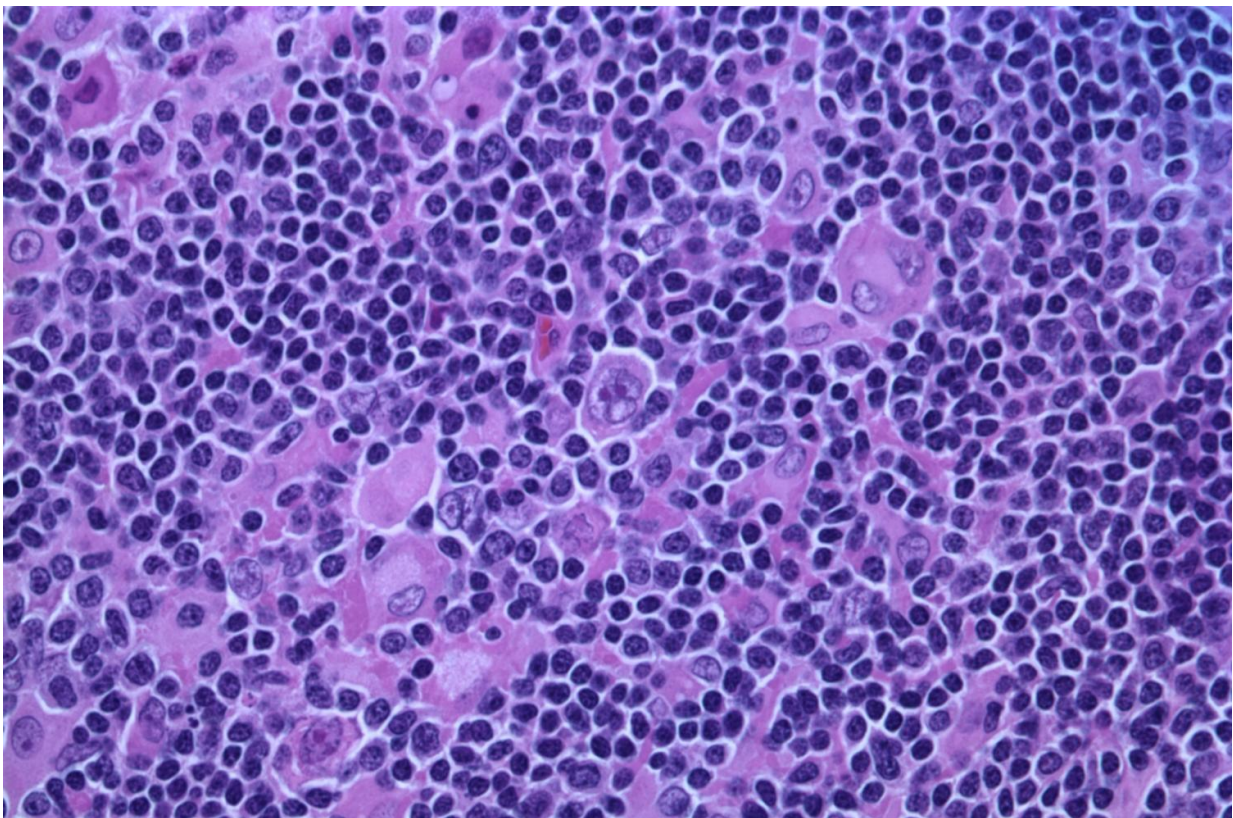


Vaccination against Epstein-Barr virus might reduce the risk of developing Hodgkin's lymphoma, study suggests

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Hodgkin lymphoma, nodular lymphocyte predominant (high-power view) Credit: Gabriel Caponetti, MD./Wikipedia/CC BY-SA 3.0

Cells of certain blood cancers such as Hodgkin's lymphoma carry the

protein CD30 on their surface. The molecule is not only an indicator of a few cancers of the immune system but also increases the risk of their occurrence, according to a report in the journal *Blood* by researchers of the Helmholtz Zentrum München. A greatly increased number of CD30-bearing cells are produced after certain viral infections, e.g. Epstein-Barr virus (EBV) infection, and in autoimmune diseases.

The study, which was supported by the German Cancer Aid, suggests that vaccination against EBV might reduce the risk of developing Hodgkin's [lymphoma](#). In addition, the study provides insights into new target structures for cancer drugs.

Doctors are already familiar with the protein CD30 as a diagnostic marker for certain blood cancer cells, i.e. some B-cell lymphomas such as Hodgkin's lymphoma. "However, it was not at all clear whether the production of CD30 on the surface of lymphoma cells is merely a result of the cancer or whether it causally contributes to it," says Ursula Zimmer-Strobl, associate professor and Deputy Head of the Research Unit Gene Vectors (AGV) at Helmholtz Zentrum München. Together with her team, she has therefore developed a [mouse model](#) to investigate whether persistent CD30 signaling leads to the development of blood cancers.

CD30 activation as a risk factor for lymphomas

"In the experiment, we found that the likelihood of B-cell lymphoma development is greatly increased when B lymphocytes carry permanently activated CD30 molecules on their surface," reports Stefanie Sperling. The lead author is a doctoral student in the AGV and a member of the HELENA Graduate School. Such permanent CD30 activation can be triggered in humans as a result of stress on the [immune system](#) over extended periods, for example at the onset of glandular fever (infectious mononucleosis) following infection due to the Epstein-Barr Virus. B

lymphocytes carrying CD30 on their surface then increase greatly in number. In most cases, the CD30-positive cells are rapidly eliminated, but in rare cases they can lead to [cancer](#) as a result of misdirected cellular processes. Thus the risk of developing Hodgkin's lymphoma directly after glandular fever is increased.

According to Zimmer-Strobl, the study opens up new perspectives for [human medicine](#): "Once we've studied them, CD30-triggered signaling pathways could serve as targets for new lymphoma therapies." In addition, the development of a vaccine to prevent lymphomas associated with the Epstein-Barr virus is conceivable, an aspect that researchers in the AGV are currently examining in detail.

More information: Stefanie Alexandra Sperling et al, Chronic CD30-signaling in B cells results in lymphomagenesis by driving the expansion of plasmablasts and B1 cells, *Blood* (2019). [DOI: 10.1182/blood.2018880138](#)

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