

## Søknadsinformasjon

---

<b>Utlysning</b>	Nordic Cancer Union Research Grant, 2014
<b>Søknad</b>	Pregnancy characteristics and maternal cancer: A joint Nordic study
<b>Søknadsid</b>	154715
<b>Innsendt av</b>	Tone Bjørge

## Oppgave: Progress report

---

<b>Tilordnet</b>	Tone Bjørge
<b>Status</b>	Arkivert
<b>Opprettet</b>	28.04.2017

## RAPPORT

### Briefly describe the project in a language understandable to non-scientists

There has been an increased focus on pregnancy as a potential disease preventive or promoting phase of life, and growing evidence suggests an association between reproductive factors, obstetric events and long-term morbidity and mortality of mothers. In this extensive cancer epidemiological project, we aim to explore relations between pregnancy conditions and birth characteristics and maternal cancer (breast, endometrial, ovarian and colorectal cancer) in a joint study that will pool linkages between birth and cancer registries in four Nordic countries. This data will include detailed information on the reproductive history of mothers and their subsequent cancer incidence. The data will be analysed within a nested case-control design, using appropriate multiple regression models that allow for adjustment for confounders. We believe our study will make a substantial contribution to the understanding of pregnancy as a cancer preventive or promoting phase of a woman's life.

### Summarize the major findings of the project

In 2016, the first paper from this project was published in Br J Cancer: Bjørge T, et al. Br J Cancer 2016; 115: 1416-20 (abstract below):

**Background:** Data are conflicting regarding the role of endogenous sex hormones in colorectal carcinogenesis. In this large population-based study, we pooled data from birth and cancer registries in four Nordic countries, to evaluate the risk of colorectal adenocarcinoma in relation to women's reproductive history.

**Methods:** We conducted a population-based case-control study among women registered in Nordic birth registries. The study included colorectal adenocarcinoma cases diagnosed in Denmark, Finland, Norway, and Sweden during 1967-2013 and up to 10 matched controls per case, in total 22,185 cases and 220,246 controls. Odds ratios (ORs) with 95% confidence intervals (95% CIs) were derived from conditional logistic regression models. We had limited information available on possible confounders.

**Results:** We found no evidence for associations between colorectal adenocarcinoma and parity, age at first and last birth, and time since first and last birth. The risk estimates were also close to unity for specific cancer subsites (proximal and distal colon and rectum). As well, when the analyses were stratified on menopausal status, parity and mother's year of birth, no indication of associations was found.

**Conclusions:** In this large, Nordic population-based study, no evidence for associations was found between women's reproductive history and colorectal adenocarcinoma in parous women.

Manuscripts are also being prepared in the other sub-projects (ovarian, endometrial and breast cancer), and they will hopefully be submitted during 2017.

An annual meeting with the participating investigators has been held since the network was established in 2009, and this will continue. In 2016 the annual meetings took place in Aarhus in September.

### Describe how the project has increased our knowledge of the prevention, cause and/or cure for cancer

In this study we aim to explore the role of pregnancy in preventing or promoting maternal cancer development. Knowledge of whether pregnancy conditions and birth characteristics are associated with maternal cancer risk is important for the understanding of the etiology of specific cancers, and could possibly allow for identification of women at elevated risk and consequent clinical intervention. The number of included cases will be much larger than in earlier studies, and it will be possible to explore associations with presumed risk factors in larger detail than previously done.

### Outline how Nordic cooperation has added value to this project

The Nordic countries, where nation-wide registries have been running for decades, have special preconditions for conducting large epidemiological population-based studies. Although cancer is a quite common disease, study sub-groups often become small when they are stratified by cancer type, sex, age and other characteristics. Combining exposure and outcome data from four Nordic countries gives us reasonable power to study relatively rare events in relation to specific cancers. In this study, we will take advantage of the opportunity to cross-link the birth registries with the cancer registries in Denmark, Finland, Norway and Sweden to explore relations between pregnancy conditions and birth characteristics and specific maternal cancers. The investigators in the project group, from the Nordic countries and the US, have an extensive knowledge of and experience within the fields of cancer and perinatal epidemiology, and an extensive knowledge of analysis of population-based registry data.

### List the publications resulting from the NCU research grant

Author(s), title, journal and edition	PMID (8 digits, only if possible)
Bjørge T, Gissler M, Ording AG, Engeland A, Glimelius I, Leinonen M, Sørensen HT, Tretli S, Ekbohm A, Troisi R, Grotmol T. Reproductive history and risk of colorectal adenocarcinoma in parous women: A Nordic population-based nested case-control study. Br J Cancer 2016; 115: 1416-20.	27701386

**Brief overview of expenditures for last year** 1 vedlegg (NCU financial report 2016\_Tone Bjørge.doc.docx)