

## The New Treatments and Interventions of Rheumatology

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### ABOUT THE STUDY

Rheumatology is a branch of medicine that deals with the diagnosis and treatment of rheumatic diseases, which are conditions that affect the joints, bones, and muscles. The field of rheumatology is constantly evolving, with ongoing research leading to new understanding of the causes and mechanisms behind rheumatic diseases, as well as the development of new treatments and interventions.

### Genetics and rheumatic diseases

Recent research has shed light on the genetic underpinnings of rheumatic diseases. Advances in genotyping and sequencing technologies have allowed researchers to identify genetic variants associated with conditions such as Rheumatoid Arthritis (RA), Systemic Lupus Erythematosus (SLE), and Ankylosing Spondylitis (AS). For example, a study published in Nature Genetics has identified 34 new genetic variants associated with RA, bringing the total number of known variants to over 100. This research could ultimately lead to the development of more personalized treatments for rheumatic diseases based on a patient's individual genetic profile.

### Biologics and other targeted therapies

Biologics are a type of drug that target specific molecules involved in the immune response, and they have revolutionized the treatment of rheumatic diseases. In recent years, researchers have continued to develop and test new biologics and other targeted therapies. Other researchers are investigating the potential of targeting specific immune cells or molecules in the treatment of SLE, vasculitis, and other rheumatic diseases.

### Exercise and physical therapy

While medications are an important part of managing rheumatic diseases, researchers are increasingly recognizing the importance of non-pharmacologic interventions such as exercise and physical therapy. Studies have shown that exercise can help reduce pain and

improve function in patients with conditions such as RA, osteoarthritis, and fibromyalgia. Physical therapy can also be beneficial, particularly for patients with conditions that affect mobility and strength. Researchers are continuing to investigate the most effective types and dosages of exercise and physical therapy for different rheumatic diseases.

### Biomarkers and disease monitoring

Biomarkers are measurable indicators of disease activity or treatment response. In rheumatology, biomarkers can be used to monitor disease activity and guide treatment decisions. Researchers are actively investigating new biomarkers for rheumatic diseases, including blood-based biomarkers, imaging biomarkers, and measures of joint inflammation and damage. For example, a study published in Arthritis Research and Therapy was found that measuring levels of a protein called CXCL13 in the blood could help predict disease activity in patients with SLE.

### Telemedicine and remote monitoring

The COVID-19 pandemic has accelerated the adoption of telemedicine and remote monitoring in healthcare, including in rheumatology. Telemedicine can be particularly useful for patients with rheumatic diseases who may have mobility issues or live far from specialized healthcare providers. Remote monitoring, such as through wearable devices or smartphone apps, can also help patients and providers track disease activity and treatment response. Researchers are continuing to investigate the effectiveness and feasibility of these technologies in rheumatology. In conclusion, the field of rheumatology is constantly evolving, with ongoing research leading to new understanding of the causes and mechanisms behind rheumatic diseases, as well as the development of new treatments and interventions. Advances in genetics, targeted therapies, non-pharmacologic interventions, biomarkers, and technology are all contributing to improved outcomes for patients with rheumatic diseases.

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