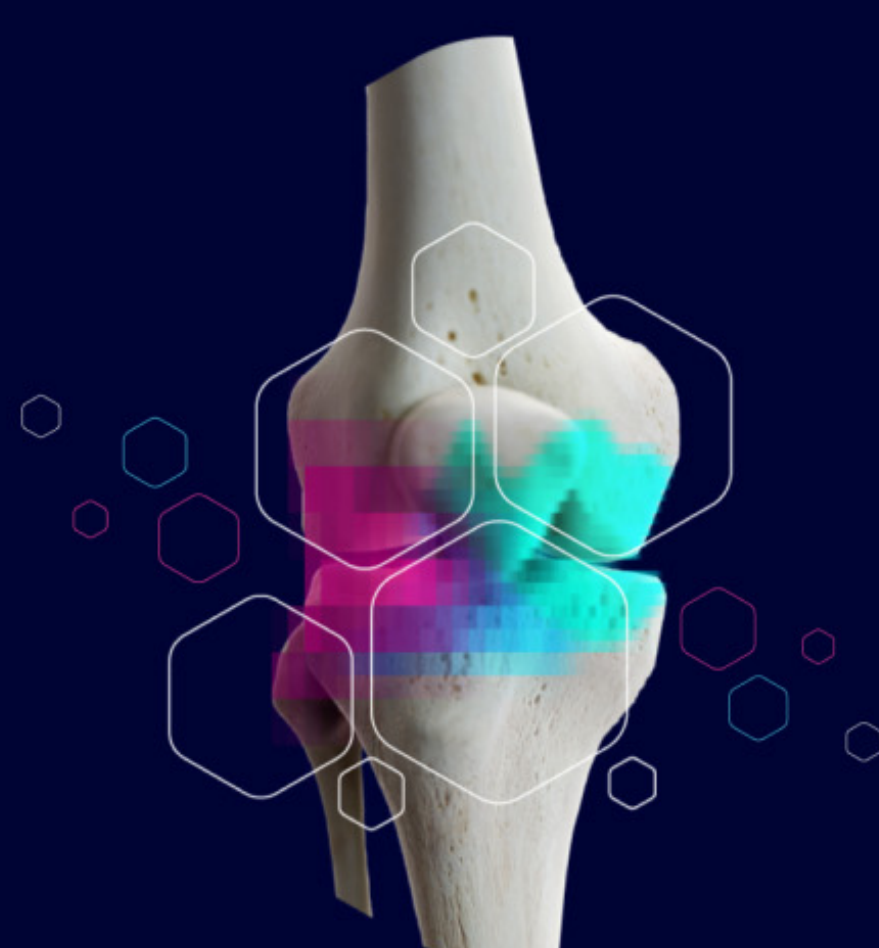


ARPA-H launches program to help joints heal themselves



Biden Harris Administration's ARPA-H initiative launches new program to help joints heal themselves

ARPA-H's first program seeks innovative proposals to reverse osteoarthritis

The Biden Administration today launched the first program under its newly-established Advanced Research Projects Agency for Health ([ARPA-H](#)) agency: the Novel Innovations for Tissue Regeneration in Osteoarthritis ([NITRO](#)). NITRO seeks to develop new ways of helping the human body repair its own joints, with the goal of revolutionizing treatment for osteoarthritis – a common and often very painful condition where bones and cartilage break down. The program is the first of several that ARPA-H intends to launch this year, each aiming to drive breakthroughs that deliver on President Biden's commitment to improve health outcomes by tackling tough problems in a range of conditions, such as cancer, Alzheimer's Disease, and diabetes.

"President Biden wants America to remain on top in cutting-edge medical research and innovation. ARPA-H is wasting no time meeting that challenge," said U.S. Department of Health and Human Services Secretary Xavier Becerra. "ARPA-H is launching NITRO, a pioneering endeavor to help the human body repair its own arthritic joints. Americans who suffer the disabling pain of osteoarthritis know what a game-changer this would be. The era of ARPA-H has begun."

Osteoarthritis (OA) currently affects more than 32 million Americans, with numbers predicted to rise as the nation's population ages. Most OA patients don't seek help until they are in pain, which often means their condition has already significantly progressed. OA is the country's third most common type of disability, with an estimated economic burden of more than \$136 billion per year, including opioid-based pain management. It is twice as common in women and has the highest prevalence in Black and Hispanic populations.

Despite the significant health and economic burden, there is no therapeutic available to reverse the damage caused by OA. To address this need, NITRO will explore technologies focused in three areas – injectable bone regeneration, injectable cartilage regeneration, and replacement joints built from human cells.

"The millions of people living with osteoarthritis clearly need a drastically improved treatment approach that could change this from a leading cause of disability to a reversible, curable disease. People deserve to get back to their lives pain-free and without invasive surgery," said [Ross Uhrich, DMD, MBA](#), ARPA-H NITRO Program Manager. "While it's an ambitious task, the goal of NITRO is to eradicate OA through targeted, regenerative therapeutics that aim to revolutionize care, prevent pain, lessen the economic burden, and eliminate the need for repeat joint surgery."

Through a Broad Agency Announcement (BAA), ARPA-H's NITRO program will solicit proposals to develop and leverage innovative forms of regenerative medicine to create minimally invasive therapeutics that fully regenerate damaged joints. For example, one method may include injections into a joint that could stimulate the joint's natural biological repair mechanisms, possibly helping the body heal damaged cartilage and bone without needing surgery.

To address OA in people with joints that are deteriorated beyond repair, current treatment calls for open-joint replacement surgery, typically with a titanium-alloy total joint. An estimated 2.5 million joint replacements are performed annually in the United States.

Through NITRO, teams may pursue building replacement joints made up of a person's own cells, requiring no permanent hardware or foreign implants to be placed inside their body. These long-lasting, load-bearing joints would be specific to each patient and, in turn, accepted by their immune system.

"The NITRO program will help unlock new futures for the millions of people with osteoarthritis," said ARPA-H Director [Renee Wegrzyn, Ph.D.](#) "This is the first of many bold programs ARPA-H will fund to radically improve health by expanding what's possible and providing solutions that can reach everyone who needs them."

The forthcoming NITRO BAA calls for proposals to advance regenerative and reconstructive strategies for treating OA, using pioneering approaches to enable revolutionary advances in patient care. Multiple awards under this BAA are anticipated and resources available will depend on the quality of the proposals received and the availability of funds. The BAA provides full program details. A Proposers' Day for interested research teams, or performers, is scheduled for June 15, 2023.

For more on NITRO, visit the ARPA-H website at <https://arpa-h.gov/engage/programs/nitro/>.



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