# Cancer.Net

Oncologist-approved cancer information from the American Society of Clinical Oncology

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# Understanding the Publication and Format of Cancer <u>Research Studies [1]</u>

#### This section has been reviewed and approved by the Cancer.Net Editorial Board [2], 12/2015

Doctors and scientists are always looking for better ways to care for people with cancer. To make scientific advances, doctors conduct research studies in the lab or with volunteers in the clinic. These research studies are known as <u>clinical trials</u> [3]. Well-designed research studies help answer key questions about how cancer works in the body and what tests and treatments may work best.

However, the results of these studies cannot improve cancer care unless other doctors know about them. The primary way that scientists can show their findings is to publish research studies in scientific and medical journals. They may publish their own research, which describes the results of a study they conducted. Another way is to write a review article, which looks at all of the published research on a certain topic.

Most authors of cancer research studies write for other doctors and scientists. However, it is becoming more common for patients to read studies while researching their type of cancer and the treatment options. Because research studies use scientific terms, it may be hard for a person without scientific training to understand them. Therefore, it is important to talk with your doctor about the research you find in a journal article.

#### **Research publishing process**

Scientific research studies are published in journals. Journals focus on a specific topic, such as

clinical cancer research. They help introduce new findings to the research field and show what research method was used to get these results.

Many journals in cancer research are published in print and online formats. This includes the <u>American Society of Clinical Oncology's (ASCO's) journals</u> [4]. Most journals are published on a weekly, biweekly, monthly, or quarterly basis.

Before appearing in journals, articles are reviewed by subject matter experts. This means that journal editors send the research articles to independent peer reviewers to read. These experts decide whether the data is accurate and the conclusions are valid.

#### Anatomy of a research article

Research studies published in journals follow a specific format and structure. This format presents the data in a way that allows others to repeat the study. Most articles present background, the researcher's methods or process, results, and the meaning of the findings. This structure is known as Introduction, **M**ethods, **R**esults, **a**nd **D**iscussion or IMRAD. The International Committee of Medical Journal Editors endorses this format. However, it is important to note that some journals call these sections by different names.

- Introduction. This section should answer the following two questions:
  - Why was this study done?
  - What is the research question? For example, does this treatment extend the lives of patients with stage IV colon cancer?
- **Methods.** In this section, researchers describe how they answered the question they stated in the first section. They will explain the study's design. Also, they will describe the study volunteer, which includes the following information:
  - Basic, such as age and sex
  - $\circ\,$  The type and stage of cancer, such as stage I lung cancer  $\,$
  - How they were chosen for the study.

If the study involved treatment, this section includes data about how, how much, and how

often the treatment was given. The researchers should also state what outcome, or result, they were measuring. This includes survival rate, tumor shrinkage, treatment side effects, quality of life, and how the data were analyzed.

- **Results.** This section presents how the researchers collected the data, focusing on the most important findings of the study. Tables and graphics also show the data in different ways.
- **Discussion.** This section is also called the conclusion. It describes what the results mean in relation to the study's purpose. Also, it places the results within the larger context of cancer research. It notes whether the results confirm or contradict previous research and explains the importance of the findings.

### The abstract

An abstract is a summary that is at the beginning of published articles. It shows the most relevant data from every section of the study. This summary allows readers to quickly learn about the important aspects of the research. Researchers often present their abstracts at scientific meetings. In fact, they often announce their initial study results at these meetings before they are published.

#### Searching for research studies

There are a number of ways to find articles and abstracts to learn more about advances in cancer treatment. To locate an article, visit the journal's website and use either the search function or the online archive to locate the abstract.

You can also use large, online databases, which provide study abstracts. One popular database used heavily in the cancer research field is <u>PubMed</u> [5]. PubMed is a service of the National Library of Medicine. It includes more than 22 million citations from a wide range of scientific journals. A citation is a reference to a source that provides information such as the author names, article title, and journal title.

Using this database may be challenging. It contains huge numbers of articles, but you can make it easier by searching only cancer-related articles. If you can't find details on a specific topic, try to choose a medical term for the general language term you have been trying to search. For example, try "renal cell carcinoma" instead of "kidney cancer." In addition, PubMed has a feature that "translates" the most common cancer terms into scientific terms.

Abstracts can often be accessed online for free or for a small cost. You may not be able to read the complete journal article if you don't subscribe to the journal. However, you might be able to pay a one-time fee for a specific article. Recently, though, six publishers have joined together as part of a project called patientACCESS. It provides access to medical research articles to patients with cancer and those who care for them for a \$2.00 processing fee per article. The publishers are ASCO, the American Association for Cancer Research, Elsevier, SAGE, Wiley and Wolters Kluwer Health, and the Copyright Clearance Center. Learn more about accessing research articles with <u>patientACCESS</u> [6].

For printed copies of medical journals, visit a local library or university.

## **More Information**

Understanding Cancer Research Study Designs and How to Evaluate Results [7]

Journals and Magazines [4]

CancerProgress.Net [8]

#### Links

[1]

http://www.cancer.net/research-and-advocacy/introduction-cancer-research/understanding-publication-and-format-c ancer-research-studies

[2] http://www.cancer.net/about-us

[3] http://www.cancer.net/node/24863

[4] http://www.cancer.net/node/25373

[5] http://www.pubmed.gov/

[6] http://www.cancer.net/node/29231

[7] http://www.cancer.net/node/24719

[8] http://www.cancerprogress.net/