

# FOR IMMEDIATE RELEASE

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**Osteoarthritis Finding Could Pave Way for Prevention**

WASHINGTON - Challenging long-held notions that osteoarthritis is a result mainly of wear and tear on the joints, researchers led by Dr. William H. Robinson of the Department of Veterans Affairs Palo Alto Health Care System and Stanford University have provided new insights into the immune-system changes that may trigger cartilage breakdown. Their report appears in the Nov. 6 online edition of *Nature Medicine*.

“This research can lead to a better quality of life for Veterans and others with osteoarthritis,” said Secretary of Veterans Affairs Eric K. Shinseki. “This is an example of how VA’s research program can lead to many significant breakthroughs in health care.”

Working with samples from humans with osteoarthritis and mice, the research team found that the complement system, a group of proteins that move freely through the bloodstream, plays an important role in the development and spread of osteoarthritis. When functioning normally, the complement system is an important part of the body’s immune system, killing harmful bacteria and cells infected by viruses when it is called upon to do so.

The researchers discovered that one component of the complement system, called the membrane attack complex, or MAC, is formed and activated in the joints of both humans and mice affected by osteoarthritis. They believe that when the MAC is aberrantly activated in the joints (a phenomenon called “dysregulation”), it induces low-grade inflammation and the production of enzymes that break down cartilage and result in the development of osteoarthritis.

“It’s a paradigm change,” says Robinson, a physician-researcher with the Geriatric Research, Education and Clinical Center at the Palo Alto VA and an associate professor of immunology and rheumatology at Stanford. “People in the field predominantly view osteoarthritis as a matter of simple wear and tear, like tires gradually wearing out on a car.”

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**Osteoarthritis 2/2/2/2**

Osteoarthritis, also known as degenerative arthritis, affects millions of people around the world, usually those who are middle aged or older. The disease is most commonly found in hands, neck, lower back, knees and hips. Currently, there are no therapies available to slow the progress of the disease, and treatment is focused on pain control. Ultimately, some patients with osteoarthritis require joint replacement surgery.

Robinson says one-third of people aged 60 or over suffer from osteoarthritis. VA estimates that more than 6 million World War II and Korean War Veterans are still living and could be affected. Finding a way to stop the disease from progressing in an aging population could potentially help millions of Veterans.

Robinson said he is optimistic about the potential of the new findings to eventually translate into better therapies to treat osteoarthritis or prevent it altogether. “Right now,” he says, “we don’t have anything to offer osteoarthritis patients to treat their underlying disease. It would be incredible to find a way to slow it down.”

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