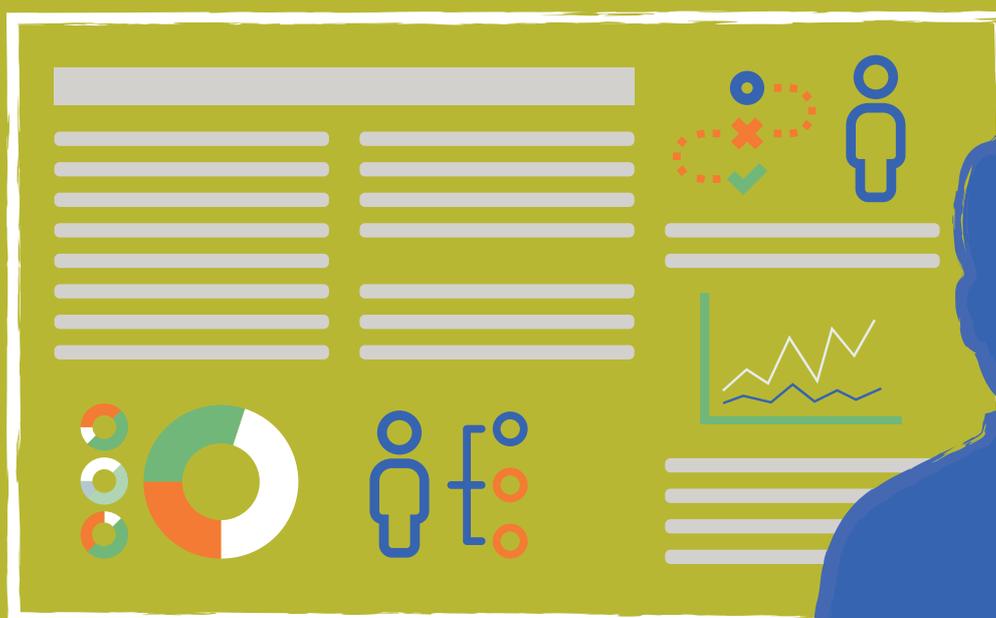


Making Sense of Scientific Publications



The treatment of multiple sclerosis (MS) has come a long way, from one approved agent in the early 1990s to more than a dozen approved disease-modifying therapies (DMTs) throughout the world. However, there are still unmet needs in the treatment and management of MS. Right now, physicians and scientists across the globe are conducting research with hopes of finding new and improved ways to diagnose, treat, and monitor people living with MS.

To communicate research results, and ultimately have a positive impact on individual care, researchers publish their work in scientific journals. For the non-scientist, scientific publications may seem complex and difficult to grasp and interpret. This guide provides useful tips that may help you to:

- understand the typical sections in scientific publications and where to locate key information
- become more informed in preparation for discussions with your healthcare provider

The typical sections in most scientific publications are: **Abstract, Introduction, Methods, Results, and Discussion.**¹ These sections are found across most types of publications, including those concerning clinical trials and those which look at a disease state in general.

Let's walk through what information each section usually contains.

Abstract

This section:



states the purpose of the study



explains how the researchers conducted the study



provides most important results



presents conclusions



captures the key takeaways/learnings from the data



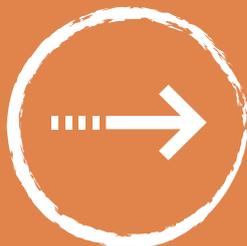
may contain author opinion(s) about the findings of the study

Introduction

Includes useful information for:



learning more about the background of the topic being discussed and about previous and/or current research



understanding the purpose of the article and how its findings contribute to advancing knowledge in a particular field of study

Methods

Here you can find answers to the following questions:



What type of treatment or procedure is being studied?



How was the study designed?



Which patients were and were not eligible to be included in the study, and is this study relevant to the reader?



Which patients in each group received placebo or drug, and at what doses?



What are the **endpoints**[†] of the study?



How were the data collected and analyzed?

In this section, you can find out if this study would be applicable to your age group and/or your diagnosis. Some scientific articles are called systematic reviews and meta-analyses, and these can give healthcare providers a summary of several studies in one publication, rather than having to search for each individually.

[†]**Note: endpoints are outcomes that aim to answer questions asked by the study, such as “How does MS affect quality of life or emotional well-being?”**

Results

This section reports the following:



characteristics of the patient population in the study, such as age, gender, race, and disease characteristics



the number of patients who completed the study, and the reason why some may have dropped out



figures or tables that illustrate important findings



statements from the authors indicating whether or not the results were statistically significant, or meaningful

When a result is statistically significant, it means there is a low likelihood that differences between groups (e.g, study participants being treated with drug vs those given placebo) are due to random chance. Some publications will contain analyses that apply the results of the study to subsets of included patients based on their unique characteristics, such as geographic location or age group. The results may or may not be statistically significant.

Discussion

This may be the most important section because it usually contains the authors' interpretation of the data. A good scientific discussion should:



summarize the most important points that can be concluded from the data (or conversely, what conclusions cannot be drawn) and what new questions are presented



compare these data to other available data



address limitations, such as potential sources of bias

Although perhaps challenging at first, reading scientific publications becomes easier with practice. One important point to remember is that many scientific publications exist and provide evidence for how to best treat a condition, and a single publication cannot answer all questions asked by patients, researchers, and clinicians. If you have questions or concerns after reading a scientific publication, be sure to discuss them with your healthcare provider, as it may lead to more meaningful discussions during your visits.

Reference

1. Liunbruno GM et al. *Blood Transfus.* 2013;11:217–226.