What Anti-Vaccine Policies Could Mean for Autoimmune Diseases

A new study identifies a link between Epstein-Barr virus and lupus. Will politics block the search for a vaccine?

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Autoimmune diseases disproportionately affect women. This is especially true for lupus (formally known as systemic lupus erythematosus), as about nine in 10 people with the condition are female. Lupus can cause inflammation and pain and commonly affects the skin, joints, and organs including the heart and kidneys.

Scientists have long observed an association between infection with the Epstein-Barr virus, or EBV, and several autoimmune diseases, including lupus. Now, the authors of a study published last month in Science Translational Medicine have dissected that link, shedding light on mechanisms that have remained obscure for too long.

It's a finding that can lead to a solution. If we can prevent infection with EBV we can potentially prevent lupus. But, as a scientist who studies chronic diseases and an educator who teaches about it, I worry that anti-vaccine policies will hinder the search for a cure.

Most people know EBV as the cause of mononucleosis, or mono, the kissing disease of adolescence. But EBV is a jack-of-all-trades.

Michael Anthony Epstein, Yvonne Barr, and Bert Achong discovered the virus in 1964 as the cause of an aggressive type of cancer seen mostly in African children. Scientists later found that EBV infects almost everybody in the world, though in most cases it does not generate any symptoms, and so the infection goes unnoticed.

The newly published study is highly technical, an intense read even for an immunologist. But the main message is that when EBV infects a specific type of immune cell called a lymphocyte, it triggers the autoimmune response that is at the core of lupus.

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Identifying a mechanism directly linking a viral infection to an autoimmune disease is a remarkable finding, though it will need to be confirmed, as is the case for all scientific findings until scientists reach consensus.

This finding is particularly important for a disease like lupus that mostly affects women and disproportionately burdens women of color.

Women's ailments, including lupus, have for so long been attributed to nebulous, pseudo-scientific causes that there is an entire genre of nonfiction books dedicated to the harm this has caused to women's health.

Finding that a specific virus infects a specific type of cell — where it induces a specific change that triggers a specific disease — is the most effective way I can think of to get rid of the psychobabble that has for so long surrounded women's health.

How do we prevent infections? By developing and administering vaccines. As the senior author of the Science Translational Medicine study indicates, a vaccine administered soon after birth could prevent infection with EBV and thus potentially prevent lupus and any of the other conditions this capricious virus can cause.

A vaccine to prevent an autoimmune disease would be transformational.

Scientists around the world are busy developing such vaccines against EBV. Different companies are using different approaches, with some utilizing the mRNA technology that has already benefited humanity with vaccines against the virus that causes Covid-19. This is the same mRNA technology that has been targeted by President Donald Trump's administration, which slashed funding for the development of 22 vaccine projects in August, although it's unclear whether some of the vaccines against EBV are also part of the cuts.

Irrespective of funding cuts, the current attitude against vaccines fomented by the current director of Health and Human Services Robert F. Kennedy Jr. — especially when it comes to childhood vaccines — will not help generate an environment conducive to the development of a vaccine against EBV. Kennedy has reshaped the Centers for Disease Control and Prevention's vaccine advisory board by replacing experts with figures aligned to his views, thus amplifying vaccine skepticism, reinforcing public distrust, and making it harder to build consensus around new vaccines.

A vaccine against EBV could rewrite the story of lupus and perhaps of other autoimmune diseases.

In 2023, the National Institutes of Health created the Office of Autoimmune Disease Research. In July 2025, the office published a strategic plan for an NIH-wide approach to tackling more than 140 different autoimmune conditions, including lupus. Although the word vaccine never appears in the document, and the role of infections as triggers or risk factors for autoimmune diseases is barely mentioned, the report set an ambitious strategy that encompasses many of the potential contributing factors to these complex diseases. I can only hope that the highly competent leader of the Office of Autoimmune Disease Research, rheumatologist Victoria Shanmugam, does not suffer the fate of so many who were recently purged from the NIH, the CDC, and other health-related federal agencies.

A vaccine against EBV could rewrite the story of lupus and perhaps of other autoimmune diseases. It is possible that such a vaccine may not ultimately work to prevent lupus, since autoimmune diseases are complex and influenced by many factors beyond viral infection. But even if the outcome is uncertain, the potential benefits are so significant that it remains a promising pursuit.

Whether that promise is realized depends less on scientific ingenuity than on political will. If we choose to protect research and embrace vaccines, we can work to transform a devastating disease into a preventable condition.

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