

Diabetic eye disease associated with five-fold risk of severe COVID-19

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DIABETES



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People with diabetes and eye disease have a five-fold increased risk of requiring intubation when hospitalised with COVID-19.

The study, published today in *Diabetes Research and Clinical Practice* by King's College London, identified for the first time the risk associated

with diabetic [retinopathy](#) and COVID-19.

Diabetic [eye disease](#) is a common complication of [diabetes](#) and is caused by damage to the small [blood vessels](#) in the eye. In 2014, the prevalence of diabetic retinopathy was 54.6% in people with Type 1 diabetes and 30.0% in people with Type 2 diabetes.

The study investigated 187 people with diabetes (179 with type 2 diabetes and 8 with type 1 diabetes) hospitalised with COVID-19 at Guy's and St Thomas' NHS Foundation Trust between 12th of March and 7th of April 2020.

Diabetic retinopathy was reported in 67 (36%) of patients, the majority with background retinopathy. Of the 187 patients hospitalised with severe COVID-19, 26% were intubated and 45% of these patients had retinopathy. Retinopathy was associated with a five-fold increased risk for intubation. In the cohort, 32% of patients died and no association was observed between retinopathy and mortality.

First author of the study, Dr. Antonella Corcillo from the School of Cardiovascular Medicine and Sciences at King's College London said: "This is the first time that retinopathy has been linked to severe COVID-19 in people with diabetes. Retinopathy is a marker of damage to the blood vessels and our results suggest that such pre-existing damage to blood vessels may result in a more severe COVID-19 infection requiring intensive care treatment.

Senior author, Dr. Janaka Karalliedde from King's College London, said: "There is increasing evidence that there is significant damage to the blood vessels in the lung and other organs in patients hospitalised with severe COVID-19. People with diabetes are at high risk of vascular complications affecting the large and [small blood vessels](#).

"We hypothesise that the presence of diabetes related vascular disease such as retinopathy may result in greater vulnerability and susceptibility to respiratory failure in severe COVID-19. Therefore looking for presence or history of retinopathy or other vascular complications of diabetes may help [health care professionals](#) identify patients at high risk of severe COVID-19. Further studies are required to investigate the possible mechanisms that explain the links between markers and manifestations of diabetic vascular disease such as retinopathy and severe COVID-19."

RNIB Specialist Lead for Eye Health, Dr. Louise Gow said: "RNIB hope this research will result in greater awareness of those who are most at risk of serious complications from COVID-19. With vaccine planning underway, consideration must be given to prioritising people with [diabetic retinopathy](#). It also highlights that it is vital that information about COVID-19 is available in formats that are accessible to people with sight loss so that they know how to protect themselves."

Limitations of this study include its relatively [small sample size](#) and that, as it is a cross-sectional study, it is unable to identify a causal relationship between retinopathy and severe COVID-19 outcomes.

Provided by King's College London

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