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Leukaemia changes 'almost inevitable', researchers say

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It is "almost inevitable" that people's blood will take the first steps towards leukaemia, UK researchers show.

The cancer is often associated with children, but some types become more common with age.

The study, published in the journal Cell Reports, showed 70% of healthy people in their 90s had genetic errors that could lead to leukaemia.

The researchers warn that the number of cases could soar as life expectancy increases.

The team at the Wellcome Trust Sanger Institute, outside Cambridge, analysed the blood of 4,219 people.

They focused on accurately testing for errors in the DNA that are linked to the blood cancers. If one blood cell in a hundred carried such a mutation they would pick it up.

The results were a surprise.

They suggest 20% of people in their 50s have potentially cancerous mutations rising to 70% in

people in their 90s.

One of the researchers, Dr George Vassiliou, told the BBC News website: "We had suspected people had these mutations, but didn't expect they would be an almost inevitable consequence of ageing.

"What it is saying is that a lot more people than expected are starting on the path to leukaemia, but thankfully only a few make it to the end."

Dramatic impact
While progression to leukaemia is currently rare, the scientists believe it could become more common as life expectancy increases.

Dr Vassiliou added: "There is one warning for the future, if there was a significant extension of life expectancy then there could be a significant increase in leukaemia.

"We don't know what percentage of people would go on to develop leukaemia, it might be one in 1,000 or even one in 100 or more and that would have a dramatic impact."

One in three girls and one in four boys born today are expected to live to 100.

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Stem cells in the bone marrow manufacture blood.

It takes multiple mutations to transform one from a normal cell into a cancerous one.

With enough mutations it can dominate the production of blood either producing defective blood cells, or one just one type to the exclusion of others.

The researchers believe that searching the blood for such mutations may identify people at high risk of developing leukaemia who may, in the future, be targeted with preventative therapies.

Dr Kat Arney, from Cancer Research UK, said: "We know that the risk of developing most types of cancer increases with age.

"This is a fascinating and important study highlighting how the genetic makeup of blood cells changes as we get older, and may contribute to the development of leukaemia.

"It will be interesting to see if this kind of technique can be applied to other types of cancer too."