



What is WIKISTIM?

WIKISTIM is a searchable website created to 1) display primary clinical and experimental data reported in the neuromodulation literature in a format that is searchable and accessible, facilitates comparison and meta-analysis, and eliminates the “noise” of unnecessary narrative and 2) promote collaboration and sharing of information among clinicians, scientists, engineers, and others.

The WIKISTIM data display has three features: 1) discrete sections devoted to various stimulation targets; 2) entries updated monthly to provide, at a minimum, citation information and PUBMED links when available; and 3) an extensive list of data categories developed for each stimulation target.

WIKISTIM is configured to allow everyone to submit abstracted data, download datasheets, and make suggestions. Our goal is for WIKISTIM to list all neurostimulation reports containing primary clinical or experimental data and extract all possible data from these reports. In addition to providing opportunities for collaboration, WIKISTIM also encourages communication via its forum.

What sorts of studies are included in WIKISTIM?

WIKISTIM includes papers that report primary data.

The needs that inspired the creation of WIKISTIM

The ability to access, synthesize, and assess clinical evidence in the scientific literature is vital for improving patient care, educating patients, receiving reimbursement, filling research gaps, gaining regulatory approval for innovations, and marketing therapies. Access alone, however, is constrained by the difficulty, expense, and time required to manage the sheer volume of reports available in a wide variety of journals.

Attempts to improve access have taken many forms. First, journals now require that authors submit an abstract. Some journals content themselves with unstructured (i.e., with no headings) abstracts; other journals require a structured format (i.e., sections, such as Introduction, Methods, and Results). The detailed data sheets that can be completed using the WIKISTIM data categories will push this trend forward and are the logical extension of abstracts as we know them.

Another response to the problem of access was the creation of massive searchable databases, such as PUBMED. Searches in such environments, however, can yield incomplete or inaccurate

results that respond only to the handful of keywords provided by the author or to language the author happened to include in an abstract or title. (If a reader wants information about infection rates, for example, a PUBMED search will not reveal these data unless “infection” is called out in the title or abstract.) Acquiring full-text reports is time-consuming and expensive.

Some authors have attempted to meet this need by performing literature reviews, some of which have morphed into more sophisticated systematic reviews and meta-analyses. The latter have become types of studies themselves, but although researchers use these techniques to synthesize and assess data, the results are limited by the necessarily arbitrary nature of the research questions, search terms, inclusion criteria, and outcome measures. Such studies are also unavoidably out-of-date by the time they are published, can incorporate and perpetuate mistakes, and rarely (if ever) meet the scientific standard of reproducibility.

An ancillary, but nonetheless important, problem with the journal-based scientific literature is the time and space limitations suffered by authors of letters to the editor. These limitations, in turn, impede meaningful communication.

A new resource clearly was needed to address these problems and answer the specific literature research and communication needs of clinicians, patients, payers, innovators, regulators, and manufacturers.

How WIKISTIM meets these needs

WIKISTIM speeds up access to important information by gathering citations to all pertinent primary publications in one searchable location. WIKISTIM facilitates synthesis of data by creating a platform for the extraction of pertinent data and then by supporting the downloading of data sheets into user-generated tables where the data can be assessed and analyzed to provide up-to-date answers to specific research questions.

WIKISTIM provides scientific information in a format that even interested lay people, such as patients and their families, will find helpful.

The useful life of published reports will be extended because critical thinkers and readers who wish to query and correct inconsistencies in scientific papers will be able to discuss published reports on a platform dedicated to the field of neurostimulation without the limitations imposed on “Letters to the Editor” by journals.

Additional benefits of WIKISTIM

Reference to WIKISTIM’s data categories as a template has the capacity of improving the quality of research protocols and published reports by encouraging inclusion of important data and, for authors writing a series of papers, revealing whether data reported in a new paper are congruent with data reported in a prior paper. Peer reviewers could also benefit from reference to the list of data categories as they assess the quality of a study and of its report.

Collaboration and communication

Through the WIKISTIM forum, users can submit suggestions of ways to improve WIKISTIM and participate in discussion of papers in a manner unlimited by time and space. The ultimate and most important result of the collaboration and communication made possible by WIKISTIM will be improved patient care.

Features of WIKISTIM

- Customized search engine has no predefined search parameters (i.e., WIKISTIM searches respond to any entry).
- Discrete searchable sections for neurostimulation targets (currently SCS, DRG, DBS, PNS, GES, SNS, with others planned) allow selective searches.
- Entries have been curated to include only publications that report primary clinical or experimental data.
- Published primary data can be abstracted into as many data categories as are appropriate for any given scientific report, with free text entries supported.
- Data category lists are on-line for all sections.
- Users can download multiple datasheets into a single table and eventually will be able to perform their own comparative analyses.
- Users can submit data from published papers.
- Discussion of papers is supported and unlimited by time and space.
- SCS Practice Parameters (neuromodfound.org) links to WIKISTIM; reverse links are in the works.
- Links are being added to full-text access options for the journal *Neuromodulation*.
- Entries that are not listed on PUBMED are included.
- Off-label uses of neuromodulation therapies are included.
- The ability of WIKISTIM to expand is unlimited.
- WIKISTIM can be constantly brought up-to-date.
- Subscription is free.

Summary: The added value of WIKISTIM

What WIKISTIM offers, even in its infancy, is an online registry comprising a curated list of papers, all of which are relevant to neuromodulation. Thus a WIKISTIM search is highly specific, whereas a PUBMED search is not. Author searches that return thousands of PUBMED references will return only relevant references when done on WIKISTIM. Thus, our users can easily find specific papers that might have otherwise taken a great deal of time to locate or might even have been missed. The WIKISTIM entries for which data abstraction has been completed provide the only access to these data in a format that facilitates rapid analysis and comparison, and the WIKISTIM data abstraction scheme yields much more information than will be found in a PUBMED abstract. WIKISTIM content will not be limited, as are meta-analyses and literature reviews, by date of publication, by the search terms the authors chose, or by the research question they asked. WIKISTIM will allow its users to ask their own questions, contribute their own data, and conduct up-to-the minute literature searches.

In short, WIKISTIM takes full advantage of the capacity of the Internet by offering the neuromodulation community a structure and format for accessing primary data that is expandable in breadth (types of stimulation therapies) and depth (data extraction). WIKISTIM is easily updatable and supports wide collaboration.

Disclosure

WIKISTIM includes citations for indications that are or might be considered off-label in the United States.