

Engelsk resume

Non-melanoma skin cancer (NMSC) is the most common cancer. The rising incidence and morbidity of NMSC has become an increasing healthcare burden. NMSC incidence is often inadequately registered and risk factors besides ultraviolet radiation have not been fully investigated. The present PhD thesis investigated the incidence of and risk factors for NMSC in Denmark.

In **paper 1**, the incidence of NMSC in Denmark 1978-2007 was assessed. To obtain the most complete data on incident NMSC cases in Denmark, we established a NMSC database by combining data from the Danish Cancer Registry and the Danish Registry of Pathology. Our results showed a substantial incidence increase of both basal cell carcinoma (BCC) and squamous cell carcinoma (SCC) during the study period. Women had a higher average annual incidence increase of BCC and SCC compared to men. Also, the BCC incidence increased more in younger persons than in older persons, especially in women.

In **paper 2** and **paper 3**, we investigated associations between use of hormone replacement therapy (HRT), oral contraceptives (OC), alcohol intake, tobacco smoking, and NMSC risk. We used data from the Danish Cancer Society's "Diet, Cancer, and Health" prospective cohort study and the established NMSC database (from paper 1).

Results from **paper 2**, showed an increased BCC risk (IRR = 1.15; 95% CI: 1.07-1.37) for ever HRT use compared to never HRT use, whereas the risk was unaffected by duration of HRT use. Ever HRT use was not associated with SCC risk but a significantly increased risk of 1.35 (95% CI: 1.05-1.72) was associated with every 5-year of HRT use. No convincing associations between OC use and NMSC risk were found.

In **paper 3**, results showed an increased BCC risk in women of 1.05 (95% CI: 1.01-1.09) per 10 gram total alcohol intake/day. This increased risk was primarily related to wine intake (IRR = 1.06; 95% CI: 1.00-1.10), but not to spirits or beer intake. No dose-response association between total alcohol intake and BCC risk was observed in men, but BCC risk increased with wine (IRR = 1.04; 95% CI: 1.00-1.08) and spirits intake (IRR = 1.16; 95% CI: 1.05-1.29), but not with beer intake. Beverage-specific SCC risk estimates were statistically insignificant but pointed in the same direction as BCC risk estimates. For men, current tobacco smoking significantly decreased BCC risk (IRR = 0.72; 95% CI: 0.62-0.83). Also, both duration of smoking and number of pack-years significantly decreased BCC risk in men. Inverse associations between smoking and BCC risk were also found for women, but markedly weaker than for men. Tobacco smoking did not appear to affect SCC risk.

In **paper 4**, a systematic review of the literature in the period 1996-2010 was performed to assess the role of human papillomavirus (HPV) infection in the development of NMSC in immunocompetent individuals. The results showed that HPV was more common in SCC compared to BCC and controls, thus indicating a potential link between HPV and SCC.