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Literature and information in vision care and vision science

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Abstract The explosion of information in vision care and vision science makes keeping up with the literature and information in the field challenging. This report examines the nature of literature and information in vision care and vision science. A variety of topics are discussed, including the general nature of scientific and clinical journals, journals in vision science and vision care, resources available for searches for literature and information, and issues involved in the evaluation of journals and other information sources. Aspects of the application of citation analysis to vision care and vision science are reviewed, and a new citation analysis of a leading textbook in vision care (*Borish's Clinical Refraction*) is presented. This report is directed toward anyone who wants to be more informed about the literature of vision care and vision science, whether they are students, clinicians, educators, or librarians.
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It is widely acknowledged that the current era is characterized by an explosion of information. This is just as true for vision care and vision science as for any other field. The ability to find and use literature and information is important for students, practitioners, and academics. Students are bombarded with a dizzying array of information. Although the memorization of lecture notes is a common approach to passing required courses, the exercise of critical thinking and analytical skills, through reading books and journals, is a better lifelong learning strategy to develop. The recognition of the need to be able to use current information in clinical practice has led to attention on information literacy skills in health care education.[1,2]

Busy practitioners must keep up with new developments to continue to provide the best possible care for their patients. Although there are numerous continuing education opportunities available, much information can be obtained through other sources, including books, journals, and online sources. Scholars in vision science and vision care are challenged by a broad range of literature. Work in vision relies on specialized literature, which is impacted by such diverse areas as biology, biochemistry, epidemiology, neurosciences, optics, physics, psychology, and sensory physiology.

Clinicians and scholars new to this area of study may be confused by the large amount of information available or may miss literature that would be significant to them. Even experienced practitioners and faculty may wonder at times if there is information "out there" that they are missing. Librarians must be prepared to manage the rapidly expanding literature and information and assist patrons in finding the literature they need. They are thus faced with decisions concerning journal retention and other collection management issues.

This report surveys and examines the nature and various aspects of literature and information in vision care and vision science. Thus, it may serve as a primer on access to,

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and use of, literature and information in this area of health care and science. A variety of topics will be discussed, among them, the general nature of scientific and clinical journals, journals in vision science and vision care, resources available for searches for literature and information, and issues involved in the evaluation of journals and other information sources. This article is directed toward anyone who wants to be more informed about those and other aspects of the literature of vision care and vision science, whether they are students, clinicians, academics, or librarians.

The flow of information

The term *flow of information* is often used to describe the process of transformation of an idea into the results of research in a scientific report and then inclusion of the resultant knowledge into textbooks and reference books. To better understand the typical contents of different information sources, a distinction can be made between primary, secondary, and tertiary literature, as well as gray literature.[3-7]

Primary literature is the first detailed and easily available record of a completed research project or clinical investigation. Common examples of primary literature are research papers and case reports in journals. Secondary literature provides a summary of primary literature or provides citations to the primary literature. Examples of secondary literature include literature review papers, annual review books, abstracts, bibliographies, and indexes. The secondary literature can thus serve to facilitate access to the primary literature. Tertiary literature also provides a summary of the primary literature but generally after it has become widely accepted knowledge. Examples of tertiary literature include textbooks and reference materials such as handbooks and encyclopedias. Thus, information flows from primary literature to secondary literature to tertiary literature.

Gray literature is material that is not widely distributed or not readily available. Generally, it is not commercially published. Examples of gray literature can include preprints, technical reports, dissertations, newsletters, materials distributed only to meeting participants, or some Internet sources. Gray literature typically is difficult to find because it is not indexed as well as the primary literature.

To best understand what has been done in a given study, one should consult the primary literature. Therefore, it is generally preferable that authors read and cite the primary literature when discussing the results of a particular study. Primary literature is generally geared toward a specialized audience. Secondary and tertiary literature can be geared toward either a specialized audience or a more general audience.

Some journals publish only primary literature. Many journals publish research papers and literature reviews, that is, both primary and secondary literature. A few journals, sometimes referred to as review journals, publish only secondary literature. Although books are commonly thought of as tertiary literature, some consist of primary and/or secondary literature, such as some meeting proceedings volumes.

Refereed articles

Articles that are refereed have gone through a process of peer review and thus meet appropriate standards. Typically, when an article is submitted to a peer-reviewed journal, the journal editor will send the article to at least 1 but sometimes as many as 3 reviewers or referees. The referees are selected for their expertise in the topical area of the submitted paper. Although the expectations of reviewers varies slightly from journal to journal, one common scheme is that the reviewers recommend that the paper be accepted as is, be accepted pending minor revisions, undergo major revision, or be rejected. The reviewers give detailed reasons for recommending rejection or specific suggestions for revision.

To determine whether a given journal is refereed, one can look for a statement to that effect in the journal or on the journal's Web site. The refereeing process used by the journal may be described in its "instructions to authors" page. One may suspect that a journal is more likely to be a refereed journal if it has a list of review board members or editorial board members rather than a list of contributing editors. Some refereed journals will list dates for receipt and acceptance of each paper and sometimes also the date revisions were received.

In peer-reviewed journals, research papers, literature reviews, and case reports typically will all be refereed. However, peer-reviewed journals may not have contributions such as editorials, letters to the editor, or book reviews refereed.

Journals that are considered the most prestigious typically are peer-reviewed. Two studies "showed that editorial processes make articles more readable and improve the quality of reporting."[8] However, reviews of the literature[8,9] also found that the effects of the peer-review process have not been studied adequately.

Types of journals

Vision care and vision science is like any other field of health care and health science in that contributions to the literature might be considered either clinical science or basic science. However, the distinction between them is not always clear, and the term *translational research* has been suggested to describe work that blends both basic and clinical science aspects or applies basic science findings to forge a better understanding of clinical conditions or procedures.[10,11] Examples of clinical science research could include studies of the effectiveness of a treatment, descriptions of newly discovered conditions, evaluations of testing or diagnostic procedures, or investigations of

the natural history or progression of a condition. Basic science research might be viewed as the investigation of phenomena to develop or test scientific theories or to understand the fundamental principles or mechanisms of phenomena. Potential clinical applications of basic science research may or may not be obvious. Some journals publish primarily or exclusively clinical science work, and some favor basic science. To determine what types of articles a given journal publishes, one can examine the journal's statement of purpose (if it has one), or look for a statement of the type of submissions the journal prefers, or examine the tables of contents of recent issues. Sometimes the title of the journal suggests the likely nature of its contents. Basic science journals and clinical science journals typically are refereed.

It can be difficult to make a perfectly distinct classification of many journals. We could consider *Optometry–Journal of the American Optometric Association* to be a clinical science journal. It publishes a significant number of clinical science articles but also publishes other material important to the practice of optometry. An example of a clinical science journal that consists mostly of secondary literature, such as literature reviews, is *Survey of Ophthalmology*. *Vision Research* is an example of a basic science journal. A journal that publishes both clinical science and basic science is *Optometry and Vision Science*.

In addition to clinical science and basic science journals, journals can be identified that might be called *clinical practice journals*. These serials typically consist largely of secondary and tertiary literature composed to be immediately useful to practitioners. They often interpret the primary literature or present recommendations based on the experience of seasoned practitioners. Such journals typically are not refereed and often have a group of regular contributors or contributing editors. Examples of clinical practice journals include *Review of Optometry* and *Primary Care Optometry News*.

Because optometry and ophthalmology each have their own journal literature, clinical science and clinical practice journals could each be further subdivided into optometry and ophthalmology categories. Differences in optometry and ophthalmology journals reflect differences in the two professions in educational background, historical development, scope of practice, and patient management philosophies. Even in instances in which the scope of practice would not affect types of treatments provided, the professions of optometry and ophthalmology tend to prefer different types of treatment patterns.[12,13] Both optometry and ophthalmology tend to cite their own literature more than the literature of their fellow discipline.[14]

Journals also may be general in nature or may publish within a given specialty area, such as binocular vision, contact lenses, or glaucoma. Information about selected journals is given in Appendix 1.

In addition to clinical science, basic science, and clinical practice journals, there are also periodicals devoted to eyewear products, practice management, or ophthalmic industry trends. Examples of these publications are *Optometric Management, 20/20* magazine, and *Vision Monday*.

Evaluation and selection of journals

Cartwright and McGhee[15] made a conservative count of 110 periodicals in the fields of ophthalmology, optometry, and vision science. With so many to choose from, individuals must be able to identify the most useful journals for their purposes. The means of evaluating and selecting journals will vary depending on whether one is deciding (1) which journals to read on a regular basis, (2) which journals to consult on a particular topic, (3) which journal to submit a manuscript to, or (4) which journals should be held in a library collection. It may also be noted that because some journals are distributed to organization members, decisions concerning organization membership and decisions concerning journal acquisition can be inter-related.

In the first situation (which journals to read on a regular basis), selection of journals will be largely subjective and will vary depending upon whether the individual in question is a clinician or researcher, a clinical scientist or a laboratory scientist, a practitioner or an academic, a generalist or a specialist. Familiarity with, and sampling from, the journals in vision care and vision science can help one make the best individual decision. In the second situation (which journals to consult on a particular topic), the choices will depend on which journals are likely to publish on the topic in question. Various indexing databases can also be checked to find lists of articles on the topic, and the predominant journals can be identified from those lists.

In the third situation (where to submit a manuscript), decisions might be guided by factors such as finding the journals that publish material related to the subject of the topic, journals that are read by persons potentially interested in the topic of the paper, the prestige of the journal, type of submission procedure, and expected time from submission to publication. For faculty members seeking promotion and/or tenure, the prestige of the journals in which they publish is important because it is often a factor in promotion and tenure decisions. For the fourth situation (which journals should be held in a library collection), there are a variety of guidelines and metrics that can be used to shape collection management decisions.

Identifying important journals

Many methods have been used to evaluate which are the most important serial publications in a library collection.[16,17] Some of the methods used to determine core journals in a field include: (1) frequency of use, (2) opinions or checklists, (3) inclusion in databases used for searching the literature, and (4) bibliometric statistics, such as impact factor. These methods have been used sometimes to suggest which journals are the highest-quality journals in a given field. Also of importance in an academic library are the

library's collecting priorities in light of relevance to curriculum and faculty research interests.

Use data have been collected by a variety of methods, including library reshelving counts and surveys. Use data can be valuable, but unbiased comprehensive data are difficult to obtain because journals can be used in so many different ways—personal subscription copies, interlibrary loan, library print copies, electronic versions, or copies of articles obtained from colleagues. There do not seem to be published use studies that would specifically be helpful in identifying core journals in vision care and vision science.

A list of core journals based on expert opinion is the Opening Day Collection list of the Association of Vision Science Librarians (AVSL). AVSL is an organization of professional librarians and others working in libraries that contain vision literature.[18] Its list (*see* Table 1) consists of 36 journals that it classified as clinical journals and 12 classified as research journals.[19] Its research journal category would be comparable to the basic science category discussed earlier in this report. Watson[20] pointed out that the list is a guide for a beginning vision science library collection rather than a comprehensive collection.

Table 1 lists the journals indexed in PubMed[21] and those included in the Institute for Scientific Information (ISI) Journal Citation Reports (JCR).[22] PubMed was searched for journals in ophthalmology and optometry. The journals from ISI JCR that are in Table 1 are those in the JCR ophthalmology subject category. In JCR there are no subject categories for optometry or for vision science. JCR includes 44 journals in its report on ophthalmology. Two of those journals are optometry journals (*Optometry and Vision Science and Ophthalmic and Physiological Optics*). Of the 44 journals in JCR, 40 are primarily in English, 3 are in German, and 1 is in French. Table 1 lists 93 journals indexed in PubMed, of which 72 are primarily or completely in English.

Bibliometric measures

Several statistics have been used to guide decisions concerning library journal collections and to help describe the literature of a given field of study. These statistics are based on how often articles from a given journal are cited, and they include citation counts, journal impact factor, immediacy index, and cited half-life. The most basic measure is citation count, which is simply a count of the number of citations to a particular journal in a particular source, such as a book or a group of journals. Citation count is not commonly used as a metric of journal quality because a high citation count can result when a journal publishes a large number of articles.

In citation analysis, all citations are given equal weight. Thus, there is no indication of whether an author used a particular cited article extensively or slightly, of whether the author may have rendered any value judgments, or whether the author considered the cited article highly relevant to the topic of the article being cited.

Journal impact factor is a statistic that represents how frequently on average an article in a journal is cited in the 2 years after its year of publication. Impact factor is calculated by dividing the number of citations in a given year to articles published in the journal in question in the previous 2 years by the total number of articles published by the journal in those 2 years. In other words, the numerator is the number of times that articles in the last 2 years from a journal were cited. The denominator is the number of articles that journal published in those same 2 years. Impact factor would not favor journals that have been published for many years or journals that publish a lot of articles each year, whereas simple citation counts would be much higher in those journals. There are a number of potential disadvantages and limitations to the use of journal impact factor:[17,23,24] (1) Citations older than 2 years are not considered. As a result, fields that are slowly developing will show low impact factors. (2) The longer publication lag for journals that are published less frequently over a given period of time can tend to reduce their impact factor. (3) The denominator of impact factor is based on the number of the original research papers, literature reviews, technical reports, and case reports published in a journal. Letters to the editor, abstracts, book reviews, and editorials are not included in the denominator, but they are included in the numerator, so impact factor can be increased by these types of publications without the risk of decreasing it if they are not cited. (4) Citation analysis statistics, such as impact factor, are useful for comparisons of journals within a discipline, not for comparisons between disciplines. Some disciplines encourage extensive referencing, whereas others suggest more concise referencing. Also some disciplines may experience more rapid research development. For example, the highest journal impact factor in cell biology in 2004 was more than 6 times higher than the highest journal impact factor in ophthalmology, and the highest journal impact factor for a general medicine journal in 2004 was more than 7 times greater than the highest impact factor for an ophthalmology journal.[17] (5) Articles in basic science journals typically reference only basic science journals, but articles in clinical science journals frequently cite both basic science and clinical science journals. Impact factors tend to be higher for basic science journals than for clinical science journals. (6) Literature reviews tend to be cited more often than the original research papers on which the reviews were based. As a consequence, journals that publish more literature reviews often have high impact factors.[17] (7) Impact factor normalizes for journal age and size, but some could argue that those values may be valid measures of journal value. (8) Impact factor places less value on clinical practice journals, because their articles are less likely than research papers to be cited in other papers. Nevertheless, clinical practice journals often are widely used by practitioners for their informational content.

The idea of impact factor was first published by Garfield in 1955.[25,26] It was originally created to select journals for

Table 1 Current optometry, ophthalmology, and vision journals indexed in PubMed, journals in the Opening Day Journal List of the Association of Vision Science Librarians (AVSL), and/or journals included in the Institute for Scientific Information Journal Citation Reports (JCR) under the category of ophthalmology

Journal	Indexed in PubMed	In AVSL Opening Day List	Included in JCR	Languages(s)
Acta Ophthalmologica Scandinavica	•		•	English
American Journal of Ophthalmology	•	• (C)	•	English
American Orthoptic Journal	•			English
Annals of Ophthalmology	•		•	English
Applied Optics	•			English
Archives of Ophthalmology	•	• (C)	•	English
Archivos de la Sociedad Espanola de Oftalmologia	•			Spanish
Archivos de oftalmologia de Buenos Aires	•			Spanish
Arquivos brasileiros de oftalmologia	•			Portuguese
Binocular Vision & Strabismus Quarterly	•			English
BioMed Central Ophthalmology	•			English
British Journal of Ophthalmology	•	• (C)	•	English
Bulletin de la Société belge d'ophtalmologie	•			French
Bulletin des sociétés d'ophtalmologie de France	•			French
Bulletin of the Ophthalmological Society of Egypt	•			Arabic, English, French
Canadian Journal of Ophthalmology	•	• (C)	•	English
Ceská a slovenská oftalmologie	•			Czech, Slovak
Clinical & Experimental Ophthalmology	•	• (C)	•	English
Clinical & Experimental Optometry	•	• (C)		English
Contact Lens & Anterior Eye	•	• (C)		English
Contact Lens Spectrum		• (C)		English
Cornea	•	• (C)	•	English
Current Eye Research	•	• (R)	•	English
Current Opinion in Ophthalmology	•	• (C)		English
Cutaneous and Ocular Toxicology	•		•	English
Der Ophthalmologe	•		•	German
Developments in Ophthalmology	•			English
Documenta Ophthalmologica. Advances in Ophthalmology	•		•	English, French, German
European Journal of Ophthalmology	•	• (C)	•	English
Evidence-Based Eye Care		• (C)		English
Excerpta Medica. Section 12, Ophthalmology	•			English
Experimental Eye Research	•	• (R)	•	English
Eye	•	• (C)	•	English
Eye & Contact Lens	•	• (C)		English
Ganka. Ophthalmology	•			English
Graefe's Archive for Clinical and Experimental Ophthalmology	•	• (C)	•	English, German
Hindsight: Journal of Optometry History	•			English
Indian Journal of Ophthalmology	•			English
International Ophthalmology	•			English
International Ophthalmology Clinics	•	• (C)		English
Investigative Ophthalmology & Visual Science	•	• (R)	•	English
Japanese Journal of Ophthalmology	•		•	English
Journal of AAPOS (Am Assoc Pediatr Ophthalmol Strabismus)	•	• (C)	•	English
Journal of Biomedical Optics	•			English
Journal of Cataract and Refractive Surgery	•	• (C)	•	English
Journal français d'ophtalmologie	•		•	French
Journal of Glaucoma	•	• (C)	•	English
Journal of Neuro-Ophthalmology	•	• (C)	•	English
Journal of Ocular Pharmacology and Therapeutics	•	• (R)	•	English
Journal of Pediatric Ophthalmology and Strabismus	•	• (C)	•	English
Journal of Refractive Surgery	•	• (C)	•	English
Journal of the Optical Society of America. A, Optics, Image Science, and Vision	•	• (R)		English

(Continued)

Table 1 *(Continued)*

Journal	Indexed in PubMed	In AVSL Opening Day List	Included in JCR	Languages(s)
Journal of Vision	•		•	English
Journal of Visual Impairment and Blindness	•	• (C)		English
Kaiin dayori	•			Japanese
Klinika oczna	•			Polish
Klinische Monatsblätter für Augenheilkunde	•		•	German
Korean Journal of Ophthalmology	•			English
Minerva oftalmologica	•			Italian
Molecular Vision	•	• (R)	•	English
Neuro-ophthalmology	•		•	English
Ocular Immunology and Inflammation	•		•	English
Ocular Surface	•			English
Oftalmologia	•			Romanian
Oftalmologicheskiĭ zhurnal	•			Ukranian
Ophthalmic Epidemiology	•	• (C)	•	English
Ophthalmic Genetics	•	• (R)		English
Ophthalmic & Physiological Optics	•	• (C)	•	English
Ophthalmic Plastic and Reconstructive Surgery	•	• (C)	•	English
Ophthalmic Research	•	• (R)	•	English
Ophthalmic Surgery, Lasers, and Imaging	•	• (C)	•	English
Ophthalmologica	•		•	German
Ophthalmology	•	• (C)	•	English
Ophthalmology Clinics of North America	•	• (C)		English
Optics Letters	•			English
Optometric Education		• (C)		English
Optometry–Journal of the American Optometric Association	•	• (C)		English
Optometry and Vision Science	•	• (C)	•	English
Orbit	•			English
Perception and Psychophysics	•	• (R)		English
Progress in Retinal and Eye Research	•		•	English
Retina	•	• (C)	•	English
Review of Ophthalmology		• (C)		English
Review of Optometry		• (C)		English
Reviews of Oculomotor Research	•			English
Revista brasileira de oftalmologia	•			Portuguese
Rinsho ganka. Japanese Journal of Clinical Ophthalmology	•			Japanese
Seminars in Ophthalmology	•			English
Spatial Vision	•	• (R)		English
Strabismus	•			English
Survey of Ophthalmology	•	• (C)	•	English
Transactions of the American Ophthalmological Society	•			English
Vestnik oftalmologii	•			Russian
Veterinary Ophthalmology	•			English
Vision Research	•	• (R)	•	English
Visual Neuroscience	•	• (R)	•	English
Yan ke xue bao = Eye Science	•			Chinese
Zhonghua yan ke za zhi. Chinese Journal of Ophthalmology	•			Chinese

C, Clinical journal as classified by AVSL; *R*, Research journal as classified by AVSL.

inclusion in Science Citation Index.[27] Because of the limitations noted above and because of its unintended application as a measure of journal quality, impact factor has generated some controversy. Nevertheless, in a 1999 review, Garfield[27] said that "Experience has shown that in each specialty the best journals are those in which it is most difficult to have an article accepted, and these are the journals that have a high impact factor….The use of impact factor as a measure of quality is widespread because it fits well with the opinion we have in each field of the best journals in our specialty." And, in fact, one study did find a significant correlation of impact factor with perceived journal quality in one field of medicine.[28] Physicians specializing in internal medicine were surveyed to obtain a rating of

journal quality. Significant correlations were obtained for both those identified as researchers ($r^2 = 0.83$) and those identified as practitioners ($r^2 = 0.62$).[28] However, the authors cautioned that the fact that the survey respondents perceived a journal to be of high quality did not mean that they actually read that journal regularly.

Another bibliometric statistic is immediacy index, which is an indication of how quickly the average article in a given journal is cited. Immediacy index is calculated by dividing the number of citations to articles published in a journal in a year by the number of articles published in that journal in the same year. It is more likely that an article published early in the year will be cited in the same year, so journals that have more issues per year may have some advantage in this statistic. And, of course, journals in rapidly changing fields will have higher immediacy index values than those in slowly developing fields.

An additional bibliometric value reported by JCR is cited half-life. Cited half-life is the median age of articles in a journal that were cited in the current year. In other words, if the cited half-life for a journal in the year 2006 was 8.0 years, then half of the citations to that journal were to articles published in the last 8 years, and half were to articles more than 8 years old. It thus represents a measure of the long-term value of an average article in a journal.

Journal citation reports for 2006 for the subject category ophthalmology

The most recent ISI JCR at the time of this writing was the report for the year 2006.[29] Optometry and vision science are included in the subject category "ophthalmology." The report for the year 2006 with the journals listed in order of journal impact factor is summarized in Table 2. *Investigative Ophthalmology and Visual Science* ranks the highest in total number of citations, but it also publishes a large number of articles, so its rank in journal impact factor is third. *Progress in Retinal and Eye Research* does not publish many articles, but those that it does publish tend to be highly cited, as shown by the fact that it ranks the highest in journal impact factor. As mentioned earlier, journals that publish a lot of literature reviews tend to rank highly in journal impact factor. This is evidenced by *Progress in Retinal and Eye Research* and *Survey of Ophthalmology* ranking first and fifth, respectively, in journal impact factor.

Citation analysis of *Borish's Clinical Refraction*

The outcome of a citation analysis is dependent on the nature of the source material from which the citations are taken. The JCR from ISI is based only on journals in the ISI database. As a result, it is biased toward research journals. One approach to identify journals important to clinical optometry could be to examine the citations in a leading clinical optometry textbook. The recently published second edition of *Borish's Clinical Refraction*[30] was chosen by the author of this report for that purpose. The 1,694 pages of *Borish's Clinical Refraction* are arranged into 37 chapters in 5 sections: Principles, Adjunct Examinations, The Refraction, Analysis and Prescription of Optical Corrections, and Special Conditions. The topics covered by the 55 authors range across the full scope of optometry practice.

References are listed at the end of each of the chapters in *Borish's Clinical Refraction*. The numbers of references in each of the chapters ranges from a low of 9 to a high of 646, with an average of 158.4 per chapter. Because the journals cited in particular chapters are likely to vary with the topic of the chapter and because there was so much variation in the number of references, references were sampled as follows: chapters with 0 to 50 references, all references were used in the analysis; chapters with 51 to 100 references, reference with numbers evenly divisible by 2 were used in the analysis; 101 to 200 references, those evenly divisible by 3; 201 to 300, those divisible by 4; 301 to 400, those divisible by 5; 401 to 500, those divisible by 6; 501 to 600, those divisible by 7; and more than 600, those divisible by 8. This resulted in 1,723 references being used in the analysis.

References were classified as journals, books, or other. The other category included technical reports and bulletins, standards documents, patents, unpublished papers, dissertations, Web pages, and personal communications. Of the total references, 82.5% were journals, 16.1% were books and 1.4% were other. The most frequently referenced book was *Clinical Procedures in Optometry*, edited by Eskridge et al.[31]

Journals that had changes in title were grouped together by the most recent name of the journal as confirmed from my own knowledge and from IUCAT, the Indiana University libraries online catalog. For example, references to the *American Journal of Optometry and Physiological Optics* were classified with *Optometry and Vision Science*, and references to the *Journal of the American Optometric Association* were classified with *Optometry—Journal of the American Optometric Association*. References to journals that underwent mergers or had major changes in focus associated with a title change were grouped by each of their separate entities. A total of 218 different journals were referenced in the sample. By far the most frequently referenced journal in the sample was *Optometry and Vision Science*. Table 3 lists the most frequently referenced journals. It may be noted that the order of journals in Table 3 is quite different from the ranking of journals by journal impact factor in Table 2. Because of the nature of the source material from which citation data were taken, the citation data in JCR reflect primarily the use of basic science and ophthalmology research journals. In contrast, the journals most cited in *Borish's Clinical Refraction* reflect the optometry content of that book.

Journal references were classified as being more than 15 years old compared with the date of publication of the book

Table 2 Institute for Scientific Information Journal Citation Reports for 2006 for the 45 journals included in the category ophthalmology. Journals are listed in order of journal impact factor.

Journal	Total citation count	Impact factor	Immediacy index	Number of articles	Cited half-life (years)
Progress in Retinal and Eye Research	2,050	9.039	0.913	23	5.3
Ophthalmology	18,195	4.031	0.785	326	7.8
Investigative Ophthalmology and Visual Science	25,173	3.766	0.588	709	6.2
Journal of Vision	1,311	3.753	0.450	100	3.0
Survey of Ophthalmology	2,990	3.451	0.706	34	8.4
Archives of Ophthalmology	15,768	3.206	0.438	249	>10.0
Experimental Eye Research	5,958	2.776	0.557	296	7.7
British Journal of Ophthalmology	10,000	2.524	0.379	380	7.2
American Journal of Ophthalmology	14,958	2.468	0.458	448	8.4
Molecular Vision	1,621	2.377	0.267	195	3.4
Journal of Cataract and Refractive Surgery	7,707	2.285	0.291	357	5.0
Vision Research	14,406	2.167	0.464	433	9.8
Journal of Refractive Surgery	2,224	2.097	0.370	154	4.9
Eye	2,240	2.084	0.358	173	4.2
Journal of Glaucoma	1,454	1.799	0.289	90	5.3
Documenta Ophthalmologica	1,333	1.712	0.029	34	8.3
Cornea	3,602	1.708	0.282	280	5.9
Ophthalmic Epidemiology	509	1.640	0.188	48	5.2
Graefe's Archive for Clinical and Experimental Ophthalmology	3,320	1.609	0.210	271	6.9
Visual Neuroscience	2,696	1.484	0.220	91	9.3
Ophthalmic and Physiological Optics	1,354	1.483	0.236	72	8.8
Acta Ophthalmologica Scandinavica	3,134	1.458	0.163	135	>10.0
Retina	2,485	1.403	1.383	107	5.2
Optometry and Vision Science	2,160	1.371	0.301	113	7.8
Clinical and Experimental Ophthalmology	851	1.247	0.285	158	3.6
Current Eye Research	2,950	1.208	0.165	115	9.3
Ophthalmic Surgery, Lasers, and Imaging	952	1.199	0.070	100	6.7
Journal of Neuro-Ophthalmology	487	1.117	0.333	39	5.4
Ophthalmologica	1,170	1.051	0.151	73	9.2
Journal of Ocular Pharmacology and Therapeutics	741	1.035	0.016	62	6.6
Ophthalmic Research	802	1.010	0.200	50	8.4
Ophthalmic Plastic and Reconstructive Surgery	1,035	0.893	0.060	151	6.7
Ocular Immunology and Inflammation	318	0.832	0.067	60	5.2
European Journal of Ophthalmology	769	0.824	0.088	113	4.5
Journal of Pediatric Ophthalmology and Strabismus	1,005	0.798	0.056	36	>10.0
Japanese Journal of Ophthalmology	1,013	0.770	0.086	81	6.4
Der Ophthalmologe	942	0.762	0.167	126	5.1
Journal of AAPOS	684	0.748	0.111	117	4.9
Canadian Journal of Ophthalmology	711	0.701	0.053	57	>10.0
Klinische Monatsblätter für Augenheilkunde	1,315	0.679	0.083	144	9.3
*Journal of Toxicology – Cutaneous and Ocular Toxicology**	82	0.407		0	
Journal français d'ophtalmologie	637	0.291	0.026	155	6.6
*Cutaneous and Ocular Toxicology**	8	0.273	0.040	25	
Neuro-ophthalmology	173	0.107	0.000	26	>10.0
Annals of Ophthalmology	705	0.075	0.000	15	>10.0

Note. Journals are listed in order of journal impact factor.

* The title of *Journal of Toxicology – Cutaneous and Ocular Toxicology* was changed to *Cutaneous and Ocular Toxicology* in 2005.

or as being 15 years old or less. Most of the references to journals (62.5%) in the sample for the whole book were more than 15 years old. The relative percentages of each varied considerably from chapter to chapter. As might be expected, chapters on rapidly changing topics, such as refractive surgery, had mostly newer references, and chapters on topics such as refractive methods had relatively more references in the older category. By far the majority of cited publications were in English, with a few citations to publications in Chinese, French, German, and Japanese.

Table 3 Numbers of citations to different journals in the sample of references from *Borish's Clinical Refraction*

Journal	Number of times referenced
Optometry and Vision Science	265
Archives of Ophthalmology	95
Investigative Ophthalmology and Visual Science	90
American Journal of Ophthalmology	77
Optometry–Journal of the American Optometric Association	71
Ophthalmic and Physiological Optics	64
Ophthalmology	63
Vision Research	49
British Journal of Ophthalmology	37
Acta Ophthalmologica Scandinavica	33
Journal of Refractive Surgery	33
Journal of the Optical Society of America	25
Journal of Cataract and Refractive Surgery	21
International Contact Lens Clinic	20
Optometric Weekly/Monthly	19
Survey of Ophthalmology	16
Optician	12
Documenta Ophthalmologica	12
Clinical and Experimental Optometry	11
Contact Lens Journal	11
Graefe's Archive for Clinical and Experimental Ophthalmology	9
6 different journals	8 each
3 different journals	7 each
4 different journals	6 each
9 different journals	5 each
6 different journals	4 each
19 different journals	3 each
19 different journals	2 each
131 different journals	1 each

Resources for literature searches

Older literature can be found by searching the reference lists of books, book chapters, and articles on the topic of interest. Searches for previous literature can also be done with various discontinued print indexes, for example, Ophthalmic Literature (1947 to 1998) and Vision Index (1971 to 1976).[32] It is also possible to find bibliographies for some topics compiled in book form.[33-36] Some journals publish topical bibliographies on an occasional or a regular basis, an example of the latter being *Current Opinion in Ophthalmology*.[37] Some topical bibliographies can be found on the Internet, such as one on the history of spectacles.[38]

There are several online search engines and bibliographic databases by which literature searches can be done for current literature. These databases vary in the journals that they index, the material other than journals that they index, and the years covered. A listing of some of these databases can be found in Appendix 2. This list was compiled in part by asking faculty of the Indiana University School of Optometry what search engines and databases they found to be useful in searching the vision care and vision science literature. Most of these databases emphasize the basic science and medical literature, and some optometry journals may not be represented, as can be seen in Appendix 2. For example, in PubMed, there are 5 optometry journals that are currently indexed, *Clinical and Experimental Optometry, Hindsight: Journal of Optometry History, Ophthalmic and Physiological Optics, Optometry—Journal of the American Optometric Association*, and *Optometry and Vision Science*. Ophthalmology journals are well represented in most of the databases listed in Appendix 2. The years of coverage vary among the databases.

Among the databases in Appendix 2, the ones that include the most optometry journals are Visionet and VisionCite. In the last 15 years, Visionet has indexed more than 200 periodical titles in its database, including numerous basic science journals along with a large number of optometry and ophthalmology periodicals. Visionet and VisionCite have more than 30 optometry journals in their databases in addition to more than 90 ophthalmology periodicals. Both databases include optometry clinical practice journals, such as *Review of Optometry;* journals in specialty areas, such as *Optometry and Vision Development* and *Journal of Behavioral Optometry*; several state optometry journals; and others, such as *Optometric Education, Optometric Management,* and *Canadian Journal of Optometry*. There are also some searchable databases on specialized, narrow topics, such as *www.referencesight.com/ReferenceSight/references.htm* for contact lenses, refractive surgery, and external eye disease.

Many databases maintain alert services that allow users to receive regular periodic searches on particular topics. For example, PubMed and ISI Web of Knowledge have alert services that provide regular e-mail notices of recently published articles on the topic of the user's choosing. Other databases that provide alert services are EBSCO, Cambridge Scientific Abstracts, and Amedeo. Some alert services provide table of contents alerts in which the user can receive the tables of contents of current issues of selected journals. Many publishers, including Elsevier (ScienceDirect), Kluwer, Springer, and Wiley, have alert services.

Another potential method of searching for particular types of vision-related literature is searching the online public access catalogs (OPACs) of libraries with extensive vision science holdings. By searching on a particular subject heading, one can find a list of the book and journal titles held by a library. OPACs do not provide information on specific contents of journals, so they cannot be used to search for lists of journal articles. Links to the OPACs of libraries associated with optometry and ophthalmology programs can be found at the Web site of the Association of Vision Science Librarians.[39] A resource that links to numerous libraries worldwide is

Online Computer Library Center (OCLC) WorldCat (*www.oclc.org/worldcat/*).

Important books in vision care and vision science

A resource identifying important books is the Opening Day book list of the AVSL.[40] It does not represent a complete list but rather a list of books that the group thought should be present in a beginning vision science library. The numbers of books in each of the categories used in that list are as follows: anatomy, 3; binocular vision, 7; contact lenses, 5; differential diagnosis/systemic disease, 5; disease, anterior segment, 3; disease, posterior segment, 7; dispensing, 4; ethics, 1; evidence-based, 2; examination and testing, 8; eye disease, general, 12; glaucoma, 5; lighting, 1; low vision and geriatrics, 4; neuro-ophthalmology, 4; ophthalmology, 8; optics, 3; patient/consumer education, 5; pediatrics, 6; perception, 3; pharmacology/toxicology, 6; physiological optics, 2; practice management, 2; reference, 5; surgery and lasers, 4; and classic out of print books, 30.

Of more historical interest, Thompson and Blanchard[41] published a list of what they judged to be the most important ophthalmology books of the 20th century. In their published report, they listed the books and explained how they decided upon those books. On a Web site[42] they have provided some notes on each of the books. A list of the most important 20th-century optometry books, based on a survey, has also been assembled.[43] Also of assistance in considering books for vision care and vision science is a listing of subject areas appropriate for a vision science library collection from the AVSL.[44]

Information on the Internet

There is, of course, a massive amount of information available on the Internet. Appendix 3 provides a listing of Web sites with links to numerous eye- and vision-related Web sites. Appendix 4 is a listing of some U.S. government sites with health statistics and information.

Because information can appear on the Internet without the standards or level of quality required of a peer-reviewed publication, it is up to the reader to evaluate the quality of the information. Some of the factors, if they are available, by which a Web site can be assessed are the authority and credentials of the author; the date of creation or last update of the material; type, organization, and depth of the content; and the entity that put the information on the Internet. The lack of such identifying information can in itself raise suspicions of the quality of the material. If the parentage of a Web page is not included on the webpage, some clues to potential biases may be gained from the domain extension in the URL: ".com" stands for commercial, ".org" for organization, ".mil" for military, ".gov" for government, and ".edu" for educational institution.

Evaluation and application of literature

An element of being a good information user is systematic evaluation of the literature. A research paper is expected to contain enough information to allow the reader to make that evaluation. The methods that readers can use to evaluate papers in the literature is beyond the scope of this report, but there are many articles and books available on the subject.[45-50]

Finding and evaluating relevant information is a part of applying best evidence to clinical practice, which has in recent years been referred to as *evidence-based medicine* or *evidence-based health care*. Evolving concepts of evidence-based health care have met with some controversy, with critics cautioning that evidence-based health care may make the doctor more passive in making or carrying out care decisions, may exclude important information because of an overly narrow definition of acceptable evidence, or may oversimplify the complexities of the care of individual patients.[51-54] However, Sackett et al.,[55] among the leading proponents of evidence-based medicine, have emphasized that it is not "cookbook" care but rather "The practice of evidence based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research…. Evidence based medicine is not restricted to randomized trials and meta-analyses. It involves tracking down the best external evidence with which to answer our clinical questions."[55] For those interested in the application of evidence-based care to optometry, discussions are available in the literature.[56-61]

Conclusion

Students, practitioners, and faculty today are faced with increasing amounts of information and rapidly expanding frontiers of knowledge. Electronic media are rapidly becoming more important in the dissemination of information. There is also an increasing expectation of optometrists by patients and other professionals that they be familiar with supporting literature for clinical procedures and treatments. Thus, an important skill in today's health care environment is the ability to find and evaluate relevant literature. This report has examined a number of topics related to literature and information in vision care and vision science.

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Appendix 1 Information about selected journals in vision care and vision science (statements about availability of information on Web sites are as of April 2007)

Journal title and organization with which it is associated	Frequency of publication	Description and information
Optometry Journals		
Clinical and Experimental Optometry; journal of Optometrists Association Australia, the New Zealand Association of Optometrists, and the Hong Kong Society of Professional Optometrists	Published 6 times per year; distributed to members, also can be obtained by subscription	According to its Web site, *www.optometrists.asn.au/ceo*, "publishes original research papers and reviews in vision science, optics and clinical optometry"; full text of issues from 1998 to 2005 can be downloaded free at *www.optometrists.asn.au/ceo/backissues*.
Hindsight: Journal of Optometry History; publication of the Optometric Historical Society (*www.opt.indiana.edu/ohs/optohiso.html*)	Quarterly; subscription obtained by membership in the society	Publishes articles, book reviews, and other material on the history of optometry and related topics; sample issue can be downloaded at *www.opt.indiana.edu/ohs/hindsightJan07.pdf*.
Journal of Behavioral Optometry; an official publication of the Optometric Extension Program (www.oep.org)	6 issues per year; distributed to membership or by subscription	"encourages authors to submit manuscripts that are based in the clinically relevant behavioral, functional, and developmental aspects of the visual process"
Ophthalmic and Physiological Optics; the journal of the College of Optometrists (United Kingdom)	6 issues per year; obtained by subscription, with reduced rates for members	according to its Web site, *www.blackwellpublishing.com/journal.asp?ref*=0275-5408&site=1, "considers papers relevant to the practice and application of optometry and the basic aspects of visual science and clinical and applied matters"; tables of contents 1995 to the present and a sample issue available at its Web site
Optometric Education; publication of the Association of Schools and Colleges of Optometry	3 times per year; complimentary to members or by subscription	according to its Web site *www.opted.org/publications_education.cfm*, it "publishes scholarly reports, papers, and other timely, informative materials relative to optometric education and professional health education"; contents of past issues from 1998 to 2006 can be accessed at its Web site
Optometry–Journal of the American Optometric Association (*www.optometryjaoa.com*)	12 issues per year; obtained by membership or subscription	according to *www.elsevier.com/wps/find/journaldescription.cws_home/705659/description#description*, "contains peer-reviewed articles on various clinical aspects of the profession and presents readers with educational material on current research in vision problems, eye disease, and other vision abnormalities"
Optometry and Vision Development; publication of the College of Optometrists in Vision Development (*www.covd.org*)	4 issues per year; distributed to members or by subscription	According to its call for papers, publishes "in the areas of eye and vision care of infants, toddlers, and preschool children, eye and vision care of school-aged children, adults with binocular vision dysfunctions, vision related learning disorders, strabismus and amblyopia, vision therapy, special populations, and issues related to practice management of a specialty office"
Optometry and Vision Science; official publication of the American Academy of Optometry (*www.optivissci.com*)	12 issues per year; distribution to membership or by subscription	According to its instructions to authors, "considers manuscripts on all aspects of eye and vision including, but not limited to: clinical, experimental, and theoretical studies in optometry, case reports, clinical techniques, public health, epidemiology, optics and instrumentation, and optometric education"
Review of Optometry; *www.revoptom.com*	12 issues per year; obtained by subscription	A clinical practice journal; articles from 1999 to January, 2007 available free of charge at Web site

(Continued)

Appendix 1 *(Continued)*

Journal title and organization with which it is associated	Frequency of publication	Description and information
General Ophthalmology Clinical Science Journals		
Acta Ophthalmologica Scandinavica; official journal of the five Nordic Ophthalmological Societies, the European Association for Vision and Eye Research, and the International Perimetric Society	8 issues per year	According to its Web site, *www.blackwellpublishing.com/journal.asp?ref*=1395-3907, "publishes clinical and experimental original articles, reviews, editorials, educational photoessays, case reports, letters to the editor and doctoral theses"; contents 1998 to 2004 and one sample issue from 2007 available free of charge at its Web site
American Journal of Ophthalmology; *www.ajo.com*	12 issues per year	"welcomes submission of original, previously unpublished manuscripts, directed to ophthalmologists and visual science specialists describing clinical investigations, clinical observations, and clinically relevant laboratory investigations"; tables of contents and abstracts 1998 to present and complete contents of one sample issue available at its Web site
Archives of Ophthalmology; *http://archopht.ama-assn.org*; published by the American Medical Association	12 issues per year; obtained by subscription, with reduced rates for American Medical Association members	publishes "…ophthalmic knowledge for the generalist, subspecialist, and trainee" and "…clinically relevant research for the vision scientist"; tables of contents 1966 to 1974 and table of contents and abstracts 1975 to the present available free of charge at Web site
British Journal of Ophthalmology; *http://bjo.bmj.com*	12 issues per year; obtained by subscription, with reduced rates for British Medical Association members	"an international peer-reviewed journal for ophthalmologists and visual science specialists describing clinical investigations, clinical observations, and clinically relevant laboratory investigations related to ophthalmology"; tables of contents 1965 to 1974 and tables of contents and abstracts 1975 to the present available free of charge at Web site
Clinical & Experimental Ophthalmology; official journal of the Royal Australian and New Zealand College of Ophthalmologists	9 issues per year; obtained by subscription	according to aims and scope section at its Web site, *www.blackwellpublishing.com/journal.asp?ref*=1442-6404&site=1, it "primarily publishes peer-reviewed original research and reviews dealing with all aspects of clinical practice and research in ophthalmology and vision science"; tables of contents and abstracts 1998 to the present and one sample issue from 2007 available free of charge at Web site
Ophthalmology; *www.ophsource.org/periodicals/ophtha*; journal of the American Academy of Ophthalmology	12 issues per year; obtained by subscription	"publishes original, peer-reviewed reports of research in ophthalmology, including basic science investigations and clinical studies"; tables of contents and abstracts 1978 to the present available free of charge at Web site
Survey of Ophthalmology; *www.elsevier.com/wps/find/journaldescription.cws_home/600337/description#description*	6 issues per year; obtained by subscription	"a clinically oriented review journal designed to keep ophthalmologists up to date"; tables of contents and abstracts 1975 to the present and one sample issue available free of charge at Web site
Basic Vision Science Journals		
Experimental Eye Research; *www.elsevier.com/wps/find/journaldescription.cws_home/622827/description#description*	12 issues per year; obtained by subscription	according to its Web site, its goal is "to publish original research papers on all aspects of the anatomy, physiology, biochemistry, biophysics, molecular biology, biophysics, pharmacology, developmental biology, microbiology, and immunology of the eye"; tables of contents and abstracts 1962 to the present and one sample issue from 2007 available free of charge at Web site

(Continued)

Appendix 1 *(Continued)*

Journal title and organization with which it is associated	Frequency of publication	Description and information
Investigative Ophthalmology and Visual Science; *www.iovs.org*; official publication of Association for Research in Vision and Ophthalmology (ARVO)	12 issues per year; obtained by membership in ARVO or subscription	publishes "original contributions that emphasize clinical and laboratory hypothesis-based research with statistically good results that clearly advance the fields of ophthalmic and vision research"; tables of contents and abstracts 1999 to the present and tables of contents, abstracts, and pdf files of articles 1962 to 1990 available free of charge at Web site
Journal of Vision; *http://journalofvision.org/info*; published by ARVO	12 to 13 issues per year; available free of charge via the Internet	published only in digital form; "devoted to all aspects of visual function in humans and other organisms"; started in 2001
Vision Research; *www.elsevier.com/wps/find/journaldescription.cws_home*/263/description#description	28 issues per year; obtained by subscription	according to its Web site, "a journal devoted to the functional aspects of human, vertebrate, and invertebrate vision and publishes experimental and observational studies, reviews, and theoretical papers firmly based upon the current facts of visual science"; tables of contents and abstracts 1961 to the present and one sample issue from 2007 available free of charge at Web site
Visual Neuroscience – *http://journals.cambridge.org/action/displayJournal?jid*=VNS	6 issues per year; obtained by subscription	"an international journal devoted to the publication of high-quality reports of experimental and theoretical research in basic visual neuroscience"; tables of contents and abstracts 1998 to 2006 available free of charge at Web site

Appendix 2 Selected databases that can be used to search vision care and vision science literature

Database	Description and information	Optometry journals included
EBSCO Academic Search; *http://search.ebscohost.com*	Multidisciplinary database indexing over 8,000 journals; "designed specifically for academic institutions"; "for patrons of subscribing institutions"	*Ophthalmic and Physiological Optics; Review of Optometry*
Google Scholar; *http://scholar.google.com*	Can be used to "search across many disciplines and sources: peer-reviewed papers, theses, books, abstracts and articles, from academic publishers, professional societies, preprint repositories, universities and other scholarly organizations"	*Best results for Optometry and Vision Science; Ophthalmic and Physiological Optics; Clinical and Experimental Optometry; and Optometry – Journal of the American Optometric Association*, but other journals can be represented*
ISI Web of Knowledge; *http://portal.isiknowledge.com/portal.cgi*	At this URL, there are several searchable databases, including Web of Science Science Citation Index, Inspec, BIOSIS Previews, and MEDLINE	*Clinical and Experimental Optometry, Ophthalmic and Physiological Optics, Optometry and Vision Science*
PubMed; *www.ncbi.nlm.nih.gov/entrez/query.fcgi?DB*=pubmed	"A service of the National Library of Medicine and the National Institutes of Health"; provides bibliographic information from MEDLINE and other sources	*Clinical and Experimental Optometry; Hindsight: Journal of Optometry History; Ophthalmic and Physiological Optics; Optometry – Journal of the American Optometric Association; Optometry and Vision Science*
Scopus; *www.scopus.com*	"Abstract and citation database of research literature and quality web sources"; searches thousands of journals in addition to conference proceedings, Web sites, and other materials	*Clinical and Experimental Optometry; Ophthalmic and Physiological Optics; Optometry – Journal of the American Optometric Association; Optometry and Vision Science*
VisionCite; *www.visioncite.com*	"Citation index of the Illinois College of Optometry library…all [more than 110] periodicals received by the library are scanned for articles on optometry, ophthalmology, contact lenses, reading, perception, and other vision related subjects"; 1984 to the present; subscription required; one-month free trial available	More than 30
Visionet; *www.visionet.sco.edu*	"Bibliographic citations of articles, books, and slides located in the Southern College of Optometry Library"; 1976 to the present; by subscription or by a per search fee	More than 30

* Google Scholar searches for keyword terms in titles, abstracts, and full text from many publishers and Web sites. Some items not included in the materials from the publishers searched may be retrieved if cited or listed in the Web sites searched or in the materials from the publishers searched.

Appendix 3 Web pages containing numerous links to vision care and vision science–related sites

Web page name and URL	Description and origin
Associations, Societies, Foundations for Eye Health; *http://library.ico.edu/eyeassn.html*	Alphabetical list of organizations; compiled on behalf of the Association of Vision Science Librarians
Directory of Optometry & Optical Web sites; *www.eyetalk.com.au/content/pages/hotlinks/hotlinks.htm*	Alphabetical list of Web sites related to optometry and clinical optics; from Eyetalk Consultants; "resources for effective management of your practice"
Eyesites: Eye Care and Vision Web sites; *www.opt.indiana.edu/news/eyesites.htm#org*	Links for Web sites under topics such as organizations; schools, colleges and institutes; patient and practitioner education; contact lens and solution companies; diagnostic instruments; publications; other optical industry companies; etc.; From Indiana University School of Optometry
Eye Resources on the Internet; *http://webeye.ophth.uiowa.edu/dept/Web* sites/eyeres.htm	Alphabetical list of Web sites related to optometry, ophthalmology, eye conditions, etc.; compiled on behalf of the Association of Vision Science Librarians
Subject Guide to Internet Resources in Vision Science; *http://spectacle.berkeley.edu/~library/avslint.htm*	Links for Web sites under topics such as anatomy, physiology and histology; cataract/IOL; contact lenses; glaucoma; low vision; patient education; refractive surgery; optometry rules and laws; from the Association of Vision Science Librarians

Appendix 4 U.S. government Web sites with health information and statistics.

Web site	URL
Center for Disease Control and Prevention	*www.cdc.gov*
Food and Drug Administration	*www.fda.gov*
MedlinePlus	*http://medlineplus.gov*
National Center for Health Statistics	*www.cdc.gov/nchs/*
National Eye Institute	*www.nei.nih.gov*
National Guideline Clearinghouse	*www.guideline.gov*
National Institutes of Health	*www.nih.gov*
Occupational Safety and Health Administration	*www.osha.gov*