

JOINT *Matters*



FEATURED IN THIS STORY:



Hicham Drissi, PhD,
Emory University



Prathap Jayaram, MD,
Emory University

Tapping into the Potential of Regenerative Medicine

The remarkable ability of the body to “repair and restore” after an injury is the driving force behind regenerative therapies. But is regenerative medicine the panacea for treating osteoarthritis (OA) where there is progressive cartilage deterioration and inflammation?

Currently, regenerative therapies utilize biomaterials, cells and other bioactive molecules. The most extensively studied regenerative therapy for OA is platelet-rich plasma (PRP), which is injected directly into the affected joint. The platelet concentrate is obtained from the patient’s blood through centrifugation. Since the concentrate is rich in cytokines, growth factors and other anti-inflammatory mediators, like [IL-1 antagonists](#), injecting PRP can help manage pain and protect the joint.

On the other hand, therapies like micro-fragmented adipose tissue (MFAT) and bone marrow aspirate concentrate (BMAC) are stem cell-based. The materials extracted from patients contain stem cells and other active cells, potentially forming an effective toolbox to treat inflammation and protect the joint. MFAT also has a high amount of the lubricating protein lubricin, which is a key component of healthy cartilage that is reduced in patients with OA.

“It’s tough to have a single silver bullet to treat OA since it is a disease that involves several different pathways that have gone dysfunctional,” said Prathap Jayaram, MD, Director of Regenerative Medicine at Emory University. “Regenerative medicine, such as PRP, BMAC or MFAT, is a strategy that can address multiple pathways.”

However, there are many challenges to fully adopting regenerative therapies. These treatments still need to be FDA-approved (although the equipment to produce them has FDA clearance) and, therefore, are not covered by insurance. More importantly, regenerative therapies delay the progression of cartilage loss but do not reverse established disease.

Center at the Atlanta VA Medical Center in April 2024, where Dr. Drissi is the site director. This center’s portfolio spans the continuum from innovative discoveries, including those within regenerative medicine, to pre-clinical proof of concept studies and the implementation of validated therapeutics in clinical practice. The Arthritis Foundation’s Jason Kim, PhD, vice president



As of now, patients with less advanced OA are poised to have better outcomes. For that reason, through the Arthritis Foundation’s FastOA initiative, Dr. Jayaram and Miguel Otero, PhD, associate scientist in the Orthopedic Soft Tissue Research Program at the Hospital for Special Surgery, are investigating whether **early treatments with BMAC** delay disease progression in patients at a high risk of developing osteoarthritis quickly after an ACL tear.

In reality, for a majority of patients, OA is a slow-developing disease and will need treatment approaches beyond current regenerative therapies.

“It is not just a cartilage disease or a synovium disease or a bone disease; it is all of the above,” said Hicham Drissi, PhD, professor of orthopaedics at Emory University. “Adding to the complexity, OA is a disease with many stages that may require different interventions.”

To seek novel treatments for arthritis, the United States Department of Veterans Affairs inaugurated the **CReATE Motion**

of OA research programs, is part of CReATE Motion’s advisory committee.

Looking ahead, regenerative medicine has the potential to play an essential part in a multi-pronged solution for OA, but it has yet to reach its full potential. Currently, several small molecules, cells, cell therapies and delivery systems are under investigation. Scaling up the manufacturing of stem cells for allogeneic therapy and creating degradable 3D materials capable of being loaded with medicinal cells and products are other exciting areas of R&D.

As the field progresses, regenerative medical products will need FDA oversight in clinical trials and subsequent approval for OA treatment. If the trials demonstrate efficacy, they can transform the practice of medicine and reach more people living with arthritis.

The Arthritis Foundation would like to thank Drs. Drissi and Prathap for their feedback on this article.

[Learn more about the Foundation’s Osteoarthritis Program.](#)

ADVOCACY UPDATE

The Supreme Court of the United States has ruled to preserve FDA’s authority in the drug approval process. The Arthritis Foundation, along with several patient and provider organizations, filed an **amicus brief** to highlight how the court’s decision may affect patients and why it is important to preserve the FDA’s authority in the drug approval process.

The Arthritis Foundation Advocacy team will continue to push for a strong federal investment in arthritis research and programs in 2025. It is partnering with the American College of Rheumatology to get increased funding for the CDC Arthritis Program, Department of Defense Arthritis Research Program and Pediatric Subspecialty Loan Repayment Program.

The Arthritis Foundation hosted a roundtable in mid-June to discuss creative solutions to the challenges of prior authorization (requiring insurance approval before a medication or procedure is covered) and step therapy. Invited participants included representatives from patient and provider groups.

Are you interested in taking action? **[Visit the Arthritis Foundation’s Advocacy Action Center to find a topic that resonates with you.](#)**



Tackling Joint Pain During Menopause

In the latter half of a woman’s third decade of life, her ovaries start their journey to a deep slumber. With the ovaries’ functional decline, estrogen and progesterone levels also drop steadily until menopause, putting women at higher risk for health issues such as arthritis and osteoporosis. However, despite the pivotal role hormones play in women’s well-being, the effects of hormone therapy (HT) on joint health have yet to be thoroughly studied.

Osteoarthritis is equally prevalent between men and women up to age 50, but after that, it becomes more common and severe in women. Women are also more likely to have joint replacement surgery for their osteoarthritis. Further, women on estrogen-blocking medications for cancer treatment and those transitioning into menopause experience accelerated arthritis and arthralgia symptoms, indicating the importance of hormones.

“Estrogen is anti-inflammatory, and its receptors are all over the whole body, including your muscles, bones, joints, tendons and ligaments,” said Jocelyn Wittstein, MD, associate professor of orthopaedic surgery at Duke University. “So, if its levels are going down, the bones and joints aren’t seeing as much estrogen, and this withdrawal could increase arthralgias in the hands, shoulders and knees — really any joint.”

Starting women on HT is thought to help reduce the adverse effects of menopause, including arthritis. While HT has been shown in studies like the [2022 Women’s Health Initiative \(WHI\)](#) to prevent bone loss and reduce fractures in postmenopausal women without

osteoporosis, there are no similar studies for osteoarthritis in women transitioning to menopause. However, a [reexamination](#) of the data of women who continued HT for their menopausal symptoms beyond the trial’s conclusion revealed that they tended to experience less pain in their bones and joints.

“The women in the WHI study were only asked whether they had joint pain, so the questions were not well-defined,” said Anne Ford, MD, obstetrician and gynecologist at Duke University. “To better understand the impact of hormone therapy, more specific questions about joint pain and arthritis need to be asked.”

Drs. Wittstein and Ford are working together to address the gap in knowledge and arthritis care for women. Their objective is to create a registry containing survey data collected from women regarding their menstrual status, menopausal symptoms, joint pain and locations, whether they are using HT for their symptoms and dosage, among other information. They emphasized that this data will be crucial in evaluating the effectiveness of HT for menopausal arthritis.

“There is a big intersection between women’s [health] and orthopedic health,” said Dr. Wittstein. “It’s important that we, as physicians, don’t work in silos. There is a significant health care disparity in terms of the management of arthritis in male and female patients. We must collaborate in the care of our patients.”

The Arthritis Foundation would like to thank Drs. Wittstein and Ford for their feedback on this article.

FEATURED IN THIS STORY:



Jocelyn Wittstein, MD,
Duke University



Anne Ford, MD,
Duke University

Highlights from the Rheumatoid Arthritis Research Summit

The Arthritis Foundation and the Hospital for Special Surgery (HSS) co-hosted the Rheumatoid Arthritis (RA) Research Summit on April 12-13. The event, one of the very few conferences in the United States devoted entirely to RA, featured talks by eminent scientists and physicians on unmet needs in RA care, cutting-edge RA research, and current and future approaches to care for individuals with RA. Overarching themes included mechanisms of RA pathogenesis, treatment non-response to therapeutic agents, and comorbidities. The summit also included Q&As after each session and a panel discussion with RA patients.

The summit featured two keynote speakers: Dr. Costantino Pitzalis, MD, PhD, from Queen Mary University of London, and Jane Buckner, MD, from the Benaroya Research Institute in Seattle. Dr. Pitzalis emphasized the importance of defining the subtypes of RA, or endotypes, to facilitate prognosis and prediction of treatment response to biologic therapies. Dr. Buckner talked about the link between human leukocyte antigen-shared epitope alleles (HLA SE, a stretch of five amino acids within the HLA protein found in most cells) and anti-citrullinated protein antibodies (ACPA). This link, she explained, points to the role of T helper cells in RA, and HLA SE may assist in identifying patients who will respond to therapy.

There were talks dedicated to the association between alterations in mucosal tissue biology and the development of RA, the role of immune cell types and the proteins they secrete in the pathology of RA, and common comorbidities, among other RA-relevant topics.

Of note was a session on treatment non-response to current therapeutic agents. This segment featured talks by former Arthritis Foundation RA Research Program grant recipients and was moderated by Kristen Mueller, PhD, vice president of autoimmune arthritis research at the Foundation.

Briefly, Susan M. Goodman, MD, from the Hospital for Special Surgery, spoke about her work identifying novel molecular mediators of low inflammatory, refractory RA.



The RA Research Summit was attended by Steven Taylor, president and CEO of the Arthritis Foundation, Kristen Mueller, PhD, vice president of autoimmune arthritis research at the Arthritis Foundation, eminent scientists and physicians.

Daniel H. Solomon, MD, MPH, and Deepak A. Rao, MD, PhD, from Brigham and Women's Hospital, defined immune cell types that distinguish treatment responders from non-responders to tumor necrosis factor inhibitors (TNFi). Adding to the discussion, Elaine Husni, MD, MPH, from Cleveland Clinic, spoke about her research on the role of a polymorphism in TNF receptor 2 genes in TNFi treatment response. Rebecca Blank, MD, PhD, from New York University Langone Health, presented evidence on how the gut microbiome can predict patient responsiveness to methotrexate and her future work investigating butyrate's therapeutic role in methotrexate efficacy.

One of the main highlights of the summit was a panel discussion with people living with RA who discussed how best to include RA patients in RA research, both as research participants and partners.

"We truly appreciate the partnership with HSS and hope to continue these types of summits moving forward," said Steven Taylor, president and CEO of the Arthritis Foundation. "We are committed to bringing the whole health ecosystem together to discuss the unmet needs of people with rheumatoid arthritis."

[Learn more about the Foundation's Rheumatoid Arthritis Research Program.](#)

Supporting Training Programs That Will Reduce Health Care Disparities

The Arthritis Foundation has awarded 2024 Clinical Rheumatology Fellowships to the University of Iowa (UI) and the University of Alabama at Birmingham (UAB), affirming its continued commitment to addressing the critical workforce shortage of rheumatologists in the United States.

Autoimmune diseases affect 1 in every 10 individuals. Furthermore, experts project that the global, regional and national burden of autoimmune diseases, like rheumatoid arthritis, will only increase in the next few decades. Thus, improved access to diagnosis and treatment is imperative in reducing the burden of rheumatic diseases.

“Right now, patients have to wait an average of 45 days to see a rheumatologist,” said Kristen Mueller, PhD, vice president of autoimmune arthritis research at the Arthritis Foundation. “With the clinical fellowships, we are leading the way by expanding the number of fellowship opportunities for rheumatologists.”



The Foundation has awarded the 2024 Clinical Rheumatology Fellowships to medical training programs that will reduce workforce barriers to care and support early-in-career physicians committed to engaging with under-served communities. With this support, UAB will train competent rheumatologists for academic and community practice. Clinical training will be throughout the UAB medical complex, including the UAB University Hospital, Department of Veterans Affairs Medical Center, and Children’s Hospital of Alabama. Rheumatology Fellowship Program Director Amanda Alexander, MD, at UAB, noted that these venues would expose trainees to various rheumatic diseases and an opportunity to interact with diverse patient populations in both the outpatient and inpatient settings.

With its fellowship award, UI will create the nation’s first designated Rural Rheumatology Health Track within its Adult Rheumatology Fellowship Training Program. IU Fellowship Program Director Bharat Kumar, MD, said this track will enable fellows to become agents of change in their communities by addressing long-standing rural health care disparities.

The generous contributions of our donors make the Foundation’s continued efforts in this area possible. Fellows funded by the award will receive \$50,000 per year for three years. [Discover more about the Foundation’s other scientific initiatives](#), which shape the development of new arthritis treatments and strengthen relationships between patients and caregivers.



Paul Larkin, PhD

Meet Our New Vice President of Science, Paul Larkin, PhD

Paul Larkin, PhD will lead the development and implementation of the Arthritis Foundation’s scientific agenda. This will include funding efforts to improve quality of life for people currently living with arthritis while also funding groundbreaking research that could lead to new treatments and, ultimately, a cure for arthritis. This work will be conducted alongside partners both within and outside the Foundation as we seek to pursue the priorities of arthritis patients, work with leading experts in the field and clearly communicate the goals and impact of our work.

Previously, Dr. Larkin administered and developed the ALS Association’s research programs and portfolio of funded research activities to discover treatments and a cure for ALS as the association’s senior director of research. Before that, Dr. Larkin was at the Crohn’s & Colitis Foundation, managing philanthropic investments and related scientific initiatives.

Dr. Larkin has an extensive research and development background across academia, consulting and venture philanthropy in both corporate and non-profit environments. He completed his post-doctoral training at Stanford University and has a PhD in neuroscience from the University of California, San Francisco.

Announcements



Juvenile Arthritis Family Summit, St. Louis, Missouri, July 11-14, 2024

The annual JA Family Summit (previously known as the National JA Conference) is the Arthritis Foundation's signature nationwide event for families affected by juvenile arthritis and childhood rheumatic diseases. This four-day educational conference focuses on health, wellness and fun for families, children and teens (ages six months and up) and young adults (ages 18-30) affected by juvenile arthritis and related childhood rheumatic diseases. [Learn more about registration, hotel reservations, and volunteer opportunities.](#)



TOPS Clinical Study: Now Recruiting Participants

The Osteoarthritis Prevention Study (TOPS), led by Wake Forest University, is the first study in the United States to examine weight loss and exercise as preventatives for osteoarthritis. In addition to the Arthritis Foundation (the largest private funder), support for this study comes from the Centers for Disease Control and Prevention and the National Institute of Arthritis and Musculoskeletal and Skin Diseases, among others. [Learn about the study and the qualification criteria for participation.](#)



PIKASO Clinical Study: Now Recruiting Participants

The [Post-Injury Knee Arthritis Severity Outcomes](#) study investigates whether metformin effectively reduces pain by delaying the onset of post-traumatic osteoarthritis (PTOA) after anterior cruciate ligament (ACL) reconstruction. This research study will compare metformin to placebo. The trial marks one of the first multi-stakeholder collaborative initiatives of the Arthritis Foundation. [Learn about the study and the qualification criteria for participation.](#)



Letter of support for Women's Health Research Initiative

Historically, women have been underrepresented in medical research and clinical trials, leading to gaps in the understanding of relevant health issues for women, including [autoimmunity and reproductive health](#). President Joe Biden issued an Executive Order on March 18, 2024, calling on Congress to invest \$12 billion in new funding for [women's health research](#) — an initiative led by First Lady Jill Biden, first announced in November 2023. Backing this directive, the Arthritis Foundation has issued a [letter of support](#) for this White House Initiative.



COMMUNITY IN ACTION

Make an impact! Join the Arthritis Foundation's signature events happening at a location near you.

Walk to Cure Arthritis is the largest arthritis gathering in the world. It celebrates people living with arthritis while raising funds to support our important initiatives. If you are interested in attending this event, please check if a walk is happening within your community in the spring and summer each year.

California Coast Classic Bike Tour (CCC), presented by Amgen, is a scenic bike ride that takes place over eight days and covers 525 miles along the coast on U.S. Highway 1. The tour starts in the heart of San Francisco and ends on the iconic strand of Los Angeles.

The Arthritis Cycling Experience is an opportunity to join the CCC Tour community virtually if you are unable to attend in person.

To learn more about our events and to participate, [visit arthritis.org/events](https://www.arthritis.org/events).

LET'S CONNECT!

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You can also email us at afscience@arthritis.org for queries and to unsubscribe from *Joint Matters*.



2024 National Patient Education

Live Yes! Connect Groups

Connect Groups provide supportive social connections and are open to parents/guardians of children with rheumatic diseases and to adults living with any type of arthritis or rheumatic diseases. These virtual and in-person groups bring people together for fun social and informative educational events and activities focused on mutual support and positive coping strategies for living well. [Learn about our Connect Groups and upcoming events.](#)

Arthritis Hacks & Joint Protection, July 25, 6 – 7:15 pm ET

This free webinar, organized by the Foundation, is for anyone who wants to learn about effective joint-protection strategies, ergonomic techniques, assistive devices and adaptive technologies that can improve daily life. [Register for the event.](#)

Bridging Horizons: Young Adults Share Their Journey, August 15, 6 – 7:15 pm ET

In this inspiring and insightful webinar, participants will hear directly from a dynamic panel of young adults who have successfully navigated the challenges of transitioning to adult care and independence. Once these webinars open for registration, you can access the event details and registration links on our [Upcoming Webinars](#) page.

Arthritis Myth Busting, August 22, 6 – 7:15 pm ET

This free webinar will explore and dispel misconceptions about medical care, diet, and physical activity that often cloud the understanding of arthritis management. Once these webinars open for registration, you can access the event details and registration links on our [Upcoming Webinars](#) page.

