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Developing a vaccine for the Epstein-Barr Virus could prevent up to 200,000 cancers globally say experts

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A vaccine to prevent infection with a common herpes virus, the Epstein-Barr Virus (EBV), could help prevent up to 200,000 new cancers worldwide per year, say Cancer Research UK experts to mark the 50th anniversary of EBV's discovery, today (Monday).

"We now know so much about how the virus contributes to the development of these particular types of cancer. Next the big challenge is to develop a vaccine that will prevent infection by the virus. We believe that a successful EBV vaccine could prevent up to 200,000 new cases of cancers per year." - Professor Alan Rickinson

Around 95 per cent of the global adult population are infected with EBV. Many people are infected in childhood and then carry the virus for life without it causing any harm. Others who become infected as teenagers may develop glandular fever, but most then recover without any long-term effects.

Yet the same virus has the potential to cause cancer and is linked to the development of several forms of the disease worldwide. Estimates show that EBV causes between 110,000 and 200,000

cancers each year worldwide*.

Cancer Research UK funded research that led to the initial discovery of the virus and its link to cancer and has continued to fund research into treatment and prevention ever since.

Many of the cancers linked to EBV occur at different rates in different populations. The most common EBV associated cancer in the UK is Hodgkin Lymphoma as well as a lymphoma common in transplant patients. In addition Burkitt Lymphoma – a type of tumour associated with EBV – also occurs in the UK, but is most often seen in children in Africa**.

Other cancers associated with EBV include a nasal tumour called nasopharyngeal carcinoma, which is mainly found in South-East Asia. And around one in 10 of gastric (stomach) cancers have high EBV levels suggesting a link between this type of cancer and the virus.

Professor Alan Rickinson, a Cancer Research UK scientist based at The University of Birmingham(link is external), said: “We now know so much about how the virus contributes to the development of these particular types of cancer. Next the big challenge is to develop a vaccine that will prevent infection by the virus. We believe that a successful EBV vaccine could prevent up to 200,000 new cases of cancers per year.”

EBV was discovered exactly 50 years ago, in 1964, by Sir Anthony Epstein and his research assistant, Dr Yvonne Barr, working in the Middlesex Hospital in London. Since then, EBV’s status as the first human tumour virus has been firmly established.

This week an international conference is being held in Oxford(link is external) to mark the 50th anniversary of the discovery.

Dr Graham Taylor, a Cancer Research UK scientist also based at The University of Birmingham, said: “We know that it’s possible to make a vaccine to prevent certain types of virus-associated cancer developing. Vaccination against human papillomavirus, the virus linked to cervical cancer in women, is a shining example. EBV is a different type of virus and is transmitted in a different way. But the basic principle remains the same. For EBV, we now need to develop the science that can turn that principle into a reality.”

Nell Barrie, senior science information manager at Cancer Research UK, said: “The past 50 years of research has been an exciting journey, from the discovery of the virus to gathering the proof that EBV plays a key role in several cancers and an understanding of how the virus does this. Thanks to all this research, we’re moving closer towards the goal of being able to prevent EBV infection with a vaccination, potentially stopping many children and adults around the world from developing cancer.”

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