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**Title of project:** The Impact of Diabetes on Colorectal Cancer

## **ABSTRACT**

### **Background and aim:**

Colorectal cancer (CRC) is one of the few cancer types in which patients with diabetes (both type 1 and 2) have a substantially higher incidence and higher mortality compared to other individuals.

However, the mechanism(s) behind the association between pre-existing diabetes and CRC are unclear. This gap of knowledge makes it difficult to initiate tailored prevention strategies to reduce the negative impact of diabetes on CRC development and prognosis.

In the following, we propose a project to identify determinants of the development of colorectal cancer as well as the excess mortality among patients with diabetes. Secondly, these studies will pave the ground for developing an intervention study, aimed to improve colorectal screening among patients with diabetes.

**Methods:** We will use two nationwide CRC databases: the Danish Colorectal Cancer Group's Database and the Danish Colorectal Cancer Screening database. First, we will make a characterization of all diabetes individuals in the cancer databases. Second, we will link the CRC-databases with other nationwide administrative and/or medical registers. This will enable the collection of extensive continuous data including general practice contacts, socioeconomic status, diagnoses and procedures from hospital contacts, medication use, and mortality. Using the resulting interlinked data, we aim to identify risk factors for CRC in people with diabetes. Finally, we will utilize these epidemiological findings to develop an intervention-trial. To design the intervention process the Behavior Change Wheel model will be used, a method that guides the design of intervention by connecting theory on changed behaviors to strategies for implementation.

**Perspectives:** The results from the epidemiological studies will help us to understand why patients with diabetes have higher risk of CRC, and why CRC prognosis is worse in those with diabetes than in individuals without diabetes.

These insights are crucial in the process of developing an intervention aimed to improve colorectal cancer screening among patients with diabetes, and it may help the clinicians in treatment of colorectal cancer patients with diabetes.