

headandneck 5000

The effect of statin drugs on the risk and progression of head and neck squamous cell carcinoma (HNSCC)

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Scientific Outline

Summary

Background:

Taking statin drugs to reduce blood cholesterol may also lower the risk of getting certain cancers, but the evidence surrounding head and neck cancer is inconclusive. Statins modify circulating blood factors such as cholesterol, hormones and metabolites resulting in the exposure of cells to an environment which may alter the chances of a cancer developing. We want to determine whether the use of statins to modify the metabolic environment also influences the likelihood of developing and dying from head and neck cancer.

Research approach:

- 1) Analyse Head and Neck 5000 data to determine if statin use is causally involved in protecting against development or recurrence of the disease. This will require the use of questionnaire data and germline DNA data to perform observational analyses and Mendelian randomization.
- 2) Identify potential targets for prevention or therapy in head and neck cancer. To determine if these pathways are relevant *in vivo*, we may request Formalin-Fixed Paraffin-Embedded (FFPE) tissue from Head and Neck 5000.

Expected impact:

This project will investigate the link between statin use and head and neck cancer, which could help inform targeted cancer screening, prevention and intervention.