# Supplementary Materials

**Table S1.** Selected features per dataset.

| Dataset | Selected Features |
|---|---|
| All original_ | GTV_LNM__original_glcm_Imc1<br>PAROTID__original_shape_Maximum2DDiameterSlice |
| All original_firstorder_ | GTV_LNM__original_firstorder_Minimum<br>PAROTID__original_firstorder_RootMeanSquared |
| All original_shape_ | PAROTID__original_shape_SurfaceVolumeRatio<br>PAROTID__original_shape_Maximum2DDiameterSlice |
| GTV LNM original_ | GTV_LNM__original_firstorder_Median<br>GTV_LNM__original_shape_Elongation<br>GTV_LNM__original_glszm_LargeAreaLowGrayLevelEmphasis<br>GTV_LNM__original_glcm_Contrast<br>GTV_LNM__original_glcm_Imc1<br>GTV_LNM__tech_ConvolutionKernel<br>GTV_LNM__original_glszm_SmallAreaHighGrayLevelEmphasis<br>GTV_LNM__original_firstorder_Minimum |
| GTV LNM original_firstorder_ | GTV_LNM__original_firstorder_Kurtosis<br>GTV_LNM__original_firstorder_Uniformity<br>GTV_LNM__original_firstorder_TotalEnergy<br>GTV_LNM__original_firstorder_Range<br>GTV_LNM__original_firstorder_90Percentile<br>GTV_LNM__original_firstorder_Median<br>GTV_LNM__tech_ConvolutionKernel<br>GTV_LNM__original_firstorder_Minimum |
| GTV LNM original_shape_ | GTV_LNM__original_shape_LeastAxisLength<br>GTV_LNM__original_shape_Maximum2DDiameterColumn<br>GTV_LNM__original_shape_MinorAxisLength<br>GTV_LNM__original_shape_SurfaceVolumeRatio<br>GTV_LNM__original_shape_Sphericity<br>GTV_LNM__original_shape_Flatness<br>GTV_LNM__original_shape_Maximum2DDiameterRow<br>GTV_LNM__tech_ConvolutionKernel |
| GTV TM original_ | GTV_TM__original_glcm_Imc2<br>GTV_TM__original_ngtdm_Complexity<br>GTV_TM__original_glszm_SmallAreaEmphasis |
| GTV TM original_firstorder_ | GTV_TM__original_firstorder_RootMeanSquared<br>GTV_TM__original_firstorder_TotalEnergy<br>GTV_TM__original_firstorder_Range |
| GTV TM original_shape_ | GTV_TM__original_shape_Maximum2DDiameterRow<br>GTV_TM__original_shape_Sphericity<br>GTV_TM__original_shape_Elongation |
| Parotid original_ | PAROTID__original_firstorder_Minimum<br>PAROTID__original_glrlm_LongRunEmphasis<br>PAROTID__original_ngtdm_Coarseness<br>PAROTID__original_glrlm_GrayLevelNonUniformityNormalized<br>PAROTID__original_glrlm_RunLengthNonUniformity<br>PAROTID__original_gldm_DependenceNonUniformity<br>PAROTID__original_firstorder_RootMeanSquared |

| | |
|---|---|
| Parotid original_firstorder_ | PAROTID__original_firstorder_Variance<br>PAROTID__original_firstorder_TotalEnergy<br>PAROTID__original_firstorder_InterquartileRange<br>PAROTID__original_firstorder_Uniformity<br>PAROTID__original_firstorder_Kurtosis<br>PAROTID__original_firstorder_Range<br>PAROTID__original_firstorder_RootMeanSquared |
| Parotid original_shape_ | PAROTID__original_shape_MajorAxisLength<br>PAROTID__original_shape_Sphericity<br>PAROTID__original_shape_Flatness<br>PAROTID__original_shape_Maximum3DDiameter<br>PAROTID__original_shape_Maximum2DDiameterSlice<br>PAROTID__original_shape_MeshVolume<br>PAROTID__original_shape_SurfaceArea |

**Table S2:** Descriptive statistics of the patient cohort by HPV status.

| | **HPV Negative** | **HPV Positive** |
|---|---|---|
| **Patients [n]** | 33 | 20 |
| **Mean age [years] (range)** | 58.1 (41–72) | 65.2 (45–91) |
| **Male [%]** | 93.9 | 85.0 |
| **T stage** | | |
| **- T4** | 24 | 11 |
| **- T3** | 5 | 4 |
| **- T1** | 2 | 2 |
| **- T2** | 2 | 3 |
| **N stage** | | |
| **- N0** | 3 | 2 |
| **- N1** | 1 | 4 |
| **- N2** | 26 | 12 |
| **- N3** | 3 | 2 |
| **M stage** | | |
| **- M0** | 30 | 19 |
| **- M1** | 2 | 1 |
| **Grading** | | |
| **- G2** | 22 | 9 |
| **- G3** | 10 | 11 |
| **- G1** | 1 | 0 |
| **Scanner** | | |
| **- No. 1** | 13 | 7 |
| **- No. 2** | 12 | 7 |
| **- No. 3** | 8 | 6 |