

**Does having psoriasis increase the risk for migraine? Anecdotal reports from people with psoriasis suggest that it may, but given that migraine affects six million people in the UK, it may not be more common among those with psoriasis than the general population. In recent years, several large studies have addressed the possible association between psoriasis and migraine and the strength of any such association.**

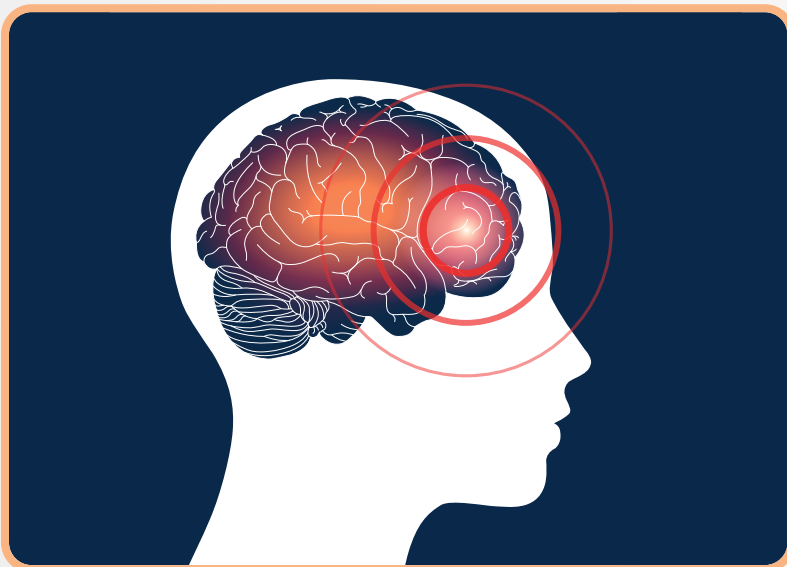
## Three studies

One of the largest investigations of the possible relationship between psoriasis and migraine was based on the Korean Health Insurance Review and Assessment, involving more than 55,000 patients examined between 2002 and 2013.<sup>1</sup> A total of 11,071 patients with psoriasis were selected and matched 1:4 by age, sex, income, region and past medical history. According to the authors, migraines occurred significantly more frequently in patients with psoriasis than in the normal controls. However, the actual increase in risk was quite modest: 16%. When the researchers analysed the data by age

and gender, a stronger association occurred, but only for middle-aged males, who have a 62% increase in risk of migraine. This is interesting, because in the general population of the UK, migraine is more common in women (5-25%) than in men (2-10%).

A second study involved no fewer than 5.3 million participants, from the Danish nationwide health registers.<sup>2</sup> These included 53,006 and 6,831 patients with mild and severe psoriasis, respectively, and 6,243 patients with psoriatic arthritis. Once again, the investigators found that those with psoriasis had a higher risk for migraine, which was around 37%, 55% and 92% for mild psoriasis, severe psoriasis and psoriatic arthritis respectively. This increased risk was found in both males and females.

And finally, in the US, researchers at the New York University School of Medicine used data obtained from the 2003-2004 National Health and Nutrition Examination Survey (NHANES) to examine the association between psoriasis and migraines in the general US population.<sup>3</sup> Of the 3,131 individuals who responded to questions concerning migraines and psoriasis, 3.2% had psoriasis and 29.2% reported a history of migraines within the last three months. Although researchers observed no significant association in basic univariate analysis, in multivariate analysis they found that psoriasis was associated with an almost







four-fold increase in risk for migraine. Unlike the Korean study referred to above, the US investigators found that male gender was a protective factor for migraine, reducing the risk by around 60%.

## Possible mechanisms

The authors of these studies speculate on what underlying mechanisms might explain the observed association between psoriasis and an increased risk of migraine. A key factor is clearly related to the various pro-inflammatory cytokines – including interleukins and tumour necrosis factor alpha (TNF- $\alpha$ ) – which are known to play a key role in the development of psoriatic lesions. These inflammatory molecules are also believed to affect the endothelial function of blood vessels found in the brain, a key factor in the onset of migraine attacks. Nevertheless, a great deal more research is required to elucidate the precise mechanisms involved.

## Conclusion

Overall, the available evidence points to an increased risk for migraine in patients with psoriasis, though the strength of the association seems to vary widely between studies. Moreover, the relationship between gender and risk appears to yield conflicting results: in the Korean study it was middle-aged men who were most at risk, whereas in the US study, being male reduced the risk by

around 60%. Some of these apparently contradictory outcomes are probably explained by differences in the definition of migraine used and the use of self-reported questionnaires.

## Key points

- Patients with psoriasis have an increased risk of migraine, though the strength of the association is unclear
- It is not clear whether certain sub-types of migraine (eg with or without aura) are more commonly associated with psoriasis
- There are common inflammatory mechanisms which help explain both the skin manifestations of psoriasis and the symptoms of migraine
- Individuals with psoriasis should be monitored and appropriately treated for migraines.

## Scientific references:

1. Min C, Lim H, Lim JS et al. Increased risk of migraine in patients with psoriasis: A longitudinal follow-up study using a national sample cohort medicine (Baltimore). 2019; 98(17): e15370.
2. Egeberg A, Mallbris L, Hilmar Gislason G et al. Increased risk of migraine in patients with psoriasis: A Danish nationwide cohort study. J Am Acad Dermatol. 2015;73: 829-35.
3. Steuer AB, Cohen JM, Wong PW, Ho RS. Psoriasis and the risk of migraines in the United States [published online October 30, 2019]. J Am Acad Dermatol. doi:10.1016/j.jaad.2019.10.050.

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