

# Comparative effectiveness of teriflunomide vs dimethyl fumarate in multiple sclerosis

David-Axel Laplaud, MD, PhD, Romain Casey, PhD, Laetitia Barbin, PhD, et al., on behalf of the SFSEP and OFSEP groups

Cite as: *Neurology*® 2019;93:e635-e646. doi:10.1212/WNL.0000000000007938

## Correspondence

Dr. Laplaud  
david.laplaud@  
univ-nantes.fr

## Study objective and summary result

This study compared teriflunomide and dimethyl fumarate (DMF) in terms of effectiveness for patients with relapsing-remitting multiple sclerosis (RRMS) in a multicenter French cohort, and it found that teriflunomide and DMF are similar in terms of clinical effectiveness for patients with RRMS.

## Classification of evidence

Class III.

## What is known and what this paper adds

Teriflunomide and DMF both reduce annualized relapse rates and disability accumulation in patients with RRMS, but no investigation has directly compared them. This investigation shows that they are similar in terms of clinical effectiveness.

## Participants and setting

The investigators analyzed data from adults with RRMS who were members of the Observatoire Français de la Sclérose En Plaques cohort (NCT02889965), which was mostly conducted through 34 centers in France. The selected patients began receiving teriflunomide (n = 713) or DMF (n = 1,057) between May 2014 and January 2016 and had Expanded Disability Status Scale (EDSS) scores  $\leq 5.5$  at treatment initiation. The data for these analyses were accessed on December 15, 2017.

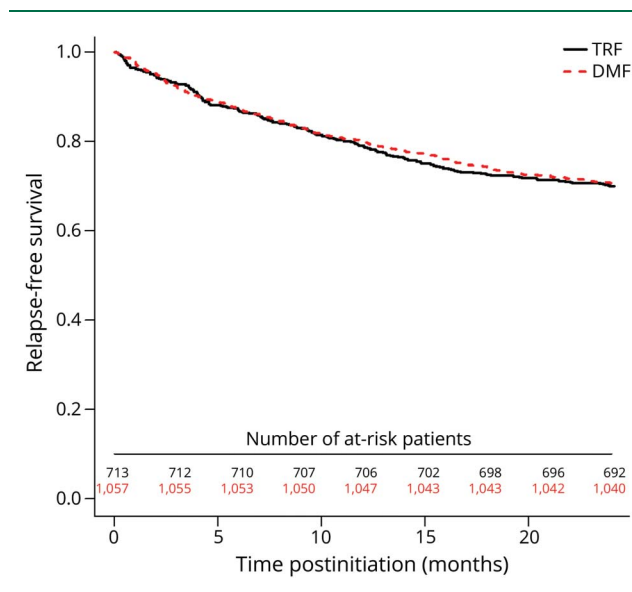
## Design, size, and duration

The main outcomes of interest were relapses within 1 or 2 years of treatment initiation. The investigators also examined from-baseline EDSS score changes within 1 or 2 years of treatment initiation. Logistic regression models were used to compare the outcomes for the teriflunomide-treated and DMF-treated patients, and propensity scores were used to address potential confounders.

## Main results and the role of chance

The teriflunomide-treated and DMF-treated groups were similar in terms of 1-year relapse rates (19.4% vs 21.6%, respectively;  $p = 0.22$ ) and 2-year relapse rates (28.1% vs 30.9%, respectively;  $p = 0.19$ ). No between-group differences in from-baseline EDSS score changes were observed.

**Figure** Time to first relapses in the teriflunomide-treated and DMF-treated groups



## Bias, confounding, and other reasons for caution

This investigation lacked complete data for all patients. Treatments were not randomly assigned.

## Generalizability to other populations

The reliance on data from France may limit the international generalizability of the results.

## Study funding/potential competing interests

This study was funded by Fondation ARSEP, the Centre Hospitalier Universitaire de Nantes, the Association ANTARES, and the Agence Nationale de la Recherche (French government). Some authors report receiving consulting fees, lecture honoraria, travel and conference expenses, committee appointments, and research support from healthcare companies; serving as investigators on industry-sponsored clinical trials; receiving research support from Rennes University Hospital; and having patents pending. Go to [Neurology.org/N](http://Neurology.org/N) for full disclosures.

A draft of the short-form article was written by M. Dalefield, a writer with Editage, a division of Cactus Communications. The authors of the full-length article and the journal editors edited and approved the final version.

# Neurology<sup>®</sup>

## Comparative effectiveness of teriflunomide vs dimethyl fumarate in multiple sclerosis

David-Axel Laplaud, Romain Casey, Laetitia Barbin, et al.

*Neurology* 2019;93:e635-e646 Published Online before print July 12, 2019

DOI 10.1212/WNL.00000000000007938

### This information is current as of July 12, 2019

<b>Updated Information &amp; Services</b>	including high resolution figures, can be found at: <a href="http://n.neurology.org/content/93/7/e635.full">http://n.neurology.org/content/93/7/e635.full</a>
<b>References</b>	This article cites 27 articles, 5 of which you can access for free at: <a href="http://n.neurology.org/content/93/7/e635.full#ref-list-1">http://n.neurology.org/content/93/7/e635.full#ref-list-1</a>
<b>Citations</b>	This article has been cited by 1 HighWire-hosted articles: <a href="http://n.neurology.org/content/93/7/e635.full##otherarticles">http://n.neurology.org/content/93/7/e635.full##otherarticles</a>
<b>Subspecialty Collections</b>	This article, along with others on similar topics, appears in the following collection(s): <b>Class III</b> <a href="http://n.neurology.org/cgi/collection/class_iii">http://n.neurology.org/cgi/collection/class_iii</a> <b>Clinical trials Observational study (Cohort, Case control)</b> <a href="http://n.neurology.org/cgi/collection/clinical_trials_observational_study_cohort_case_control">http://n.neurology.org/cgi/collection/clinical_trials_observational_study_cohort_case_control</a> <b>Multiple sclerosis</b> <a href="http://n.neurology.org/cgi/collection/multiple_sclerosis">http://n.neurology.org/cgi/collection/multiple_sclerosis</a>
<b>Permissions &amp; Licensing</b>	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: <a href="http://www.neurology.org/about/about_the_journal#permissions">http://www.neurology.org/about/about_the_journal#permissions</a>
<b>Reprints</b>	Information about ordering reprints can be found online: <a href="http://n.neurology.org/subscribers/advertise">http://n.neurology.org/subscribers/advertise</a>

*Neurology*® is the official journal of the American Academy of Neurology. Published continuously since 1951, it is now a weekly with 48 issues per year. Copyright © 2019 The Author(s). Published by Wolters Kluwer Health, Inc. on behalf of the American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.

