

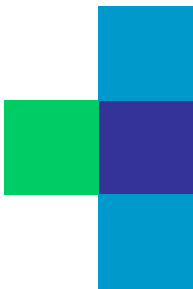
# Rektum – Katzinom:

## Lebensqualität nach multimodaler Therapie

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# Rektum - Karzinom : Zielsetzung der Therapie

- **Reduktion der lokalen Rezidivrate**
- **Reduktion der Fernmetastasierung**
  - ↓
- **Verbesserung der Prognose**
- **Lebensqualität:**
  - **Sphinktererhalt**
  - **sexuelle Funktion**
  - **geringe chronische Toxizität**
  - **akzeptable akute Toxizität**



# Rektum Karzinom

**Funktionserhaltende OP  
versus  
Abdominoperineale Resektion**



# Rektum –Karzinom : Ant . Res vs APER

Metaanalyse Cornish et al. 2007 Ann Surg Oncol

## Verbesserte Funktionen bei ant. Resektion:

- Vitality  $p = 0.01$
- Sexual function  $p=0.01$
- Physical functioning score  $p=0.004$
- Cognitive function  $p<0.001$
- Emotional function  $p<0.001$

## Aber:

Kein Unterschied im „global health score“



# Rektum –Karzinom

Hassan et al. 2010; N = 168; EORTC QLQ – C 30

	<b>Coloanale Anastomose N = 72</b>	<b>APR N = 83</b>	
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<b>Physical Functioning</b>	<b>78</b>	<b>73</b>	<b>p = 0,003</b>
<b>Fatigue</b>	<b>14</b>	<b>22</b>	<b>p = 0,004</b>
<b>Pain</b>	<b>4</b>	<b>12</b>	<b>p = 0,023</b>
<b>Constipation</b>	<b>16</b>	<b>8</b>	<b>p = 0,018</b>

**Kein Unterschied: “Diarrhea; appetite loss; insomnia; dyspnea; nausea and vomiting; social functioning (p=0.068); cognitive functioning (p=0.058); emotional functioning; role functioning (p=0.072); global health (p=0.086)”**



# Rektum –Karzinom

Hassan et al. 2010; N = 168; EORTC QLQ – C 38

	<b>Coloanale Anastomose N = 72</b>	<b>APR N = 83</b>	
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<b>Body image</b>	<b>86</b>	<b>73</b>	<b>p = 0,0003</b>
<b>Sexual functioning</b>	<b>27</b>	<b>76</b>	<b>p &lt; 0,0001</b>
<b>Symptoms in GI tract</b>	<b>15</b>	<b>12</b>	<b>p = 0,049</b>
<b>Male sexual problems</b>	<b>52</b>	<b>68</b>	<b>p = 0,019</b>

**Kein Unterschied: “defecation problems; female sexual problems; micturition problems; future perspective; sexual enjoyment”**



# Rektum Karzinom

## Sexuelle Funktion



# Rektum –Karzinom

Lange MM et al. 2009; EJC Niederländische Studie

## Multivariate Faktoren für reduzierte sexuelle Funktion (Männer)

<b>Radiotherapy</b>	<b>p = 0,003</b>
<b>Excessive blood loss</b>	<b>p = 0,148</b>
<b>Temporary/permanent stoma</b>	<b>p = 0,019</b>
<b>Anastomotic leakage</b>	<b>p = 0,076</b>

**Nach 2 Jahren**



# Rektum –Karzinom

Lange MM et al. 2009; EJC; Niederländische Studie

## Multivariate Faktoren für erektile Dysfunktion (Männer)

<b>Alter</b>	<b>p = 0,298</b>
<b>Type of resection</b>	<b>p = 0,129</b>
<b>Excessive blood loss</b>	<b>p = 0,033</b>
<b>Nerve damage</b>	<b>p = 0,175</b>
<b>Temporary/permanent stoma</b>	<b>p = 0,262</b>
<b>Anastomotic leakage</b>	<b>p = 0,034</b>

**Nach 2 Jahren**



# Rektum –Karzinom

Lange MM et al. 2009; EJC, Niederländische Studie

## Multivariate Faktoren für reduzierte sexuelle Funktion (Frauen)

### General:

Radiotherapy

$p = 0,033$

### Vaginal Dryness

Temporary/permanent stoma

$p = 0,063$

### Dyspareunia

Temporary/permanent stoma

$p = 0,051$

Nach 2 Jahren



# Rektum –Karzinom

Bruheim et al. 2010; Int J Radiat Oncol Biol Phys; N = 535; Norwegen

Table 2. International Index of Erectile Function Scores in irradiated (RT+) and nonirradiated (RT-) patients

Domain (valid answers <i>n</i> , RT+/RT-)	Range	RT+ group	RT- group	<i>p</i> *
		Mean (SD)	Mean (SD)	
Sexual desire ( <i>n</i> = 104/130)	2–10	5.0 (2.0)	5.4 (2.0)	0.23
Erectile function ( <i>n</i> = 100/125)	1–30	6.9 (7.9)	14.3 (11.1)	<0.001
Orgasmic function ( <i>n</i> = 103/128)	0–10	2.9 (3.8)	5.2 (4.3)	<0.001
Intercourse satisfaction ( <i>n</i> = 32/65) <sup>†</sup>	0–15	7.6 (3.5)	10.1 (2.8)	0.001
Overall satisfaction with sex life ( <i>n</i> = 96/120)	2–10	4.3 (2.2)	5.7 (2.6)	<0.001

\* Mann-Whitney *U* test.

<sup>†</sup> Patients who had sexual intercourse during the previous month.



# Rektum Karzinom

## Sphinkterfunktion



# Rektum –Karzinom

Bruheim et al. 2010; Int J Radiat Oncol Biol Phys; N = 535; Norwegen

	<b>OP</b> <b>N = 336</b>	<b>OP/ RT</b> <b>N = 199</b>	
<b>Fecal incontinence</b>	<b>15 %</b>	<b>49 %</b>	<b>p = 0,001</b>
<b>Need for sanitary pads</b>	<b>13 %</b>	<b>52 %</b>	<b>p = 0,001</b>
<b>Urinary incontinence</b>	<b>2 %</b>	<b>9 %</b>	<b>p = 0,001</b>
<b>Defer defecation</b>	<b>16 %</b>	<b>44 %</b>	<b>p = 0,001</b>
<b>Social function</b>		<b>&lt;</b>	<b>p = 0,001</b>
<b>Cognitive function</b>		<b>&lt;</b>	<b>p = 0.026</b>

**Nach 4,8 Jahren**

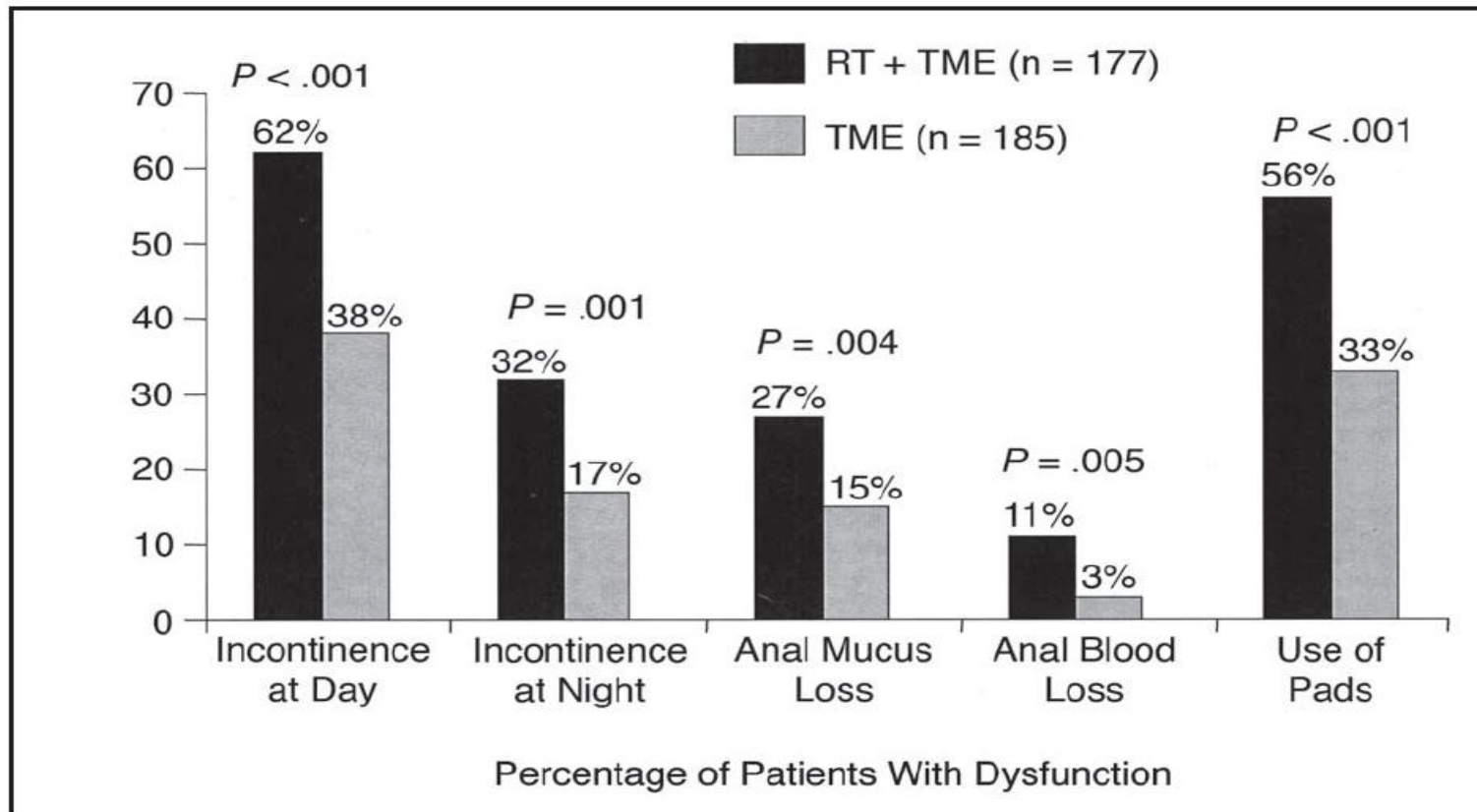


## Rectal cancer : late toxicity following 5 X 5 Gy

	Radiotherapy (n = 65)	No radiotherapy (n = 74)	P†
Any adverse event	45 (69)	32 (43)	0.002
Cardiovascular disease	23 (35)	14 (19)	0.032
Venous thromboembolism	4 (6)	5 (7)	0.823
Faecal incontinence*	12 (57)	11 (26)	0.013
Small bowel obstruction	19 (29)	13 (18)	0.074
Urinary incontinence	29 (45)	20 (27)	0.023
Incomplete bladder emptying	17 (26)	13 (18)	0.193
Fractures (all types)	11 (17)	6 (8)	0.118
Hip and pelvic fractures	3 (5)	1 (1)	0.227

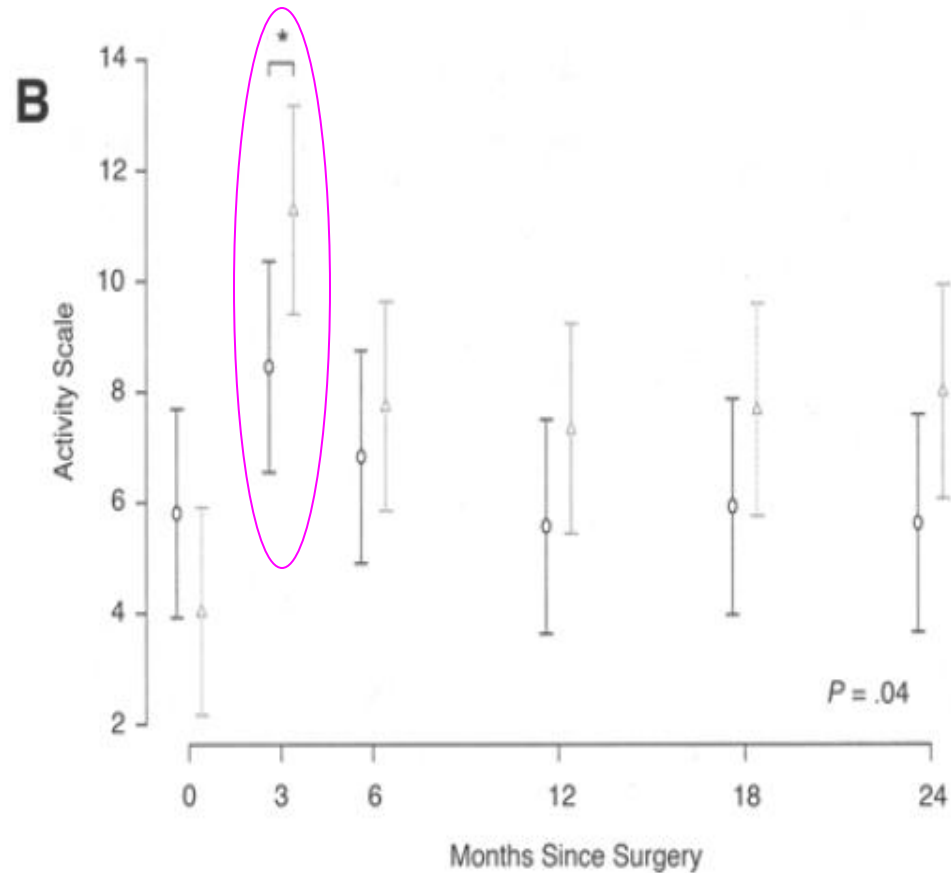
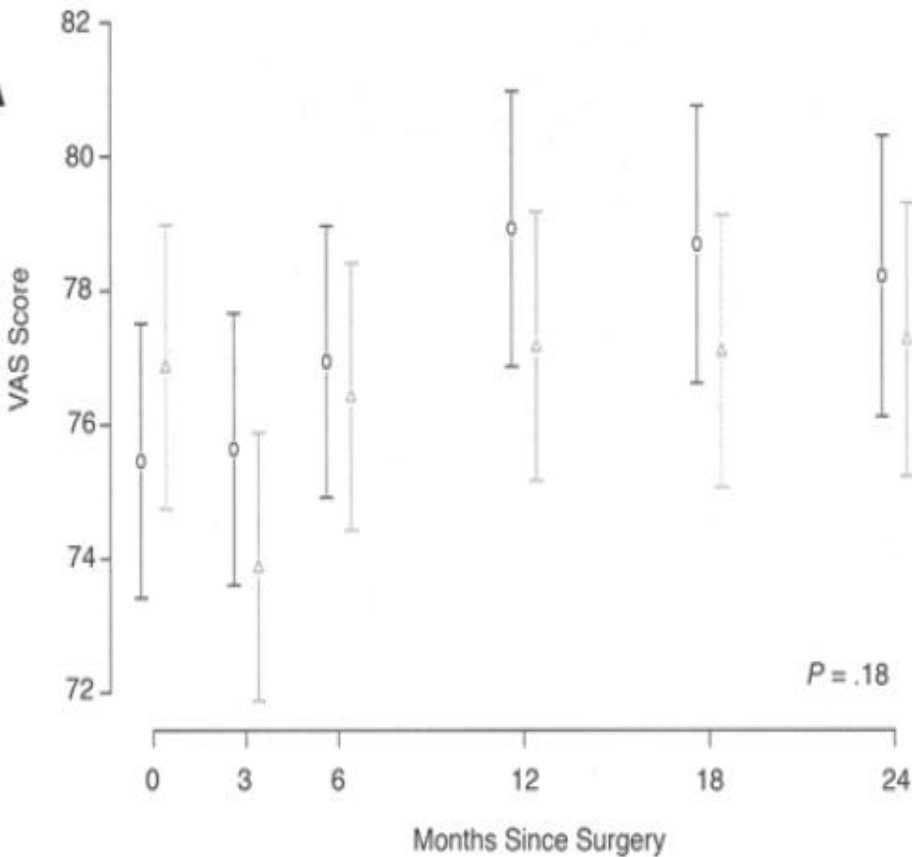
Values in parentheses are percentages. \*Assessed only in patients who had anterior resection. †Fisher's exact test.

# Rectal Cancer: Dysfunction of sphincter following RT (5 \* 5 Gy)



**Fig 1.** Bowel function in eligible patients at risk without a stoma. RT, radiotherapy; TME, total mesorectal excision.

# Rektum-Karzinom: „Overall quality of life“ Marijnen et al. 2005



Kein Unterschied im „global health score“



# Rectal cancer: Sphincter Function following RCT

**Table 1** Comparison of postoperative clinical evaluation in irradiated and nonirradiated patients

Parameter	With chemoradiation	Without chemoradiation
Stool frequency/d	2.8±2.1	2.8±1.8
Impaired discrimination	33%	32%
Warning time >15 min	67%	64%
Fractionated evacuation	33%	28%
Contentment with postop. continence	58%	56%
Changes in lifestyle and general behavior	33%	40%
Points Jorge–Wexner score	6.6±4.5	6.0±4.5



# Rectal Cancer: Incontinence following CRT

- Canda et al. 2009:**  
(N = 57)
- Reduction of median Wexner Score 0 (0-13) versus 3 (0-7) [OP vs RCT + OP]  
No difference in FIQL
- Pietsch et al. 2007:**  
(N = 39)
- No difference of Wexner Score
- Urso et al. 2006:**  
(N = 44)
- No difference of Fecal Incontinence Scoring system
- Lim et al. 2005:**  
(N = 66)
- 18/66 pts with prolonged pudendal nerve terminal motor latency and decreased Wexner Score after CRT



# Rectal cancer: Sphincter Function following RCT

Author	Preoperative treatment	Impairment of anorectal function
Dahlberg et al. 1998 [18]	Short term	Yes
van Duijvendijk et al. 2002 [26]	Short term	Yes
Welsh et al. 2003 [23]	Short term	Yes
Peeters et al. 2005 [22]	Short term	Yes
Pollack et al. 2006 [24]	Short term	Yes
Birnbaum et al. 1994 [17]	Conventional	No
Gervaz et al. 2001 [20]	Conventional	Yes
Dehni et al. 2002 [19]	Conventional	Yes (partially)
Nathanson et al. 2003 [21]	Conventional	No
Ammann et al. 2003 [16]	Conventional	Yes
Saito et al. 2004 [25]	Conventional	No
Own results 2006	Conventional	No

# Zusammenfassung

- 1. Operation und Strahlen (chemo) therapie beeinflussen die sexuelle Funktion / Empfinden der Patienten negativ**
- 2. Die Sphinkterfunktion wird durch Strahlentherapie negativ beeinflusst**
  - bei 5\*5 Gy in allen Studien**
  - bei Langzeit RCT sind die Daten nicht eindeutig**
- 3. Die allgemeine Lebensqualität der Patienten wird durch die Art der Operation und durch eine Bestrahlung weniger beeinflusst als allgemein angenommen**

