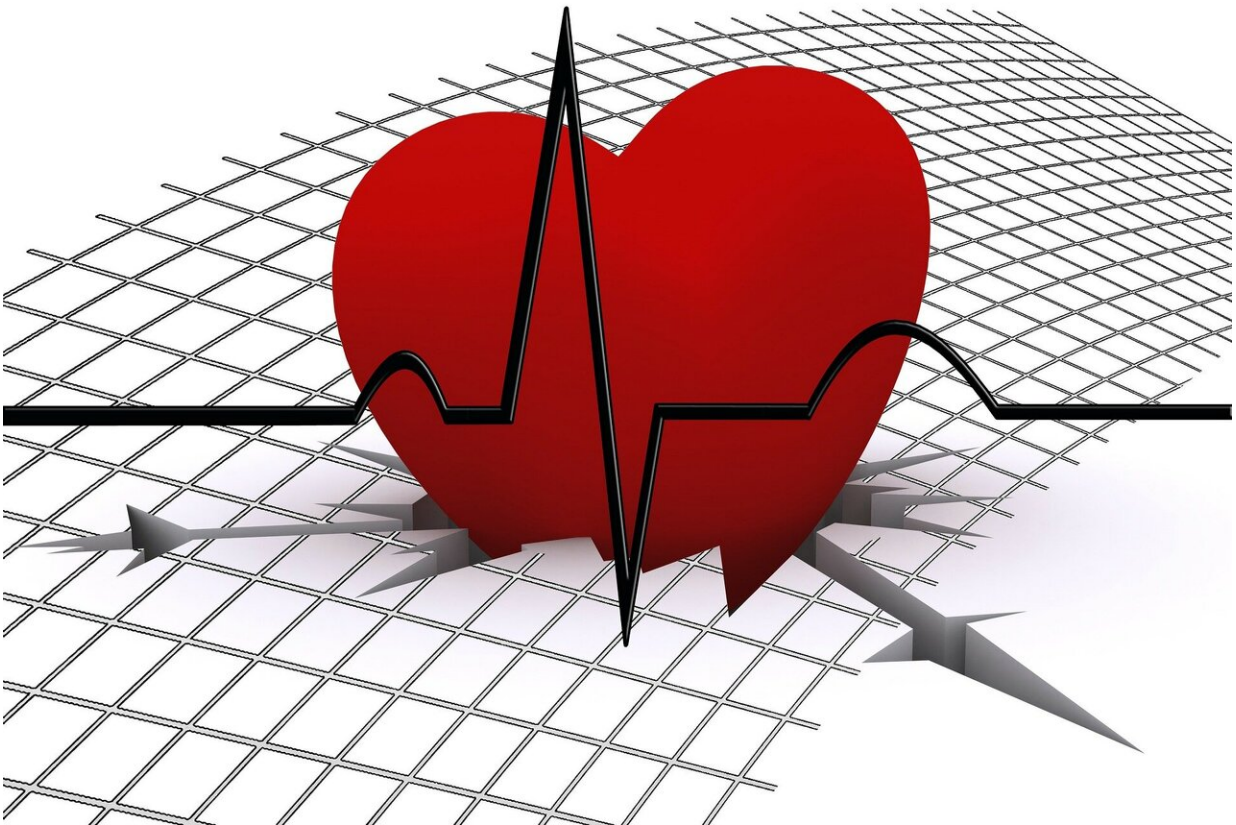


Fewer known risk factors, but heightened risk of cardiovascular disease in people with celiac disease

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People with celiac disease might have fewer known risk factors for cardiovascular disease, but still have a heightened risk of developing it, finds a study led by researchers from Oxford Population Health, published online in the journal *BMJ Medicine*.

It's not clear what the reasons for this might be, and further research is needed to unearth the drivers behind these associations. This includes the role of a [gluten-free diet](#), which those affected are required to follow to ease symptoms, say the study authors.

Around 1% of the UK population has [celiac disease](#)—an [autoimmune condition](#) caused by an exaggerated reaction to gluten, a dietary protein found in wheat, barley, and rye.

The condition is more common in women and is typically diagnosed in childhood and adolescence or between the ages of 40 and 60, say the researchers.

The published evidence on whether celiac disease is associated with a heightened risk of cardiovascular disease is mixed, and previous studies have tended to not investigate the potential role of traditional cardiovascular [risk factors](#), such as [blood pressure](#) or cholesterol.

To find out whether traditional cardiovascular risk factors might contribute to the link between celiac disease and a heightened risk of cardiovascular disease ([ischemic heart disease](#), [heart attack](#), and stroke), the researchers drew on medical data supplied by UK Biobank participants.

The UK Biobank is a population based study that recruited around half a million 40-69 year olds from England, Scotland, and Wales between 2006 and 2010.

Of these, 2,083 had celiac disease but no cardiovascular disease when they were recruited. Their cardiovascular health was monitored, using linked hospital records and death certificates, for an average of just over 12 years.

Those with celiac disease were more likely to be women—56% vs. 71.5%—and of white ethnicity—95% vs. 99%—than those who didn't have the condition.

During the monitoring period, 40,687 diagnoses of cardiovascular disease were recorded among all the surviving UK Biobank participants.

Some 218 of these incidents were in people with celiac disease—equivalent to an annual rate of 9 in every 1,000 people—compared with an annual rate of 7.4/1,000 in those without the condition.

This translates into a 27% heightened risk of cardiovascular disease for people with celiac disease compared with those who didn't have it, after accounting for a wide range of potentially influential lifestyle, medical, and cardiovascular disease factors.

Risk seemed to increase the longer a person had been living with their condition—to a 30% increased risk among those who had had celiac disease for less than 10 years, rising to an increased risk of 34% among those who had had it for 10 or more years.

Yet people with celiac disease had fewer of the known risk factors for cardiovascular disease (including overweight or obesity; high systolic blood pressure; a history of smoking; and high cholesterol), being more likely to have a lower BMI and a lower systolic blood pressure.

They were also more likely to have a so-called ideal cardiovascular risk

score (23% vs. 14%), and less likely to have a poor risk score (5% vs. 9%) than people with celiac disease.

When the researchers explored the potential joint effects of celiac disease and cardiovascular risk score on incident cardiovascular disease, the risk increased by more than 60% in people with celiac disease plus an ideal cardiovascular disease risk score compared with those with an ideal risk score but no celiac disease.

This is an observational study, and as such can't establish cause and effect. The researchers acknowledge various limitations to their findings, including that cardiovascular disease risk factors were measured at one point in time only.

But a number of autoimmune conditions are associated with a heightened risk of cardiovascular disease as a result of systemic inflammation, they point out.

The researchers didn't look into dietary factors, but some previously published research suggests that a gluten-free diet might reduce inflammation and therefore cardiovascular disease risk, while other studies indicate that this diet might actually boost the risk.

"This study highlights the importance of cardiovascular disease as a potential complication of celiac disease. Further research into the drivers and mechanistic pathways of this association is warranted. In addition, an investigation is warranted into the extent to which any risk reduction is reported by adherence to a gluten-free diet in people with celiac disease, or whether a gluten-free diet itself contributes to the increased risk identified," they write

"Given the increased rates of cardiovascular disease reported in people with celiac disease who have an ideal and moderate [cardiovascular](#)

[disease](#) risk score, clinicians should make patients with celiac disease aware of their elevated risk, and work with their patients to optimize their cardiovascular health," the researchers conclude.

More information: Association between coeliac disease and cardiovascular disease: prospective analysis of UK Biobank data, *BMJ Medicine* (2023). [DOI: 10.1136/bmjmed-2022-000371](https://doi.org/10.1136/bmjmed-2022-000371)

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