

DNA abnormalities may contribute to cancer risk in people with type 2 diabetes

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A type of genetic abnormality linked to cancer is more common in people with type 2 diabetes than the rest of the population, a new study has found.

People with [type 2 diabetes](#) are already known to have a higher risk of cancers, especially [blood cancers](#) like lymphoma and leukaemia. The new study, led by scientists at Imperial College London and CNRS in France, suggests that mutations called clonal mosaic events (CMEs) may partly explain why this is.

CMEs are defects that result in some cells having extra copies or missing copies of large chunks of DNA. They are very rare in young people but more common as we get older. Among those aged over 70, around one in 50 people have some of these mutations. Research published last year found that people with CMEs have a 10-fold higher risk of blood cancers.

In the new study, published in *Nature Genetics*, researchers looked for CMEs in blood samples from 7,437 participants in genetic studies in Europe, including 2,208 people with type 2 diabetes. They found that CMEs were four times more common in people with type 2 diabetes.

"Type 2 diabetes is a disease that accelerates ageing, so we wondered if it would make people more likely to have these genetic defects that are associated with ageing," said Professor Philippe Froguel, from the School of Public Health at Imperial College London, who led the study.

"This finding may partly explain why people with type 2 diabetes are more likely to get blood cancers. It could have profound clinical implications. It may be useful for doctors to test for CMEs in patients with type 2 diabetes to identify those who have the highest risk of cancers. These patients would be followed up closely to watch for early signs of leukaemia and could start having mild chemotherapy."

They also found that [diabetes patients](#) with CMEs had a much higher rate of complications such as [kidney failure](#), eye disease or heart disease.

More information: A Bonnefond et al. 'Association between large detectable clonal mosaicism and type 2 diabetes with vascular complications' *Nature Genetics*, 14 July 2013. [DOI: 10.1038/ng.2700](https://doi.org/10.1038/ng.2700)

Provided by Imperial College London

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