

## **Quality of life outcomes after primary treatment for clinically localised prostate cancer: A systematic review**

LARDAS, Michael, LIEW, Matthew, VAN DEN BERGH, Roderick C., DE SANTIS, Maria, BELLMUNT, Joaquim, VAN DEN BROECK, Thomas, CORNFORD, Philip, CUMBERBATCH, Marcus G., FOSSATI, Nicola, GROSA, Tobias, HENRY, Ann M., BOLLA, Michel, BRIERS, Erik, JONIAU, Steven, LAM, Thomas B., MASON, Malcolm D., MOTTET, Nicolas, VAN DER POEL, Henk G., ROUVIÈRE, Olivier, SCHOOTS, Ivo G., WIEGEL, Thomas, WILLEMSE, Peter-Paul M., YUAN, Cathy Yuhong and BOURKE, Liam  
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Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals
					<b>Estimated difference of EPIC score between the two intervention arms</b> <b>Mean (SD)</b> Higher values refer to better function		P-values
Crook 2011 EPIC	Radical prostatectomy	66	NR	mean of 62.4 months	Urinary: 88.15 (11.47) Bowel: 94.37 (8.91) Sexual: 39.22 (25.35) Hormonal: 89.98 (12.79)		Urinary: 0.02 <i>favouring BT</i> Bowel: 0.34 Sexual: 0.001 <i>favouring BT</i> Hormonal: 0.1
	Brachytherapy	102			Urinary: 91.82 (8.53) Bowel: 93.0 (11.62) Sexual: 52.54 (24.06) Hormonal: 93.52 (8.27)		
					<b>Cancer specific quality of life EPIC scores at 12 months</b> <b>Mean (SD)</b> Higher values refer to better function	<b>Cancer specific quality of life EPIC scores at 24 months</b> <b>Mean (SD)</b> Higher values refer to better function	
	Active monitoring	545	Urinary incontinence: 93.5 (11.3) Urinary summary score: 93.0 (9.6) Urinary bother: 91.2 (12.3) Urinary obstruction/irritative: 93.2 (9.5) Sexual summary score: 60.3 (23.5) Sexual function: 53.5 (22.8) Sexual bother: 76.0 (30.5) Bowel summary score: 92.8 (9.1) Bowel function: 91.6 (9.0) Bowel bother: 94.0 (11.8)	72 months	Urinary incontinence: 89.1 (15.3) Urinary summary score: 91.2 (10.1) Urinary bother: 90.0 (12.2) Urinary obstruction/irritative: 92.9 (9.0) Sexual summary score: 51.5 (27.4) Sexual function: 44.4 (27.1) Sexual bother: 67.8 (34.3) Bowel summary score: 93.4 (8.6) Bowel function: 92.1 (8.6) Bowel bother: 94.7 (10.4)	Urinary incontinence: 88.9 (15.0) Urinary summary score: 90.3 (10.9) Urinary bother: 88.6 (13.5) Urinary obstruction/irritative: 91.7 (9.9) Sexual summary score: 48.2 (27.5) Sexual function: 41.9 (26.7) Sexual bother: 62.2 (35.4) Bowel summary score: 93.2 (9.4) Bowel function: 92.2 (19.1) Bowel bother: 94.2 (11.7)	

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals
Donovan 2016 QLQ-C30 EPIC	Radical prostatectomy	553	Urinary incontinence: 92.8 (11.6) Urinary summary score: 91.9 (9.4) Urinary bother: 89.9 (12.2) Urinary obstruction/irritative: 92.0 (9.9) Sexual summary score: 61.4 (22.7) Sexual function: 54.4 (22.9) Sexual bother: 77.6 (28.9) Bowel summary score: 93.1 (8.9) Bowel function: 91.4 (9.3) Bowel bother: 94.7 (10.3)		Urinary incontinence: 76.5 (23.7) Urinary summary score: 86.5 (13.2) Urinary bother: 87.7 (14.1) Urinary obstruction/irritative: 92.8 (9.2) Sexual summary score: 30.1 (23.2) Sexual function: 23.6 (22.8) Sexual bother: 44.5 (34.1) Bowel summary score: 94.0 (7.7) Bowel function: 92.8 (8.1) Bowel bother: 95.2 (9.1)	Urinary incontinence: 80.3 (21.4) Urinary summary score: 88.1 (12.3) Urinary bother: 88.9 (13.8) Urinary obstruction/irritative: 93.4 (8.7) Sexual summary score: 33.3 (23.3) Sexual function: 27.2 (23.4) Sexual bother: 46.8 (33.1) Bowel summary score: 93.8 (8.2) Bowel function: 92.6 (8.5) Bowel bother: 95.0 (9.4)	
	EBRT	545	Urinary incontinence: 92.8 (11.0) Urinary summary score: 93.2 (8.3) Urinary bother: 92.1 (10.3) Urinary obstruction/irritative: 93.8 (7.9) Sexual summary score: 63.6 (23.1) Sexual function: 55.7 (23.0) Sexual bother: 80.5 (29.2) Bowel summary score: 94.8 (6.9) Bowel function: 92.9 (8.0) Bowel bother: 96.8 (7.1)		Urinary incontinence: 90.5 (13.5) Urinary summary score: 91.9 (9.0) Urinary bother: 90.6 (11.0) Urinary obstruction/irritative: 93.2 (7.9) Sexual summary score: 43.2 (27.6) Sexual function: 36.6 (27.0) Sexual bother: 57.6 (36.5) Bowel summary score: 90.5 (12.2) Bowel function: 90.3 (11.1) Bowel bother: 90.7 (14.9)	Urinary incontinence: 89.0 (14.1) Urinary summary score: 91.4 (9.8) Urinary bother: 90.3 (11.8) Urinary obstruction/irritative: 93.4 (8.5) Sexual summary score: 43.4 (25.2) Sexual function: 36.9 (25.1) Sexual bother: 57.9 (33.5) Bowel summary score: 89.3 (12.8) Bowel function: 89.5 (10.7) Bowel bother: 89.2 (16.7)	
					<b>Cancer specific quality of life</b>	<b>Cancer specific quality of life</b>	

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals
					EPIC scores at 36 months Mean (SD) Higher values refer to better function	EPIC scores at 48 months Mean (SD) Higher values refer to better function	
Donovan 2016 cont.	Active monitoring	545			Urinary incontinence: 87.3 (16.7) Urinary summary score: 89.3 (11.5) Urinary bother: 87.5 (14.1) Urinary obstruction/irritative: 91.1 (10.0) Sexual summary score: 45.9 (28.4) Sexual function: 39.2 (27.4) Sexual bother: 60.7 (36.3) Bowel summary score: 92.8 (10.8) Bowel function: 91.9 (10.0) Bowel bother: 93.7 (13.1)	Urinary incontinence: 86.8 (17.4) Urinary summary score: 89.2 (12.5) Urinary bother: 87.9 (14.6) Urinary obstruction/irritative: 91.3 (11.2) Sexual summary score: 44.5 (26.9) Sexual function: 37.2 (26.5) Sexual bother: 60.4 (35.8) Bowel summary score: 92.9 (11.2) Bowel function: 92.2 (10.8) Bowel bother: 93.8 (12.7)	
	Radical prostatectomy	553			Urinary incontinence: 79.3 (21.8) Urinary summary score: 87.9 (12.1) Urinary bother: 88.7 (13.4) Urinary obstruction/irritative: 93.3 (8.7) Sexual summary score: 33.9 (23.9) Sexual function: 26.9 (23.7) Sexual bother: 49.6 (34.8) Bowel summary score: 93.8 (8.0) Bowel function: 92.7 (8.1) Bowel bother: 94.9 (9.8)	Urinary incontinence: 80.2 (20.3) Urinary summary score: 88.6 (11.9) Urinary bother: 89.5 (13.0) Urinary obstruction/irritative: 94.1 (8.6) Sexual summary score: 34.3 (24.2) Sexual function: 27.1 (24.2) Sexual bother: 50.4 (34.2) Bowel summary score: 93.7 (8.9) Bowel function: 93.0 (8.4) Bowel bother: 94.6 (11.1)	
	EBRT	545			Urinary incontinence: 89.8 (13.5) Urinary summary score: 91.7 (9.2) Urinary bother: 90.3 (11.4) Urinary obstruction/irritative: 93.3	Urinary incontinence: 89.2 (14.4) Urinary summary score: 91.4 (9.6)	

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results	Reported p-values or Hazard Ratios with confidence intervals	
					<p>(7.7)</p> <p>Sexual summary score: 42.5 (25.9)</p> <p>Sexual function: 35.7 (25.5)</p> <p>Sexual bother: 57.1 (34.9)</p> <p>Bowel summary score: 90.8 (11.2)</p> <p>Bowel function: 90.7 (10.1)</p> <p>Bowel bother: 90.9 (14.3)</p>	<p>Urinary bother: 90.4 (11.6)</p> <p>Urinary obstruction/irritative: 93.2 (8.4)</p> <p>Sexual summary score: 41.8 (25.5)</p> <p>Sexual function: 34.3 (25.4)</p> <p>Sexual bother: 58.2 (34.7)</p> <p>Bowel summary score: 91.2 (11.2)</p> <p>Bowel function: 90.7 (10.1)</p> <p>Bowel bother: 91.7 (13.8)</p>	
					<p><b>Cancer specific quality of life EPIC scores at 60 months Mean (SD)</b></p> <p>Higher values refer to better function</p>	<p><b>Cancer specific quality of life EPIC scores at 72 months Mean (SD)</b></p> <p>Higher values refer to better function</p>	<p>P-values for a difference in mean response over 6 years of follow-up across the three groups</p>
Donovan 2016 cont.	Active monitoring	545			<p>Urinary incontinence: 87.2 (16.8)</p> <p>Urinary summary score: 89.6 (11.3)</p> <p>Urinary bother: 88.3 (13.5)</p> <p>Urinary obstruction/irritative: 91.7 (9.8)</p> <p>Sexual summary score: 43.2 (27.4)</p> <p>Sexual function: 35.6 (27.3)</p> <p>Sexual bother: 60.1 (36.3)</p> <p>Bowel summary score: 93.1 (10.1)</p> <p>Bowel function: 92.0 (9.5)</p> <p>Bowel bother: 94.1 (12.2)</p>	<p>Urinary incontinence: 85.8 (18.5)</p> <p>Urinary summary score: 89.0 (12.5)</p> <p>Urinary bother: 88.0 (13.9)</p> <p>Urinary obstruction/irritative: 91.5 (11.0)</p> <p>Sexual summary score: 40.6 (26.7)</p> <p>Sexual function: 32.5 (26.4)</p> <p>Sexual bother: 57.9 (36.6)</p> <p>Bowel summary score: 93.0 (9.8)</p> <p>Bowel function: 92.3 (9.7)</p> <p>Bowel bother: 93.7 (11.6)</p>	<p>Urinary incontinence: &lt;0.001 <i>favouring AM and EBRT over RP</i></p> <p>Urinary summary score: &lt;0.001 <i>favouring AM and EBRT over RP</i></p> <p>Urinary bother: 0.095</p> <p>Urinary obstruction/irritative: 0.77</p> <p>Sexual summary score: &lt;0.001 <i>favouring AM and EBRT over RP</i></p> <p>Sexual function: &lt;0.001 <i>favouring AM and EBRT over RP</i></p> <p>Sexual bother: &lt;0.001 <i>favouring AM and EBRT over RP</i></p> <p>Bowel summary score: &lt;0.001 <i>favouring AM and RP</i></p>
	Radical prostatectomy	553			<p>Urinary incontinence: 80.6 (20.2)</p> <p>Urinary summary score: 88.9 (11.1)</p> <p>Urinary bother: 89.9 (11.9)</p> <p>Urinary obstruction/irritative: 94.1 (7.6)</p> <p>Sexual summary score: 34.5 (24.0)</p> <p>Sexual function: 26.5 (24.4)</p> <p>Sexual bother: 52.6 (35.1)</p> <p>Bowel summary score: 94.0 (7.9)</p> <p>Bowel function: 92.9 (7.7)</p> <p>Bowel bother: 95.1 (9.6)</p>	<p>Urinary incontinence: 80.9 (20.2)</p> <p>Urinary summary score: 88.7 (11.3)</p> <p>Urinary bother: 89.7 (11.9)</p> <p>Urinary obstruction/irritative: 93.7 (7.9)</p> <p>Sexual summary score: 32.3 (23.2)</p> <p>Sexual function: 23.7 (23.4)</p> <p>Sexual bother: 51.4 (35.5)</p> <p>Bowel summary score: 93.2 (8.7)</p> <p>Bowel function: 92.3 (8.6)</p>	

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results	Reported p-values or Hazard Ratios with confidence intervals	
	EBRT	545			<p>Bowel bother: 94.2 (10.8)</p> <p>Urinary incontinence: 89.4 (14.4)            Urinary summary score: 91.3 (9.6)            Urinary bother: 90.2 (11.6)            Urinary obstruction/irritative: 93.0 (8.3)            Sexual summary score: 40.1 (24.4)            Sexual function: 31.9 (24.8)            Sexual bother: 58.9 (35.3)            Bowel summary score: 91.0 (10.6)            Bowel function: 90.3 (10.1)            Bowel bother: 91.6 (13.2)</p>	<p>Bowel bother: 94.2 (10.8)</p> <p>Urinary incontinence: 89.4 (14.0)            Urinary summary score: 91.4 (9.2)            Urinary bother: 90.3 (11.2)            Urinary obstruction/irritative: 93.1 (7.7)            Sexual summary score: 41.3 (24.9)            Sexual function: 32.7 (25.6)            Sexual bother: 60.1 (34.9)            Bowel summary score: 91.2 (10.9)            Bowel function: 90.8 (9.7)            Bowel bother: 91.7 (13.7)</p>	<p><i>over EBRT</i></p> <p>Bowel function: &lt;0.001 <i>favouring AM and RP over EBRT</i></p> <p>Bowel bother: &lt;0.001 <i>favouring AM and RP over EBRT</i></p>
					<p><b>Cancer-specific quality of life: EORTC-QLQ-C30 at 5 years Mean (SD)</b>            Higher values refer to better function</p>	P-values	
Donovan 2016 cont.	Active monitoring	545			<p><b>Global health status:</b> 76.8 (17.6)</p> <p><b>Functioning scales</b>            Physical: 90.9 (14.7)            Role: 90.5 (19.7)            Emotional: 87.3 (17.3)            Cognitive: 86.0 (15.4)            Social: 91.3 (17.2)</p> <p><b>Symptom scales and items</b>            Fatigue: 19.0 (19.4)            Nausea/vomiting: 2.0 (7.1)            Pain: 12.0 (20.5)            Dyspnoea: 12.4 (22.1)            Insomnia: 18.3 (25.6)            Appetite loss: 4.9 (13.6)            Constipation: 6.4 (15.7)            Diarrhoea: 6.0 (15.3)            Financial difficulties: 3.1 (13.8)</p>		
	Radical prostatectomy	553			<p><b>Global health status:</b> 78.4 (17.7)</p> <p><b>Functioning scales</b></p>		

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals	
					Physical: 91.6 (13.8) Role: 90.9 (19.0) Emotional: 87.9 (16.0) Cognitive: 87.9 (14.4) Social: 91.3 (16.8) <b>Symptom scales and items</b> Fatigue: 17.1 (17.9) Nausea/vomiting: 1.4 (6.2) Pain: 9.7 (18.1) Dyspnoea: 10.1 (20.0) Insomnia: 14.6 (22.4) Appetite loss: 3.8 (11.9) Constipation: 4.6 (14.3) Diarrhoea: 6.0 (16.4) Financial difficulties: 3.4 (12.7)		<b>Global health status:</b> 0.38 <b>Functioning scales</b> Physical: 0.81 Role: 0.60 Emotional: 0.79 Cognitive: 0.21 Social: 0.95 <b>Symptom scales and items</b> Fatigue: 0.24 Nausea/vomiting: 0.44 Pain: 0.20 Dyspnoea: 0.34 Insomnia: 0.08 Appetite loss: 0.56 Constipation: 0.25 Diarrhoea: 0.89 Financial difficulties: 0.80	
	EBRT	545			<b>Global health status:</b> 77.4 (19.0) <b>Functioning scales</b> Physical: 91.3 (14.1) Role: 89.5 (20.1) Emotional: 87.7 (16.6) Cognitive: 87.3 (15.7) Social: 91.6 (17.8) <b>Symptom scales and items</b> Fatigue: 17.3 (17.1) Nausea/vomiting: 1.7 (5.9) Pain: 11.9 (20.2) Dyspnoea: 11.3 (19.9) Insomnia: 16.0 (23.1) Appetite loss: 4.2 (13.2) Constipation: 5.1 (14.0) Diarrhoea: 5.6 (13.7) Financial difficulties: 2.8 (11.9)			
			QLQ-C30 baseline		<b>Mean QLQ-C30 scores at 1 year</b> Higher values refer to better function	<b>Mean QLQ-C30 scores at 5</b>	<b>P-value for difference</b>	<b>P-value for difference</b>

Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals	
					score	years Higher values refer to better function	from baseline QLQ-30 score at 1 year	from baseline QLQ-30 score at 5 years
<b>Giberti 2009</b>  <b>QLQ-C30</b> <b>QLQ-PR25</b>	Radical prostatectomy	100	Cognitive functioning: 91 Emotional functioning: 82 Physical functioning: 91 Role functioning: 93 Social functioning: 89 Global health/QoL: 79	60 months	Cognitive functioning: 90 Emotional functioning: 86 Physical functioning: 86 Role functioning: 90 Social functioning: 89 Global health/QoL: 78	Cognitive functioning: 90 Emotional functioning: 84 Physical functioning: 90 Role functioning: 90 Social functioning: 89 Global health/QoL: 78	Cognitive functioning: NSS Emotional functioning: 0.03 Physical functioning: 0.02 Role functioning: NSS Social functioning: NSS Global health/QoL: NSS	Cognitive functioning: NSS Emotional functioning: NSS Physical functioning: NSS Role functioning: NSS Social functioning: NSS Global health/QoL: NSS
	Brachytherapy	100	Cognitive functioning: 87 Emotional functioning: 80 Physical functioning: 94 Role functioning: 95 Social functioning: 92 Global health/QoL: 83		Cognitive functioning: 88 Emotional functioning: 84 Physical functioning: 90 Role functioning: 93 Social functioning: 93 Global health/QoL: 81	Cognitive functioning: 88 Emotional functioning: 82 Physical functioning: 94 Role functioning: 94 Social functioning: 94 Global health/QoL: 82	Cognitive functioning: NSS Emotional functioning: 0.01 Physical functioning: 0.03 Role functioning: NSS Social functioning: NSS Global health/QoL: NSS	Cognitive functioning: NSS Emotional functioning: NSS Physical functioning: NSS Role functioning: NSS Social functioning: NSS Global health/QoL: NSS
			<b>QLQ-PR25 baseline score</b>		<b>Mean QLQ-PR25 scores at 1 year</b> Higher values refer to worse function	<b>Mean QLQ-PR25 scores at 5 years</b> Higher values refer to worse function	<b>P-value for difference from baseline QLQ-PR25 score at 1 year</b>	<b>P-value for difference from baseline QLQ-PR25 score at 5 years</b>
<b>Giberti 2009 cont.</b>	Radical prostatectomy	100	Urinary symptoms: 9 Bowel symptoms: 2 Treatment-related symptoms: 5 Sexual function: 5 Sexual activity: 6		Urinary symptoms: 10 Bowel symptoms: 2 Treatment-related symptoms: 9 Sexual function: 7 Sexual activity: 8	Urinary symptoms: 10 Bowel symptoms: 2 Treatment-related symptoms: 8 Sexual function: 7 Sexual activity: 8	Urinary symptoms: NSS Bowel symptoms: NSS Treatment-related symptoms: 0.03 Sexual function: NSS Sexual activity: NSS	Urinary symptoms: NSS Bowel symptoms: NSS Treatment-related symptoms: NSS Sexual function: NSS Sexual activity: NSS
	Brachytherapy	100	Urinary symptoms: 8 Bowel symptoms: 2 Treatment-related symptoms: 6 Sexual function: 6		Urinary symptoms: 15 Bowel symptoms: 4 Treatment-related symptoms: 9 Sexual function: 7 Sexual activity: 8	Urinary symptoms: 17 Bowel symptoms: 2 Treatment-related symptoms: 8 Sexual function: 8 Sexual activity: 8	Urinary symptoms: <0.01 Bowel symptoms: NSS	Urinary symptoms: NSS Bowel symptoms: NSS Treatment-related



Supplementary table 1: Summary of results for RCTs

Author, year and PROM tool used	Interventions	N at baseline	Baseline QoL scores	FU	Reported Results		Reported p-values or Hazard Ratios with confidence intervals	
			Sexual activity: 6				Treatment-related symptoms: 0.04 Sexual function: NSS Sexual activity: NSS	symptoms: NSS Sexual function: NSS Sexual activity: NSS

NR: Not reported

NSS: Not statistically significant

AM: Active monitoring

RP: Radical prostatectomy

EBRT: External beam radiotherapy

BT: Brachytherapy