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Background The neutrophil is the first cell recruited to the site of inflammation in HNSCC.¹ Neutrophils have been perceived as a relatively homogenous cell type. However, our group has demonstrated that neutrophils can be divided into different subsets.²⁻⁵ and we have identified a subset that can migrate into the tumour in HNSCC patients.⁶ HNSCC may promote a shift towards more activated neutrophil subsets and the neutrophils may thereafter migrate to the lymph nodes.

Methods Thanks to our unique access to unfixed samples of lymph nodes and tumour biopsies of patients with oral HNSCC we were able to identify neutrophil subsets in each tissue and compare them to neutrophils found in the blood. The tissue, homogenized to a single cell suspension, and blood were analyzed with flow cytometry.

Results There are more CD16^{High}CD62L^{High} Neutrophils in the blood compared to lymph nodes and the tumour tissue. The neutrophils subset CD16^{High}CD62L^{dim} neutrophils are found mainly in the lymph node of the cancer patients and the subset CD16^{dim}CD62^{dim} is almost only present in the tumour site. In healthy lymph nodes is the dominant subset CD16^{High}CD62L^{High}.

Conclusions Our study suggests that neutrophil subsets have different functions and play role in HNSCC.

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Ethics Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the Swedish national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study. Ethics Committee Approvals: 2015/1650-31/2 and 2019-03518.

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