Does it matter if the delivery of a treatment faction is protracted?

30 day treatment (weekdays only) delivered using 10 patient-beam orientations. LPL parameters for CHO 10B2 cells.

Total Dose (Gy)	Dose per Fraction (Gy)	Surviving Fraction (LPL model)			Ratio Protracted to Acute	
		Acute	6 min	15 min	6 min	15 min
50.00	1.667	1.458E-02	1.595E-02	1.805E-02	1.09	1.24
55.00	1.833	7.348E-03	8.186E-03	9.502E-03	1.11	1.29
60.00	2.000	3.535E-03	4.017E-03	4.795E-03	1.14	1.36
65.00	2.167	1.623E-03	1.886E-03	2.319E-03	1.16	1.43
70.00	2.333	7.123E-04	8.469E-04	1.076E-03	1.19	1.51
75.00	2.500	2.986E-04	3.640E-04	4.787E-04	1.22	1.60
80.00	2.667	1.196E-04	1.498E-04	2.043E-04	1.25	1.71
85.00	2.833	4.584E-05	5.901E-05	8.371E-05	1.29	1.83
90.00	3.000	1.679E-05	2.227E-05	3.292E-05	1.33	1.96
95.00	3.167	5.887E-06	8.055E-06	1.243E-05	1.37	2.11
100.00	3.333	1.975E-06	2.792E-06	4.509E-06	1.41	2.28

HeLa S3 Cervix Carcinoma Cells

30 Day Treatment (weekdays only). 10 patient-beam orientations.

Total Dose (Gy)	Dose per Fraction (Gy)	Surviving Fraction (LPL model)			Ratio of Protracted to Acute	
		Acute	6 min	15 min	6 min	15 min
35.00	1.167	2.841E-06	3.404E-06	4.245E-06	1.20	1.49
40.00	1.333	3.475E-07	4.394E-07	5.856E-07	1.26	1.69
45.00	1.500	3.973E-08	5.340E-08	7.669E-08	1.34	1.93
50.00	1.667	4.249E-09	6.112E-09	9.536E-09	1.44	2.24
55.00	1.833	4.255E-10	6.592E-10	1.126E-09	1.55	2.65
60.00	2.000	3.991E-11	6.702E-11	1.265E-10	1.68	3.17
65.00	2.167	3.508E-12	6.428E-12	1.350E-11	1.83	3.85
70.00	2.333	2.892E-13	5.818E-13	1.371E-12	2.01	4.74

LPL model inputs determined from LQ parameters reported by
PJ Deschavanne *et al.*, *Radiat. Res.*, **122**(1), 29-37 (1990).

TX-4 Osteosarcoma Cells

30 Day Treatment (weekdays only). 10 patient-beam orientations.

Total Dose (Gy)	Dose per Fraction (Gy)	Surviving Fraction (LPL model)			Ratio of Protracted to Acute	
		Acute	6 min	15 min	6 min	15 min
35.00	1.167	2.239E-05	2.428E-05	2.681E-05	1.08	1.20
40.00	1.333	4.278E-06	4.755E-06	5.411E-06	1.11	1.27
45.00	1.500	7.925E-07	9.057E-07	1.066E-06	1.14	1.35
50.00	1.667	1.424E-07	1.678E-07	2.052E-07	1.18	1.44
55.00	1.833	2.480E-08	3.025E-08	3.857E-08	1.22	1.56
60.00	2.000	4.190E-09	5.305E-09	7.080E-09	1.27	1.69
65.00	2.167	6.867E-10	9.052E-10	1.269E-09	1.32	1.85
70.00	2.333	1.092E-10	1.503E-10	2.223E-10	1.38	2.04

LPL model inputs determined from LQ parameters reported by
PJ Deschavanne *et al.*, *Radiat. Res.*, **122**(1), 29-37 (1990).

DL1DA colon adenocarcinoma cells

30 Day Treatment (weekdays only). 10 patient-beam orientations.

Total Dose (Gy)	Dose per Fraction (Gy)	Surviving Fraction (LPL model)			Ratio of Protracted to Acute	
		Acute	6 min	15 min	6 min	15 min
35.00	1.167	3.904E-05	5.563E-05	8.582E-05	1.42	2.20
40.00	1.333	5.364E-06	8.483E-06	1.487E-05	1.58	2.77
45.00	1.500	6.495E-07	1.154E-06	2.334E-06	1.78	3.59
50.00	1.667	6.946E-08	1.403E-07	3.323E-07	2.02	4.78
55.00	1.833	6.575E-09	1.528E-08	4.299E-08	2.32	6.54
60.00	2.000	5.521E-10	1.493E-09	5.061E-09	2.70	9.17
65.00	2.167	4.122E-11	1.311E-10	5.429E-10	3.18	13.17
70.00	2.333	2.741E-12	1.037E-11	5.315E-11	3.78	19.39

LPL model inputs determined from LQ parameters reported by
PJ Deschavanne *et al.*, *Radiat. Res.*, **122**(1), 29-37 (1990).

DL1DA colon adenocarcinoma cells

30 Day Treatment (weekdays only). 5, 10, and 15 patient-beam orientations.

Total Dose (Gy)	Dose per Fraction (Gy)	Surviving Fraction (LPL model)			Ratio of Protracted to Acute		
		5 beams	10 beams	15 beams	5 beams	10 beams	15 beams
35.00	1.167	4.150E-05	4.422E-05	4.699E-05	1.06	1.13	1.20
40.00	1.333	5.805E-06	6.301E-06	6.818E-06	1.08	1.17	1.27
45.00	1.500	7.171E-07	7.948E-07	8.773E-07	1.10	1.22	1.35
50.00	1.667	7.839E-08	8.891E-08	1.003E-07	1.13	1.28	1.44
55.00	1.833	7.601E-09	8.839E-09	1.022E-08	1.16	1.34	1.55
60.00	2.000	6.550E-10	7.827E-10	9.288E-10	1.19	1.42	1.68
65.00	2.167	5.027E-11	6.185E-11	7.547E-11	1.22	1.50	1.83
70.00	2.333	3.443E-12	4.370E-12	5.494E-12	1.26	1.59	2.00

2 minutes to move between patient-beam orientations.

LPL model inputs determined from LQ parameters reported by
PJ Deschavanne *et al.*, *Radiat. Res.*, **122**(1), 29-37 (1990).