Application number/Title: 10088 - Serum lipid and glucose measurements and risk of prostate cancer

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Keywords provided by the Applicant PI to describe the research project:

prostate_cancer, cholesterol, diabetes, lipid_metabolism, cholesterol_metabolism

Application Lay Summary:

1a: We aim to study blood biomarkers of glucose and fat metabolism in relation to prostate cancer development using data from the UK Biobank. More specifically, we want to know how
1) blood glucose and fat profiles predict risk of prostate cancer
2) blood glucose and fat profiles predict severity of prostate cancer at time of diagnosis
3) blood glucose and fat profiles correlate with measurements of sex steroid hormones

1b: Understanding the factors that contribute to poor outcome in men with metabolic risks is needed to develop clinical, therapeutic and lifestyle interventions that improve quality of life and prolong active independence of men with prostate cancer.

1c: We will study the association between glucose and fat components measured in blood prior to cancer diagnosis and risk of prostate cancer as well as prostate cancer severity. We will use statistical methods that take into account the different characteristics of the participants such as age, ethnicity and socio-economic status.
In addition, we will study how these blood markers of glucose and fat metabolism are associated with sex steroid hormones in the general male population. This will help us get a better understanding of how the glucose and fat metabolism may affect risk and progression of prostate cancer.

1d: For the first component of the project (question 1 and 2), we would like to use all men aged >=20 with baseline measurements of serum glucose, Hb1Ac, total cholesterol and triglycerides as well as HDL/LDL cholesterol and apolipoproteins A-I/B (and urine levels for those available). Eligible participants will be those who are free from cancer at baseline measurement and who have not been diagnosed with cancer or died within three months of study entry.

For the second component (question 3) we would also like to include information on circulating sex steroid hormones concentrations (e.g. testosterone).