RESIDENTS FORUM

[Translated article] RF – Role of the Mediterranean Diet in the Treatment of Psoriasis
FR – El papel de la dieta mediterránea en el tratamiento de la psoriasis

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KEYWORDS
Psoriasis; Mediterranean diet; Skin; Treatment

Psoriasis is a chronic inflammatory disease that is affected by multiple lifestyle-associated factors. In recent years, several studies have demonstrated the ability of certain foods and dietary patterns to modulate different markers related to systemic inflammation,1 which is an important component of moderate-to-severe psoriasis and is closely linked to associated comorbidities. In a meta-analysis of clinical trials, weight loss through diet was associated with a significant decrease in disease severity.2 Although these improvements could be attributed to a reduction in obesity-associated systemic inflammation, the results of the included studies showed great heterogeneity, suggesting a role of factors other than weight loss in the observed benefit. Diet composition, as mentioned above, could be one such factor.1,2 The Mediterranean diet (MD) is a great source of antioxidant and anti-inflammatory molecules, and has been associated with a decreased risk of cardiovascular and chronic inflammatory diseases.1 Accordingly, several research groups have investigated the potential benefits of MD in patients with psoriasis.

In a cross-sectional study published in 2015 by Barrea et al.,3 poor MD adherence was observed in a significantly higher percentage of psoriasis patients than controls (30.6 and 4.8%, respectively; P < 0.001). Diet adherence was negatively correlated with disease severity as measured by the psoriasis area severity index (PASI). In the multiple regression analysis, consumption of olive oil was one of the main predictors of PASI score, with a correlation coefficient (r²) of 0.548 (P < 0.001). The largest study in this field is a cross-sectional study published in 2018 in JAMA Dermatology4 that included 35,735 subjects from the NutriNet-Santé cohort. Of the participating subjects, 3,557 had psoriasis, which was classified as severe in 878 patients. In the multivariate analysis, after adjusting for variables such as age, sex, weight,
### Table 1: Studies Evaluating the Effect of the Mediterranean Diet in Psoriasis and/or Psoriatic Arthritis.

<table>
<thead>
<tr>
<th>Author, year</th>
<th>Country</th>
<th>Study design</th>
<th>Population</th>
<th>Main findings</th>
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<tbody>
<tr>
<td>Barrea et al.,</td>
<td>Italy</td>
<td>Observational, transversal.</td>
<td>62 psoriasis patients without previous systemic treatment.</td>
<td>Low adherence observed in significantly higher percentage of psoriasis patients than controls (30.6% vs. 4.8%; ( P &lt; 0.001 )). Negative correlation between PREDIMED and PASI scores (( r = -0.576; P &lt; 0.01 )). Among PREDIMED items, use of EVOO was an independent predictive factor of PASI (( \beta = -0.741; t = -7.636; P &lt; 0.001 )). Fish consumption was an independent predictive factor of CRP (( \beta = -0.372; t = 2.922; P &lt; 0.005 )).</td>
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<td>2015(^\text{1} )</td>
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<td>Phan et al.,</td>
<td>France</td>
<td>Observational, transversal.</td>
<td>35 735 subjects from the NutriNet-Santé cohort.</td>
<td>Univariate analysis: percentage of patients with severe psoriasis was higher in tertile 1 (severe psoriasis, 45.5%; non-severe psoriasis, 36.6%; no psoriasis, 35.6%; ( P &lt; 0.001 )). Multivariate analysis(^*): ● Tertile 2, OR (95% CI) for severe psoriasis: 0.74 (0.61–0.90). ● Tertile 3, OR (95% CI) for severe psoriasis: 0.74 (0.60–0.91).</td>
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<td>2018(^\text{2} )</td>
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<td>Molina-Leyva et al.,</td>
<td>Spain</td>
<td>Observational, transversal.</td>
<td>89 patients with psoriasis receiving systemic treatment.</td>
<td>PASI was lower in patients with greater MD adherence. Low adherence, 7 (95% CI 3.6–8.20); moderate adherence, 3.4 (95% CI 1.05–9.45); high adherence, 0.8 (95% CI 0.00–2.57); ( P = 0.007 ). Lower CRP in group with greatest MD adherence (3.20 ± 2.73 vs. 2.54 ± 3.84 vs. 1.12 ± 1.23; ( P = 0.05 )).</td>
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<td>2019(^\text{3} )</td>
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<td>Korovesi et al.,</td>
<td>Greece</td>
<td>Observational, transversal.</td>
<td>69 patients with psoriasis without prior systemic treatment.</td>
<td>MD adherence inversely associated with risk of developing psoriasis(^\text{a} ) (OR, 0.34; 95% CI 0.13–0.92; ( P = 0.03 )). MedDietScore negatively correlated with PASI (( r = -0.39, P = 0.001 )). PASI inversely associated with consumption of legumes, fish, and EVOO (( P &lt; 0.05 )).</td>
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<td>2019(^\text{7} )</td>
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and cardiovascular risk factors, the percentage of patients with severe forms of the disease was significantly lower among the groups with the greatest adherence to the diet. Castaldo et al.\(^5\) evaluated the effect of a very low-calorie ketogenic diet for 4 weeks followed by hypocaloric MD for 6 weeks in a group of overweight/obese patients with psoriasis without systemic treatment. The authors observed significant reductions in weight and improvements in PASI and quality of life. Interestingly, they observed no linear correlation between weight loss and PASI, suggesting that the anti-inflammatory effect of ketone bodies and other dietary components contributed to the observed benefits. Finally, a recent study reported an inverse and weight-independent correlation between psoriatic arthritis activity and MD adherence, suggesting a potential benefit of this dietary pattern in these patients.\(^6\) Table 1 summarizes published studies evaluating the effect of MD in psoriasis and/or psoriatic arthritis.

In conclusion, the available evidence indicates that MD may be associated with less severe forms of psoriasis and/or psoriatic arthritis. Bearing in mind that reduced severity was independent of body mass index in several studies,\(^4\)\(^-\)\(^7\) it is possible that the beneficial effects of this dietary pattern are due to more than mere weight loss. However, more experimental longitudinal studies will be necessary to consolidate these findings and to precisely define the role of MD in the treatment of this disease.

### Funding

This work has not received any type of funding.

### Conflicts of Interest

The authors declare that they have no conflicts of interest.

### References


