Wound dehiscence superficial	2 (1.2%)	4 (2.6%)
62. Wound - Wound infection	6 (3.7%)	13 (8.3%)
63. Wound - Wound sepsis	0 (0%)	3 (1.9%)
64. Wound - Wound seroma	0 (0%)	0 (0%)
65. Other (specify)*	20 (12.4%)	22 (14.1%)

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\* Other includes abdominal pain, scrotal swelling, oral thrush, apnoea secondary to opiates, dusky ileal stoma, swollen leg, retracted stent in neobladder, rash, vaginal prolapse, neck pain, diuresis, flare of ulcerative colitis, completion urethrectomy, high output ileostomy, flushing, loss of taste and reduced appetite, gout, scrotal soreness, acute passage of kidney stone, fractured neck of femur.

69 **Supplementary Table 4: Summary statistics for the EQ-5D-5L by group.** Descriptive  
70 statistics for the EQ-5D-5L Scores are given as mean (SD) by group, at baseline and at 5, 12  
71 and 26 weeks time point. Additionally, the frequency of missing data is also given. EQ-5D-5L  
72 Scores at 5, 12 and 26 weeks were compared between trial groups using a mixed model,  
73 with fixed effects for group, time (and their interaction), baseline EQ-5D-5L score value, and  
74 type of diversion, and random effects for site and patient.  
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Randomised group	Robotic (n=161)	Open (n=156)	N	Coeff. Estimate ORC	95% Confidence Interval	p-value
<b>EQ-5D-5L - Baseline</b>	0.89 (0.2)	0.90 (0.1)				
<i>Missing</i>	10	11				
<b>EQ-5D-5L - Week 5</b>	0.83 (0.1)	0.77 (0.2)	231	-0.07	(-0.11; -0.03)	<b>0.003</b>
<i>Missing</i>	31	40				
<b>EQ-5D-5L - Week 12</b>	0.88 (0.1)	0.86 (0.2)	226	-0.03	(-0.07; 0.01)	0.1
<i>Missing</i>	34	43				
<b>EQ-5D-5L - Week 26</b>	0.87 (0.2)	0.87 (0.2)	209	-0.02	(-0.06; 0.01)	0.2
<i>Missing</i>	51	46				

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81 **Supplementary Table 5: Summary statistics for the QLQ-C30, by group.** Descriptive  
 82 statistics for the QLQ-C30 scores are given as mean (standard deviation) by group, at  
 83 baseline and at 5, 12 and 26 weeks time point. Additionally, the frequency of missing data is  
 84 also given. QLQ-C30 Scores at 5, 12 and 26 weeks were compared between trial groups  
 85 using a mixed model, with fixed effects for group, time (and their interaction), baseline QLQ-  
 86 C30 score value, and type of diversion, and random effects for site and patient.  
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Randomised group	Robotic (n=161)	Open (n=156)	N	Coeff. Estimate ORC	95% Confidence Interval	p-value
<b>QLQ-C30 Baseline</b>	87.55 (11.6)	87.74 (11.6)				
<i>Missing</i>	13	16				
<b>QLQ-C30 Week 5</b>	76.46 (14.2)	68.66 (18.4)	217	-9.59	(-13.14; -6.04)	<b>&lt;0.001</b>
<i>Missing</i>	38	43				
<b>QLQ-C30 Week 12</b>	86.06 (11.7)	81.96 (16.1)	212	-4.60	(-8.19; -1.01)	<b>0.01</b>
<i>Missing</i>	36	48				
<b>QLQ-C30 Week 26</b>	87.14 (13.1)	84.86 (14.0)	195	-2.58	(-6.27; 1.11)	0.17
<i>Missing</i>	54	47				

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93 **Supplementary Table 6: Summary statistics for the QLQ-BLM30 by group.** Descriptive  
 94 statistics for the QLQ-BLM30 scores are given as means (standard deviation) for each  
 95 questionnaire form are summarised, by group, at baseline and at 5, 12 and 26 weeks time  
 96 point. The table also show the differences in scores at each time point with the associated  
 97 95% CI. Additionally, the frequency of missing data is also reported  
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	Randomised group	Robotic (n=161)	Open (n=156)	Difference (95% CI)
<b>Urinary symptoms - Baseline</b>		34.0 (24.8)	26.7 (22.8)	7.3 (1.6; 12.9)
	<i>Missing</i>	18	23	
<b>Urinary symptoms - Week 5</b>		33.8 (24.4)	24.2 (25.9)	9.6 (-11.9; 31.1)
	<i>Missing</i>	148	145	
<b>Urinary symptoms - Week 12</b>		31.6 (20.7)	31.8 (25.2)	-0.2 (-18.9; 18.5)
	<i>Missing</i>	148	143	
<b>Urinary symptoms - Week 26</b>		28.6 (24.6)	30.8 (22.0)	-2.2 (-21.1; 16.6)
	<i>Missing</i>	149	141	
<b>Urostomy problems - Baseline</b>		27.8 ( .)	0.0 ( .)	NA (NA; NA)
	<i>Missing</i>	160	155	
<b>Urostomy problems - Week 5</b>		15.8 (14.2)	16.8 (13.8)	-1 (-4.7; 2.7)
	<i>Missing</i>	44	48	
<b>Urostomy problems - Week 12</b>		13.4 (13.1)	15.1 (14.7)	-1.7 (-5.5; 2.1)
	<i>Missing</i>	48	55	
<b>Urostomy problems - Week 26</b>		14.5 (13.2)	12.3 (12.2)	2.3 (-1.4; 5.9)
	<i>Missing</i>	62	62	
<b>Catheter use problem - Baseline</b>		19.0 (37.8)	20.0 (35.8)	-1 (-40.5; 38.6)
	<i>Missing</i>	154	146	
<b>Catheter use problem - Week 5</b>		25.6 (30.9)	14.3 (17.8)	11.4 (-11.6; 34.3)
	<i>Missing</i>	148	149	
<b>Catheter use problem - Week 12</b>		27.8 (31.2)	22.2 (28.9)	5.6 (-22.1; 33.3)
	<i>Missing</i>	149	147	
<b>Catheter use problem - Week 26</b>		15.4 (17.3)	12.5 (24.8)	2.9 (-19.1; 24.8)
	<i>Missing</i>	148	148	
<b>Future worries - Baseline</b>		38.1 (25.2)	42.0 (25.9)	-3.9 (-9.9; 2.1)
	<i>Missing</i>	18	16	
<b>Future worries - Week 5</b>		34.1 (24.9)	41.7 (26.4)	-7.6 (-14.2; -1)
	<i>Missing</i>	34	46	
<b>Future worries - Week 12</b>		28.6 (23.9)	32.2 (26.8)	-3.6 (-10.1; 3)
	<i>Missing</i>	35	46	
<b>Future worries - Week 26</b>		27.6 (22.4)	28.4 (23.6)	-0.8 (-6.9; 5.4)
	<i>Missing</i>	50	50	

	Randomised group	Robotic (n=161)	Open (n=156)	Difference (95% CI)
<b>Bloating and flatulence - Baseline</b>		17.0 (22.1)	16.9 (21.3)	0.1 (-5; 5.2)
	<i>Missing</i>	19	18	
<b>Bloating and flatulence - Week 5</b>		26.7 (20.3)	31.2 (23.3)	-4.5 (-10.2; 1.1)
	<i>Missing</i>	36	47	
<b>Bloating and flatulence - Week 12</b>		19.6 (16.5)	23.7 (17.0)	-4.1 (-8.4; 0.2)
	<i>Missing</i>	36	47	
<b>Bloating and flatulence - Week 26</b>		16.4 (19.5)	22.2 (20.7)	-5.8 (-11.2; -0.4)
	<i>Missing</i>	51	50	
<b>Body image - Baseline</b>		14.3 (23.1)	13.1 (19.1)	1.2 (-3.8; 6.1)
	<i>Missing</i>	18	18	
<b>Body image - Week 5</b>		24.7 (26.6)	29.0 (28.8)	-4.3 (-11.5; 2.8)
	<i>Missing</i>	33	46	
<b>Body image - Week 12</b>		23.7 (26.1)	25.1 (26.8)	-1.4 (-8.2; 5.4)
	<i>Missing</i>	35	45	
<b>Body image - Week 26</b>		25.3 (26.9)	24.2 (28.4)	1.1 (-6.3; 8.5)
	<i>Missing</i>	50	49	
<b>Sexual function - Baseline</b>		34.3 (21.8)	35.2 (22.1)	-1 (-7.1; 5.1)
	<i>Missing</i>	53	60	
<b>Sexual function - Week 5</b>		11.0 (17.4)	9.6 (16.0)	1.4 (-2.9; 5.7)
	<i>Missing</i>	38	48	
<b>Sexual function - Week 12</b>		16.0 (20.8)	16.7 (22.8)	-0.7 (-6.5; 5.1)
	<i>Missing</i>	43	52	
<b>Sexual function - Week 26</b>		17.7 (20.6)	22.3 (24.5)	-4.7 (-11; 1.7)
	<i>Missing</i>	61	59	
<b>Male sexual problems - Baseline</b>		29.8 (36.1)	32.6 (36.9)	-2.8 (-13.3; 7.7)
	<i>Missing</i>	62	67	
<b>Male sexual problems - Week 5</b>		73.1 (36.3)	77.8 (35.4)	-4.6 (-17.1; 7.8)
	<i>Missing</i>	94	93	
<b>Male sexual problems - Week 12</b>		78.4 (31.2)	83.1 (28.5)	-4.7 (-15; 5.6)
	<i>Missing</i>	94	91	
<b>Male sexual problems - Week 26</b>		20.2 (38.2)	22.6 (44.8)	-2.4 (-16.6; 11.8)
	<i>Missing</i>	90	91	
<b>Sexual intimacy - Baseline</b>		12.6 (25.2)	14.3 (25.9)	-1.7 (-10.8; 7.4)
	<i>Missing</i>	100	93	
<b>Sexual intimacy - Week 5</b>		22.2 (26.1)	39.7 (40.3)	-17.5 (-38.1; 3.2)
	<i>Missing</i>	134	135	
<b>Sexual intimacy - Week 12</b>		34.3 (37.5)	33.3 (34.8)	1 (-18.4; 20.3)
	<i>Missing</i>	126	133	
<b>Sexual intimacy - Week 26</b>		25.3 (33.4)	32.5 (36.3)	-7.2 (-23.6; 9.2)
	<i>Missing</i>	128	117	

	Randomised group	Robotic (n=161)	Open (n=156)	Difference (95% CI)
<b>Risk of contaminating partner - Baseline</b>		14.4 (25.6)	11.3 (24.8)	3.2 (-5.9; 12.2)
	<i>Missing</i>	101	94	
<b>Risk of contaminating partner - Week 5</b>		7.4 (16.9)	8.3 (26.2)	-0.9 (-14.6; 12.8)
	<i>Missing</i>	134	136	
<b>Risk contaminating partner – Week 12</b>		6.1 (21.2)	19.7 (36.6)	-13.6 (-31.3; 4)
	<i>Missing</i>	128	134	
<b>Risk contaminating partner – Week 26</b>		6.2 (13.2)	10.3 (26.7)	-4 (-13.7; 5.7)
	<i>Missing</i>	129	117	
<b>Sexual enjoyment - Baseline</b>		60.0 (37.7)	45.8 (39.1)	14.2 (0.3; 28.2)
	<i>Missing</i>	101	97	
<b>Sexual enjoyment - Week 5</b>		42.3 (36.0)	48.1 (34.7)	-5.8 (-27.7; 16)
	<i>Missing</i>	135	138	
<b>Sexual enjoyment - Week 12</b>		34.5 (30.2)	38.1 (39.8)	-3.6 (-24.6; 17.4)
	<i>Missing</i>	132	135	
<b>Sexual enjoyment - Week 26</b>		39.3 (31.5)	37.7 (37.3)	1.6 (-15.4; 18.5)
	<i>Missing</i>	133	118	
<b>Female sexual problems - Baseline</b>		27.8 (31.2)	11.1 (27.2)	16.7 (-14.7; 48)
	<i>Missing</i>	149	150	
<b>Female sexual problems - Week 5</b>		25.0 (31.9)	100.0 ( . )	NA (NA; NA)
	<i>Missing</i>	157	155	
<b>Female sexual problems - Week 12</b>		14.3 (26.2)	20.0 (44.7)	-5.7 (-60.4; 49)
	<i>Missing</i>	154	151	
<b>Female sexual problems - Week 26</b>		33.3 (21.1)	40.0 (36.5)	-6.7 (-51.6; 38.2)
	<i>Missing</i>	155	151	

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106 **Supplementary Table 7: Summary statistics WHODAS-2 score, by group.** Descriptive  
 107 statistics for the WHODAS-2 score are given as mean (SD) by group, at baseline and at 5, 12,  
 108 26 and 52 weeks timepoints. Additionally, the frequency of missing data is also given.  
 109 WHODAS-2 scores at 5, 12 and 26 weeks were compared between trial groups using a mixed  
 110 model, with fixed effects for group, time (and their interaction), baseline WHODAS-2 score  
 111 value, and type of diversion, and random effects for site and patient. Due to skewness of  
 112 WHODAS-2 score, the outcome was log-transformed.  
 113

Randomised group	Robotic (N=161)	Open (N=155)	Coeff. Estimate ORC	95% Confidence Interval	p-value
<b>WHODAS-2 score Baseline</b>	9.3 (12.4)	9.2 (11.4)			
<i>Missing</i>	20	26			
<b>WHODAS-2 score Week 5</b>	20.9 (18.2)	26.4 (18.7)	0.43	(0.15; 0.73)	<b>0.003</b>
<i>Missing</i>	47	54			
<b>WHODAS-2 score Week 12</b>	10.2 (11.5)	14.9 (16.3)	0.38	(0.09; 0.68)	<b>0.01</b>
<i>Missing</i>	43	52			
<b>WHODAS-2 score Week 26</b>	10.8 (13.3)	11.1 (13.1)	0.24	(-0.05; 0.54)	0.1
<i>Missing</i>	56	51			
<b>WHODAS-2 score Week 52</b>	10.8 (15.8)	10.1 (14.4)			
<i>Missing</i>	69	74			

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121 **Supplementary Table 8: Activity Levels by group as measured by steps per day over a 7-**  
 122 **day period.** Descriptive statistics for Activity Levels are given as mean (SD) for both Average  
 123 and Maximum number of daily steps by group, at baseline, 5 days, 5 and 12 weeks time  
 124 point. Additionally, the frequency of missing data is also given. Average and Maximum  
 125 number of daily steps, at 5 days, 5 and 12 weeks time point can be compared between trial  
 126 groups using linear regression models. For both outcomes, values at 5 days, 5 weeks, and 12  
 127 weeks were compared between trial groups using a mixed model, with fixed effects for  
 128 group, time (and their interaction), baseline value, and type of diversion, and random  
 129 effects for site and patient.  
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Randomised group	Robotic (n=161)	Open (n=156)	Coeff. Estimate ORC	95% Confidence Interval	p-value
<b>Avg. - Baseline</b>	6429.8 (3188.7)	6550.4 (2863.7)			
<b>Max - Baseline</b>	9658.7 (5238.1)	9525.3 (4039.1)			
<i>Missing</i>	31	43			
<b>Avg. - Day 5</b>	1941.8 (1331.5)	1648.3 (1281.3)	-364	(-1018; 288)	<b>0.3</b>
<b>Max - Day 5</b>	2959.5 (1889.7)	2603.9 (1991.6)	-396	(--1342; 551)	0.4
<i>Missing</i>	38	46			
<b>Avg. - Week 5</b>	4615.3 (2604.0)	3997.6 (2587.3)	-641	(-1324; 42)	0.07
<b>Max - Week 5</b>	7135.2 (3778.9)	6295.6 (4163.9)	-793	(-1782; 196)	0.1
<i>Missing</i>	49	57			
<b>Avg. - Week 12</b>	5693.9 (3271.6)	5872.4 (2729.5)	-147	(--900; 605)	0.7
<b>Max - Week 12</b>	8440.3 (4560.5)	8850.8 (3790.7)	-92	(-996; 1179)	0.4
<i>Missing</i>	64	80			

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136 **Supplementary Table 9: Summary statistics for the Chair to Stand test by group.** Mean and  
 137 SD are summarized by group, at baseline and at 5, 12 and 26-weeks' time point.  
 138 Additionally, the frequency of missing data is also given. Chair-to-Stand scores at 5, 12 and  
 139 26 weeks were compared between trial groups using a mixed model, with fixed effects for  
 140 group, time (and their interaction), baseline Chair-to-Stand score value, and type of  
 141 diversion, and random effects for site and patient.  
 142

Randomised group	Robotic (n=161)	Open (n=156)	Coeff. Estimate ORC	95% Confidence Interval	p-value
<b>Chair-to-Stand Baseline</b>	14.0 (4.5)	13.8 (3.8)			
<i>Missing</i>	13	13			
<b>Chair-to-Stand Week 5</b>	8.8 (5.0)	6.4 (4.1)	-1.38	(-2.60; -0.16)	<b>0.03</b>
<i>Missing</i>	94	95			
<b>Chair-to-Stand Week 12</b>	12.7 (4.4)	11.5 (3.9)	-1.13	(-2.16; -0.10)	<b>0.03</b>
<i>Missing</i>	51	66			
<b>Chair-to-Stand Week 26</b>	14.2 (4.8)	14.0 (4.3)	0.04	(-1.01; 1.09)	0.9
<i>Missing</i>	58	64			

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150 **Supplementary Table 10: Subgroup analyses.** Results from separate subgroup analyses.  
151 Differences are from analyses of the transformed outcome with interaction terms between  
152 the intervention and the subgroup variables. The P-values come from the corresponding  
153 interaction test.  
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Subgroup	Level	N	Difference (Robotic-Open) (95% CI)	P-value
Overall		305	- 0.183 (-0.322 to -0.043)	0.01
Baseline Fitbit Steps	low	78	-0.308 (-0.589 -0.027)	0.26
	median	78	0.023 (-0.253 to 0.298)	
	high	77	-0.123 (-0.400 to 0.154)	
PS & Co-morbidity	0	221	-0.130 (-0.295 to 0.035)	0.31
	1+	51	-0.326 (-0.670 to 0.018)	
BMI	low	101	-0.116 (-0.356 to 0.123)	0.73
	median	101	-0.252 (-0.492 to -0.013)	
	high	101	-0.201 (-0.440 to 0.039)	
Age	<75	240	-0.113 (-0.268 to 0.042)	0.05
	75+	65	-0.449 (-0.748 to -0.150)	
Stage	< T2	140	-0.232 (-0.433 to -0.032)	0.47
	T2+	139	-0.128 (-0.329 to 0.073)	

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159 **Supplementary Table 11: Demographic features of the patients excluded after Radical**  
 160 **cystectomy.** In total, 12 patients were excluded from analysis after radical cystectomy due  
 161 to either missing data or participants withdrawing from the study. The table compares their  
 162 demographic features with those included in the outcomes analysis.  
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		Included in the outcomes analysis				Excluded from analysis			
		iRARC (n=156)		ORC (n=149)		iRARC (n=5)		ORC (n=7)	
Sex	1. Male	125/156	80%	116/149	78%	3/5	60%	6/7	86%
	2. Female	31/156	20%	33/149	22%	2/5	40%	1/7	14%
Site	a	59/156	38%	56/149	38%	1/5	20%	2/7	29%
	b	25/156	16%	26/149	17%	1/5	20%	1/7	14%
	c	24/156	15%	20/149	13%	1/5	20%	3/7	43%
	d	2/156	1%	2/149	1%	1/5	20%	0/7	0%
	g	9/156	6%	9/149	6%	0/5	0%	1/7	14%
	h	9/156	6%	9/149	6%	1/5	20%	0/7	0%
Age at Cys. (years)	mean (SD)	69.1 (8.1)		68.6 (8.3)		76.1 (3.1)		71.6 (10.8)	
Height (cm)	mean (SD)	170.1 (9.7)		171.3 (9.9)		163.2 (10.2)		171.6 (9.9)	
Weight (kg)	mean (SD)	80.0 (15.7)		80.9 (16.5)		66.2 (15.4)		96.4 (36.0)	
BMI (kg/m <sup>2</sup> )	mean (SD)	27.7 (5.6)		27.7 (6.2)		24.7 (4.6)		32.7 (11.0)	
ECOG Status	0. Fully active.	109/134	81%	112/138	81%	4/5	80%	6/7	86%
	1. Restricted in strenuous	20/134	15%	25/138	18%	1/5	20%	0/7	0%
	3. Limited self-care	2/134	2%	0/138	0%	0/5	0%	1/7	14%
Smoking status	1. Currently smoking	17/155	11%	17/149	11%	1/5	20%	0/7	0%
	2. Ever smoked	93/155	60%	89/149	60%	2/5	40%	4/7	57%
	3. Never smoked	45/155	29%	43/149	29%	2/5	40%	3/7	43%
Occupation	0. No	89/153	58%	87/145	60%	1/5	20%	3/7	43%
	1. Yes; one occupation	44/153	29%	43/145	30%	2/5	40%	4/7	57%
	2. Yes; two occupations	16/153	11%	11/145	8%	2/5	40%	0/7	0%
	3. Yes; three occupations	4/153	3%	4/145	3%	2/5	40%	0/7	0%
Chair to stand performed		144/149	97%	139/142	98%	4/5	80%	4/6	67%
Urothelial carcinoma		145/156	93%	139/148	94%	4/5	80%	7/7	100%
Squamous carcinoma		17/138	12%	19/134	14%	1/4	25%	1/7	14%
Neoadjuvant chemotherapy		53/156	34%	51/149	34%	1/5	20%	2/7	29%
Immunotherapy		20/144	14%	15/135	11%	1/5	20%	1/5	20%
Pre-op Haemoglobin, g/dL (mean (SD))		13.3 (1.8)		13.3 (1.9)		11.5 (1.0)		12.6 (2.2)	
Pre-op Serum creatinine, mmol/L (mean (SD))		90.9 (30.3)		84.8 (21.0)		122.7 (38.2)		94.4 (31.1)	
Type of urinary diversion	Continent diversion	19/156	12%	15/149	10%	0/5	0%	1/7	14%
	Ileal conduit	137/156	88%	134/149	90%	5/5	100%	6/7	86%
Cystectomy histology stage	2. T0	24/143	17%	20/138	15%	1/2	50%	0/0	0%
	11. T3b	14/143	10%	11/138	8%	1/2	50%	0/0	0%
Flat CIS	0. Absent	88/142	62%	79/136	58%	2/2	100%	0/0	0%
Grade of Tumor	3. Grade 3	105/111	95%	102/109	94%	1/1	100%	0/0	0%
Margins	Positive	10/135	7%	10/125	8%	1/1	100%	0/0	0%

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