

Health disparities in type 1 diabetes and COVID-19 infection

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Non-Hispanic black patients with Type 1 diabetes and COVID-19 were almost four times as likely to present to the hospital with diabetic ketoacidosis (DKA) compared to non-Hispanic whites, according to an article published in *The Journal of Clinical Endocrinology & Metabolism* by Le Bonheur Pediatric Endocrinologist Kathryn Sumpter, MD.

The study examined 180 patients with Type 1 [diabetes](#) and laboratory-confirmed COVID-19 from 52 clinical sites, including Le Bonheur Children's. The objective of the study was to evaluate instances of DKA, a serious complication of Type 1 diabetes, in patients with Type 1 diabetes and COVID-19 and determine if minorities had increased risk when controlled for sex, age, insurance and last hemoglobin A1c (HbA1c) level.

"We know that Type 2 diabetes is a risk factor for worse COVID-19 outcomes, but less is known about Type 1 diabetes and COVID," said Sumpter. "This study allowed us to examine the intersection of Type 1 diabetes and COVID while also determining the racial inequities in DKA for these patients."

Previous studies have shown that COVID-19 disproportionately affects racial and ethnic [minority groups](#) with higher rates of infection and death. The same [minority](#) groups with Type 1 diabetes have also been shown to have increased risk of DKA and associated mortality. Because of these existing [risk factors](#), it is critical to understand how COVID-19 and Type 1 diabetes interact and affect outcomes. The results of this

study show that non-Hispanic black patients with COVID-19 and Type 1 diabetes have an additional risk of DKA beyond the risk of having diabetes or being of [minority status](#).

The results of the study show that non-Hispanic blacks were more likely to present with DKA and COVID-19 (55%) compared with non-Hispanic whites (13%). Hispanics had almost two times greater odds of presenting with DKA compared to non-Hispanic whites, which researchers found to not be statistically significant.

"A combination of factors lead to higher rates of DKA among minority Type 1 diabetes patients with COVID-19 that relate to social and structural risks," said Sumpter. "Social determinants of health, including income level, education, [racial discrimination](#) and inadequate health care access, impact these populations with devastating complications for Type 1 diabetes and COVID-19."

According to the study, intervention in these areas is essential to prevent these poor outcomes that unequally affect minority populations.

More information: Osagie Ebekozen et al, Inequities in Diabetic Ketoacidosis Among Patients With Type 1 Diabetes and COVID-19: Data From 52 US Clinical Centers, *The Journal of Clinical Endocrinology & Metabolism* (2021). [DOI: 10.1210/clinem/dgaa920](https://doi.org/10.1210/clinem/dgaa920)

Provided by Le Bonheur Children's Hospital

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