



**Figure S1.** Principal component eigenvectors using dimension reduction approach and the waterfall plot for PC2.

**Table S1.** Loading matrix containing the respective eigenvalues for PC1 and PC2.

	PC1	PC2
pf	0.296566	-0.08106
rf	0.201688	-0.02814
ef	0.2096	0.068444
cf	0.293558	-0.01499
sf	0.320354	0.105731
QOL	0.273354	-0.02157
fa	-0.30727	-0.10404
nv	-0.1991	0.129466
pa	-0.14276	-0.19722
dy	-0.264	-0.16111
sl	-0.18298	0.081258
ap	-0.05254	0.371597
co	-0.18281	0.361258
di	-0.05076	0.447343
fi	-0.22275	-0.04803
lcco	-0.15689	-0.16373
lcha	-0.22575	-0.20058
lcsn	-0.14927	-0.04386
lods	-0.11603	-0.15338
lcpn	-0.09303	0.422428
lchr	-0.03052	0.304172
lcpc	-0.02072	0.187325
lcpa	-0.04908	0.0324
lcpo	-0.20456	0.079528
lody	-0.22877	-0.01034

**Table S2.** Comparisons between patient demographics and either PC1 or PC2 using the Kruskal–Wallis Test.

	<b>PC1*</b>	<b>PC2 *</b>
Age (years) (<75, ≥75)	0.66	0.44
Gender	0.73	0.77
KPS (80+, <80)	0.6	0.25
Race (white, non-white)	0.85	0.27
Stage (IA, IB)	0.28	0.23
Arm (30Gy/1fx, 60Gy/3fx)	0.71	0.91
Histology (Adeno, SCC/NOS)	0.09	0.12

\* *p*-value; Karnofsky Performance Status (KPS); Squamous cell carcinoma (SCC), Not otherwise specified (NOS).