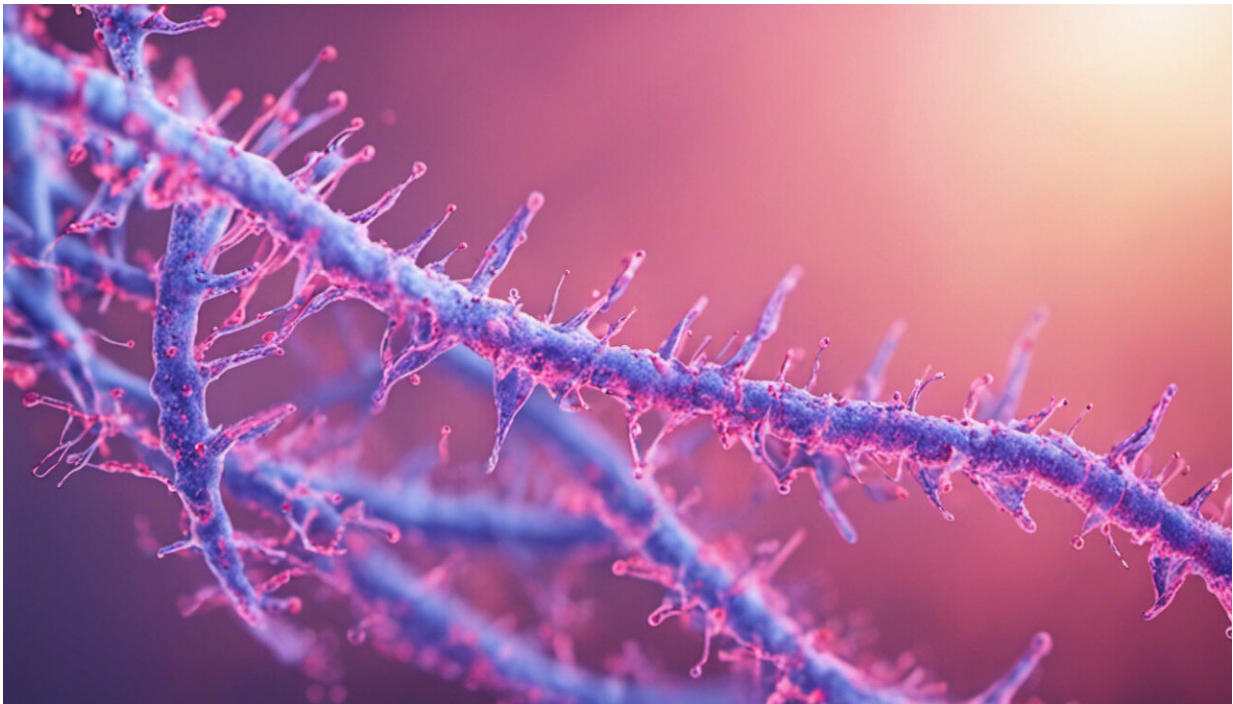


Vaccine developed to treat osteoarthritic pain by blocking nerve growth factor

March 14 2019



Credit: AI-generated image ([disclaimer](#))

In a collaborative effort between the Jenner Institute and the Kennedy Institute of Rheumatology at the University of Oxford, with colleagues in the University of Bern, and the Latvian Biomedical Research & Study Centre, scientists have developed and tested a vaccine that could be used to treat chronic pain caused by osteoarthritis, by blocking the cause of

the pain – NGF.

The researchers developed a virus-like particle vaccine that triggers the immune system to produce antibodies to block naturally-occurring NGF. The new vaccine was tested in mice that had signs of painful OA (uneven distribution of weight across the hind legs), and it was shown to visibly reverse these effects.

Osteoarthritis is the most common joint disease in humans and is estimated to cost between 1 to 2.5 percent of the GDP of developed countries through its debilitating effects. It also represents a substantial social problem because fewer than 25 percent of patients currently have adequate pain control for their condition, and long-term use of painkillers are well known to pose significant risks.

Professor Tonia Vincent of Oxford University's Kennedy Institute of Rheumatology, said: "This is the first successful vaccination to target pain in osteoarthritis, one of the biggest healthcare challenges of our generation.

"Whilst there are still [safety issues](#) that need to be considered before these types of approaches can be used in patients, we are reassured that this vaccine design allows us to control antibody levels and thus tailor treatment to individual cases according to need."

Professor Martin Bachmann comments: "I am happy to see the vaccine platform perform so well, and look forward to seeing the [vaccine](#) enter clinical testing in companion animals."

Dr. Stephen Simpson, Director of Research at charity Versus Arthritis, which funded the research said: "We know that for the 10m people with arthritis, persistent pain is life changing. Too many people living with pain do not get effective relief from the treatments that are currently

available, and that is why the development of more effective pain killers, with fewer side-effects, is vital for people living with arthritis.

"Although at an early stage, this is highly innovative research and these results are very promising. We are proud to support research such as this, which aims to tackle this urgent problem and discover new ways to help people overcome [pain](#)."

The full paper, "Active immunization targeting Nerve Growth Factor attenuates [chronic pain](#) behavior in murine [osteoarthritis](#)," can be read in the *Annals of Rheumatic Disease*.

More information: Isabaell S. von Loga et al. Active immunisation targeting nerve growth factor attenuates chronic pain behaviour in murine osteoarthritis. *Annals of the Rheumatic Diseases*. 2019. [dx.doi.org/10.1136/annrheumdis-2018-214489](https://doi.org/10.1136/annrheumdis-2018-214489)

Provided by University of Oxford

Citation: Vaccine developed to treat osteoarthritic pain by blocking nerve growth factor (2019, March 14) retrieved 27 April 2024 from <https://medicalxpress.com/news/2019-03-vaccine-osteoarthritic-pain-blocking-nerve.html>

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