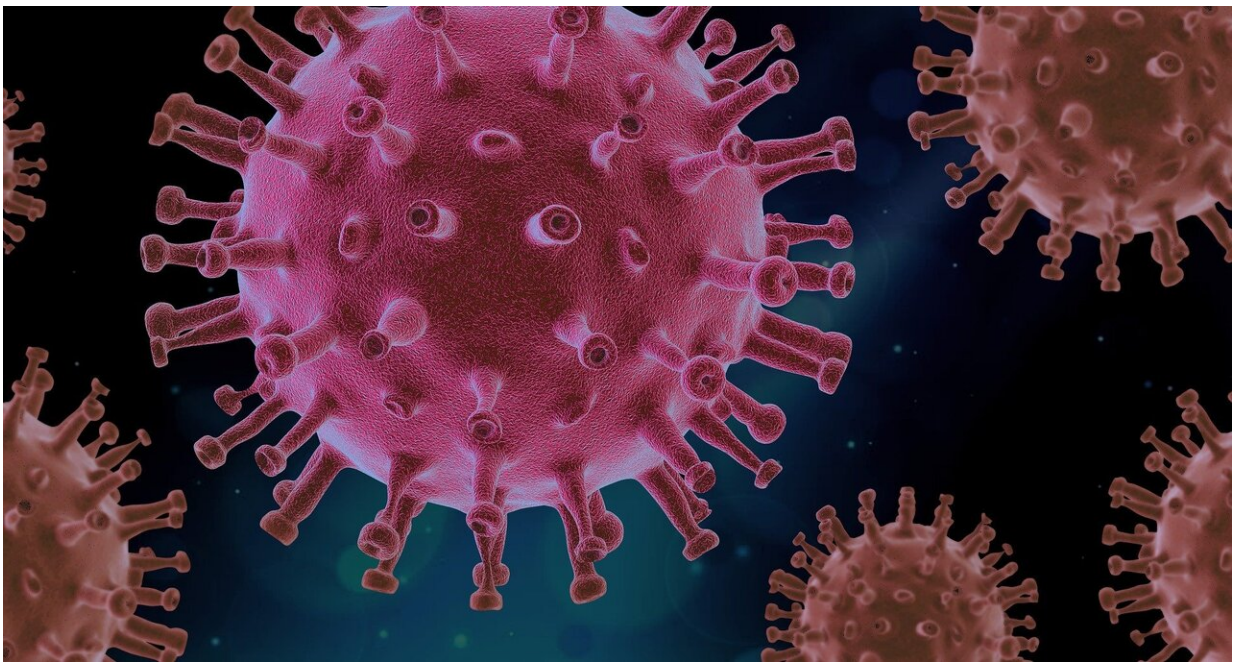


# First study of COVID-19 patients with diabetes shows that 10% die within seven days of hospital admission

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The first study of COVID-19 to specifically analyse the effect of the disease in hospitalised patients with diabetes has found that one in ten patients dies within 7 days of hospital admission, and one in five is intubated and mechanically ventilated by this point. The research is published in *Diabetologia* (the journal of the European Association for

the Study of Diabetes [EASD]), by Professor Bertrand Cariou and Professor Samy Hadjadj, diabetologists at l'institut du thorax, University Hospital Nantes, INSERM, CNRS, and University of Nantes, France, and colleagues.

The study shows that two thirds (65%) of COVID-19 patients with diabetes admitted to hospital are men, and the average age of all patients is 70 years. Worse blood sugar control did not seem to impact a patient's outcome, however the presence of diabetic complications and increasing age increase the risk of [death](#), and increased BMI is associated with both increased risk of needing mechanical ventilation and with increased risk of death.

The CORONADO study analysed 1,317 patients admitted to 53 French hospitals (public and private) between 10 and 31 March 2020. The majority of hospitalised subjects had type 2 diabetes (89%) while only 3% had type 1 diabetes, with other types of diabetes in the remaining cases. In 3% of cases, diabetes was actually diagnosed during hospitalisation for COVID-19.

Microvascular complications (eye, kidney and nerves) were found in 47% of the subjects in the study, while macrovascular complications (arteries of the heart, brain, legs) were present in 41% of the patients analysed. Across all patients in this study, by day 7 one in five (20.3%) had been intubated and placed on a ventilator in intensive care, and one in 10 (10.3%) had died. A further 18% had been discharged home at this point.

The presence of microvascular or macrovascular complications each more than doubled the risk of death at day 7. Advanced age also substantially increased the risk of death, with the group of patients aged 75 years and more than 14 times more likely to die than younger patients aged under 55 years, while patients 65-74 years old were three times

more likely to die than those under 55 years. The presence of the respiratory condition obstructive sleep apnoea almost tripled the risk of death at 7 days, as did the presence of dyspnoea symptoms (shortness of breath).

The study also confirmed that insulin, and indeed all treatments for modifying blood sugar, are not a risk factor for severe forms of COVID-19 and should be continued in patients with diabetes. Encouragingly, there were no deaths in patients under 65 years old with type 1 diabetes, but the authors highlight there were only 39 patients with type 1 diabetes in this study and other work is ongoing to establish the effect of COVID-19 in this specific population.

Increasing BMI raised the risk of reaching the combined primary outcome of the study (intubation/ventilation or death at day 7). Women were 25% less likely to reach the combined primary endpoint than men (a result that had borderline statistical significance). However, when looking at death only, men were not statistically more likely to die at day 7 than women.

The authors say: "The [risk factors](#) for severe form of COVID-19 are identical to those found in the [general population](#): age and BMI."

They add: "Elderly populations with long-term diabetes with advanced diabetic complications and/or treated obstructive sleep apnoea were particularly at risk of early death, and might require specific management to avoid infection with the novel coronavirus. BMI also appears as an independent prognostic factor for COVID-19 severity in the population living with diabetes requiring hospital admission. The link between obesity and COVID-19 requires further study."

The authors plan to publish further work in the summer detailing outcomes of some 3000 patients with diabetes hospitalised with

COVID-19, looking at their status 28 days after admission to hospital. The next study will also make more detailed comparisons of COVID-19 outcomes in patients with and without [diabetes](#).

Provided by Diabetologia

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