

How to Efficiently Read a *JOI* Dental Scientific Paper

Why should a busy clinician take the time to read the *Journal of Oral Implantology (JOI)*? The primary reason for reading a dental/scientific paper in *JOI* is that the information contained within is current and peer reviewed. Textbooks often contain information that was once current, but now may be outdated. Also, textbooks are not necessarily peer reviewed, and therefore, may represent the author's personal bias. Journal articles are what the opinion leaders believe to be true now and are reviewed and corrected by other "experts" in the field. Scholarly dental/scientific papers are written so the reader can replicate the research project or clinical procedure under discussion. If the paper addresses a clinical or scientific research matter, there will be data which enables the reader to utilize critical thinking skills to interpret the validity of the author's findings and conclusions. The reader can then decide whether or not to accept the findings or hypothesis.

I realize that many readers of *JOI* are clinicians and may not have the time to read the entire paper. Clinicians spent their time in school learning skills that benefit patients in their practice. Unless the clinician has undergone additional time acquiring a Masters or PhD beyond their dental degree, they may not have acquired the skills to quickly read and understand a scientific paper. Therefore, the clinician may stop reading well before the end of the paper. This Editorial will provide some suggestions to enable one to efficiently read a scientific paper.

If you are reading a paper, it will be beneficial to have a highlighter on hand or take notes of the significant concepts covered in the paper. To begin with, DO NOT read the paper straight through.¹ You will undoubtedly come to an incomplete or inaccurate conclusion or become discouraged. The following steps may be helpful.

1. Begin with the Abstract. This will let you quickly know what was done and found. However, please do not stop at the abstract. It is only a summary, and if you stop at there, you may be missing significant information that would limit the utility of the paper. This would be like buying a new car with multiple new technologies, but never getting properly trained in the "how-to" for using the technology. So, please do not stop here and conclude you have developed the skills needed to painlessly read and understand a scientific paper.
2. Read the Discussion and Conclusion(s). These sections may be separate or combined and present: (1) a summary of the research results, (2) how the results are relevant to the research question or hypothesis, and (3) how the results support the conclusion(s). At this point, you should use critical thinking to decide if you agree with the presented conclusion and if the conclusion relevant to your clinical needs. The conclusion may not necessarily be relevant for you immediately, although it may have significant impact on your practice in the future. If you have great familiarity with, or minimal interest in, the topic, you may choose not to read any additional sections, although I would encourage you to

re-read the abstract and then reflect on what you learned. Additionally, it would be good to discuss the conclusion(s) with a colleague. This will help you retain what you have learned. However, if you do not have a good understanding of the topic, then move onto step 3.

3. Read the Introduction. This section explains the incentive and importance for the research project. It also explains historical and current background information that is supported by references. The cited references are truly significant and if one takes the time to review the references (step 6), you will gain exponential value from the paper. As a clinician, exiting the paper at this point is understandable and acceptable. However, if the paper has piqued your interest in the topic and you intend to implement the findings in your daily practice, then continue to step 4.
4. Review the Results. This section provides the raw data with figures and tables that summarize the data. When looking at figures, make certain to examine the graph's axes and then determine if the data is being clearly and fairly represented.
5. Read through the Materials and Methods. This section is for those who wish to duplicate the experiment(s) or the clinical procedure. Reading this section will help you decide if the methodology used is valid, or if the technique is something that is "sensible" or "doable" in your clinical practice. If you made it this far, be certain to review the references in the next step.
6. Review References. This allows the reader to see what the author referenced and decide if the supporting documents are relevant, accurate, and current. Reviewing the references is a good exercise whether the reader has or has not completed steps 4 and 5.

No matter where you stop in the reading process, always ask yourself if what the author(s) has concluded is relevant, without bias, and something you feel comfortable incorporating into your clinical practice. Reading scientific papers does become easier with time and therefore, the more you read, the easier it will become.² Also, know that you are a better and more current clinician by investing in the journal-reading process. As Editor-in-Chief, I encourage you to invest at least 30 minutes a week in reading *JOI* or other journals. Yes, reading *JOI* will make you a better implant dentist.

James L. Rutkowski, DMD, PhD
Editor-in-Chief

REFERENCES

1. Fosmire M. How to read a scientific paper. <https://www.lib.purdue.edu/sites/default/files/libraries/engr/Tutorials/Newest%20Scientific%20Paper.pdf>. Accessed March 25, 2020.
2. Pain E. How to (seriously) read a scientific paper. *Science*. <https://www.sciencemag.org/careers/2016/03/how-seriously-read-scientific-paper>. Accessed March 25, 2020.