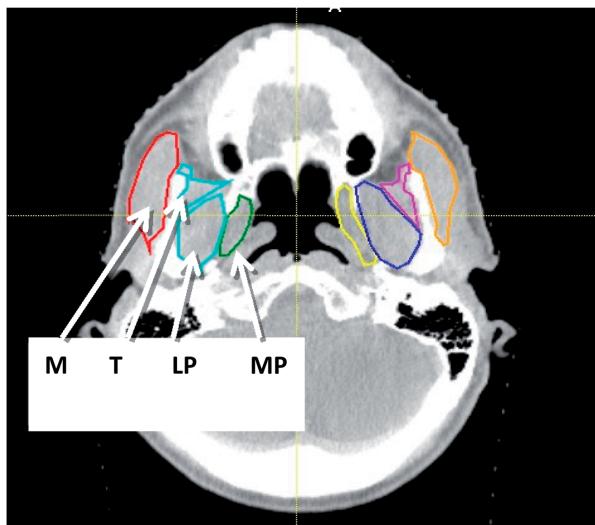


Supplementary Material for Rao et al., Dose-volume factors correlating with trismus following chemoradiation for head and neck cancer. Acta Oncol. 2015; doi: 10.3109/0284186X.2015.1037864

Supplementary Table I. Univariate and multivariate results using bootstrap technique with 250 samples.

Muscle	Univariate				Multivariate			
	Odds ratio	Std. Err.	p-value	AUC	Odds ratio	Std. Err.	p-value	
MPI (md)	1.109	0.036	0.001	0.71	1.096	0.046	0.028	
MPC (md)	1.042	0.024	0.069	0.64	0.963	0.045	0.411	
LPI (md)	1.039	0.014	0.004	0.65	0.985	0.032	0.652	
LPC (md)	1.032	0.014	0.016	0.63	1.014	0.037	0.687	
MI (md)	1.089	0.022	<0.001	0.73	1.063	0.038	0.091	
MC (md)	1.068	0.023	0.003	0.65	1.042	0.054	0.429	
TI (md)	1.022	0.011	0.042	0.60	0.971	0.063	0.653	
TC (md)	1.023	0.012	0.063	0.62	0.988	0.071	0.876	



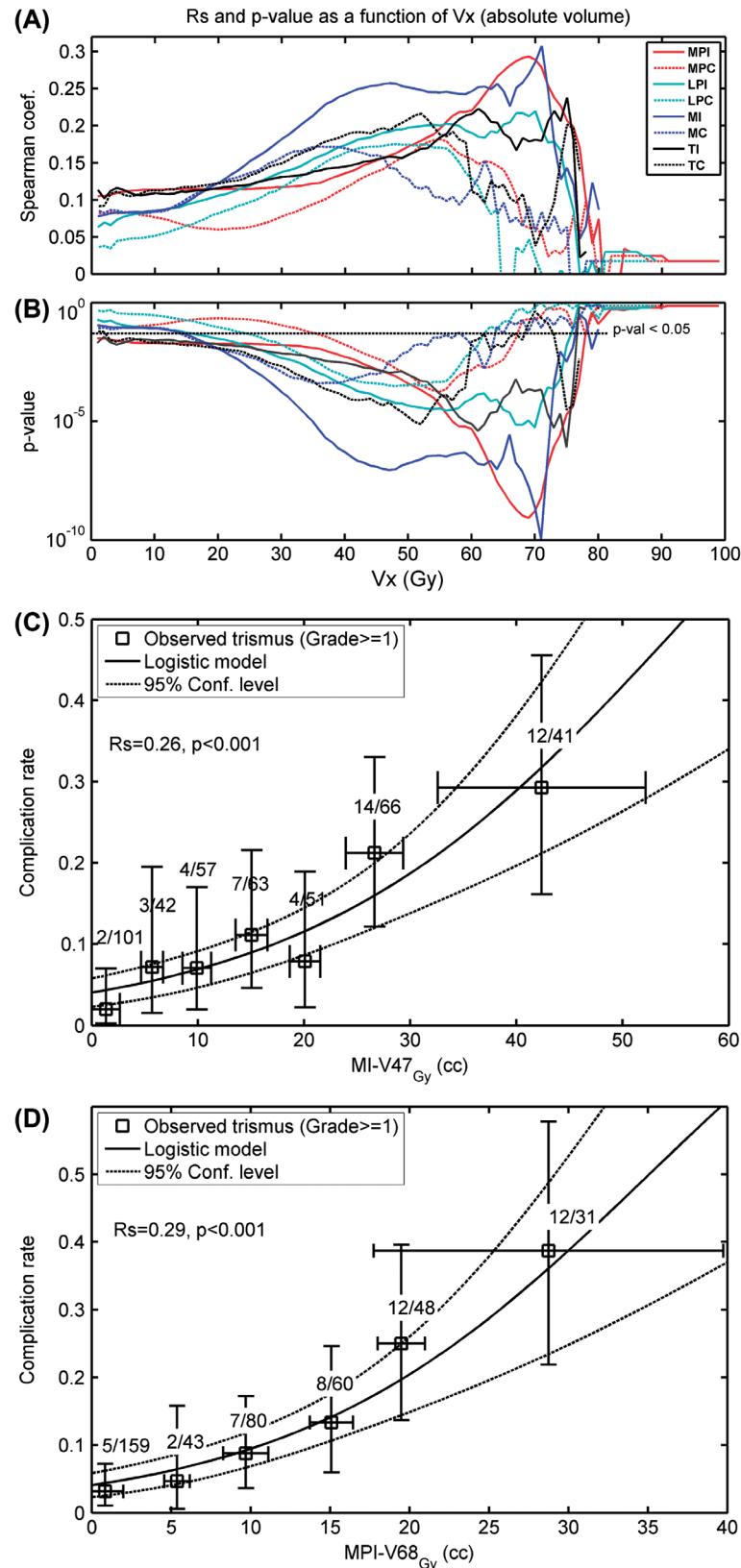
Supplementary Figure 1. Delineation of muscles of mastication. The paired masseter (M), temporalis (T), lateral pterygoid (LP) and medial pterygoid (MP) muscles caudal to the inferior orbital for each patient. A CT-axial image with the contoured images is shown for a representative patient.

Supplementary Table II. The best fit parameters (95% CI) for the LKB model.

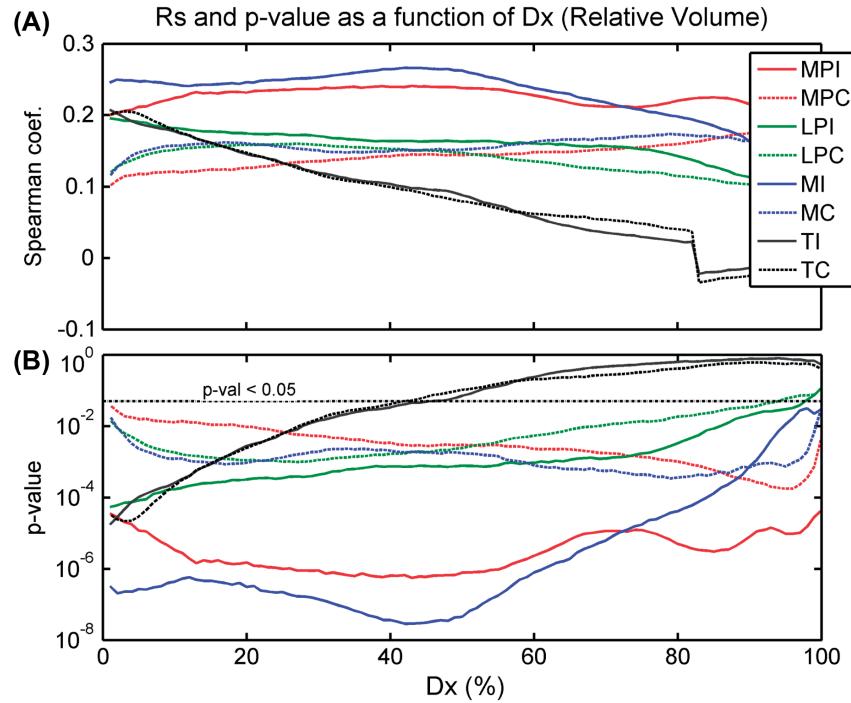
Parameter	Ipsi Med. Pterygoid (MPI)			Ipsi Masseter (MI)		
	value	Bootstrap CI (95%)	value	Bootstrap CI (95%)		
a	6.8	5.54	61.35	8.70	2.54	158.53
m	0.19	0.12	0.33	0.25	0.14	0.31
D50 (Gy)	86.00	78.57	115.54	71.00	63.51	89.64

Supplementary Table III. Chi-Square statistics for the logistic regression model.

Model Parameter	$\chi^2$	Prob > $\chi^2$
MPI (md)	22.38	<0.0001
PMC (md)	6.57	0.0104
LPI (md)	10.36	0.0013
LPC (md)	7.21	0.0072
MI (md)	24.29	<0.0001
MC (md)	12.38	0.0003
TI (md)	3.37	0.0664
TC (md)	2.8	0.0942
MPI-Vx ( $x = 68$ Gy)	30.30	<0.0001
Age, MPI-Vx( $x = 68$ Gy)	33.27	<0.0001
Age, MPI-gEUD( $a = 6.8$ ), MI-gEUD( $a = 8.7$ )	34.29	<0.0001



Supplementary Figure 2. Correlation between trismus and absolute  $Vx$ . (A) Spearman's correlation between complication (trismus; Grade  $\geq 1$ ) and the absolute volume (cc) receiving at least  $X$  Gy at different dose levels for each muscle. Significant correlation is found with the  $Vx$  of the ipsilateral masseter and medial pterygoid muscles. (B) Corresponding p-values are shown where the horizontal dotted black line indicates the 0.05 significance level. (C) & (D) Logistic fit based on dose to Medial Pterygoid and Masseter muscle. A higher correlation and steeper response is observed with  $MPI-V_{68\text{Gy}}$  in comparison with  $MI-V_{47\text{Gy}}$ .



Supplementary Figure 3A & B. Correlation between trismus and Dx for each muscle. Spearman's correlation (A) between complication (trismus) and Dx (the minimum dose to x% highest dose volume). Significant correlation is found with the Dx of the ipsilateral masseter (MI) and medial pterygoid (MPI). Corresponding p-values are shown in the bottom panel (B) where the horizontal dotted black line indicates the 0.05 significance level.