Editorial

How to write an excellent Review article

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Review articles are our bread and butter. Here, we would like to offer some insights on how to craft a comprehensive and authoritative assessment of a field.

Only by taking stock of where we are, can we point to where we need to go next. Review articles are designed to synthesize and critically evaluate the most important research findings within a specific field to gauge its progress and identify new research opportunities. They should be timely, objective, balanced, forward-thinking and engaging – not only informative but also easy to read. So, what does it take to craft a high-quality Review that serves as an essential resource for those interested in your field?

The first step is to determine whether your topic is timely and whether there is sufficient recent primary research to justify a crucial discussion. Start by thoroughly scanning the scientific literature to identify key findings, open questions, emerging insights, controversies and recent conclusions. A good rule of thumb is to aim for at least 30 relevant primary research papers published within the past 2–3 years. If you can meet this benchmark, it may be a good time to assess the field through a Review and start screening the broader literature. When identifying references, use a range of sources, such as literature databases and community-specific resources, and experiment with different keyword combinations to ensure comprehensive coverage. It is also beneficial to follow the work of a diverse set of researchers to get a sense of what is trending globally. Because references are the foundation of your article, make sure to cite appropriately and be mindful of inclusivity and diversity in your citations[1].

Next, you need to find a compelling angle for your discussion. Ask yourself whether new research results have led to fresh questions or if certain areas are approaching clinical application. If not, are there emerging research directions aimed at bridging the translational gaps? Has the field shifted toward a new focus or approach? Identifying this angle will shape the narrative of your Review.

Begin by drafting a detailed outline. Identify the main topics, examples and key messages you want to convey. Organize these into a coherent storyline, drawing connections and highlighting synergies between different research areas. In addition, consider designing original illustrations that summarize the core concepts, compare different approaches and showcase key examples. Visual elements are powerful tools to enhance understanding and can help readers to grasp complex ideas quickly.

The introduction to your Review should set the stage by providing an overview of the field and context for the topic. Keep in mind that your audience may include readers who are unfamiliar with the subject, so explain mechanisms and concepts clearly and in sufficient detail. However, avoid overcomplicating things – simplicity is key. Steer clear of acronyms and abbreviations, as their meanings can vary across disciplines and may confuse readers, and keep sentences and paragraphs concise. Be sure to highlight the major advancements and knowledge gaps, emphasizing the importance and impact of the field you are reviewing.

The core of the Review – the critical discussion – should follow a logical flow. Organize the content into major sections, each dedicated to a particular area of research, with sub-sections to help to structure the discussion. Do not merely list research outcomes in chronological order; instead, compare and contrast the most representative research findings, exploring what has succeeded, what has not, and what can be learned from any failures. Look for common themes, conflicting conclusions and bottlenecks. Be as specific as possible, offering detailed information about models, systems and methodologies. To avoid ambiguity, make sure it is clear whether you are discussing established findings or proposing hypotheses. Incorporate tables to compare systems, metrics or approaches – such as clinical trials, performance outcomes or device designs – and consider adding text boxes for technical details that support the main discussion.

Conclude your Review with an outlook section that summarizes the key take-home messages and highlights future directions for the field, pinpointing specific actionable milestones. By the end, readers should have a clear understanding of the current state of the field, its future challenges, and the steps needed to overcome them from both engineering and translational perspectives. Ideally, the reader is left with many ideas for new experiments and collaborations.

Finally, choose a title that is clear, descriptive and concise, avoiding vague terms, such as 'advances', 'emerging' or 'recent', to make your Review easy to find and classify. The title should include key terms that reflect the content of the Review. Similarly, the abstract should be succinct, providing a snapshot of the article by briefly introducing the field and outlining the major themes of your article. Think of it as a miniature version of the Review.

A good Review should always teach you something new – even if you have been in the field for a long time. Writing a Review article offers a unique opportunity to reflect on a field and deepen your understanding of core concepts. The process might even lead you to fresh insights of your own.

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References

1. Citation diversity statement. *Nat. Rev. Bioeng.* **1**, 227 (2023).