
Cambridge study finds gene mutations tied to leukaemia rise with age

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The researchers from CUH and the Wellcome Trust Sanger Institute and elsewhere looked specifically at mutations in blood stem cells.

Study senior author George Vassiliou of CUH and the Sanger Institute said: "These mutations will be harmless for the majority of people, but for a few unlucky carriers they will take the body on a journey towards leukaemia. We are now beginning to understand the major landmarks on that journey."

Co-lead author Thomas McKerrell from the Wellcome Trust Sanger Institute said: "Over time, the probability of these cells acquiring mutations rises. What surprised us was that we found these mutations in such a large proportion of elderly people."

In the study, researchers looked at more than 4,200 people without any evidence of blood cancer. They found that up to 20 percent of people aged 50 to 60, and more than 70 percent of people older than 90, have blood cells with the same gene changes seen in leukaemia.

Just carrying a particular mutation doesn't mean that a leukaemia is guaranteed, however.

Thomas McKerrell added: "Leukaemia results from the gradual accumulation of DNA mutations in blood stem cells, in a process that can take decades. This study helps us understand how aging can lead to leukaemia, even though the great majority of people will not live long enough to accumulate all the mutations required to develop the disease."

The study was published Feb. 26 in the journal Cell Reports.