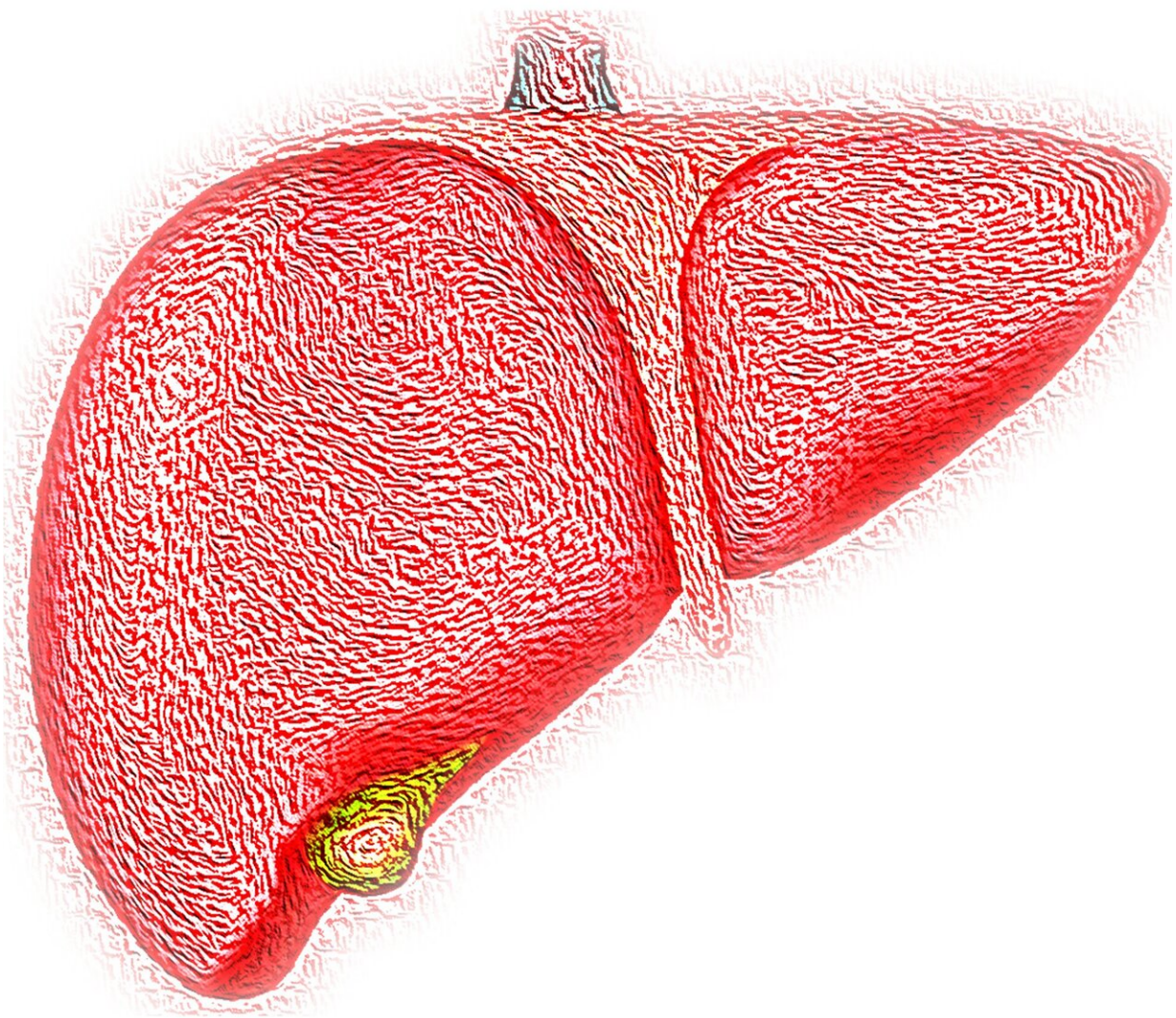


Researchers recommend closer monitoring of liver during methotrexate treatment for psoriasis

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Using the immunosuppressant medication methotrexate to treat psoriasis and psoriatic arthritis is more likely to lead to serious liver complications than using the same medication to treat rheumatoid arthritis, according to research from the Perelman School of Medicine at the University of Pennsylvania. That finding continued to be true even when controlling for other risk factors for liver disease such as obesity and alcohol use. The Penn researchers suggest that clinicians closely monitor the health and liver condition of their patients on methotrexate for the treatment of psoriasis and psoriatic arthritis. The study results are published in the *Journal of the American Association of Dermatology*.

Methotrexate, a medication commonly given to [cancer patients](#) in high doses, is also prescribed in much smaller doses to people with psoriatic diseases or [rheumatoid arthritis](#). In those low doses, it's anti-inflammatory, can decrease symptoms of the skin and joint conditions, and is relatively inexpensive compared to other medications that can control the diseases. However, methotrexate can produce many unwanted side effects and can alter [liver cells](#), leading to liver damage and cirrhosis.

After evaluating 20 years of data from thousands of individuals with psoriasis, psoriatic arthritis, and/or rheumatoid arthritis who also were taking methotrexate, the researchers saw that rates of cirrhosis and liver damage were higher in methotrexate users with psoriasis or psoriatic arthritis compared to methotrexate users with rheumatoid arthritis. The greatest rates of [liver disease](#) came from the psoriasis group.

"We are not sure why people with psoriasis and psoriatic arthritis have greater rates of liver disease when on methotrexate," said lead author Joel M Gelfand, MD, MSCE, a professor of Dermatology and Epidemiology at Penn. "All three conditions cause inflammation that set the stage for possible liver damage. But it is hypothesized that there is a "psoriatic liver" which means that that psoriasis somehow promotes fatty changes in the liver which can lead to a higher risk of liver complications when taking medications that also cause liver damage such as methotrexate."

Before this study, there were smaller studies with findings suggesting that liver damage was a possible result of methotrexate use, but they were incomplete due to issues like relying on lab testing and other measures of liver function, which could be susceptible to testing bias, rather than truly meaningful outcomes. The Penn researchers instead used a Danish national database to simply assess how often liver damage occurred in people with these conditions also taking methotrexate.

"Our team encourages clinicians and patients to consider all treatments available for psoriasis and [psoriatic arthritis](#)," Gelfand said. "And if methotrexate is used, clinicians should carefully and regularly monitor their patients' liver health and function and take advantage of new blood and specialized ultrasound tests which can detect [liver damage](#) at an early stage in order to prevent patients from developing clinically significant liver problems."

The team's findings also resonate in a time when there is greater focus on existing health disparities. High costs of medications with fewer side effects could lead some individuals to ultimately choose a more affordable drug with more possible side effects.

"It is preferable to have a wide range of pharmaceutical or treatment options for patients because every patient is unique and may have other

conditions they need to manage or have lifestyle factors, like trying to conceive a child, which would mean one medication over another is a better option," Gelfand said. "Nevertheless, the [medical community](#) should be aware of the factors, like cost, that deter a patient or provider from prescribing a treatment that is actually best suited to the patient's needs.

More information: Joel M. Gelfand et al. Risk of liver disease in patients with psoriasis, psoriatic arthritis, and rheumatoid arthritis receiving methotrexate: a population-based study, *Journal of the American Academy of Dermatology* (2021). DOI: [10.1016/j.jaad.2021.02.019](https://doi.org/10.1016/j.jaad.2021.02.019)

Provided by Perelman School of Medicine at the University of Pennsylvania

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