

# **Metabolic factors and risk of prostate, kidney, and bladder cancer**

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## **Akademisk avhandling**

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Avhandlingen kommer att försvaras på engelska.

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**Abstract**

**Background:** Prostate cancer is the most common cancer in Sweden with around 10,000 new cases every year. Kidney and bladder cancer are less common with 1,000 and 2,000 new cases annually, respectively. The incidence of these cancer sites is higher in developed, than in developing countries, suggesting an association between lifestyle and cancer risk. The aims of this thesis were to investigate body mass index (BMI), blood pressure, and blood levels of glucose, total cholesterol, and triglycerides as risk factors for prostate, kidney, and bladder cancer. Furthermore, we aimed at assess probabilities of prostate cancer and competing events, all-cause death, for men with normal and high levels of metabolic factors.

**Material and methods:** This thesis was conducted within the Metabolic Syndrome and Cancer project (Me-Can), a pooled cohort study with data from 578,700 participants from Norway, Sweden, and Austria. Data from metabolic factors were prospectively collected at health examinations and linked to the Cancer and Cause of Death registers in each country.

**Results:** High levels of metabolic factors were not associated with increased risk of prostate cancer, but high levels of BMI and blood pressure were associated with risk of prostate cancer death. The probability of prostate cancer was higher for men with normal levels of metabolic factors compared to men with high levels, but the probability of all-cause death, was higher for men with high levels than for those with normal levels. For both men and women, high levels of metabolic factors were associated with increased risk of kidney cancer (renal cell carcinoma). Furthermore, blood pressure for men and BMI for women were found as independent risk factors of kidney cancer. High blood pressure was associated with an increased risk of bladder cancer for men.

**Conclusions:** High levels of metabolic factors were associated to risk of kidney and bladder cancer and to death from kidney, bladder, and prostate cancer. Compared to men with normal levels, men with high levels of metabolic factors had a decreased probability of prostate cancer but an increased probability of all-cause death.

**Keywords**

Epidemiology, prostate cancer, kidney cancer, bladder cancer, metabolic factors, cohort study, BMI, blood pressure, Cox regression, survival analysis, competing risk, Me-Can

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