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Table 1. Remaining normal tissue doses for SABR small bowel re-irradiation based on variety of initial radiotherapy normal tissue doses and variety of cumulative constraints (based on $\alpha/\beta=3\text{Gy}$)

Possible dose received by normal tissues at first irradiation	No. fractions	Dose per fraction	EQD2 ($\alpha/\beta=3\text{Gy}$)	Remaining dose constraint for 5 fraction SABR based on Abusaris et al cumulative constraints ^{20§}	Remaining dose constraint for 5 fraction SABR based on conventional first irradiation constraints used cumulatively, assuming no recovery)*	Remaining dose constraint for 5 fraction SABR based on conventional first irradiation constraints used cumulatively, assuming 50% recovery of original dose*	AAPM report constraints for 5 fraction pelvic SABR as first irradiation, included for comparison only ²⁹
Small bowel							
30	15	2.00	30.00	37.8 to 10cm³	18.4 max point	24.8 max point	19.5 to < 5cm ³ / 35 max point**
34	15	2.27	35.81	36.2 to 10cm³	15.4 max point	23.7 max point	19.5 to < 5cm ³ / 35 max point**
34	28	1.21	28.66	38.2 to 10cm³	19.1 max point	25.1 max point	19.5 to < 5cm ³ / 35 max point**
42	25	1.68	39.31	35.2 to 10cm³	13.4 max point	23.0 max point	19.5 to < 5cm ³ / 35 max point**
45	25	1.80	43.20	34.0 to 10cm³	11.0 max point	22.2 max point	19.5 to < 5cm ³ / 35 max point**
50.4	28	1.80	48.38	32.5 to 10cm³	7.1 max point	21.1 max point	19.5 to < 5cm ³ / 35 max point**
50	25	2.00	50.00	31.9 to 10cm³	5.6 max point	20.7 max point	19.5 to < 5cm ³ / 35 max point**
54	28	1.93	53.23	30.9 to 10cm³	2.0 max point	20.0 max point	19.5 to < 5cm ³ / 35 max point**
70	39	1.79	67.13	26.1 to 10cm³	Nil remaining	16.6 max point	19.5 to < 5cm ³ / 35 max point**
78	39	2.00	78.00	21.8 to 10cm³	Nil remaining	13.6 max point	19.5 to < 5cm ³ / 35 max point**
80	39	2.05	80.82	20.5 to 10cm³	Nil remaining	12.8 max point	19.5 to < 5cm ³ / 35 max point**

[§] Abusaris et al cumulative constraints²⁰ small bowel: 110Gy (as EQD2, $\alpha/\beta=3$), dose to no more than 10cm³

*Conventional constraints: small bowel: e.g. maximum point dose 55Gy²⁵, based on 28 fraction treatment;

**AAPM report constraints are those for ileum and jejunum

max: maximum

Table 2. Suggested pragmatic conservative approach for organ at risk constraint definition for SABR re-irradiation

Organ at risk constraint determination	
First choice ('best case scenario')	Second choice ('pragmatic compromise')
<p>Subtract previous dose from traditional constraint, no repair permitted</p>	<p>If first choice constraints not feasible</p> <p>Subtract previous dose from traditional constraint, allowing degree of repair</p> <p>AND</p> <p>Do not exceed AAPM report constraints for first irradiation²⁹, nor Abusaris et al²⁰ constraints</p>

