

How to Conduct an Effective and Thorough Literature Search for Medical Writing Projects

By Yanni Wang, PhD, CMPPTM

Many medical writing projects start with a literature search and review. But conducting a thorough literature search can be time consuming. How do you effectively gather all the information you need without over researching?

Here is a way to do it.

Step 1. Find a Starting Point

1. **Client.** If you are a freelance medical writer working for a client, your client may have some reference articles for you to get started. If this is the case, great. Briefly read these reference articles first. If these articles turn out to be too deep for you, put them aside, and try to find a different starting point. You can come back to your client's references later -- after you have a better understanding of the target issue you are supposed to address.
2. **Websites of reputable organizations.** Many research institutions, hospitals, and professional as well as nonprofit organizations post high-quality educational materials on their websites. Because their target audiences are often patients and the general public, the materials are generally written in plain language and are relatively easy to read. But make sure you visit the websites of reputable organizations. For example, if I want to search a cancer or oncology-related topic, I start with the National Cancer Institute's website cancer.gov. The site provides tons of information ranging from cancer statistics, to diagnosis and treatment, and much more.
3. **UpToDate[®].** Launched in 1992 by Wolters Kluwer, UpToDate[®] claims to be an evidence-based resource, and the content is supposedly updated constantly. But you do have to subscribe to access its content. The subscription fees range from \$45.00 for recurring 30-day subscription and all the way to \$1199.00 for a 3-year subscription.
4. **Review articles.** If you already have a decent understanding about the topic, you probably can start with one or two most recent review articles. Your client may already have such review articles. If not, a quick PubMed search will do the trick, if such review articles exist.
5. **Wikipedia.** Sometimes Wikipedia can give you a quick summary about a topic. But for me, unless I know almost nothing about the topic, I generally do not use Wikipedia for accuracy-related concerns. If you do decide to use Wikipedia as a starting point, make sure you check out other resources as well.

Step 2. Dive into Primary Publications

Once you have a good basic understanding about a topic, locate and read primary publications. These should be your main source of information and you'll need to cite them — at the end for articles and embedded in pages for PowerPoint presentations.

Here are two most common places to locate peer-reviewed research publications.

1. **MEDLINE® and PubMed.** These two are related but different. MEDLINE® is the US National Library of Medicine's journal citation database, and PubMed is an interface that users can use to search databases, including MEDLINE® and more. With access to more than 25 million biomedical articles and more than 56 scholarly journals, PubMed is probably the most used tool for searching peer-reviewed, biomedical research-related publications.
2. **Google Scholar.** To search for peer-reviewed journal publications, PubMed is many medical writers' first choice. But if you want publications that are not included in PubMed (eg, books, theses, ect.), you may want to give Google Scholar a try. It's easy to use, and it may link you to some free publications.

Tips on obtaining free articles

There is no free lunch, but sometimes you can get a copy of a peer-reviewed journal publication for free. Here are a few options.

1. **Client.** Again, if you are a freelance medical writer working for a client, chances are your client already has a decent collection of articles on the topic they are interested for you to cover. So ask. If they have them, great. You'll save yourself, and your client, time and money.
2. **PubMed Central®.** PubMed Central® is a free digital archive of a large selection of biomedical and life sciences journals. According to the NIH Public Access Policy, publications of all research funded by the NIH must be freely accessible to the public. In addition, many publishers and individual authors voluntarily make their publications free to access through PubMed Central. Currently, full-text articles of more than 2570 journals are freely accessible to the public.
3. **Google Scholar.** Most articles you find through Google Scholar probably will not be free to you. But some are. If you know the title of your target reference (article, book, or thesis), run it through Google Scholar. If you are lucky, a simple search may lead you to the full article, for free.
4. **University libraries.** If you are affiliated with a university (eg, a faculty member or a student), and if the university subscribes for the journal that publishes your target article, you can easily access the article through your library.

5. **Publishers.** Many journals make their older issues freely available to the public. Some even selectively make some of their new articles free.
6. **The author.** It's the old fashion, but sometimes it might be your only option to get a free copy. The good news is most authors are very open and responsive. If all other options fail, it doesn't hurt to send the corresponding author a polite email.

Step 3. Expand Your Search

1. **Press releases.** Press releases can't be used as references in general, but sometimes it can give you a clue of what has happened since the most recent publication you can find. After all, all published work is already history in certain sense, and a lot of work has been done since the last publication. Press releases from study sponsors might be biased, but they might lead you to recent or upcoming publications that you otherwise are not aware of. In rare cases, you can find releases from the FDA, which will often give you some interesting information.
2. **CME content.** CME content generally can't be cited as a reference, but you could use it as your own reference. For example, you could check its reference list to make sure that you don't miss some important or interesting publications.

Yanni Wang is a principal scientific writer and the owner of International Biomedical Communications, a company dedicated to translating research data into clear messages. Yanni has a PhD in chemistry and writes about biomedical research-related topics for professional audiences and the general public. Yanni can be reached at dr.yanni.wang@gmail.com.