

Psoriasis is a chronic disease which has clear geographic variations, with prevalence rates higher in those countries more distant from the equator. This suggests that climatic factors such as sun exposure and humidity may be relevant, though these and similar factors have not been much studied in specific populations.

In a 2013 study from Naples, researchers used a specific questionnaire to investigate the effect of weather and both indoor and outdoor environmental factors on the clinical course of psoriasis. The setting was a psoriasis outpatient department in a university medical centre and a total of 300 consecutive patients were enrolled into the study.

Questions in the survey were detailed and quite specific, covering outdoor environmental factors such as exposure to sunny, rainy, windy, muggy, hot and cold climates. Additional questions covered indoor climatic factors, such as seasonal exposure to domestic heating and ventilation systems.

The investigators divided the study participants into two groups:

- 121 patients with psoriasis only (Ps), and
- 179 patients with psoriasis and psoriatic arthritis (PsA).

For both groups, the researchers evaluated the impact of the various environmental factors on skin and (in the PsA group) arthritis.

Outdoor environmental factors

This study showed that skin manifestations in both groups improved dramatically in the summer months and were significantly worse during winter – an observation clearly related to the beneficial effects of UV light on the skin.

Conversely, arthropathy in PsA patients showed little variation between winter and summer, with the majority (67% and 68.2%) reporting their arthritis as stable throughout the summer and winter. Nevertheless, a significant proportion (24%) of PsA patients reported an improvement in arthritis during the summer.

Regarding reported wind exposure, there was a worsening of skin symptoms in a minority in both groups, but no reported effect on arthritis.

Heat appeared to have a negative effect on skin symptoms in both groups, but only in a minority (22.3% in Ps and 14% in PsA respectively). Perhaps

surprisingly, heat had no effect on arthritis. On the other hand, cold appeared to have a significant negative effect on skin manifestation of psoriasis in both groups and there was a striking worsening of arthritic symptoms in the PsA group.

Exposure to muggy and rainy climates seems to have had no impact on either group in terms of skin or arthritic symptoms.

Indoor environmental factors

Regarding the indoor environment, patients in both groups reported no relationship at all between symptoms and the use of air conditioners, heaters, radiators or open fireplaces. This finding seems at odds with anecdotal reports which suggest that air conditioning can make psoriasis worse because it tends to dry out the surface layers of the skin.

The key findings from the study are summarised in the table below:

This is a small study carried out in an outpatient setting and based on a questionnaire. It therefore has significant limitations.

Factor	Patient g
	Skin
Winter	1.7 % vs [59.8%]
Summer	71.5% vs [12.8%]
Wind	0% vs [29%]
Cold	2.8% vs [38.5%]
Heat	14.5% vs [14.0%]
Key: Symptoms improved %	Symptoms worse [%]

Firstly, the information collected is qualitative, which means that the results are entirely dependent upon the accuracy of the responses. In addition, questions relating to disease severity are difficult to interpret and patients with arthritis may have a different perception of their skin condition compared with those with psoriasis alone. There are also problems with definitions of terms such as "muggy" and "humid" which may mean different things to different people.

Nevertheless, this is a helpful attempt to raise the question about the impact of climate and environmental factors on patients with psoriasis. This is especially relevant given that the global climate

appears to be changing at an unprecedented rate.

The observation that increased UV exposure during the summer months had a major beneficial effect on skin symptoms among patients with and without arthritis, is well recognised and has been the basis for various therapeutic interventions for many years. Sunlight during summer months tends to improve skin lesions by slowing the rate of skin growth and shedding which are typical of psoriasis.

Another important factor is the generally higher humidity during the warmer, summer months. This tends to increase skin moisture, making psoriatic patches less prone to cracking. Conversely, lower levels of humidity in winter months increases skin permeability, induces thickening of the



greater negative effect on skin in the PsA group than Ps only.

For patients with psoriatic arthritis, cold has a relatively large negative effect on symptoms, while neither wind nor heat made any difference.

Groups and symptoms

PsA	Arthritis	Ps Skin
	0% vs [31.8%]	1.6% vs [59.5%]
	24% vs [8.9%]	69.4% vs [13.2%]
	0% vs [0%]	0% vs [19.8%]
	1.7% vs [43.6%]	4.9% vs [22.3%]
	7.8% vs [0%]	6.6% vs [22.3%]

epidermis and stimulates production of inflammatory mediators, making skin lesions worse. For these reasons (and as might be predicted), skin symptoms were much worse in winter in both Ps and PsA groups – almost identically so (59.5 and 59.8% respectively).

There is little scientific evidence regarding the effects of sunlight on psoriatic arthritis, so it is interesting that while most (67%) patients with arthritis remained stable during the summer period, almost a quarter (24%) of study subjects reported improvement.

Regarding exposure to wind, cold and heat, skin lesions in most patients in both groups generally remained stable. However, both wind and cold had a

Key points

- Skin manifestations of psoriasis invariably improve during summer months (due to UV light and increased humidity) and predictably worsen during the winter.
- Psoriatic arthritis shows little seasonal variation, remaining relatively stable throughout the year, though a minority may experience an improvement in summer months.
- Wind and cold may have a negative impact on skin lesions in a significant minority of both groups, but greater in those with psoriatic arthritis.
- Cold appeared to have a significant negative impact on arthritis.

Finally, these results suggest that climatic factors and seasonal variations should be taken into account when planning treatment for patients with psoriasis and psoriatic arthritis. While further research is needed, these preliminary observations represent an important basis for more advanced study.

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