

**Table S3. Radiological dynamics and its correlation with survival outcomes*
(multivariate analysis, n=215)**

Survival type	Variable type	HR (95% CI)	P value
PFS	Tumor percent change	1.014 (1.011 to 1.017)	<.001
	Time to maximal tumor reduction	0.830 (0.788 to 0.874)	<.001
OS	Tumor percent change	1.009 (1.004 to 1.013)	<.001
	Time to maximal tumor reduction	0.897 (0.851 to 0.946)	<.001

*Response depth and time to maximal tumor reduction were both treated as continuous variables and incorporated in the same model, interpreted as HR per 1 percent increase in the change of the sum of target lesions and per 1-month increase for time to maximum decrease or minimum increase of tumor before or at PD compared with baseline measurement. Other covariates included ethnicity (Caucasian vs. non-Caucasian), melanoma subtype (cutaneous, acral, mucosal, ocular, and melanoma of unknown primary), M stage (M0, M1a, M1b, M1c, and M1d), baseline LDH level (elevated vs. normal), previous systemic treatment (yes vs. no), baseline target lesion size (continuous variable).