The Challenge
Type 2 diabetes has become an increasingly common disease which can result in serious health complications. Patients with type 2 diabetes are known to be at higher risk of diseases of the heart or blood vessels – known collectively as cardiovascular diseases. Previous studies have focused on two common cardiovascular diseases: heart attack and stroke, but other cardiovascular diseases are also important. Doctors and policy makers need to understand how all cardiovascular diseases are related with diabetes so that different treatments can be made available to the right patients.

The Research
A research team from the Farr Institute and the University of Leeds carried out a very large study of nearly 2 million anonymous patient health records to examine how strongly type 2 diabetes was associated with 12 common cardiovascular diseases. Special techniques were used to simulate – or ‘make up’ data that were missing from the records based on developing complex models of what would be expected, as not all patients had full details recorded in their notes.

The Results
The study provided strong evidence that type 2 diabetes is associated differently with the 12 diseases that researchers studied. For example, patients with type 2 diabetes were nearly 3 times more likely to develop peripheral arterial disease (a disease in which fatty deposits build up in the arteries that carry blood to your head, organs and limbs) compared to non-diabetics. Patients with type 2 diabetes were also 1.6 times more likely to develop heart failure (a condition in which the heart does not pump well enough, resulting in fluid build-up in the body).

However, patients with type 2 diabetes were protected against some diseases – patients were 54% less likely to go on to have an abdominal aortic aneurysm (a swelling in the main blood vessel that leads away from the heart) and 52% less likely to have a stroke caused by bleeding on the surface of the brain.

The Impact
Using these ‘real world’ patient data is powerful because it allows researchers to detect real differences between patients compared to other types of studies which tend to be based on fewer patients and are not as up to date. Crucially, the research can help inform clinical trials in type 2 diabetes looking to develop new drugs by showing the importance of looking at other cardiovascular diseases as well as heart attack and stroke.

For more information about type 2 diabetes visit:
www.nhs.uk/Conditions/Diabetes-type2/

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