

Review Article

## Internet Resources in Prosthodontics: An Overview

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### ABSTRACT

The internet has become an intrinsic component of the present day prosthodontics because of the unmatched materials available on the World Wide Web (www). Although books and journals are important sources of information, but it is not always feasible to take them everywhere, require large storage space and are difficult to update. Internet resources present a simple solution to overcome these problems. Though there have been many reviews on internet sources in dentistry, none has been done so far specifically for Prosthodontics. Knowledge of where to access different prosthodontic topics would save the user invaluable time spent in surfing the vast internet. This article reviews various prosthodontic (science) resources available on the internet, for the healthcare professional/faculty, undergraduate/postgraduate student and patient.

**Keywords:** Internet, prosthodontics, resources

### INTRODUCTION

Considerable changes have occurred in the methods of information delivery in health education.<sup>1,2</sup> The most noteworthy change is the development of computerized network system which allows information storage and propagation in various formats; internet being undeniably the most significant. This powerful, universal system has had a momentous impact on the way health care personnel retrieved and disseminated information in the past and will continue to do so.<sup>3,4</sup>

Books and journals are invaluable sources of information. Despite the fact that information

appears in textbooks much later than on internet, they are often considered more trustworthy as information delivered is time tested. However, textbooks cannot be carried everywhere, require a lot of maintenance, space for storage and need to be updated regularly. Internet resources can easily help in overcoming these problems

Software for navigating the internet include Telnet, Online public access catalogs (OPAC), Client-server software, File transfer protocol, Archie File transfer protocol, Wide Area Information Service, Gopher, Veronica, World Wide Web, Mosaic etc.<sup>5,6</sup> File transfer protocol (FTP) facilitates file retrieval from file archive (i.e., server) sites. Individual text files, data files, or even software can be moved quickly between internet FTP clients and servers. Speeds of 5,000 to 10,000 bytes per second to distant sites around the world are common. World Wide Web (www) software offers hypertext documents that pull together information from sources round the world. Instead of merely citing supporting references, www authors can include active links directing the reader to the www server holding supportive information.<sup>3-6</sup>

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**Table 1: Reliable Prosthodontics Portals**

Site Name	URL	Site Description
The American College of Prosthodontists	<a href="http://www.prosthodontics.org">www.prosthodontics.org</a>	A professional association of dentists with specialty training who create optimal oral health, in function and appearance including dental implants, dentures, veneers and crowns.
Dentistry internet resources, University of Hong Kong	<a href="http://www.hku.hk/lib/DenLib/den.html">www.hku.hk/lib/DenLib/den.html</a>	It provides links to dental education resources, electronic libraries, journals, and associations. The dental resources are listed according to subject, such as cleft lip and palate, dental implants, dental materials, prosthodontics and temporomandibular joint disease etc.
Dental related Internet Resources	<a href="http://www.dentalresources.com">www.dentalresources.com</a>	This site with commercial orientation provides links to dental suppliers and laboratories as well as dental education, continuing education sites and associations.
MedNets Dental Database.	<a href="http://www.internets.com/mednets/sdental.htm#chid">www.internets.com/mednets/sdental.htm#chid</a>	This searchable database enables the user to locate materials in the repository. The extensive database contains book abstracts, pamphlets, brochures, fact sheets and journal articles, many of which are written by top researchers in their fields. Also, links to other searchable dental databases are provided.
Dental Study Club Online Archives	<a href="http://www.tambd.edu/DentalCE/dsc/ARCHIVES/search.html">www.tambd.edu/DentalCE/dsc/ARCHIVES/search.html</a>	This searchable database provides structured abstracts of journal articles containing research objectives, results and conclusions. Suggested reading lists and self-assessment tests are also given.
Biomaterials Properties Database, University of Michigan	<a href="http://www.lib.umich.edu/libhome/Dentistry.lib/DentalUables.toc.html">www.lib.umich.edu/libhome/Dentistry.lib/DentalUables.toc.html</a>	The site provides data on physical properties of the biomaterials. It is perhaps more useful to the researcher than the student or teacher.
Dental Materials School of Dentistry, University of North Carolina at Chapel Hill.	<a href="http://www.dent.unc.edu/bayneldentmtls/dmlectures.html">www.dent.unc.edu/bayneldentmtls/dmlectures.html</a>	This site provides lecture notes on dental materials including resin modified glass ionomers, filling materials, gold casting alloys, mercury controversy and dental cements.
Dental Education Resources on the Web (DERWeb), University of Sheffield	<a href="http://www.derweb.ac.uk/index.html">www.derweb.ac.uk/index.html</a>	This is a very good dental education resource. In addition to an extensive database of images, it provides web conferencing, a virtual bookshop and links to professional organizations. DERWeb features case studies, a CAL program on immediate dentures, a history of occlusal concepts, articulators, quizzes (with hints, if required) and patient education pages.
Directory of open access journals	<a href="http://www.doaj.org/home">www.doaj.org/home</a>	This site provides free access to quality controlled open access journals. Open access is defined as journals which use a funding model that does not charge readers or their institutions for access. The criteria for quality controlled journal is that 'the journal must exercise peer review or editorial quality control to be included.' Currently it holds 110 journals in the subject of dentistry.
Foundation for oro-facial rehabilitation	<a href="http://www.fffpr.org/">http://www.fffpr.org/</a>	The site allows free access to power-point presentations on various topics of complete dentures in English, Spanish and Chinese. Implant dentistry, removable partial dentures and maxillofacial prosthesis presentations are also available in both English and Chinese.

Despite the fact that the www is a repository of much information, search for information often remains uncoordinated, complex and time-consuming. Understanding the intricacies of the internet and search engines may require years of study and/or expert assistance<sup>7</sup>; prosthodontic users who are unacquainted with using the

internet may have to depend on luck to obtain useful material. Moreover, it may be difficult to distinguish between reliable and unreliable resources. Though there have been many reviews on internet sources in dentistry<sup>8-11</sup>, none has been done on internet sources specifically in Prosthodontics. This article reviews various reliable prosthodontic (science) resources

available on the internet, which should make searching required data easier for the prosthodontist, student and patient.

### PROSTHODONTIC PORTALS

Within fractions of a second, the search engine can retrieve more than a million websites related to the search term “Prosthodontics”. Despite the availability of an immense quantity of information on the internet, performing a coordinated search is time consuming. For instance, the exact number of results displayed

Google with the above search term on 16/11/17 was 5, 420,000 in 0.70 seconds. The same search performed 24 hours later displayed 5,600,000 results in 0.62 seconds. This signifies that numbers of resources are constantly changing; therefore it is important to know reliable resources of information. More dependable gateways known as Portals are repositories of selected quality websites can direct the user to smaller sections of prosthodontic resources. A list of such prosthodontic sites is given in Table I, providing useful resources and knowledge banks.<sup>8</sup> Apart from various prosthodontic sites mentioned in Table I, different prosthodontic societies have their own websites which provide a link to journals published by them. Also, various university websites (where prosthodontics is taught) provide information about training programs and prosthetic services available. These can be of immense help to professionals seeking information related to super-specialty /fellowship programs, or patients looking for specialized services.

**Database and journals:** A database is an organized collection of data, typically in digital form. A single Google search retrieves more than 20 databases related to Prosthodontics, of which the most commonly used are PubMed and Cochrane Library. Table II lists a selection of online prosthodontic journals (on dental materials, implants, temporomandibular joint and prosthodontics as a whole) which have been ranked at the top based on 2016 impact factors.<sup>12</sup> Most online journals are reproductions of print counterparts. There are hardly any prosthodontic journals that are available free online, so accessing full text of articles typically requires a paid subscription. However, most journal

websites offer certain non-subscription services such as table of contents alerts (TOC alert) which registered users receive on their email, when a new online issue is released.

**Table 2: Top Prosthodontics Journals on the basis of Impact Factor**

	Journal Name	URL	Impact Factor
<b>A.</b>	Journals on Dental Materials Science		
1.	Dental Materials	<a href="http://www.journals.e Elsevier.com/dental-materials">http://www.journals.e Elsevier.com/dental-materials</a>	4.070
2.	Dental Materials Journal	<a href="https://www.jstage.jst.go.jp/browse/dmj">https://www.jstage.jst.go.jp/browse/dmj</a>	1.073
<b>B.</b>	Journals on Implantology		
1.	Clinical Oral Implant Research	<a href="http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1600-0501">onlinelibrary.wiley.com/journal/10.1111/(ISSN)1600-0501</a>	3.624
2.	European Journal of Oral Implantology	<a href="http://ejoi.quintesseenz.de/">http://ejoi.quintesseenz.de/</a>	3.567
3.	Clinical Implant Dentistry and Related Research	<a href="http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1708-8208">onlinelibrary.wiley.com/journal/10.1111/(ISSN)1708-8208</a>	2.939
<b>C.</b>	Journals on TMJ		
1.	CRANIO : the journal of craniomandibular & sleep practice	<a href="http://www.maneyonline.com/loi/crn">http://www.maneyonline.com/loi/crn</a>	0.877
<b>D.</b>	Journals on Prosthodontics (As a whole)		
1.	Journal of Prosthodontic Research	<a href="http://www.journalofprosthodonticresearch.com/">www.journalofprosthodonticresearch.com/</a>	2.561
2.	Journal of Prosthetic Dentistry	<a href="http://www.thejpd.org">http://www.thejpd.org</a>	2.095
3.	Journal of Prosthodontics	<a href="http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1532-849X">onlinelibrary.wiley.com/journal/10.1111/(ISSN)1532-849X</a>	0.905

**PubMed:** The U.S. National Library of Medicine (NLM) located at the National Institutes of Health (NIH) has National Centre for Biotechnology Information (NCBI) which provides access to numerous databases through the website URL: <http://www.ncbi.nlm.nih.gov/>. PubMed is a free resource that is developed and maintained by NCBI. It comprises over 20 million citations for biomedical literature from MEDLINE (Medical Literature Analysis and Retrieval System Online, or MEDLARS Online), life science journals and online books. Links to other resources related to molecular biology and additional pertinent Web sites are also provided. Journals publishers can submit citations to NCBI, which then directs the user, using LinkOut to

journal web sites where full text of articles is accessible. So, a direct link to a wider information sources and services beyond NCBI systems can be accessed from PubMed and other NCBI databases.<sup>13,14</sup>

**The Cochrane Library:** Cochrane is a worldwide autonomous organization of volunteers involved in healthcare who are devoted to generate best available evidence, to facilitate better decision making in healthcare practices. A collection of 6 databases collectively known as Cochrane Library maintains all the necessary quality evidence related documents from various sources. Information about various review groups present in this Cochrane is provided by a seventh database.<sup>15</sup>

This consists of the following 6 databases:

1. The Cochrane database of systematic review
2. The Cochrane central register of controlled trials
3. The Cochrane methodology register
4. Health technology assessment database
5. NHS economic evaluation database.
6. About The Cochrane Collaboration

It was originally published by Update Software, but now it is a part of the Wiley Online system and is a subscription-based database. It is an evidence based information resource which is updated daily.

In developing countries including India, it is available free throughout the length and breadth of the nation.<sup>16</sup> In low-income countries also, it is freely accessible via HINARI due to provisions made by WHO. Abstracts of Cochrane Reviews and summaries of articles are freely accessible in all countries.

**Patient Education:** Computer-aided learning systems such as compact drives, video discs are frequently utilized for patient education in the developed countries. These methods besides convenient and user friendly, are also interactive. Electronic patient record can be utilized to personalize the information contents of the web page.<sup>17,18</sup>

This review is not exhaustive and needs regular update due to rapid emergence of newer resources in prosthodontics on internet.

**CONCLUSION:** Enormous quantity of information available about prosthodontics on the internet can really confuse the novice user. However, the quality information can be easily accessed through a careful selection of portals outlined in this review. E-mail updates and mentioned resources can go a long way in keeping the prosthodontist up to date.

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