SUMMARY

There has been major improvements in treatment of childhood cancer over the past 50 years. After 1970 lifesaving advances in treatment were introduced with combinations of multi-agent chemotherapy, surgery, and radiotherapy. This has caused the overall 5-year survival rate of childhood cancer to increase from less than 30% in the pre-chemotherapeutic era to more than 80% today. This remarkable development implies that we have a steadily growing cohort of former childhood cancer patients with a long life ahead of them, which raises concern about late effects of the life-saving treatments.

The main objectives of the three studies included in this thesis were to investigate the risk of late complications in Nordic survivors of two rare groups of childhood cancers - neuroblastoma and soft-tissue sarcomas. The studies are part of the Nordic collaborative research program Adult Life after Childhood Cancer in Scandinavia (ALiCCS), in which a large cohort of childhood cancer survivors has been established including all children diagnosed with cancer in the Nordic countries before age 20 years since the start of the cancer registries and accordingly randomly selected population-based comparisons representing the level of morbidity in the general population.

Due to the rarity of neuroblastoma and soft-tissue sarcomas, very little is known about the long-term morbidity following cancer and cancer treatment for these survivors. Achievement of clinically meaningful and statistically significant results in studies of rare childhood cancers requires large survivor cohorts. Through the ALiCCS study, we were able to gather the largest population-based cohorts of long-term survivors of neuroblastoma and soft-tissue sarcomas to date. This Nordic approach allowed us to provide completely new knowledge to the field of late effects in two understudied groups of childhood cancer survivors.