SUMMARY

Denmark has one of the highest cancer incidences worldwide and breast cancer is by far, the most frequent cancer among women. The lifestyle of Danish women is believed to be an important contributing factor to these differences in outcomes compared to other countries. The lifestyle factors most convincingly associated with cancer risk in middle-aged women are smoking, alcohol consumption, menopausal hormone use, and physical inactivity. As for hormone use, the past decades have seen contradictory research results on the associated health benefits and risks. Several questions regarding the long-term influence of menopausal hormone use, and other factors believed to affect hormonal balance, on middle-aged female cancer risk and mortality remain unanswered.

The overall aim of this PhD thesis was to determine the long-term associations between menopausal hormone use and possible interaction with other lifestyle factors, and female cancer incidence and mortality. This was done by studying 29,518 female participants of the Danish Diet, Cancer, and Health cohort during 20 years of follow up. Information on lifestyle collected from participants at baseline between 1993 and 1997 was linked with information on cancer diagnoses and causes of death from Danish population registers. A more detailed inquiry into the associations between lifestyle and breast cancer prognosis was conducted on the approximately 2,000 women who developed breast cancer before 2012.

Menopausal hormone therapy was associated with a higher risk of female cancers of the breast, endometrium and ovaries and a lower risk of colorectal cancer. The combined effects between HT and other lifestyle factors were largely additive. Even though HT was associated with an overall higher risk of cancer, the higher risk was modest and importantly there was no difference in overall mortality. However, differential associations in both causes of death and time specific associations were evident with a lower cardiovascular mortality in the short term and a lower colorectal cancer and higher breast cancer mortality in the long term.

There was limited evidence of any substantial impact of alcohol intake on breast cancer prognosis. The lifestyle factors most convincingly associated with poorer prognosis in women diagnosed with breast cancer were physical inactivity and obesity.

In addition to the above-mentioned results, the research behind this thesis highlighted the methodological challenges associated with analyzing exposures that potentially affect both incidence and prognosis, and displayed the importance of considering latency and recurrence patterns of cancers when determining long-term outcomes.