

Bookshelf Help

Last Updated: September 29, 2022



National Center for Biotechnology Information (US), Bethesda (MD)

NLM Citation: Bookshelf Help [Internet]. Bethesda (MD): National Center for Biotechnology Information (US); 2005-.

Bookshelf, the books division of the NLM Literature Archive (LitArch) at the National Center for Biotechnology Information (NCBI), is an online searchable collection of books, reports, databases, and other scholarly literature in biology, medicine, and the life sciences. This documentation describes the Bookshelf project and features for accessing the literature and addresses some commonly asked questions.

Table of Contents

Introduction	1
Searching Bookshelf.....	1
Browsing <i>versus</i> Searching.....	1
Integration with Other NCBI Databases.....	1
Copyright, Permissions, and Conditions of Use.....	2
Information for Authors and Publishers.....	3
Quick Start Guide	5
Search Tips.....	5
Browsing Bookshelf	7
From the Bookshelf Homepage.....	7
From the Browse Titles Page.....	7
From a Publication’s Table of Contents.....	7
From within a Page.....	9
Searching Bookshelf	17
Facets.....	17
Advanced Search.....	18
Displaying Your Search Results.....	22
Links to Related Data in Other NCBI Resources.....	23
Displaying the Search Details.....	23
Creating Alerts.....	24
Saving and E-mailing Results and Searches.....	25
Frequently Asked Questions	29
Copyright and Permissions.....	29
PubReader and PDF format.....	29
Hard Copy Versions.....	31
Applications and Submissions.....	31
Cataloging.....	32
Citations.....	32
Other General Questions.....	33
Tutorials	35
Tutorial 1: Browsing.....	35

Tutorial 2: Search	35
Tutorial 3: Inside a book	36
Tutorial 4: Using facets	37
Tutorial 5: Advanced search	38

Introduction

Created: September 30, 2010; Updated: January 15, 2021.

Bookshelf is an online searchable collection of more than 9000 books, reports, databases, and other scholarly literature in biology, medicine, and the life sciences developed and managed by the [National Center for Biotechnology Information \(NCBI\)](#) in the [National Library of Medicine \(NLM\)](#) at the [National Institutes of Health](#).

As the books division of the [NLM Literature Archive \(NLM LitArch\)](#), the digital repository of full-text literature, Bookshelf serves not only to preserve and maintain free access to electronic biomedical literature, but through its integration with other NCBI resources, such as [PubMed](#), [Gene](#), [OMIM](#), and [PubChem](#), it fosters both intentional and serendipitous discoveries.

Each publication on Bookshelf is divided into searchable units of content based on the organization of parts, chapters, sections, subsections, etc, within the individual publication. The entry-point for a user is a page within the book usually found by a search.

Once browsing this book page, it is possible to navigate around a whole unit of content. The size of the unit of content and its interconnection with other parts of the book will depend on both the organization of the book and the wishes of the publisher.

Searching Bookshelf

You may search across all content, or one book at a time in Bookshelf. To search across the entire Bookshelf resource, type a word or phrase into the **Search** box at the top of the [Bookshelf homepage](#) and click **Search**. You may search one book at a time by selecting a book listed on the [Browse Titles](#) page. Simply click on the book's cover or hyperlink to view the **Table of Contents** page. There is a **Search this book** box located under the book's metadata and cover thumbnail. Enter one or more terms to query the book. Your search results will be displayed on a separate page and organized by **Relevance**. To query the entire Bookshelf again, use the **Search** box set to 'Books' at the top of the screen (See [Searching Bookshelf](#) for more information).

Browsing versus Searching

Browsing allows you to "click your way" through a Bookshelf publication. Searching, on the other hand, requires the user to enter a search term to retrieve books that contain the specific term. Every publication in Bookshelf is fully searchable, but not all publications can be browsed. Browsable publications include a hyperlinked **Table of Contents**, allowing you to view the publication chapter by chapter. All books created at the National Library of Medicine (NLM) and by the National Center for Biotechnology Information (NCBI) are browsable. Books that cannot be browsed are accessible by using the **Search this book** box on the book's Table of Contents page. Whether books are browsable depends on agreements made with the publishers.

Integration with Other NCBI Databases

Through links to other resources at NCBI, such as [PubMed](#), [PMC](#), [PubChem Substance](#), [Gene](#), and [OMIM](#), Bookshelf enables readers to discover relevant biomedical information (see [Figure 1](#)). A number of full-text books, reports and databases hosted in Bookshelf can be accessed through links in their corresponding entry in [PubMed](#), a database of citations and abstracts for journal articles, books and documents (see the [NLM Technical Bulletin](#) for more information). PubMed and Bookshelf are also interlinked by 1) links in PubMed to publications in Bookshelf that have cited a PubMed citation in their bibliography, and 2) links to PubMed citations from articles cited in publications on Bookshelf.

The screenshot shows a Bookshelf page for the article "Mouse models of graft-versus-host disease" by Pavan Reddy and James LM Ferrara, published February 28, 2009. The page features a top navigation bar with "StemBook [Internet]", "Show details", "Contents", and a search box. A green button in the top right corner says "PubReader format: click here to try".

The main content area includes an "Introduction" section. The text discusses allogeneic hematopoietic cell transplantation (HCT) and graft-versus-host disease (GVHD). It mentions that GVHD can be acute or chronic, with acute GVHD responsible for 15% to 40% of mortality. The text highlights that mouse models have provided insights into the biology of this process. It also describes the GVHD reaction in irradiated mice and the requirements for developing GVHD models, such as immunological competence of donor T cells and the recipient's inability to reject transplanted cells. The text concludes by stating that mouse models are the most utilized systems for investigating GVH responses.

On the right margin, there are several discovery panels:

- Views:** Includes links for PubReader, Print View, Cite this Page, and PDF version of this page (274K).
- In this Page:** Lists sections: Introduction, Mouse models, Immunobiology, Conclusion, and References.
- Related information:** Provides links to PMC, PubMed, and Gene.
- Related citations in PubMed:** Lists several PubMed citations, including "Human and murine cutaneous graft-versus-host diseases. Potential models for the study of immunologi [Br J Dermatol. 1984]" and "Progress in acute graft versus host disease. [Curr Opin Hematol. 2007]".

Two orange callout boxes, labeled 'A' and 'B', point to the "Related information" and "Related citations in PubMed" panels, respectively.

Figure 1. Among the discovery panels located along the right margin of a book page are those displaying links to PubMed and other NCBI resources. **A)** “Related Information” provides links to other databases at NCBI, such as PMC, PubMed Substance, Gene and OMIM. **B)** Links to related PubMed abstracts can be found in the “Related citations in PubMed” panel.

Copyright, Permissions, and Conditions of Use

Some of the information found in Bookshelf is provided by non-government authors and publishers, and as such is copyright protected. Since NCBI does not control the copyright for these books, you must contact the author or publisher to obtain permission before reproducing any material found in such publications. Such books are identified on Bookshelf web pages by the presence of the copyright symbol (©) at the bottom of the webpage. For more information, see the [Bookshelf Copyright Notice](#).

Restrictions on Systematic Downloading of Books or Chapters

Crawlers and other automated processes may NOT be used to systematically retrieve content from the Bookshelf web site, and bulk downloading of books is prohibited. Bookshelf does have two auxiliary services, the [NLM LitArch OAI service](#) and [NLM LitArch FTP service](#), that may be used to download certain content in bulk.

Information for Authors and Publishers

Bookshelf strives to represent the range of biomedical, health, and life sciences books and resources available to scientists, health professionals, educators, students, and consumers. Specialist research, resources for university-level teaching, works on methods and procedures, and clinical reports and guidelines are all included. See Bookshelf's [Information for Authors and Publishers](#) page about how to propose a publication, the review process, and the submission of data.

Quick Start Guide

Created: September 30, 2010; Updated: August 27, 2013.

From Bookshelf's [Browse Titles](#) page you may view all of Bookshelf's titles by title, first author/editor, publisher, publication year or type, or begin searching across the entire resource. You may browse and search across all content, or one book at a time.

By clicking on a book's cover image or hyperlinked title, you may access an individual publication's Table of Contents page, from which you can begin browsing or searching the contents of that particular book.

Search results will be displayed on a separate page and organized by relevance (see [Displaying Your Search Results](#)).

For a quick look at Bookshelf and its features, also visit the [Tutorials](#) page.

Search Tips

You may search Bookshelf like any other NCBI database, namely by

- searching on any word
- restricting the search term to a certain field using Facets
- using the Advanced Search option to search multiple fields, or
- applying filters to properties.

Here are some representative searches:

Find books by...	Search text
free text	mood sleep disorders
author	alberts[au]
editor	pagon[ed]
title	Lactose Intolerance[Title]
publisher	National Academies Press[Publisher]
ISBN	0-8153-3218-1[ISBN]
publication date (year)	2010[Year of publication]

See [Advanced Searching](#) for more information about building specialized searches, viewing your search history, saving search results and viewing search details.

Browsing Bookshelf

Created: September 30, 2010; Updated: February 18, 2014.

From the Bookshelf Homepage

Browsing allows you to “click your way” through Bookshelf and its publications. From the [Bookshelf homepage](#), you may browse [New & Updated](#) content and [Featured Titles](#). [New & Updated](#) includes new books and resources added to Bookshelf and books and resources on Bookshelf that have been recently updated with a new chapter. Click on “See more...” to access the full [New & Updated](#) list and additional information about these titles, such as the date new books or chapters were added to Bookshelf. By clicking on a book’s cover image or hyperlinked title, you may access its [Table of Contents](#) page (see Figure 1).

To return to the Bookshelf homepage from any page of a publication, click on “Bookshelf” in the top left corner.

From the Browse Titles Page

You may begin browsing the contents of the entire Bookshelf via the [Browse Titles](#) page, which allows you to view and sort contents by title or publication date (see Figure 2, and [Browsing Tutorial video](#)). To narrow the list of titles by particular terms in the titles and/or contributors, enter one or more terms in the “Filter term” box and click the [Go](#) button. Or you may filter the list by clicking on the types of resource, publishers that interest you (see Figure 3), or versions/editions of publications. By default only current titles in Bookshelf will display on the Browse Titles page. To view all titles in Bookshelf, including previous versions or editions, or content that is no longer considered current by its authors/publisher, you must select “Include previous versions/editions” in the [Versions/Editions](#) panel (see Figure 3).

To temporarily send titles to the clipboard so that you can come back to them later, use the check boxes to select titles, click on the [Send to](#) link, and select [Clipboard](#). If no check boxes are selected, the first 500 titles displaying will be sent to the clipboard.

You may also save titles to a text file, CSV file, or e-mail them by clicking on the [Send to](#) link, and selecting [File](#) to save as a text or CSV file or [E-mail](#) to send them to a particular e-mail address. You may either select to send particular titles listed by using the check boxes, or have the first 1000 displayed titles saved in a text file or e-mailed (see Figure 4a).

For more information about using the clipboard, saving as a text file and e-mailing results, see [Saving and E-mailing Results and Searches](#).

If you’d like to save a particular page of displayed titles, such as the entire list of contents, or a list of contents filtered by a term or one or more categories, click on [Save Link](#). You may then copy the provided link to this page, and paste it to your browser to bookmark it, or send it to others to save (see Figure 4b).

By clicking on a book’s cover thumbnail or hyperlinked title, you may access its [Table of Contents](#) page (see Figure 1). Many publications are also available in PDF format, so you can download a copy to your computer.

From a Publication’s Table of Contents

Each publication on Bookshelf is divided into searchable units of content based on the organization of parts, chapters, and sections within the individual publication. These units of content are listed under the [Contents](#) section of the [Table of Contents](#) page. You can expand or collapse all of the main units of [Contents](#) by using the [Expand All](#) and [Collapse All](#) links on the [Table of Contents](#) page (see Figure 1).

The screenshot shows the NCBI Bookshelf interface for the book "Dynamics of Cancer" by Steven A. Frank. The page is annotated with callout letters A through J:

- A:** Points to the "Bookshelf" link in the top left navigation bar.
- B:** Points to the hyperlinked PMID number (20821846) at the bottom of the page.
- C:** Points to the publisher's name, "Princeton University Press".
- D:** Points to the "Copyright and Permissions" link.
- E:** Points to the "Search this book" search box.
- F:** Points to the "Contents" section on the left side of the page.
- G:** Points to the "Expand All" link below the contents.
- H:** Points to the "Views" panel on the right side of the page.
- I:** Points to the "Related citations in PubMed" panel on the right side of the page.
- J:** Points to the "Next >" button at the top right of the page.

The page content includes the book title, author, publisher, ISBN, and a description. The "Contents" section lists chapters from Introduction to Conclusions. The "Views" panel offers options like PubReader, Print View, and PDF version. The "Related citations in PubMed" panel shows several related abstracts.

Figure 1. Table of Contents page of a browsable book. **A)** Clicking on “Bookshelf” at the top left corner of the page will return you to the Bookshelf homepage. **B)** The hyperlinked PMID number will take you to a publication’s corresponding citation in PubMed. **C)** You can access a publisher website by clicking on the publisher’s link. **D)** For information about requesting permission to use copyrighted material, click on the Copyright Notice link to access the copyright statement (also available at the bottom of the page). **E)** To search within a book use the **Search this book**. **F)** If the publication is browsable, the **Contents** will be hyperlinked, allowing you to view the publication chapter by chapter. **G)** To expand or collapse the entire **Contents** of a publication, use these links. **H)** The “Views” panel contains a PubReader link to a reader-friendly version of any page of a browsable book designed primarily for tablets and other small screen devices, a Print View link to a print friendly version of any page of a browsable book, a Cite this Page link to the citation for the book or resource (based on **NLM style**), and a link to a PDF version of the title. **I)** Links to related PubMed abstracts can be found in the “Related citations in PubMed” panel on right. **J)** The Next button will take you to the first page of the book’s contents.

If the publication is browsable, the **Contents** will be hyperlinked, allowing you to view the publication chapter by chapter. If a publication is not browsable, there will be a notification on the publication’s pages. Whether publications are browsable depends on agreements made with the publishers. Publications that cannot be browsed are accessible by using the **Search this book** box on a page of that publication or by querying the Bookshelf (see Figure 5). Most publications on Bookshelf (> 95%) are fully browsable.

The screenshot shows the NCBI Bookshelf interface. At the top, there are navigation links for 'NCBI Resources' and 'How To'. The main header includes 'Bookshelf', a search box, and a 'Search' button. Below the header, there are sections for 'Browse Titles', 'Subjects', and 'Types'. The 'Sort by' dropdown menu is open, showing options: 'Title', 'Pub Date' (selected), and 'Reverse'. An orange box highlights the 'Sort by' menu, and a red circle with a blue 'A' is next to it. The background shows a list of search results with titles like 'Diagnosis and Treatment of Obstructive Sleep Apnea in Adults [Internet]' and 'Common Syndromes in Older Adults Related to Primary and Secondary Prevention [Internet]'.

Figure 2. Sorting the Browse Titles page. Bookshelf’s titles are by default sorted by publication date, with the most recent titles at top. To alphabetically sort contents by title, click on the Display Settings link, change the selection to Title, and click on Apply. To sort by reverse publication date (so that oldest titles appear at top), select both Pub Date and Reverse. To sort by reverse alphabetical order, select both Title and Reverse (A).

When navigating through the pages of a browsable publication, you can view the publication’s hyperlinked **Contents** or return to the **Table of Contents** page by clicking on the **Contents** drop-down menu (see Figure 6, and Inside a Book Tutorial video).

From within a Page

Once you have landed on a particular page of content, such as a chapter, via a search query, your search terms will be bolded or highlighted if this is selected in your **My NCBI preferences**. Your particular search terms will remain bolded or highlighted until you’ve conducted a new search query, you change your My NCBI settings to not highlight search terms, or the next day.

You can browse the main sections of a page by looking at the hyperlinked **In this Page** section. It is also possible to quickly navigate from section to section within a chapter by clicking on the **Go to** drop-down menu (see Figure 7, and Inside a Book Tutorial video).

The screenshot shows the NCBI Bookshelf interface. At the top, there are navigation links for 'Resources' and 'How To', and user options for 'lathrops', 'My NCBI', and 'Sign Out'. The main header includes 'Bookshelf', a dropdown menu set to 'Books', a search input field containing 'cancer', and a 'Search' button. Below the search bar are links for 'Limits' and 'Advanced search'. The 'Browse Titles' section is active, showing a filter term of 'cancer' in the 'Title or Contributor' field, with 'Go' and 'Reset' buttons. A 'Display Settings' box indicates '20 titles displayed, Sorted by Pub Date'. On the left, there are three filter panels: 'Subjects' (with 'Cancer' selected), 'Types' (with 'Report' selected), and 'Publishers' (with 'Agency for Healthcare Research and Quality (US)' selected). A 'Versions/Editions' panel at the bottom left has 'Current titles in Bookshelf' selected. A 'More' button is visible in each filter panel. On the right, a list of search results is shown, with the first result being 'Treatments for Localized Prostate Cancer: Systematic Review to Update the 2002 U.S. Preventive Services Task Force Recommendation [Internet]'. A 'Show All Titles' link is present above the results. An 'Apply' button is visible in the filter panels.

Figure 3. Filtering the Browse Titles page. To narrow the list of Bookshelf titles, enter one or more terms in the “Filter term” box and click the **Go** button (A). The total number of titles containing that term will appear at the top of the page (B). Click on the **Show All Titles** link if you want to display all titles in the list, automatically sorted by publication date. To filter the list by subjects, type of resource, or publishers, click on one or more options (C) available in these menus. The total number of titles will appear in parentheses for each subject, type or publisher, with those containing the most titles appearing at top. Click on the **More** button in each filter box to get the complete set of available subjects, types or publishers, sorted alphabetically. Use the check boxes to select one or more options in the box, and press the **Apply** button to filter by them (D). To clear filters and reset page to the default, click the **Reset** button (E). By default only current titles in Bookshelf will appear when you use the Browse Titles page. To include previous versions or editions of titles, or titles no longer considered current by their authors or publishers, select “Include previous versions/editions” in the **Versions/Editions** panel (F).

If the publication is browsable, you can use the **Contents** drop-down menu (see Figure 6) at the top and bottom of the page to click on another part, chapter or section you would like to view.

To return to the publication’s **Table of Contents** page, click on the **Table of Contents** link at the top right of the **Contents** drop-down menu or under the book details. You can also return to the **Table of Contents** page by clicking on the publication’s cover thumbnail. To return to the Bookshelf homepage, click on “Bookshelf” in the top left corner (see Figure 7).

NCBI Resources How To lathrops My NCBI Sign Out

Bookshelf Books Search Limits Advanced search Help

Browse Titles

Select a category or enter filter term below.

Filter term: genetics in Title or Contributor Go Reset

Display Settings: Sorted by Pub Date Send to: Save Link:

Subjects

- All Subjects
- Genetics (2)
- Medicine (2)
- Microbiology (1)
- Molecular Biology (1)

More

Types

- All Types
- Book (3)

Publishers

- All Publishers
- ASM Press (1)
- Remedica (1)
- Wiley-Liss (1)

More

3 of 3 Titles for "genetics"

-  [Genetics for Surgeons.](#)
Morrison PJ, Spence RAJ.
London: Remedica; 2005.
Book | Genetics, Medicine
-  [Helicobacter pylori: Physiology and Genetics.](#)
Mobley HLT, Mendz GL, Hazell SL, editors.
Washington (DC): ASM Press; 2001.
Book | Microbiology, Medicine
-  [Human Molecular Genetics. 2nd edition.](#)
Strachan T, Read AP.
New York: Wiley-Liss; 1999.
Book | Genetics, Molecular Biology

Choose Destination

- File
- Clipboard
- E-mail

Figure 4a. Saving and e-mailing browsed titles. Click on the Send to link to send all titles displayed on a page to a text file, e-mail address or the clipboard (A). Use the check boxes to select just one or more titles displayed on the list to send to one of the destinations.

NCBI Resources How To lathrops My NCBI Sign Out

Bookshelf Books Search Limits Advanced search Help

Browse Titles

Select a category or enter filter term below.

Filter term: genetics in Title or Contributor Go Reset

Subjects
 All Subjects
 Genetics (2)
 Medicine (2)
 Microbiology (1)
 Molecular Biology (1)
 More

Types
 All Types
 Book (3)

Publishers
 All Publishers
 ASM Press (1)
 Remedica (1)
 Wiley-Liss (1)
 More

Display Settings: Sorted by Pub Date Send to: Save Link:

3 of 3 Titles for "genetics"

-  [Genetics for Surgeons.](#)
Morrison PJ, Spence RAJ.
London: Remedica; 2005.
Book | Genetics, Medicine
-  [Helicobacter pylori: Physiology and Genetics.](#)
Mobley HLT, Mendz GL, Hazell SL, editors.
Washington (DC): ASM Press; 2001.
Book | Microbiology, Medicine
-  [Human Molecular Genetics. 2nd edition.](#)
Strachan T, Read AP.
New York: Wiley-Liss; 1999.
Book | Genetics, Molecular Biology

Link to this page
<http://www.ncbi.nlm.nih.gov/books/browse/?>

Figure 4b. Saving the link of a page of filtered titles. Click on the Save Link to get the link to the page with your filtered results (A).

NCBI Resources How To Sign in to NCBI

Booksshelf Books Search

Browse Titles Limits Advanced

A By agreement with the publisher, this book is accessible by the search feature, but cannot be browsed.

Molecular Biology of the Cell, 4th edition
 Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, and Peter Walter.
 New York: [Garland Science](#); 2002.
 ISBN-10: 0-8153-3218-1 ISBN-10: 0-8153-4072-9
[Copyright and Permissions](#)

B Search this book

Views
 Cite this Page

Recent Activity
 Turn Off Clear

- Molecular Biology of the Cell Bookshelf
- molecular biology of the cell (5982) Books
- Dynamics of Cancer Bookshelf
- dynamics of cancer (628) Books
- results (52755) Books

See more...

Excerpt
Molecular Biology of the Cell is the classic in-depth text reference in **cell biology**. By extracting fundamental concepts and meaning from this enormous and ever-growing field, the authors tell the story of **cell biology**, and create a coherent framework through which non-expert readers may approach the subject. Written in clear and concise language, and illustrated with original drawings, the book is enjoyable to read, and provides a sense of the excitement of modern **biology**. **Molecular Biology of the Cell** not only sets forth the current understanding of **cell biology** (updated as of Fall 2001), but also explores the intriguing implications and possibilities of that which remains unknown.

C

Contents

- Acknowledgments
- Preface
- A Note to the Reader
- Part I. Introduction to the Cell
- Part II. Basic Genetic Mechanisms
- Part III. Methods
- Part IV. Internal Organization of the Cell
- Part V. Cells in Their Social Context
- Glossary

Expand All Collapse All

Expand All Collapse All

Figure 5. Table of Contents page of a non-browsable book. A) Non-browsable books are indicated with a notice at the top of the page; C) their Contents will not be hyperlinked so you cannot view the publication chapter by chapter. B) Although these books cannot be browsed, they are searchable by using the **Search this book** box under details about the book.

NCBI Resources How To Sign in to NCBI

Bookshelf Books Search

Browse Titles Limits Advanced Help

Dynamics of Cancer: Incidence, Inheritance, and Evolution. < Prev Next >

PubReader format: click here to try

Contents

Chapter 1 Introduction

1.1 Aims

1.2 How to Read

1.3 Chapter Summaries

Part I Background

Chapter 2 Age of Cancer Incidence

2.1 Incidence and Acceleration

2.2 Different Cancers

2.3 Childhood Cancers

2.4 Inheritance

2.5 Carcinogens

2.6 Sex Differences

2.7 Summary

Chapter 3 Multistage Progression

3.1 Terminology

3.2 What Is Multistage Progression?

3.3 Multistage Progression in Colorectal Cancer

3.4 Alternative Pathways to Colorectal Cancer

3.5 Changes during Progression

3.6 What Physical Changes Drive Progression?

3.7 What Processes Change during Progression?

3.8 How Do Changes Accumulate in Cell Lineages?

3.9 Summary

Table of Contents Page

Views

PubReader

Print View

Cite this Page

PDF version of this title (3.0M)

In this Page

2.1 Incidence and Acceleration

2.2 Different Cancers

2.3 Childhood Cancers

2.4 Inheritance

2.5 Carcinogens

2.6 Sex Differences

2.7 Summary

Recent Activity

Turn Off Clear

Your browsing activity is empty.

Figure 6. Contents drop-down menu. **A)** When navigating through the pages of a browsable publication, you can view the publication's hyperlinked **Contents** by clicking on the **Contents** drop-down menu. **B)** To return to the **Table of Contents** page, click on the link at the top right of the menu.

NCBI Resources How To Sign in to NCBI

Bookshelf Books Search

Browse Titles Limits Advanced Help

Dynamics of Cancer: Incidence, Inheritance, and Evolution. < Prev Next >

Show details Contents

Search this book

Chapter 8 Genetics of Progression

Genes affect cancer to the extent that they alter age-specific incidence. Thus, the most powerful empirical analysis compares age-specific incidence between normal and mutated genotypes. This chapter describes comparative studies between genotypes.

The first section compares mutant and normal genotypes in human populations. I begin with the classic study of **retinoblastoma**. An inherited mutation in the *Rb* gene causes a high incidence of bilateral retinal tumors. Individuals who do not inherit a mutation suffer rare unilateral tumors. The age-specific acceleration of unilateral cases is one unit higher than the acceleration of bilateral cases, consistent with the prediction that most of the individuals who suffer bilateral **retinoblastoma** were born advanced by one stage in progression because of an inherited mutation.

A similar comparison between inherited and sporadic cases of colon cancer shows that the sporadic cases have an acceleration approximately one unit greater than inherited cases. The decrease in acceleration for individuals who inherit a mutation to the *APC* gene supports the hypothesis that such mutations cause their carriers to be born one stage advanced in progression.

The second section compares incidence between different genotypes in laboratory animals. The controlled genetic background makes clearer the causal role of particular mutations in shifting age-specific incidence. I describe the quantitative methods needed to test hypotheses with the small sample sizes commonly obtained in lab studies. I then present a full analysis of one example: the change in age-specific incidence and acceleration between four genotypes with different knockouts of DNA mismatch repair genes. Knockouts that cause a greater increase in mutation rate had earlier cancer onset and a lower age-specific acceleration. The lower acceleration suggests some hypotheses about how the mismatch repair mutations affect the rate of cancer progression.

The third section compares breast cancer incidence between human groups classified by the age at which a first-degree relative developed the disease. The earlier the age of onset for the affected first-degree relative, the faster the rate of progression. Those who progressed more quickly appeared to have an inherited polygenic predisposition. Greater polygenic predisposition was associated with lower age-specific acceleration. I discuss various hypotheses about why such predisposition may increase incidence and reduce acceleration.

8.1 Comparison between Genotypes in Human Populations

Comparisons between sporadic and inherited cancers provide powerful support for multistage theory. With new genomic techniques, comparison of age-specific incidence between human groups with different genotypes will become increasingly accomplish. So, it is important to have a clear sense of what has already been done and what can be learned in the future.

Retinoblastoma

Bilateral **retinoblastoma**, in which tumors develop in both eyes, is an inherited disease. Most unilateral cases occur sporadically. [Knudson \(1971\)](#) predicted that bilateral cases follow age-specific patterns consistent with one inherited mutation (hit) and for only one somatic hit to produce a tumor. By contrast, Knudson predicted that unilateral cases require two somatic hits to produce a tumor.

Views: PubReader, Print View, Cite this Page, PDF version of this title (3.0M)

In this Page: 8.1 Comparison between Genotypes in Human Populations, 8.2 Comparison between Genotypes in Laboratory Populations, 8.3 Polygenic Heterogeneity, 8.4 Summary

Recent Activity: retinoblastoma (580) Books, Genetics of Progression - Dynamics of Cancer Bookshelf

Go to: 8.1 Comparison between Genotypes in Human Populations, 8.2 Comparison between Genotypes in Laboratory Populations, 8.3 Polygenic Heterogeneity, 8.4 Summary

Figure 7. Chapter page. **A)** You may browse a chapter's main sections by looking at the hyperlinked **In this Page** section on the chapter page. **B)** It is also possible to quickly navigate from section to section within a chapter by clicking on the **Go to** drop-down menu. **C)** To return to the publication's **Table of Contents** page, click the publication's cover thumbnail. **D)** The **PubReader** link in the "View" panel directs to a reader-friendly version of the page designed primarily for tablets and other small screen devices, and the **Cite this Page** link provides a citation for the chapter or part (based on **NLM style**). **E)** Search terms are bolded or highlighted on a page if you have selected this as a **My NCBI preference**.

Searching Bookshelf

Created: September 30, 2010; Updated: February 11, 2019.

You may search across all content, or one book at a time in Bookshelf. To search across the Bookshelf, type a word or phrase into the Search box at the top of the [Bookshelf homepage](#) and click **Search** (see Search Tutorial video). The content of the Books database is searched, and a results page will be displayed according to the number of items found. Previous versions or editions of content in Bookshelf, and content that is no longer considered current by its authors/publisher, are only included in the search results when selected using the Facets function. See the Facets and Advanced Search sections for creating other specialized searches.

You may search one book at a time by selecting a book from the list of titles on the [Browse Titles](#) page. Simply click on the book's cover image or hyperlink to view the **Table of Contents** page. There is a **Search this book** box located under the book's title and details. Enter one or more terms to query the book. Your search results will be displayed on a separate page and **Sorted by Relevance** (See Displaying Your Search Results for more information, including additional sorting options). If the book has an "Archive" watermark on its pages, or a link at top of the page to a more recent version or edition in Bookshelf, then it will not be searchable unless you select to include previous versions or editions in the search results using the Facets search function.

Facets

You can limit your search by previous versions or editions, publication year, dates, resource type, and specific search fields by following these steps:

1. Choose from any of the filters available on the left side of the search results page.
2. To access specific search fields, click the **Show additional filters link**, select **Search fields**, and press **Show**. Then press **Choose** under **Search fields** at the bottom of the filters menu. Select a search field and click "Apply" to refine your search.
3. If necessary, make changes to the search terms in the search box or enter a new search term.
4. Click **Search**.
5. To clear specific search fields, select **Clear** next to the field you would like to eliminate. To clear all filters, click **Clear all** at the bottom of the filters menu.

Note: When **Filters** are selected, a **Filters Activated** message will display on the results page. To turn off **Filters** click **Clear all**.

For an example of how to use this feature, see the Using Facets Tutorial video.

Previous versions or editions

Previous versions or editions of content in Bookshelf, or content that is no longer considered current by its authors/publisher, will not be included in search results or be searchable unless you select this option.

Publication Date

To limit your search results by a book or resource's publication date, choose one of the specific year options listed or choose the menu option **Custom range** to select a range of years.

Dates

Choose a date from the **Added to Bookshelf** in the last: menu selections to limit your search results by the date a book or chapter was added to Bookshelf, or choose the **Custom range** menu option to enter a specific date or date range.

Resource Type

The resource type restricts your search based on the category of material the resource represents, such as: Clinical Guidelines, Documentation, Medical Genetics Resources, Methods Resources, Microbiology Resources, Monographs, Reference Works, Statistical Works, Systematic Reviews, Textbooks, Toxicology Resources.

Search Fields

Use the **Search fields** filter to search for terms in a specific search field (term (See Search Field Descriptions and Tags for common search fields).

Advanced Search

Searching by a Specific Field

Use the **Advanced Search Builder** to search for terms in a specific search field.

- To search by author, select Author from the All Fields menu, and then enter an author's name. The name will automatically display in the search box.
- To search for other fields in a book or resource's citation (e.g. Editor, Publisher, Title, Publication Year) or other specific bibliographic information, use the pull-down menus to select a field before entering a term in the search builder box.
- Terms entered in the builder are automatically added to the search box.
- Note that the default Boolean operator is AND; if desired, choose OR or NOT from the pull-down menu.
- You may also search a specific field by adding the appropriate tag to a search term (See Search Field Descriptions and Tags for common search fields.)
 - The search tag must be enclosed in square brackets.
 - Case and spacing do not matter.

Search Field Descriptions and Tags

Accession ID [AID]	Full Author Name [FA]	Publication Type[PTYP]
Attribute [ATTR]	Full Editor Name [FE]	Publication Year [PDAT]
Author [AU]	Full Text [FText]	Publisher [PUBN]
Book [BOOK]	Gene Name	RefPMID [RMID]
Book Accession ID [BACI]	Grant Number [GR]	Release Date [RD]
Chapter Accession ID [CHID]	ISBN [ISBN]	Resource Type [RT]
Concept Phrases and Keywords [KYWD]	MeSH Major Topic [MAJR]	Rid [RID]
Corporate Author [CA]	MeSH Subheadings [SH]	Title [TITL]
Disease	MeSH Terms [MH]	Type [TYPE]
Editor [ED]	PMID [PMID]	Stopwords
Filter [SB]	Protein Name	

Accession ID [AID]

Includes every NBK accession number from the Books database. These are identified as the “Bookshelf ID” at the bottom of each document's webpage in Bookshelf, e.g., NBK285222

All Fields [ALL]

Includes all searchable Bookshelf fields. Bookshelf ignores stopwords in search queries.

Attribute [ATTR]

Refers to specific search attributes, for example, “scoll hstatcollect”[Attribute] will retrieve all books in the HSTAT collection

Author [AU]

To search for an author, enter the last name followed by a space and up to the first two initials followed by a space and, if applicable, a suffix abbreviation (e.g., crowley wf jr[Author]). Do not include a period or comma after the last name. Initials and suffixes may be omitted when searching.

Book [BOOK]

The ID of the book that contains one or more documents. The book id field is pre-selected when searching within a book (e.g., dementia AND erta193[book]). Book ids may, but do not always, correspond to publisher series information, for instance, AHRQ Evidence Reports are prefaced by erta followed by the series number.

Book Accession ID [BACI]

Includes accession numbers from the Books database provided to each book in Bookshelf. Each accession number has a prefix, “NBK”. These are identified as the “Bookshelf ID” at the top of each book or resource’s Table of Contents page. This field will return all search results within the book with the specific Book Accession ID.

Chapter Accession ID [CHID]

Includes NBK accession numbers from the Books database provided to each chapter in Bookshelf. These are identified as the “Bookshelf ID” on top of each particular page of content, such as a Chapter page. This field will return all search results within the chapter with the specific Chapter Accession ID

Concept Phrases and Keywords [KYWD]

Keywords may be concept phrases (generated keywords or phrases) or they may be added by the author of a resource. Users can search by keyword or concept phrase by entering [KYWD] after the search term, e.g. metformin[KYWD].

Corporate Author [CA]

Corporate author identifies the corporate or collective authorship of an article. Bookshelf ignores stopwords in Corporate Author search queries.

Disease, Gene Name, and Protein Name

These facets are indexed fields specific to the GeneReviews resource. For more information, see [GeneReviews Advanced Search Help](#).

Editor [ED]

To search for an editor, enter the last name followed by a space and up to the first two initials followed by a space and, if applicable, a suffix abbreviation. Do not include a period or comma after the last name. Initials and suffixes may be omitted when searching.

Filter [SB]

Technical tags used by Bookshelf; filters include those to limit records for books (e.g., “book alz”[Filter]), series (e.g., “derpcollect”[Filter]) and subjects (e.g., “biochemistry”[Filter]). Book and series filters are preselected when you search within a book or within a series.

Full Author Name [FA]

The full author names from all books and chapters for which full names are provided to Bookshelf from the publisher. See Author [Author] for more information on author searching.

Full Editor Name [FE]

The full editor names from all books and chapters for which full names are provided to Bookshelf from the publisher. See Editor [Editor] for more information on editor searching.

Full Text [FText]

Includes all words and numbers in the full text; excludes text of bibliographies.

Grant Number [GR]

The grant number search field includes research grant numbers or contract numbers that designate financial support by US agencies or international funding sources. The four parts of the grant data are:

1. number, e.g., HHSN276201400262U
2. US Public Health Service (PHS) 2-character grant abbreviation, e.g., LM
3. institute acronym, e.g., NLM NIH HHS
4. country, e.g., United States

Each individual grant part can be searched using [gr], e.g., NIH[gr]

See [Grant codes and agency abbreviations](#) used in grant numbers for the 2-character abbreviations, PHS agency acronyms, and other US and non-US funding organization.

ISBN [ISBN]

To search by an ISBN number, enter a standardized international ISBN-10 or ISBN-13 code (e.g., 0-7167-3118-5 or 978-0-309-15706-3)

MeSH Major Topic [MAJR]

A MeSH major topic denotes the major topics of a publication, usually obtained from the title and/or abstract, statement of purpose, or other type of summary.

MeSH Subheadings [SH]

MeSH subheadings are often used as qualifiers for MeSH terms, and can also be used to search topically (e.g. etiology[SH] or veterinary[SH]). For a list of MeSH subheadings, please see [MeSH Qualifiers with Scope Notes](#).

MeSH Terms [MH]

The Medical Subject Heading (MeSH) terms are a controlled medical vocabulary of over 26,000 terms curated by the National Library of Medicine. MeSH terms are assigned by subject analysts who examine publications and ascribe several specific terms as part of the NLM Cataloging process (which includes Major Topics and Subheadings as well). For more information on MeSH, see the NLM's [online MeSH resource](#).

PMID [PMID]

To search by PubMed ID, enter the ID number (e.g., 21089236)

Publication Type [PTYP]

Describes the type of material the publication represents (e.g., “Practice Guideline”[PTYP]). See complete list of [Publication Types](#).

Publication Year [PDAT]

The year that the book or resource was published (e.g., 2010)

Publisher [PUBN]

To search for a publisher, enter the publisher’s name followed by the [publisher] tag. Bookshelf ignores stopwords in Publisher search queries.

RefPMID [RMID]

The PubMed ID of a reference cited in a Bookshelf publication.

Release Date [RD]

The date that the book or resource was added to or updated on the Bookshelf. Dates or date ranges must be searched using the format YYYY/MM/DD, e.g., “2010/12/10[ReleaseDate]”. The month and day are optional (e.g., “2010[ReleaseDate]” or “2010/12[ReleaseDate]”). To enter a date range, insert a colon: between each date (e.g., “2010/06/30:2010/12/30/[ReleaseDate]”).

Resource Type [RT]

The category of material the resource represents, such as: Clinical Guidelines, Documentation, Medical Genetics Resources, Methods Resources, Microbiology Resources, Monographs, Reference Works, Statistical Works, Systematic Reviews, Textbooks, Toxicology Resources.

Rid [RID]

The NCBI-internal identifier of any searchable part of a book in Bookshelf.

Title [TITL]

Words and numbers included in the title of a Bookshelf unit of content, i.e., book, chapter, section.

Type [TYPE]

The types and levels of content in Bookshelf that are indexed, including the entire book, parts, chapters, sections, appendices, glossaries, reference lists, boxed text, tables and figures.

Stopwords

Bookshelf searches use the same stopwords that are used in PubMed. See [PubMed Stopwords](#) for more information.

Browsing the Index of Terms

The **Search Builder Index** provides an alphabetical display of all terms in each Bookshelf search field. You can browse by all fields or within a specific field.

1. Click **Advanced** and use the **Builder** to select a search field from the All Fields menu.

2. Enter a term in the search box, and then click **Show Index list**.
3. The index displays an alphabetical list of search terms. The number of results for each term appears in parentheses. Click **Previous** or **Next** to move within the index.
4. Scroll until you find a term and then highlight it to add it to the search box. To select multiple terms (and OR them together), click on each term while holding down the Ctrl key (PC) or Command key (Mac).

Bookshelf processes all Boolean operators left to right. To change this order, enclose search terms to be processed in parentheses, e.g., hypertension AND (ACEIs OR ARBs). Bookshelf will automatically OR (and add parentheses) for multiple terms selected from the Index.

Previewing the Number of Search Results

Use the **Add to history** link in the Advanced Search Builder to preview the number of items available for a query before displaying the search results (see Advanced Search Tutorial video):

1. Click **Advanced**.
2. Use the Builder to add search terms to the search box.
3. Click **Add to history** to display the number of results in History.
4. To display the results, click the **Items found** link in History.

Combining Searches Using History

Previous searches can be combined or used in subsequent searches using the search number from the Advanced search **History** (see Advanced Search Tutorial video).

1. Click **Advanced**.
2. In **History**, click **Add** to move the search to the Builder.
3. Alternatively, enter a number sign followed by the search number (e.g., #1) in the search box, or click the search number to display additional options to add the search to the Builder, including Boolean operators OR or NOT. Other menu options include:
 - Delete from history
 - Show search results
 - Show search details
 - Save in **My NCBI**
4. Add additional search terms in the builder.
5. Click **Search**

The **Clear history** button will remove all of your queries. History can hold a maximum of 100 searches in one session, but the queries will be lost after eight hours of inactivity. Bookshelf uses cookies to keep a history of your searches. For you to use this feature, your Web browser must be set to accept cookies. A separate History will be kept for each NCBI database, although the search statement numbers will be assigned sequentially for all databases.

Displaying Your Search Results

When searching across Bookshelf, your results will automatically display as a list of books, **Sorted by Relevance** (see Figure 1) according to the number of results found. You can manually change the display of your search results by selecting from the various options within the **Display Settings** menu, including **Sort by Title** and **Pub Date**. Images containing your search term will display only in the **Images search in Bookshelf** panel (see Figure 2).

Search results from within books will be grouped automatically by the book unit having an Accession ID (example, chapter, section, appendix, etc) and **Sorted by Relevance**. The total number of results retrieved within each chapter or section will be displayed as a collapsible link below it (see Figure 3).

Your search terms will be bolded or highlighted in your results if this is selected in your my [My NCBI preferences](#). Your particular search terms will remain bolded or highlighted until you've conducted a new search query, you change your My NCBI preferences to not highlight search terms, or the next day.

Links to Related Data in Other NCBI Resources

Bookshelf automatically generates links from your search results to related results in other NCBI databases. These databases include **Gene**, **OMIM**, **PubChem Substance**, **PubMed Central (PMC)**, and **PubMed**. To access the links to other NCBI Databases:

Click the check box for one or more of the items retrieved in the list of search results.

Select from one of the five database links in the **Database** options pull-down menu in the **Find related data** panel to the right of the search results. You will be taken to the relevant results within the selected database.

Displaying the Search Details

The **Search Details** panel to the right of your search results shows the computer's translation of your query using search terms, field limits, and search rules. To access the full **Search Details** information, click on the "See more..." link below the panel. The full information is presented in four parts:

Query Translation displays the search string used by the computer to query the database. Use this box to edit the query.

Search will execute the search in the **Query Translation** box.

URL will display the current search as a URL to bookmark for future use.

Result provides the total number of results retrieved.

Database shows the NCBI database you are using (Books).

User Query shows the search strategy entered as you entered it in the search box and any syntax errors generated by the query.

If your results are not what you expected, it is a good idea to check the **Search Details** page for the computer's translation of your search to determine how to modify the query.

Note the Bookshelf search program may modify your search terms to enhance your retrieval. Untagged or unqualified terms that are entered in the Search box are matched (in this order) against a MeSH (Medical Subject Headings) translation table, a Digits translation table, the Full Author translation table, and an Author index.

The Bookshelf MeSH translation table contains:

- MeSH terms
- Concept phrases and keywords that are autogenerated or author-generated
- Terms derived from the Unified Medical Language System (UMLS) that have equivalent synonyms or lexical variants in English

The screenshot shows the NCBI Bookshelf search results for 'diabetes'. The search bar at the top contains 'diabetes' and the search button is labeled 'Search'. Below the search bar, the 'Display Settings' menu is set to 'Summary, 20 per page, Sorted by Relevance'. The search results are displayed as a list of books, with the first result being 'Database of Abstracts of Reviews of Effects (DARE): Quality-assessed Reviews [Internet]'. Each result includes a cover image, the book title, author information, and a 'Top results in this book' link. The search details section on the right shows the search query: '"diabetes mellitus"[KYWD] OR ("diabetes"[All Fields] AND "mellitus"[All Fields]) OR "diabetes mellitus"[All Fields] OR "diabetes"[All Fields] OR'. The recent activity section shows the search history: 'diabetes (30480)', 'hemoglobin (7140)', 'Sickle Cell Disease - GeneReviews®', and 'Alpha-Thalassemia - GeneReviews®'.

Figure 1. Search across all books in Bookshelf. The **Display Setting** options menu is set by default as **Sorted by Relevance** (A) according to the number of results found. Search results are grouped according to the book in which they appear. Each book includes a cover image, the book's citation information, a hyperlink from the book's title to a page to see all search results in the book (B), a link to the book's Table of Contents page (C), and a toggle link to view the top 3 results in the book (D).

The Digits translation table checks for publication dates, ISBNs, PMIDs for the books or documents, PMIDs for reference citations, and grant numbers.

The Full Author translation table contains full author names from all articles for which full names are provided to Bookshelf from the publisher. If the term is not found in the above tables, except for Full Author, and is not a single term, Bookshelf checks the author index for a match.

Creating Alerts

Users can create an alert to keep up to date on new search results for queries. This function requires a **MY NCBI** account. To use the **Create alert** function:

1. On the search results page, select **Create alert** from the menu beneath the search bar.
2. Select a name for your saved search (the tool automatically defaults to the search terms entered).
3. Confirm or change search terms.
4. Choose options to receive alerts, including:
 - o Email update options
 - o Email address
 - o Schedule frequency and day to receive alerts

NCBI Resources How To

Bookshelf Books Browse Titles Create alert Advanced

Display Settings: Summary, 20 per page, Sorted by Relevance

Results in this book: 1 to 20 of 69 << First < Prev Page 1

GeneReviews® [Internet]. Pagon RA, Adam MP, Ardinger HH, et al., editors. Seattle (WA): University of Washington, Seattle; 1993-2017.

sleep apnea Search GeneReviews

GeneReviews by Title GeneReviews Advanced Search Help

Achondroplasia. ← Chapter Title

1. Pauli RM. 1998 Oct 12 [Updated 2012 Feb 16].
 ▾ Show details (5) Chapter Author
[Achondroplasia.](#)
[Management.](#)
[Clinical Characteristics.](#)
[References.](#)
[Summary.](#)

[Mucopolysaccharidosis Type IVA.](#)

2. Regier DS, Oetgen M, Tanpaiboon P. 2013 Jul 11 [Updated 2016 Mar 24].
 ▶ Show details (5)

[Mucopolysaccharidosis Type I.](#)

3. Clarke LA. 2002 Oct 31 [Updated 2016 Feb 11].
 ▶ Show details (4) Date Chapter Created

[Friedreich Ataxia.](#)

4. Bidichandani SI, Delatycki MB. 1998 Dec 18 [Updated 2017 Jun 1].
 ▶ Show details (4) Date Chapter Updated

[KCNK9 Imprinting Syndrome.](#)

5. Zadeh N, Graham JM Jr. 2017 Mar 23.
 ▶ Show details (4)

Figure 3. Search within a book in Bookshelf. The **Display Settings** options menu is set by default as **Sorted by Relevance** (A). The citation of the book you are within is displayed at the top of the results page (B). To modify your search within the book displayed, enter a new term in the search box under the book's citation and press the **Search this book** button (C). Search results from a book are grouped by the book units having accession IDs (for example, a chapter, section or appendix) with the most relevant book unit ranked at the top (D). Each summary includes the chapter's hyperlinked title, and if available, the authors of the chapter, publication date when the chapter was created, and the date the chapter was updated. The number of results within a chapter containing your search term is displayed as a **Show details** link that opens to provide links to the particular resulting sections, tables and boxes.

Use the **Remove from clipboard** link to delete individual items, or use the check boxes to select items to delete, and then click the Remove selected items link.

To delete all citations from the Clipboard, do not select any items, click the **Remove all** link.

Saving as a Text File

1. In your search results, use the check boxes to select citations. You may move to other pages to continue your selections. If you do not make any selections, Bookshelf will save the entire retrieval.
2. From **Send to**, select **File**.
3. Your Web browser will prompt you to save the Bookshelf search results in a file on your computer.

E-mailing Results

1. In your search results, use the check boxes to select citations. To e-mail all citations displayed on the page, do not make any selections.
2. From **Send to**, select **E-mail**.
3. Choose selections for **Format**.
4. Enter an e-mail address. You may also enter additional text that will be included in the e-mail.
5. Click **E-mail**. The system returns you to your results page and displays a confirmation e-mail sent message.

You can read more about using the **Clipboard**, **Saving as a Text File** and **E-mailing Results** in [Saving and E-mailing Results and Searches in PubMed Help](#).

This panel does not display image results from queries using **Limits** or **Advanced Search**.

Frequently Asked Questions

Created: September 30, 2010; Updated: September 29, 2022.

Copyright and Permissions

Who controls copyright privileges for the material archived in Bookshelf?

Copyright to all materials deposited in Bookshelf remains with copyright holder. Bookshelf is simply an online collection and does not claim copyright on any material in the collection. Books by US government agencies are in the public domain. See [Copyright and Permissions](#) for more information.

For copyrighted works, the name of the copyright holder is indicated at the bottom of each page with the copyright symbol and year of publication. It is also indicated on the Table of Contents page near the thumbnail. Click on ‘Copyright and Permissions’.

Can I use figures and tables from Bookshelf?

You must check the copyright of the book first. In some cases, a license statement is provided which explains whether reuse is permitted.

On the Table of Contents page, Click on the Copyright and Permissions link at the top. If the book is published by the National Center for Biotechnology Information (NCBI) or another US government agency, then the book will indicate the publication is in the public domain. In this case, you must take the next step of looking at the individual figures and tables that you want to use. Permissions may have been obtained from other publishers for the use of the figures and tables. These permissions are noted on each figure and table. Where no permission is noted, you are free to use the figure or table.

If the book is published by another publisher, the name of the copyright holder is at the bottom of each page with the copyright symbol and year of publication. You will need to contact the respective copyright holder regarding permissions for use of all figures and tables in the book. To contact the copyright holder for permission, click on the link from the publisher’s name on the book’s Table of Contents page. Check the publisher’s website for “rights and permissions” information.

PubReader and PDF format

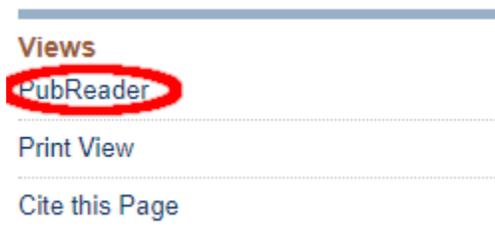
Why do some books have PDF files and others do not?

PDF files are made for several books created by NCBI. Some publishers also make available a PDF version of the full-text publication on Bookshelf. Books that have PDFs available for the entire publication have a “PDF version of this title” link on the right-hand side of the Table of Contents and all chapter pages. If PDFs are available for each chapter of a publication, there will be a “PDF version of this page” link on the right-hand side of each chapter page.

Adobe Reader is required to view PDF files. The software is free and can be downloaded from the Adobe Web site: <http://get.adobe.com/reader>.

How can I switch from the “classic” view back to the Pubreader view?

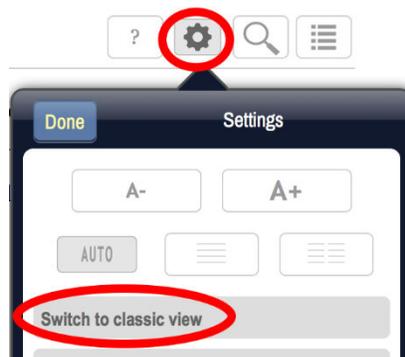
You can go to the Pubreader view from the “Views” sidebar menu.



The default setting is the classic view.

How can I switch from the PubReader view back to the “classic” view?

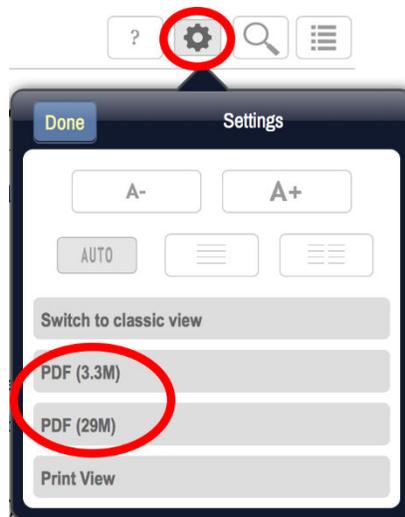
You can go back to classic view from the settings menu (gear icon).



The default setting is the classic view.

How can I access the PDF version in PubReader view?

Tap on the gear icon near the top right corner of the PubReader page, then tap the “PDF” option on the resulting menu. If there are two “PDF” options, tapping the larger-sized PDF option will download the “whole book” PDF, and tapping the smaller one will download the “chapter-only” PDF.



If no PDF option appears under the gear menu, then there is no PDF available for the document you are reading.

Additional help on PubReader topics is found by tapping the question mark icon near the top right corner of PubReader pages, and at <https://www.ncbi.nlm.nih.gov/pmc/about/pubreader/>.

Hard Copy Versions

Can I buy books from Bookshelf?

No. As a library, we do not sell books; rather, we collect and display them for people to use in agreement with the book publishers. To purchase books, you will need to contact the publishers directly. The publisher's website can be found by clicking on the publisher link in the book details at the top of a book's Table of Contents page.

How can I order a SAMHSA TIP?

To request a print copy of a TIP (Treatment Improvement Protocol) publication, go to this Substance Abuse and Mental Health Services Administration (SAMHSA) Publications Ordering Web page at: <http://store.samhsa.gov> Or, please call SAMHSA at 1-877-SAMHSA-7 (1-877-726-4727) (English and Español).

How can I order Evidence Reports/Technology Assessments (ERTAs) or Comparative Effectiveness Reviews?

The Evidence Reports/Technology Assessments (ERTAs) and Comparative Effectiveness Reviews (CERs) are provided to Bookshelf by the Agency for Healthcare Research and Quality (AHRQ). Ordering information for AHRQ publication is available at: <http://www.ahrq.gov/research/publications/order/index.html>

Applications and Submissions

How can I participate in Bookshelf?

If you would like your book to be included, first submit an application. Each application goes through a review process. The book must fall within the scope of core biomedical topics as defined in the [NLM Collection Development Guidelines](#). The book is also evaluated for editorial and scientific quality, as well as the technical quality of its digital files. Publishers must provide Bookshelf the full text of content in XML format using a mutually agreed upon DTD.

Bookshelf requires a participation agreement. For details, please see [Information for Authors and Publishers](#)

Who may contribute to Bookshelf?

Bookshelf welcomes applications from authors, editors, publishers, or any organization with content that is in scope for NLM as defined in the [NLM Collection Development Guidelines](#). Authors and editors should first agree with the book publisher or copyright holder on whether to submit an application for including a book in Bookshelf. A book must qualify on two main levels: on the scientific and editorial quality of the content, and on the technical quality of the digital files. For details, please see [Information for Authors and Publishers](#).

What types of material may be submitted to Bookshelf?

As an archive, Bookshelf strives to represent the range of biomedical, health, and life sciences books and resources available to users of the National Library of Medicine, including scientists, health professionals, educators and students, and consumers. The content can be in the area of college or graduate level text books, specialist research monographs, resources for university-level teaching, works on methods and procedures, and clinical reports and guidelines. Those books and resources that can be integrated with other resources available at NCBI, such as [PubMed](#), [Gene](#), [OMIM](#), and [PubChem](#), are of particular interest. Theses dissertations and works consisting entirely of original research articles are not accepted.

Will a new edition of the same book in Bookshelf automatically get included?

No, each new edition is considered a new application and must go through the review process (see [Information for Authors and Publishers](#)).

Can publishers continue to provide the content of their books or resources on other sites in addition to Bookshelf?

A publisher participating in Bookshelf is free to distribute its content in any other manner, including through other websites. In fact, Bookshelf will provide the publisher a copy of its content in Bookshelf, at any time, to be used however the publisher chooses.

What is the Bookshelf submission format?

Bookshelf requires that data be submitted in XML (Extensible Markup Language), using a mutually agreed upon DTD (Document Type Definition). The original high-resolution, digital image files must also be provided for all figures. A PDF of the book or book chapters, if available, should be submitted in addition to the XML version. Supplementary material, in the form of video, sound, datasets, or software files that accompany the book or resource should also be submitted.

See the [File Specifications](#) for details.

Are publishers required to make the full text freely available or can they submit abstracts only?

Bookshelf does not accept abstracts only. Participants in the Bookshelf project must agree to make the full text of the content freely available to NLM users.

Cataloging

Are MARC records available for books on Bookshelf?

Yes, the National Library of Medicine (NLM) Cataloging Section creates MARC 21 records for Bookshelf titles, which are available in batches by release date at:; <ftp://ftp.ncbi.nlm.nih.gov/pub/bookshelf/>

Citations

What citation format is used for Bookshelf citations?

Bookshelf citations follow the NLM citation format. See [Citing Medicine, 2nd Edition](#).

How do I cite books from Bookshelf?

You can find information about how to cite a book in Bookshelf by clicking on the “Cite this Page” link located in the Views panel (top right) on the book’s Table of Contents page. Citations for chapters, figures, or tables are also similarly available on the respective pages. These citations are based on [NLM style](#).

How is Bookshelf related to PubMed?

PubMed is a database of citations and abstracts for journal articles, books, and documents. Bookshelf, the books division of the NLM Literature Archive (LitArch), is an online collection of full-text books, reports, databases and other documents. Most Bookshelf contents have a corresponding entry in PubMed, either at the book or document level for monographs and reports, or also at the chapter level for authored contributions to edited reference books and resources. (See [PubMed Help](#) for details on how to find Bookshelf, or Book [book], records in PubMed searches). PubMed will not have citations for certain types of Bookshelf material that are not peer reviewed, such as Help Documentation, that are considered out of scope for PubMed.

Bookshelf and PubMed are also interlinked in a variety of ways. PubMed citations have links to Bookshelf documents which cite them (see [PubMed Help](#) on how to view these links). Similarly, journal citations

appearing in the bibliography of a Bookshelf document include links to that citation's PubMed record. You can also view PubMed citations related to a Bookshelf publication or its chapters via the "Similar articles in PubMed" panel on the right on book and chapter pages.

Can I add my Bookshelf citations to NCBI's My Bibliography?

Most peer-reviewed Bookshelf records are also indexed in PubMed as authored books and/or chapters. As a result, these citations can be added to My Bibliography by their PMID. In instances where the activities that contributed to the publication were derived directly from an NIH award and are within the scope of the award being acknowledged, the award can be added manually by the NIH investigator in My Bibliography. For all Bookshelf records, the Public Access Compliance status message is automatically set as "Not applicable" because they are not peer-reviewed journal articles. This compliance status only applies to the NIH Public Access Policy. Authors with awards from other institutions should check with their funding agencies.

Other General Questions

I found an error or mistake in Bookshelf; how do I get it fixed?

Please report errors directly to the publisher listed in the metadata on the book or document's landing page. To identify the publisher to contact to fix an error, click on the link from the publisher's name on the book's Table of Contents page.

When writing to the publisher, provide the book and chapter titles of the content with the typo and the URL on Bookshelf, requesting that the email be directed to the team or department that submits full text to Bookshelf. The same team should be able to fix any errors and send those corrections to Bookshelf. You can copy booksauthors@ncbi.nlm.nih.gov on the message in case the publisher's team needs any assistance.

Why are parts of some Table of Contents not hyperlinked?

Most of the books in our collection are provided in collaboration with the book publishers. Some of the publishers prefer that we do not provide access to the books via the Table of Contents. All of the book content is available by searching, however. Hyperlinked chapter and section titles in the Table of Contents provide direct access to the content for the majority of books in the collection.

When will the next edition of a book come out on Bookshelf?

The books we host have been given to us by the publishers (we do not pay them any kind of fee). We hope that the publishers will want to continue to collaborate with us and will ask that the next edition of their book be placed on Bookshelf. Each book is viewed as a new candidate for Bookshelf. Whether the next edition of a book comes out in Bookshelf depends on whether we have a participation agreement for that edition with the publisher. The publisher must contact us with this request. You may also contact the publisher directly to request that the next edition be placed in Bookshelf.

You may find links to each book's publisher on the book's Table of Contents page.

May I suggest a book for Bookshelf?

For a book to be featured in Bookshelf, we need the author, editor, or publisher to contact us expressing an interest in participating in the project. If you feel strongly about having a particular book included on Bookshelf, we suggest you contact the author or publisher regarding the idea.

You may find links to each book's publisher on the book's Table of Contents page.

Our email address is bookshelf@ncbi.nlm.nih.gov.

Can I be notified when a new book is added to Bookshelf?

Bookshelf announces new books via an RSS feed. Subscribe to the Bookshelf feed [here](#).

Do you have any materials about Bookshelf that I can provide my patrons or customers?

Yes, Bookshelf has two printable flyers available for patrons and customers, one [for potential submitters who'd like their content included in the Bookshelf repository](#), and one [for those interested in using the Bookshelf repository to find and read peer-reviewed, non-journal biomedical literature](#).

Tutorials

This chapter contains a collection of short video tutorials that highlight the features of the Bookshelf. In order to play the videos, you will need to have Adobe Flash Player installed on your computer. If you do not have the Flash Player, you can download it from [here](#).

Tutorial 1: Browsing

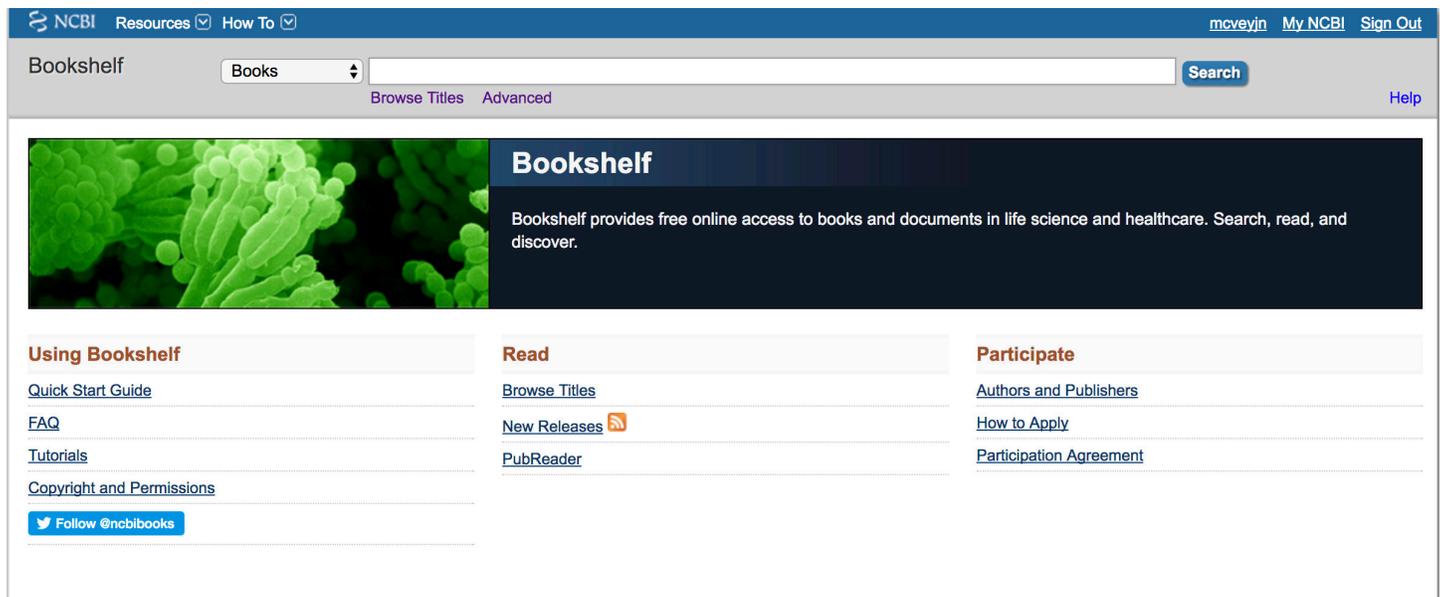
A student is just beginning his course in genetics, and his teacher has recommended Bookshelf as a good source of information. The student explores which books are relevant to his studies.

The screenshot shows the NCBI Bookshelf website. At the top, there is a navigation bar with "NCBI Resources" and "How To" menus, and user links for "mcveyjn", "My NCBI", and "Sign Out". Below this is a search bar with a "Books" dropdown menu, a search input field, and a "Search" button. There are also links for "Browse Titles" and "Advanced". A "Help" link is visible in the top right corner. The main content area features a large image of green, glowing biological structures on the left. To the right of the image is a dark blue header with the text "Bookshelf" and a description: "Bookshelf provides free online access to books and documents in life science and healthcare. Search, read, and discover." Below this header are three columns of links: "Using Bookshelf" (Quick Start Guide, FAQ, Tutorials, Copyright and Permissions, Follow @ncbibooks), "Read" (Browse Titles, New Releases, PubReader), and "Participate" (Authors and Publishers, How to Apply, Participation Agreement).

Tutorial 1. Browsing – ARCHIVED - NOT AVAILABLE FOR VIEWING

Tutorial 2: Search

A medical student is trying to understand the role of the t-cell receptor during a viral infection.



NCBI Resources How To mcveyjn My NCBI Sign Out

Bookshelf Books Search

[Browse Titles](#) [Advanced](#) [Help](#)

Bookshelf

Bookshelf provides free online access to books and documents in life science and healthcare. Search, read, and discover.

Using Bookshelf

[Quick Start Guide](#)

[FAQ](#)

[Tutorials](#)

[Copyright and Permissions](#)

[Follow @ncbibooks](#)

Read

[Browse Titles](#)

[New Releases](#)

[PubReader](#)

Participate

[Authors and Publishers](#)

[How to Apply](#)

[Participation Agreement](#)

Tutorial 2. Search

[Download video](#)

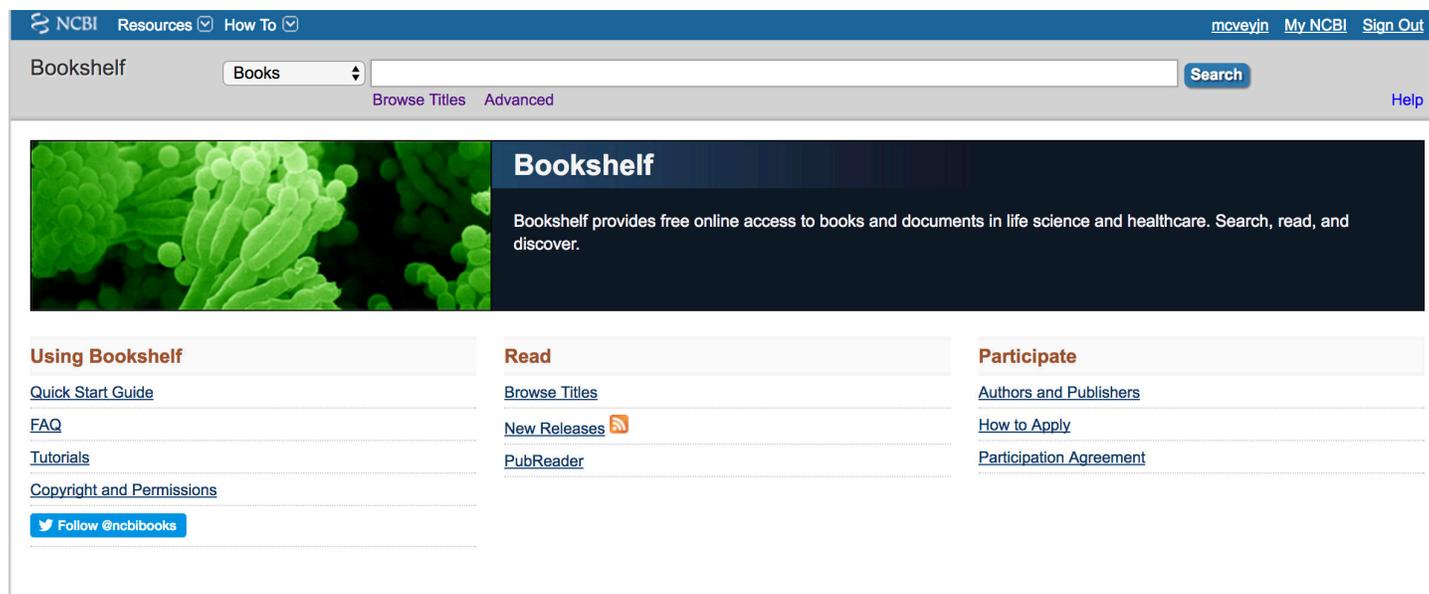
This tutorial will show you how to do a simple search through Bookshelf. In the search box, enter the term you want to find out more about, in this example, “t-cell receptor”, then click on the **Search** button. The results show a list of books that have the term, along with several figures.

The books are displayed in order of relevance. By clicking on **Display Settings**, you can change how the books are sorted, and the number of results you see on one page.

Click on **Top results** for one of the books to find out information about the t-cell receptor.

Tutorial 3: Inside a book

A genetics counselor is seeking information on hemochromatosis. He visits GeneReviews to learn about how the disease is inherited, and the risk to family members.



Bookshelf

Books

[Browse Titles](#) [Advanced](#) [Help](#)

Bookshelf

Bookshelf provides free online access to books and documents in life science and healthcare. Search, read, and discover.

Using Bookshelf

[Quick Start Guide](#)

[FAQ](#)

[Tutorials](#)

[Copyright and Permissions](#)

[Follow @ncbibooks](#)

Read

[Browse Titles](#)

[New Releases](#) 

[PubReader](#)

Participate

[Authors and Publishers](#)

[How to Apply](#)

[Participation Agreement](#)

Tutorial 3. Inside a book

[Download video](#)

This tutorial will show you how to read our books. Clicking on **Browse Titles** will show you all the books, but for this example, click on the featured title, **GeneReviews**.

To find hemochromatosis, click on **H**, and find **HFE-Associated Hereditary Hemochromatosis**.

Here is a summary. To skip to another part of the review, Click on **Go to**, and then **Genetic Counseling**.

To read original papers and reviews, click on a citation and then its PubMed link. You can also see related PubMed citations for this article on the right side of the page.

Tutorial 4: Using facets

A user needs to narrow results while seeking information on hemoglobin.

Tutorial 4. Using facets – ARCHIVED - NOT AVAILABLE FOR VIEWING

Tutorial 5: Advanced search

A doctor is researching breast cancer. She wants to know about the BRCA gene and the drug tamoxifen.

Tutorial 5. Advanced search

Download video

This tutorial will show you the Bookshelf Advanced search that lets you refine your search term. Click on **Advanced**, enter “tamoxifen” and click on **Add to history**. Note there are 1052 results.

Now enter “BRCA” and click on **Add to history** again. Note there are 303 results.

To combine the two searches, enter “#1 AND #2”. Click on **add to history**, and then click on the **58** results found.

Alternatively, you can use the search builder. Enter “tamoxifen”, make sure **AND** is selected from the drop-down list, then on the next row enter “BRCA”. Clicking on **Add to history** shows the same 58 results again.