### CD8 infiltration is associated with disease control and tobacco exposure in intermediaterisk oropharyngeal cancer

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Running title: Tumor immunity is impacted by p16 status and tobacco exposure

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#### Supplementary Figure Legends

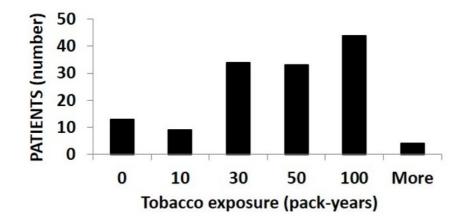
Supplementary Figure 1. Distribution of tobacco exposure across the entire patient cohort.

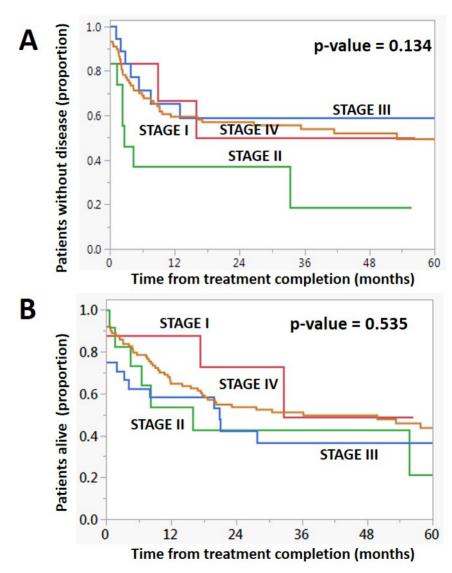
Supplementary Figure 2. Impact of AJCC staging on survival. Relapse free survival (A) and overall survival (B) stratified by AJCC 7<sup>th</sup> Edition Staging Manual. Kaplan-Meier curves, p-value generated using log-rank analysis.

Supplementary Figure 3. Impact of tumor immune infiltrate on survival. Relapse free survival as a function of CD3+ (A) and CD8+ (C) infiltration. Overall survival as a function of CD3+ (B) or CD8+ (D) infiltration. Kaplan-Meier curves, p-value generated using log-rank analysis. Inset includes representative figures utilized to quantify relative tumor infiltration by lymphocytes. Left sided panels represent bright field pictures of immunohistochemistry (IHC) for CD3 and CD8 expressing cells respectively. Right sided panels represent pseudocolor masking of cells which staining positive (green) for CD3 or CD8 and cells which do not stain positive (red). Black arrow points to a conglomerate of CD3 positive staining cells; gray arrow points to the same cell conglomerate on the pseudocolor masked panel. Top panels are representative of tumors with high immune infiltrates, bottom panels are representative of tumors with low immune infiltrates.

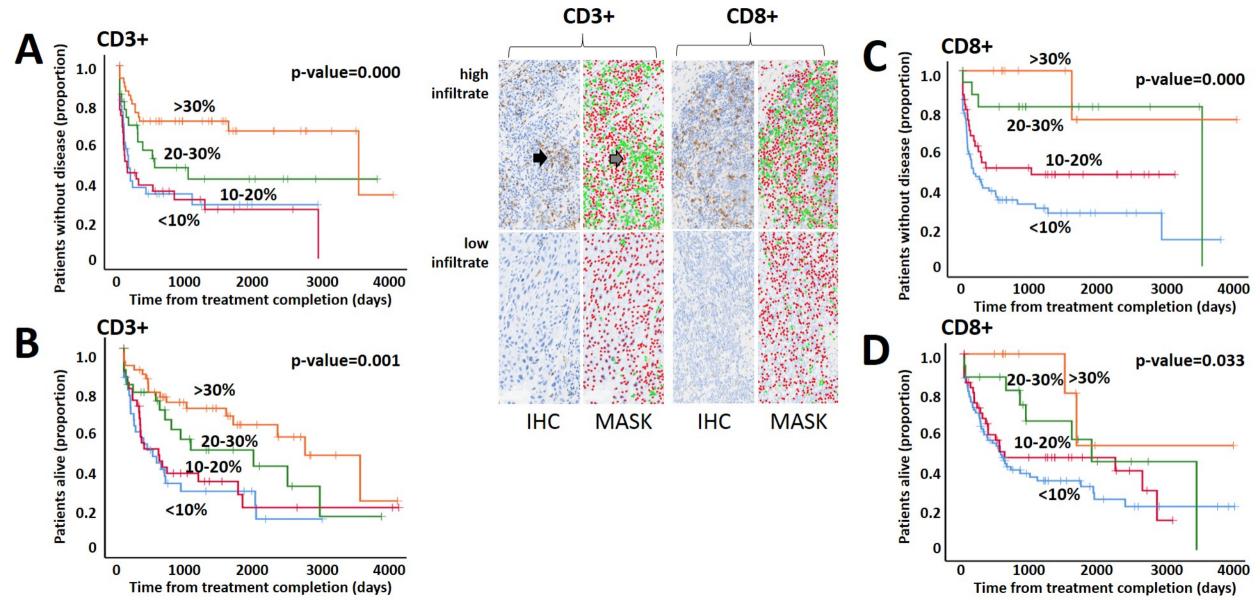
Supplementary Figure 4. Correlation between CD3/CD8 classifier and p16 status (A) and AJCC stage (B).

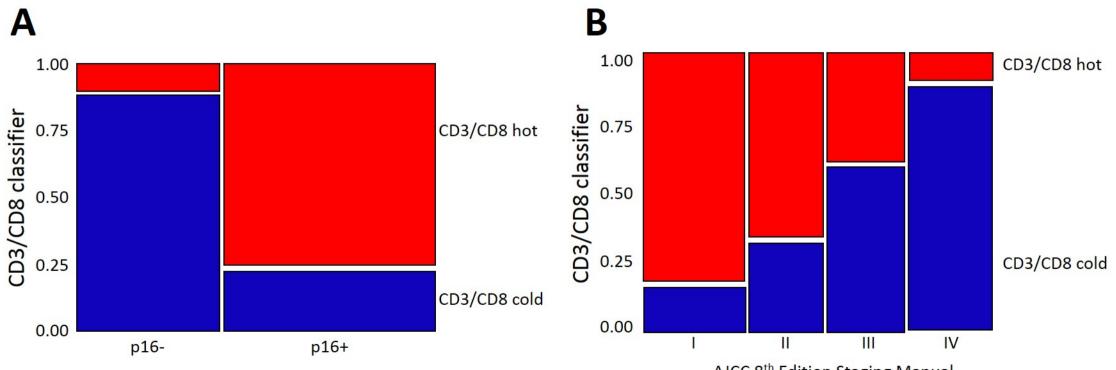
Supplementary Figure 5. Proportion of patients free of disease as a function of CD8+ infiltration. Only patients treated with curative intent and demonstrating high nuclear p16 staining were included in the analysis. Kaplan-Meier curves, p-value generated using log-rank analysis.





**SUPPLEMENTARY FIGURE 3** 





AJCC 8<sup>th</sup> Edition Staging Manual

