

# Literature search approaches in an era of increasing publication volume

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## Background

- Literature reviews are a key part of the drug development process used in the early exploration of unmet needs through regulatory submission and post-marketing activities.
- The amount of literature published each year has increased substantially over the past decade.
  - Multiple sclerosis (MS) research has increased at a 6.4% annual bibliographic growth rate from 1945 to 2020, with nearly half of the growth occurring within the last decade.<sup>1</sup>
- The rapid growth of publications has increased the amount of time and cost related to conducting high-quality literature reviews.
- Focusing on the most up-to-date literature has frequently been used as a method to reduce the scope of review while still identifying the most relevant publications; however, the recent surge in publications has reduced the utility of publication year limits alone.

## Objective

- To explore the impact of applying focused search filters and varying review methodology on the time and budget burden of literature reviews.

## Methods

### Literature searches:

- Literature searches were conducted in Embase via Ovid in May of 2024 to identify real-world evidence studies on treatment patterns of disease-modifying therapy in MS.
- The initial search was for real-world studies in MS, including filters to remove animal studies, letters, editorials, comments, case reports, narrative reviews, and conference abstracts.
- Subsequently, additional search terms were added to limit hits by interventions, outcomes, and publication year.
- Hours to screen for citations were calculated at the title/abstract level using an estimated rate of 45 abstracts per hour.

## Results

### Number of citations

- Over 16,000 citations were identified by the search for real-world studies in MS from database inception to May 2024.
- 74%, approximately 12,000 studies, were published in the last 10 years, and 48%, nearly 8,000 studies, were published in the last 5 years (**Figure 1**).
- The number of studies identified in a search of the last 10 years was reduced from approximately 12,000 to 3,464 by applying intervention terms, to 1,623 by applying outcome terms, and to 577 by applying both intervention and outcome terms.
- The number of citations identified per year from the overall search nearly tripled over the last 10 years, from 583 in 2013 to 1,509 in 2023 (**Figure 2**).
  - A similar pattern was seen for the searches including intervention or outcome terms.

Figure 1. Percentage of publications of real-world studies in MS identified from the overall search across different time periods

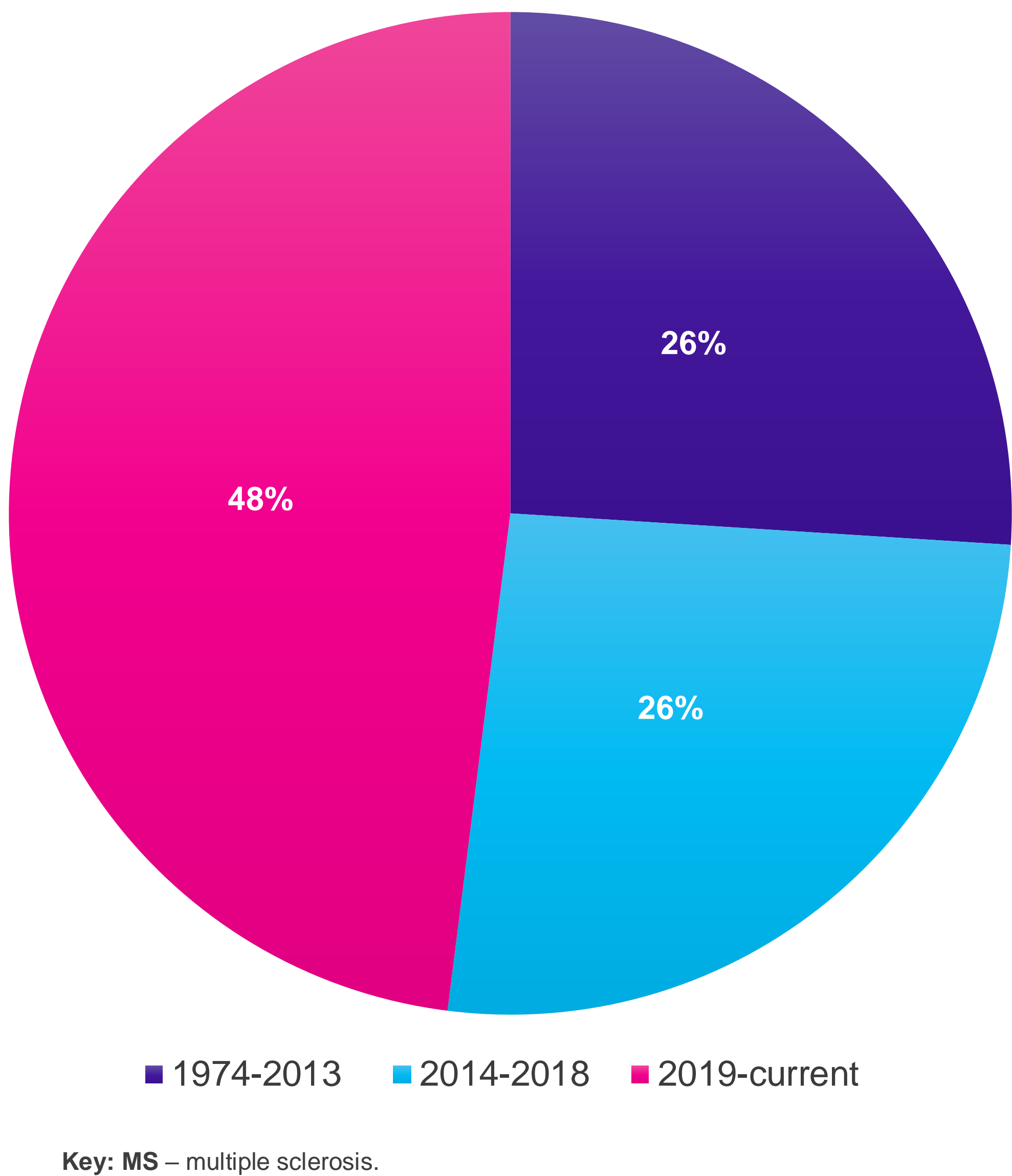
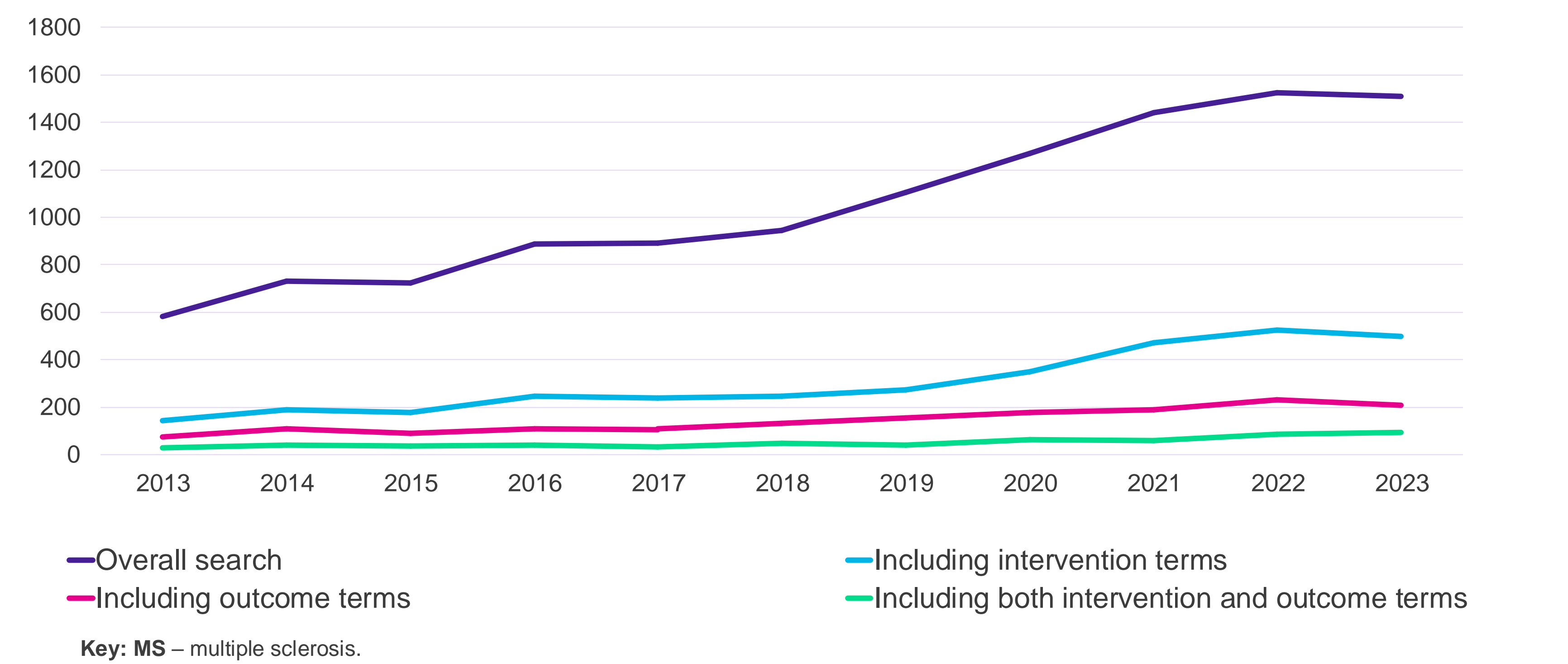


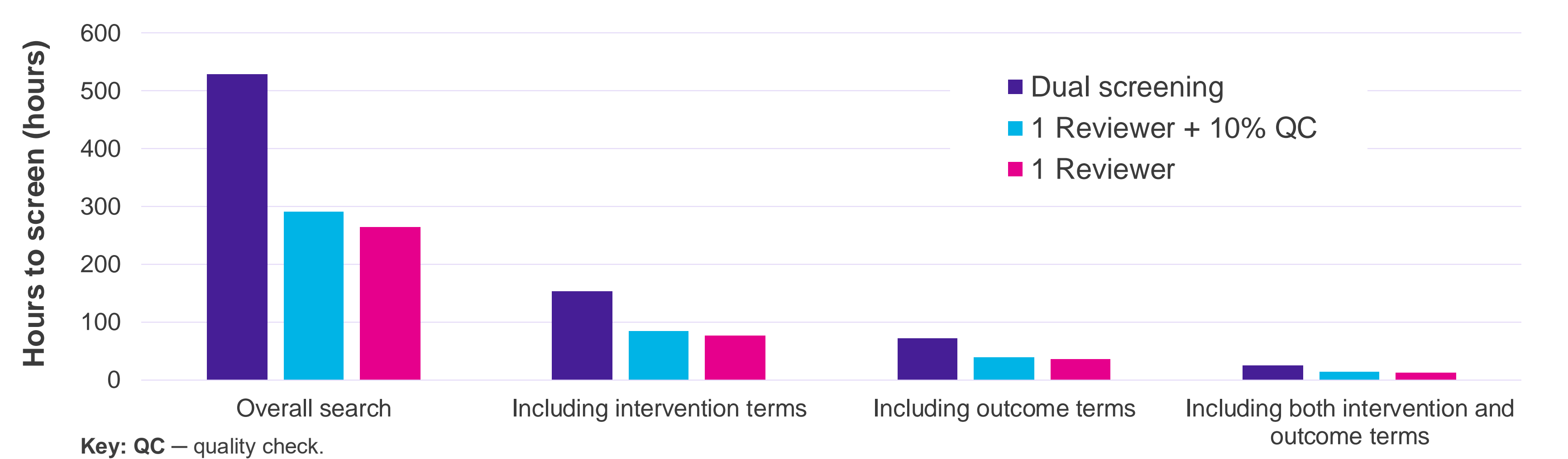
Figure 2. Number of real-world studies in MS identified per year, from 2013 to 2023



### Hours to screen

- 530 person-hours were needed to dual screen all citations identified from the overall search within the last 10 years.
- Focusing the search to the last 5 years reduced the time needed to dual screen to 344 person-hours for studies identified from the overall search.
- The addition of terms for interventions reduced the person-hours needed to dual screen from 530 to 154.
- The addition of terms for outcomes reduced the person-hours needed to dual screen to 72.
- Adding terms for both interventions and outcomes reduced the person-hours needed to dual screen to 26.
- While dual review is necessary for systematic literature reviews supporting health technology assessment submissions or planned for publication, targeted reviews using single-reviewer or quality check screening are appropriate for many projects intended for internal use.
- Taking a targeted approach to screening can further lower the burden of undertaking a literature review (**Figure 3**).

Figure 3. Hours to screen by search filter(s) and reviewer method, from 2014 to present



## Conclusion

- Increased publication volume has increased the time and budget burden associated with conducting efficient literature reviews.
- Reducing the scope of a review by defining specific research questions *a priori* and choosing a review methodology appropriate to the goal of the review allows for a more focused search and screening process, thus reducing the number of resources needed to complete literature reviews.

## References

- Ismail, II, Saqr M. A Quantitative synthesis of eight decades of global multiple sclerosis research using bibliometrics. *Front Neurol.* 2022;13:845539. doi:10.3389/fneur.2022.845539

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