

This is the lay version of a HIPPOCRATES publication. HIPPOCRATES is an international consortium to conduct studies benefitting people with psoriasis and psoriatic arthritis. The original publication can be downloaded from the HIPPOCRATES website: [www.hippocrates-imi.eu/publications](http://www.hippocrates-imi.eu/publications)

Köhm, Michaela, et al. "POS0881 Specific AI-Generated Pattern of Tender Joints and Tenderness at Enthesial Sites are Predictive for Objective Detection of Musculoskeletal Inflammation in Psoriasis Patients." *Annals of the Rheumatic Diseases* 82 (2023): 747-748. <https://doi.org/10.1136/annrheumdis-2023-eular.4791>

## Pain Patterns May Reveal Early Joint Inflammation in People with Psoriasis

### Research Background

Psoriasis is a chronic skin disease. For some people, it later develops into psoriatic arthritis (PsA), a painful condition that inflames joints and can cause permanent damage. Up to three in ten people with psoriasis are affected. Early detection of PsA is essential. Treatment works best before joints are damaged. However, early diagnosis is difficult. Symptoms can be vague, and advanced imaging is not always available in routine care. We asked ourselves if everyday pain reports could already point to early joint inflammation. For this, we used artificial intelligence (AI) to look for patterns of pain and tenderness in people with psoriasis who had a higher risk of developing joint problems but without PsA diagnosis. The AI grouped patients by pain location, such as fingers or feet, and compared this with inflammation seen in medical tests.

### Key Findings

We found that pain patterns mattered. Certain locations of tenderness were strongly linked to real inflammation detected by clinical examination and imaging. Tenderness in the feet and in small finger joints – especially the middle and end knuckles – often indicated early inflammation, even before PsA was diagnosed. People without pain or tenderness usually showed no signs of inflammation.

### Research Impact

Our findings suggest that simply paying attention to where people with psoriasis feel pain could help doctors detect early joint inflammation. This may allow earlier referral for imaging, closer monitoring, and faster access to specialist care. Combining pain pattern analysis with imaging and blood tests could improve early diagnosis and help prevent permanent joint damage.

- **AI identified clear pain patterns:** pain in the feet and small finger joints often signalled hidden joint inflammation in people with psoriasis.
- **Little or no pain usually meant no inflammation** on medical exams or scans.
- **Mapping where pain occurs,** combined with scans or blood tests, **could help detect psoriatic arthritis earlier.**

### Relevance to HIPPOCRATES

By helping to spot early inflammation, the findings support the HIPPOCRATES goal of earlier diagnosis, better treatment decisions, and improved outcomes for patients.

[View the graphical abstract for an accessible overview!](#)



# PAIN PATTERNS MAY REVEAL EARLY JOINT INFLAMMATION IN PEOPLE WITH PSORIASIS

## RESEARCH BACKGROUND

- Psoriasis can progress to **psoriatic arthritis**, a painful joint condition
- **Early detection** is beneficial but difficult
- The study used artificial intelligence (AI) to analyze **everyday pain patterns** in people with psoriasis
- These patterns were linked to **early joint inflammation**



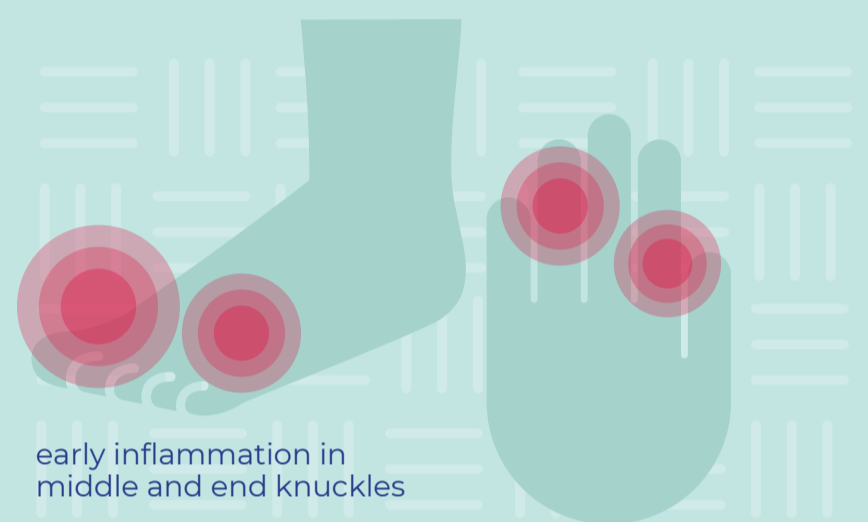
## KEY FINDINGS:

AI identified clear pain patterns, with tenderness in the feet and small finger joints indicating hidden inflammation.

Little or no pain usually meant **no inflammation** detected in medical exams or scans.

Mapping where pain occurs, combined with scans or blood tests, could help detect psoriatic arthritis earlier.

## RESEARCH IMPACT

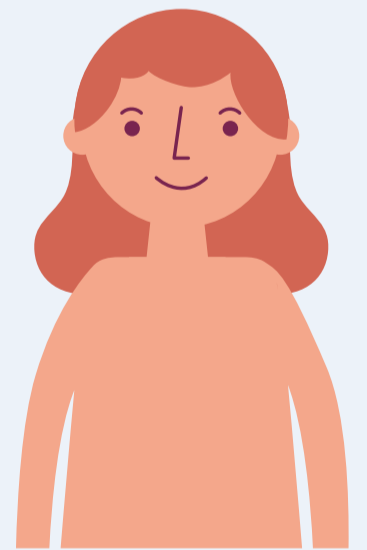
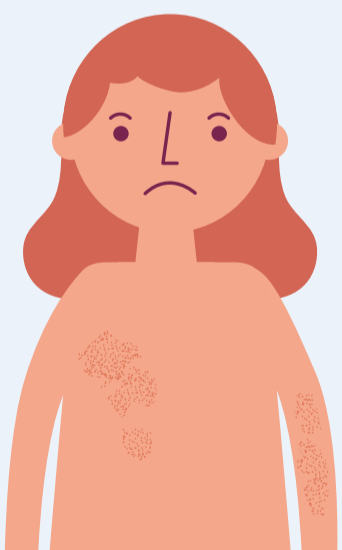


early inflammation in middle and end knuckles

Pain pattern analysis could help **detect early joint inflammation**, support earlier referral and monitoring, and **improve diagnosis** when combined with imaging or blood tests.

## RELEVANCE TO HIPPOCRATES

By helping to spot inflammation sooner, the findings support the HIPPOCRATES goal of **earlier diagnosis, better treatment decisions, and improved outcomes for patients.**



### Related publication:

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