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**THE
MERCCK
MANUAL**

SIXTEENTH EDITION

User's Manual

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Contents

Getting Started	7
Installing Digital Books	8
Using Menus	9
Changing Settings	11
Viewing Text	12
Using the Outline	13
Using the Index	16
Viewing References	17
Viewing Tables	18
Searching for Words	20
Entering Search Words	21
Picking Search Words	24
Fine-tuning Searches	26
Expanding Searches	28
Finding Words in Other Books	29
Taking Notes	30
Placing Notes	31
Viewing Notes	32
Removing Notes	33
Appendixes/Index	34
Abbreviations and Symbols	35
Digital Book System®	38
Key Guide	42
Index	43

Foreword

NOTE: This foreword of the 16th Edition of THE MERCK MANUAL contains page references not applicable to the digital book.

It has been 93 years since THE MERCK MANUAL first appeared in 1899 as a slender 262-page text titled MERCK'S MANUAL OF THE MATERIA MEDICA. It was expressly designed to meet the needs of general practitioners in selecting medications, noting that "memory is treacherous" and that even the most thoroughly informed physician needs a reminder "to make him at once master of the situation and enable him to prescribe exactly what his judgment tells him is needed for the occasion." It was well received and, by the 6th Edition (1934), THE MERCK MANUAL had become highly valued by medical students and house staff as well; by the end of World War II the pocket-sized manual was an established favorite ready—reference book. Today THE MANUAL is the most widely used medical text in the world. While the book has grown to about 2800 pages, its primary purpose remains the same—to provide useful clinical information to practicing physicians, medical students, interns, residents, and other health care professionals.

Fewer physicians now attempt to manage the whole range of medical disorders that can occur in infants, children, and adults, but those who do must have available a broad spectrum of current and accurate information. Specialists require precise information about subjects outside their areas of expertise. All physicians need more and more information for study and examination purposes, as well as for patient care. Keeping up with the rapid and extraordinary advances in cellular and molecular biology, molecular genetics, and medical technology is more challenging than ever, but THE MERCK MANUAL continues to try to meet these needs, excluding only details of surgical procedures.

Precisely how do we attempt to meet these needs? First,

Foreword

from a disease orientation, THE MANUAL covers all but the most obscure disorders of mankind, not only those that a general internist might expect to encounter but also problems associated with pregnancy and delivery; common and serious disorders of neonates, infants, and children; and many special situations. Disorders are organized mainly according to the organ systems primarily affected, on the basis of their etiology (as with most of the infectious diseases and disorders due to physical agents), or on the basis of disciplines (e.g., gynecology, obstetrics, pediatrics, genetics, psychiatry). In addition, THE MANUAL contains information for special circumstances, such as radiation reactions and injuries, problems encountered in deep-sea diving, and dental emergencies. The entire book is updated for each new edition, and new subjects are added, such as discussions of genetic evaluation and counseling, human immunodeficiency virus (HIV) infection in children, sports medicine, hospice medicine, cross-cultural issues in medicine, anabolic steroid abuse, and special considerations in performing cardiopulmonary resuscitation on infants and children. This edition has 140 more pages of text (approximately 5%) than the preceding edition. We therefore urge you to check the Index whenever you need information, even on unusual subjects or those not commonly found in other texts.

A completely disease-oriented compendium, however, would have serious limitations. Since patients usually present with complaints or concerns that must be meticulously described, sorted, and deciphered, many chapters are devoted to discussions of symptoms and signs and of how to elicit the historical and physical data required for diagnosis. Common clinical procedures and laboratory tests used as diagnostic and management aids are described, with emphasis on their indications, contraindications, and possible complications. New and sophisticated laboratory and technologic proce-

Foreword

dures are also described, with comments on their uses, interpretations, and limitations.

Current therapy is presented for each disorder and supplemented with a separate section on clinical pharmacology that describes general principles, new advances, (e.g., the role of drug receptors, plasma concentration monitoring), and details of pharmacologic groups and specific agents; it even discusses the uses of placebos. The use of complex equipment (e.g., respirators) is also described. Prophylaxis is emphasized wherever possible. Finally, reference guides are provided for checking normal values, for calculating dosages, and for converting weights, measures, and volumes to metric equivalents.

Can so many subjects be adequately covered in a single book? You, the reader, must be the ultimate judge, but we believe the answer is in the affirmative. This edition required a concerted effort by many people, beginning with an internal analysis and critique of the previous edition, even though it enjoyed highly favorable reviews and outstanding reader acceptance. Sections of that book were then sent to outside experts who had had nothing to do with its preparation, to solicit their most candid criticism. Published reviews and letters from readers were analyzed. Next, the Editorial Board met to compare reviews and critiques and to plan this 16th Edition. Distinguished special consultants were enlisted to provide additional expertise. Then, 290 authors with outstanding qualifications, experience, and knowledge were engaged. Their manuscripts were painstakingly edited by our in-house staff to retain every valuable morsel of knowledge while eliminating sometimes elegant but unneeded words. Each manuscript was then reviewed by a member of the Editorial Board or a consultant. In many cases, additional special reviewers were invited to comment. Every mention of a drug and its dosage was reviewed by still another outside consultant. The

Foreword

objective of all these reviews was to ensure accuracy, adequate and relevant coverage of each subject, and simple and clean exposition. The authors then reworked, modified, and polished their manuscripts. Almost all of the manuscripts were revised at least 6 times; 15 to 20 revisions were not uncommon. We believe that no other medical text undergoes as many reviews and revisions as THE MERCK MANUAL does.

Owing to the extensive subject matter covered and to a successful tradition, the style and organization of THE MANUAL have some unique characteristics. Readers are urged to spend a few minutes reviewing the Guide for Readers (p. viii), the Table of Contents at the beginning of each section (indicated by a thumb tab), and the Index (p. 2717). Scrutiny of the arrangement of subject headings within each section, of internal headings within a subject discussion, and of bold-faced terms in the text will reveal a pattern of outlining intended to aid study of the text.

The foregoing description is a simplified review of the complex and arduous but rewarding 5-year enterprise that culminated in the presentation of the 16th Edition of THE MERCK MANUAL. The members of the Editorial Board, special consultants, contributing authors, and in-house staff and their affiliations are listed on the pages that follow. They deserve a degree of gratitude that cannot adequately be expressed here, but we know they will feel sufficiently rewarded if their efforts serve your needs.

We hope this edition of THE MERCK MANUAL will be a welcome aid to you, our readers—compatible with your needs and worthy of frequent use. Suggestions for improvements will be warmly welcomed and carefully considered

Robert Berkow, M.D., Editor-in-Chief
MERCK RESEARCH LABORATORIES



West Point, Pa. 19486

Getting Started

If you have never used this digital book,
read this section first.
It explains how to install
and start using this digital book.

Installing Digital Books

You must install this digital book before you can use it. **Warning:** Never install a digital book when the Digital Book System is on.

1. Turn the Digital Book System off.
2. Install the digital book in a slot on the back.
3. Press **ON/OFF**.
4. To adjust the contrast, turn the wheel on the side of the Digital Book System.
If the screen is still blank, check the batteries.
5. Press **CARD**.
6. Press  or  to highlight the appropriate digital book symbol.



7. Press **ENTER**.

✓ Protecting Your Digital Books

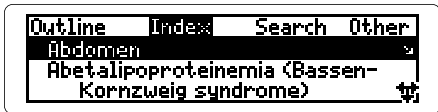
If you install or remove a digital book while the Digital Book System is on, information that you entered in other installed digital books may be erased.

Using Menus

To begin most functions of this digital book, you must use menus. This lesson shows how to move around the main menu and select menu items.

1. Press **CLEAR**.

2. Press **MENU**.



3. Press the arrow keys to highlight menus and menu items.

The flashing arrows at the bottom of the screen show which arrow keys you can press.

A slanted arrow to the right of a menu item shows that a submenu exists.

4. To select a highlighted item, press **ENTER**.

5. Press **BACK** to return to the main menus.

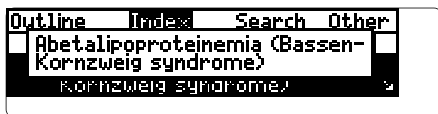
✓ Help is at Hand

Except during the self-demonstration, you can always view an appropriate help message by pressing **HELP**.

To read the message, press **↓** or **DN**. To exit it, press **BACK**.

✓ Viewing Full Menu Items

Some items are too long to fit on a menu. To view the full menu item, highlight it and then press **(?*)**.



✓ Scanning Menus

Use these keys to move quickly around menus.

To...

page up or down

zoom to the top or
bottom of a menu

Press...

 or 

 +  or 

✓ Resuming Where You Left Off

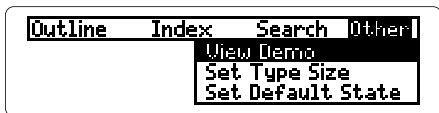
While using this digital book, you can turn off the Digital Book System at any time.

When you turn the Digital Book System on again, you return to the screen that you last viewed.

Changing Settings

You can change its type size, default state, or shutoff time of this digital book. The type size is how large letters appear on screen. The default state is the display that appears when you press **(CLEAR)**. The shutoff time is how long the Digital Book System stays on when you forget to turn it off.

1. Press **(MENU)**.
2. Highlight the Other menu.



3. Highlight Set Type Size, Set Default State, or Set Shutoff.
4. Press **(ENTER)**.
5. Highlight a setting.
6. Press **(ENTER)** to select it.

✓ Viewing a Demonstration

You can view a brief demonstration of this digital book. First press **(MENU)**. Then highlight View Demo under the Other menu and press **(ENTER)**. To stop the demonstration, press **(CLEAR)**.

Viewing Text

This section shows you how to find and view the text of this digital book using its Outline and Index.

You will also learn how to view references occurring in text, such as footnotes , as well as tables and figures.

Using the Outline

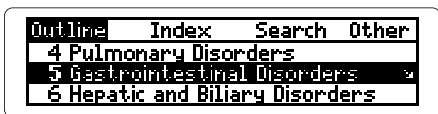
The Outline is organized into more than 20 sections, numbered serially from the start of the book. Those sections are divided into nearly 300 chapters, which are also numbered serially. For example, Section 2: Immunology; Allergic Disorders begins with Chapter 18: Biology of the Immune System.

To find a specific chapter in the Outline, you must first locate the section containing that chapter. Then you can go to subchapters, sub-subchapters, and text. Here is how.

1. Highlight the Outline menu.

- If Outline menu is the default state, press **CLEAR**.
- If another default state is selected, first press **CLEAR**, then press **MENU**, then highlight Outline.

2. Press **↓** to highlight a section or type a section number (e.g., 5).




To type a number, press **○** plus a numbered key.

3. Press **ENTER**.

4. Press **↓** to highlight a chapter or type a chapter number (e.g., 50).


Using the Outline



```
5 Gastrointestinal Disorders
50 Gastrointestinal Bleeding
51 Disorders of the Stomach and
  Duodenum
```

5. Press **ENTER**.

6. Press **↓** to highlight a subchapter or type its first letters (e.g., sym).



```
50 Gastrointestinal Bleeding
  Symptoms and Signs
  Diagnosis and Differential
  Diagnosis
```

7. Press **ENTER** to go to text.

To view the text, use these direction keys:

To...	Press...
scroll up or down	↑ or ↓
page up or down	△UP or ▽DN
page down	SPACE
view the next or previous paragraph	○ + ▽DN or △UP
view the next or previous heading	○ + ↓ or ↑

8. Press **BACK** to return to the Outline.

Using the Outline

To continue backing up, press **BACK** repeatedly.
To go directly to the highest Outline level (i.e., section headings), press **○** plus **BACK**.

9. To return to the default state, press **CLEAR.**

✓ Moving To and From the Outline

When you have gone to text from the Outline, you can go to the lowest Outline level by pressing **BACK**. When you have gone to text from the Index or from a word search, you can go to the lowest Outline level by pressing **SPEC**.

A quick way to go from any Outline level to text is to press **○** plus **ENTER**.

✓ Where in the Book Am I?

You can always see the Outline location of the text in view by pressing **?***.



The section (at top), chapter, subchapter, and sub-subchapter, if applicable, of the text are listed. The lowest Outline level is highlighted. To return to the text, press **BACK**. *Note:* When you press **?***, you are not in the Outline itself.

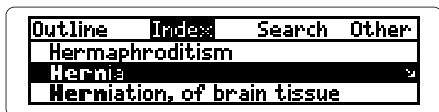
Using the Index

You can use the Index to quickly find specific topics. Simply type a topic at the Index menu. Usually you need to type only the first few letters to highlight one.

1. Highlight the Index menu.

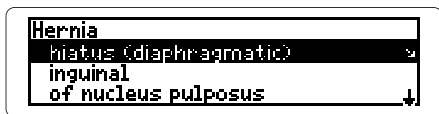
- If Index menu is the default state, press **(CLEAR)**.
- If another default state is selected, first press **(CLEAR)**, then press **(MENU)**, then highlight Index.

2. Start typing a topic (e.g., hernia).



To erase typed letters, press **(BACK)**. The slanted arrow to the right of the entry indicates subentries.

3. Press **(ENTER)**.



4. Highlight a subentry and then press **(ENTER)**.

5. Highlight a sub-subentry, if any, and then press **(ENTER)** to go to text.

6. To return to the Index, press **(BACK)**.

Viewing References

References appear throughout the text and in tables. Their places are marked by these symbols:

bibliographic reference **BIB**

cross-reference **XREF**

footnote **FOOT**

Whenever you see a symbol, you can view its reference. *Note:* Cross-references take you to the cross-referenced text or table. Follow these steps.

1. At text or a table with a reference, press **(ENTER)** to start the highlight.
2. Press the arrow keys to highlight the symbol.

18-2: CYTOKINES [|||||]
• Interleukin (IL)
• IL-1 α , IL-1 β . **Molecular Mass: 15-17. Source:**
Monocytes, macrophages. **↑**

3. Press **(ENTER)**.

Abbreviations:
↑ = increases
↓ = decreases
CSF = colony-stimulating factor
CTL = cytotoxic T lymphocyte **↓**

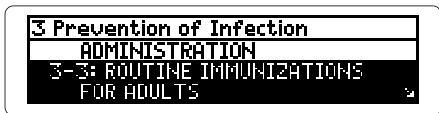
4. Press **(BACK)** to return to the text or table.
5. Press **(BACK)** again to turn off the highlight.

Viewing Tables

Many of the chapters have tables. Tables are listed at the bottom of the subchapter headings in the Outline.

Tables are displayed at the end of chapters in text. To learn how to view tables, try this example.

1. Under the Outline menu, highlight 1: Infectious Disease.
2. Press **ENTER**.
3. Highlight 3: Prevention of Infection.
4. Press **ENTER**.
5. Press **○** plus **↓** to highlight the last subchapter of Chapter 3.



3 Prevention of Infection
ADMINISTRATION
3-3: ROUTINE IMMUNIZATIONS FOR ADULTS

6. Press **ENTER**.



3-3: ROUTINE IMMUNIZATIONS FO...
Measles-mumps-rubella
Td
HB

These are the row headings for Table 3-3.

Viewing Tables

7. Press **ENTER**.

+ Measles-mumps-rubella. **Dose:**
0.5 mL s.c. initially and at entry
to college, military, etc.
Indications: Anyone born after
1956 and never infected or who

These are the row and column headings and text of Table 3-3. See “Understanding Tables” below.

8. Press the direction keys to view the table.

9. Press **BACK** to return to its row headings.

✓ Understanding Tables

In this digital book, table rows and columns are displayed as indented text.

Generally, the main headings of a table are row headings, preceded by bullets. Column headings are included in each row in boldface type.

When you select a table from the Outline, you can view a menu for each level of rows.

✓ Viewing Figures

In this digital book, figures are referenced in text but are not displayed. To view a figure, please refer to it in the appropriate printed edition of *The Merck Manual*.

Searching for Words

This section shows you how to search for words and phrases.

You will also learn how to fine-tune and expand your searches, as well as search for words in other digital books.

Entering Search Words

You can search for any word except short, common ones such as “the” and “and.” Enter your search word(s) at the Search line. Then view every occurrence, or match, of your word(s) in the text.

1. Go to the Search line.

- If Word Search is the default state, press **CLEAR**.
- If another default state is selected, first press **CLEAR**, then press **MENU**, then highlight Word Search under the Search menu and press **ENTER**.

2. Type up to 4 words (e.g., arteriolar sclerosis).

Type words to find then press **ENTER**. Or press **HELP**.

arteriolar sclerosis

Press **MENU** for other options.

You do not need to type capital letters. To erase letters, press **BACK**.

3. Press **ENTER**.

No pathologic changes occur early in primary hypertension. Ultimately, generalized arteriolar sclerosis develops; it is particularly apparent in the kidney and is

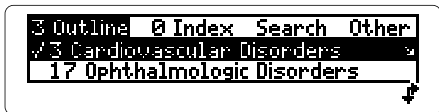
The boxed words are the first match.

4. Press **○** plus **▼** to view the next match.

Entering Search Words

To view the previous match, press  plus .

5. Press .



After a search, only the Outline headings and Index entries with matches are listed in the menus. The total matches in each menu are displayed, too.


6. Select an item from the Outline or Index.

7. When you are done, press .

✓ If You Misspell a Word

When you enter a misspelled word—or a correctly spelled word not in this digital book—at the Search line, a correction list appears.



Highlight a correction and then press .

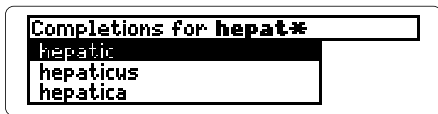
To change your search word(s), press .

To view words that start with the letters you entered, select the top line of the correction list.

✓ Using the Fragment Finder™

The asterisk—*—is the Fragment Finder. When you type an asterisk in a word at the Search line, it can stand for any series of letters. To type an asterisk, press **SHIFT** plus **?***.

For example, if you enter “hepat*,” a list of completions beginning with “hepat” appears.



Highlight a completion and press **ENTER** to search for it.

You can type asterisks at the end, middle, or beginning of search words. However, if you type an asterisk at the beginning, the entire alphabet must be searched and your search will take awhile.

Also, you cannot type consecutive asterisks in a word.

✓ Typing Greek Letters

You can search for words containing Greek letters by typing these substitutes at the Search line: a for alpha, b for beta, e for epsilon, and g for gamma. You can also type these substitute letters when typing words at the Index menu.

Picking Search Words

You can also search for a word by highlighting, or picking, it from text. Remember, you can pick and search for any word except short, common ones such as “the” and “and.” Try this example.

1. Under the Outline menu, highlight **5: Gastrointestinal Disorders.**
2. Press **ENTER**.
3. Highlight **47: Diagnostic and Therapeutic Gastrointestinal Procedures.**
4. Press **ENTER** twice.
The Introduction to Chapter 47 appears.
5. Press **ENTER** again to start the highlight.

Introduction

(See also discussions of endoscopic retrograde cholangiopancreatography [ERCP], liver biopsy, and percutaneous

You can turn off the highlight by pressing **BACK** .

6. Press the arrow keys to highlight “cholangiopancreatography.”

Introduction

(See also discussions of endoscopic retrograde **cholangiopancreatography [ERCP]**, liver biopsy, and percutaneous 

Picking Search Words

7. Press **ENTER** to search for the first match.

(See also discussions of endoscopic retrograde
cholangiopancreatography [ERCP],
liver biopsy, and percutaneous
transhepatic cholangiography [PTC])

The boxed word is the match.

8. Press **○** plus **▽** to view the next match.

To view the previous match, press **○** plus **△**.

To view more text, press the direction keys.

To view the Outline location of the text,
press **SPEC** and then press **BACK**.

9. Press **MENU** to view the Outline sections and Index entries with matches.

To view the text of a section or entry, select an item from the menus.

10. When you are done, press **CLEAR**.

✓ Viewing Multiple-Word Matches

When you search for more than one word (which can be done only by entering words at the Search line), you first see the search word in a match that is at the lowest level of text.

The other search word(s) in the match will be boxed at their highest level in text. You may have to scroll up to view them.

Fine-tuning Searches

You can fine-tune your word searches by changing their search order and/or search width.

An ordered search finds words only in the order that you enter them. For example, an ordered search for “spinal meningitis” will not find “meningitis spinal.” The search width is how far apart search words can be in matches.

Note: You can change the search order or width before or after a word search. Your settings remain until you change them or reset the Digital Book System. Try this example.

1. Go to the Search line.

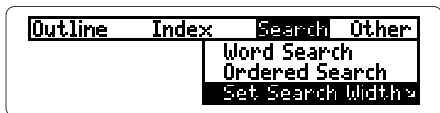
To learn how, see “Entering Search Words,” p. 21.

2. Type a phrase (e.g., kidney failure).

3. Press **ENTER**.

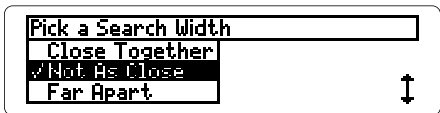
4. Press **MENU**.

5. Under the Search menu, highlight Set Search Width.



6. Press **ENTER**.

Fine-tuning Searches



7. Highlight **Close Together** and press **ENTER**.

The search width is changed and the number of matches decreases.

8. Press **MENU**.

9. Under **Search**, highlight **Ordered Search**.

10. Press **ENTER**.

The search order is changed and the number of matches further decreases. To deselect **Ordered Search**, repeat Steps 8 through 10.

11. Press **○** plus **▽** to view more matches.

✓ Understanding Search Widths

How far apart can search words can be at the various search widths?

Search Width

Close Together

Not as Close

Far Apart

Very Far Apart

Distance between words

adjacent or nearly so

a few words apart

many words apart

a few sentences apart.

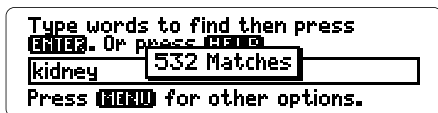
Expanding Searches

After entering or picking search word(s), you can expand a word search to find more matches.

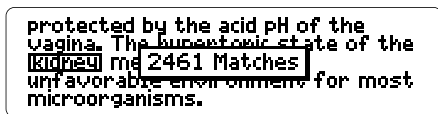
When you expand a search, inflections, synonyms, and similar words are added to your search. For example, an expanded search for “kidney” finds matches of “kidneys,” “renal,” “nephritis,” etc,

Follow these steps.

1. At the Search line, enter search word(s), or pick a search word from text (e.g., kidney).



2. Press **MORE** to expand the search.



The number of matches increases.








3. Press **MENU** .
4. Select an Outline or Index item to view.
5. When you're done, press **CLEAR** .

Finding Words in Other Books

This digital book can send and receive words to and from certain other digital books in order to look them up. (To learn if a digital book can send and receive words, read its User's Manual.)

Before looking up a word in another digital book, you must of course install it in your Digital Book System (see "Installing Digital Books").

Then follow these steps.

1. **At text, press  to start the highlight.**
2. **Press the arrow keys to highlight a word to send.**
3. **Press  plus .**
4. **Highlight another digital book symbol.**
5. **Press .**
The word that you highlighted appears in its Entry screen.
6. **Press  again.**
The receiving digital book searches for the word. If a match is found, you can view its text.
7. **To return to the sending digital book, press  plus  and then select its symbol.**

Taking Notes

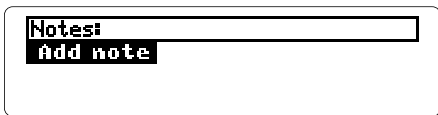
You can place your own notes
in text and tables
and then use your notes like bookmarks
to find important passages.

This section shows you how
place, view, and remove notes.

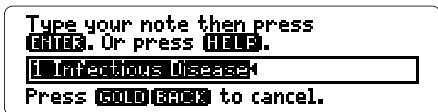
Placing Notes

You can place one note per paragraph or table. The total number of notes that you can place depends upon the length of each note.

1. At any text or table, press **(LIST)**.



2. Press **(ENTER)**.



The words in the line are the Outline location.

3. Place the note.

- To use the Outline location as the note, press **(ENTER)**.
- To use your own words as the note, type them and then press **(ENTER)**.

✓ A Quick Way to Place Notes

When text or a table is in view, you can place a note by pressing **(O)** plus **(N)**. Then press **(ENTER)** or enter your own note.

Viewing Notes

Once placed, your notes are marked in text or tables with a **NOTE**. You can find and view any note by selecting it from the user note list, where your notes are listed alphabetically.

1. With any text or table in view, press **LIST** to view the user note list.
2. Highlight a note.



This is a sample user note list. You can highlight a note by pressing the arrow keys or by typing it.

3. Press **ENTER**.

The note-marked text or table appears.

✓ Viewing the Contents of Notes

When a note-marked text or table is in view, you can view the contents of the note without viewing your user note list.

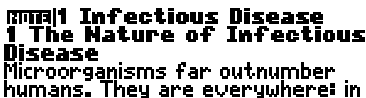
First, at the text or table, press **ENTER** to start the highlight. Then highlight the **NOTE**. Then press **ENTER** to view its contents.

To return to the text or table, press **BACK**.

Removing Notes

Here is how to remove a placed note.

1. At any note-marked text or table, press **(ENTER)** to start the highlight.
2. Press the arrow keys to highlight the **NOTE**.



1 Infectious Disease
1 The Nature of Infectious Disease
Microorganisms far outnumber humans. They are everywhere in

3. Press **(LIST)**.



Notes:
Remove note: 1 Infectious Di...
1 Infectious Disease
Penicillin dosages

4. With Remove note highlighted, press **(ENTER)**.

✓ Removing All Your Notes

You can remove all your notes at once by resetting the Digital Book System when *The Merck Manual* digital book is installed.

To learn how to reset the Digital Book System, see p. 38. **Warning:** Resetting the Digital Book System may erase information that you have entered in other currently installed digital books.

Appendixes

This section reviews
how to use the Digital Book System
and this digital book.
Use it for quick reference.

Abbreviations and Symbols

The text of this digital book uses these abbreviations:

ACTH	adrenocorticotrophic hormone	CSF	cerebrospinal fluid
ADH	antidiuretic hormone	CT	computed tomography
ADP	adenosine diphosphate	cu	cubic
AIDS	acquired immunodeficiency syndrome	D&C	dilation & curettage
ALT	alanine aminotransferase (formerly SGPT)	dL	deciliter (=100 mL)
AST	aspartate aminotransferase (formerly SGOT)	DNA	deoxyribonucleic acid
bid	two times a day	DTP	diphtheria-tetanus-pertussis (toxoids/vaccine)
BP	blood pressure	D/W	dextrose in water
BSA	body surface area	ECF	extracellular fluid
BUN	blood urea nitrogen	ECG	electrocardiogram
C	Celsius; centigrade; complement	EEG	electroencephalogram
CBC	complete blood count	ENT	ear, nose, and throat
CF	complement fixation, fixating	ESR	erythrocyte sedimentation rate
Ch.	chapter	FDA	U.S. Food and Drug Administration
Ci	curie	ft	foot; feet (measure)
CK	creatine kinase	FUO	fever of unknown origin
Cl	chloride; chlorine	GFR	glomerular filtration rate
cm	centimeter	GI	Gastrointestinal
CNS	central nervous system	gm	gram
CO₂	carbon dioxide	G6PD	glucose-6-phosphate dehydrogenase
CPR	cardiopulmonary resuscitation	GU	genitourinary
		h	hour
		Hb	hemoglobin
		HCl	hydrochloric acid; hydrochloride
		HCO₃	bicarbonate

Abbreviations and Symbols

Hct	hematocrit	mEq	milliequivalent
Hg	mercury	Mg	magnesium
HI	hemagglutination inhibition, inhibiting	mg	milligram
HIV	human immunodeficiency virus	MI	myocardial infarction
HLA	human leukocyte group A	MIC	minimum inhibitory concentration
Hz	hertz (cycles/sec.)	min	minute
ICF	intracellular fluid	mIU	milli-international unit
IgA	immunoglobulin A	mL	milliliter
IM	intramuscular(ly)	mm	millimeter
IV	intravenous(ly)	mmol	millimole
IVU	intravenous urography	mo	month
K	potassium	mol wt	molecular wt
kcal	kilocalorie (food calorie)	mOsm	milliosmole
kg	kilogram	MRC	Medical Research Council (units)
17-KS	17 ketosteroids	MRI	Magnetic Resonance Imaging
L	liter	N	nitrogen; normal (strength of solution)
lb	pound	Na	sodium
LDH	lactic dehydrogenase	NaCl	sodium chlorides
LE	lupus erythematosus	ng	nanogram (= millimicrogram)
M	molar	nm	nanometer (= millimicron)
m	meter	NSAID	nonsteroidal anti-inflammatory drug
m²	square meter	17-OHCS	17-hydroxycorticosteroid
MCH	mean corpuscular hemoglobin	OTC	over-the-counter (pharmaceuticals)
MCHC	mean corpuscular hemoglobin concentration	oz	ounce
mCi	millicurie	P	phosphorous; pressure
MCV	mean corpuscular volume		

Abbreviations and Symbols

Pa_{co2}	arterial carbon dioxide pressure	SLE	systemic lupus erythematosus
PA_{o2}	alveolar oxygen pressure	soln	solution
Pa_{o2}	carbon dioxide pressure (or tension)	sp gr	specific gravity
pg	picogram (=micromicrogram)	sq	square
pH	hydrogen ion concentration	STS	serologic test(s) for syphilis
PMN	polymorphonuclear leukocyte	TB	tuberculosis
po	orally	tid	3 times a day
P_{o2}	oxygen pressure	u.	unit
PPD	purified protein derivative (tuberculin)	URI	upper respiratory infection
ppm	parts per million	USPHS	United States Public Health Service
prn	as needed	UTI	urinary tract infection
psi	pounds/square in.	WBC	white blood cell count
q	every	WHO	World Health Org.
q 4 h etc	every 4 hours, etc	wk	week
qid	4 times a day	wt	weight
RA	rheumatoid arthritis	yr	year
RBC	red blood cell	μ	micro-; micron
RF	rheumatic fever; rheumatoid factor	μCi	microcurie
RNA	ribonucleic acid	μg	microgram
Sa_{o2}	arterial oxygen saturation	μL	microliter
SBE	subacute bacterial endocarditis	μm	micrometer (= micron)
s.c.	subcutaneous(ly)	μmol	micromole
sec	second	μOsm	micro-osmole
SI	International System of Units	mμ	millimicron
		/	per
		< / >	less/greater than
		≤ / ≥	equal to or less/greater than
		§	section

Digital Book System[®]

Resetting the Digital Book System

To reset the Digital Book System, hold **CLEAR** while pressing **ON/OFF**. Or press the recessed reset button on the back of the Digital Book System. (Read its Basic Operating Guide for details.)

Warning: Resetting the Digital Book System may permanently erase information, such as notes, that you have entered in the installed digital books.

Note: If the keyboard fails to respond or the screen performs erratically, you can press **CLEAR** and then press **ON/OFF** rather than resetting the Digital Book System. If nothing happens, then reset.

Protecting and Cleaning

- Do not touch the metal contacts on the back of digital books or the rubber contacts on the Digital Book System with statically charged objects. Statically charged objects may erase information that you entered in the digital books.
- Do not put excessive weight on digital books or the Digital Book System, or expose them to extreme or prolonged heat, cold, or other adverse conditions.
- To clean digital books, apply isopropyl alcohol with cotton swab. To clean the Digital Book System, apply a mild household cleaner with a soft cloth.
Caution: Spraying liquids on digital books or the Digital Book System may damage them.

Replacing the Batteries

The DBS-1 and DBS-2 use four 3-volt, CR2032 lithium batteries. The DBS-2D uses four 1.5-volt, AA batteries.

1. **Have new batteries ready.**
2. **Turn the Digital Book System off.**
3. **Slide the battery cover off the back.**
4. **Remove all the batteries.**
5. **Place new batteries in the cavities, with the +’s oriented correctly. (In the DBS-1 and DBS-2, the +’s should face up.)**
6. **Replace the battery cover**

✓ **Battery Precautions**

When you replace batteries, follow these precautions to avoid erasing information on your installed digital books:

- Replace the batteries before they lose power;
- Once batteries have been removed, install new ones within two minutes;
- Don’t mix old and new batteries;
- Never remove batteries with the unit on.

Specifications

Model IC-118

- Text, tables, Outline, and Index (but no figures) from *The Merck Manual*, Sixteenth Edition
- Word search with ordered search, set search width, search expansion, and pick mode
- Alpha-Search in Outline, Index, and user note list
- Spelling correction with Fragment Finder™ key
- User-entered notes
- Footnotes, cross-references, and bibliographic references
- Send and receive words from other digital books
- Adjustable type size, shutoff time, and default state
- Context-sensitive help messages
- Built-in self-demonstration
- Auto-resume feature
- Size: 2-1/4" x 1-1/4" x 1/4"

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Digital Book System is a registered trademark of Franklin. Fragment Finder is a trademark of Franklin.

Patents: 4,490,811; 4,830,618; 5,113,340; 5,218,536

European Patent: 0 136 379. Patents Pending

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






















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Key Guide

-  BACK Back up; erase letter; or stop highlight in text.
-  CARD Exit the digital book.
-  CLEAR Clear to the default state.
-  ENTER Make an entry; select a menu item; or start the highlight in text.
-  HELP View a help message.
-  LIST From text, view the user note list.
-  MENU View menus.
-  MORE Expand a word search.
-  ON/OFF Turn the Digital Book System on or off.
-  SHIFT Shift keys to type capital letters, etc.
-  SPACE Type a space; or page down in text.
-  SPEC From text, go to the lowest Outline level.
-   BACK In Outline, go to the highest level.
-   CARD Send a word to another digital book.
-   ENTER From any Outline level, go to text.
-   N At text or a table, add a user note.
-   Q etc. Type a number.
-  Move in the indicated direction.
-  UP/DN Page up or down.
-    At menus, zoom to last or first item; at text, go to next/previous heading.
-    At the Outline, go to next section that matches your entry. At text, go to the next/previous paragraph, row, or match.
-  ?* At text, view its Outline location; at a menu, view a full item.

Index

- ?* key 10, 15, 23
- Abbreviations 35
- Add note 31
- Arrows
 - flashing on screen 9
 - slanted in menus 9, 16
- Asterisks (Fragment Finder™ key) 23
- Auto-resume feature 10
- BACK
 - key 9, 13, 15, 16, 21, 24
- Batteries
 - precautions 39
 - replacing 39
- BIB symbol 17
- Bibliographic references 17
- Boxed words (matches) 21
- Bullets (in tables) 19
- Capital letters 21
- CARD key 8, 29
- Changing
 - default state 11
 - search order 26
 - search width 26
 - shutoff time 11
 - type size 11
- CLEAR key 11, 13, 16, 21
- Column headings (in tables) 19
- Completions 22, 23
- Contrast, adjusting 8
- Copyrights 40
- Correcting spellings 22
- Cross-references 17
- Default state 11, 13, 15, 16, 21
- Demonstration 11
- Digital Book System
 - protecting and cleaning 38
 - resetting 33, 38
- Digital books
 - installing 8
 - protecting 8
- DN key 10, 14
- Erasing letters 13, 16, 21
- Finding
 - Index entries 16
 - inflections 28
 - more matches 28
 - notes 32
 - Outline headings 13
 - phrases 26
 - synonyms 28
 - tables 18
 - text 13, 16, 21
 - words 20
 - by entering them 21
 - by picking them 24
 - in other digital books 29
 - words by picking them in verses 24

Index

- FOOT symbol** 17
- Footnotes** 17
- Foreword** 3
- Fragment Finder™ key** 23
- GOLD + BACK** 15
- GOLD + CARD** 29
- GOLD + DN** 21, 25, 27
- GOLD + ENTER** 15
- GOLD + N** 31
- GOLD + UP** 14, 22, 25
- Greek letters. See Typing:**
 - Greek letters**
- HELP key** 9
- Help messages** 9
- Highlighting**
 - digital book symbols 8
 - Index entries 16
 - menus and menu items 9
 - note symbols 32, 33
 - notes in the user note list 32
 - Outline headings 13
 - reference symbols 17
 - tables 18
 - turning off 17, 24
- Index menu** 9
 - highlighting entries 16
 - viewing 16
- Inflections** 28. *See also Finding: inflections*
- Installing digital books** 8
- Key guide** 42
- LIST key** 31, 32
- Matches** 21
 - multiple-words 25
- MENU key** 9, 11
- Menus**
 - Index 16. *See also* Index menu
 - Other 11
 - Outline. *See* Outline menu
 - scanning 10
 - Search 21, 26, 27
 - viewing 9
- Misspellings, correcting** 22
- MORE key** 28
- NOTE symbol** 33
- Notes. See also User note list**
 - entering contents of 31
 - highlighting in user note list 32
 - maximum allowed 31
 - placing
 - using GOLD + N keys 31
 - using LIST key 31
 - removing
 - a single note 33
 - all notes at once 33
 - uses of 30
 - viewing

Index

- contents of 32
- using user note list 32
- ON/OFF key 8**
- Ordered searches 26**
- Other menu 11**
- Outline location 15**
- Outline menu**
 - backing up through levels 15
 - erasing letters 13
 - going to from text 15
 - highlighting headings 13
 - understanding 13
 - viewing text from 15
 - viewing 13
- Patents 40**
- Picking**
 - search widths 27
 - search words in text 24
- References**
 - highlighting symbols 17
 - viewing 17
- Removing notes 33**
- Resetting. *See also***
 - Digital Book System: resetting**
- Row headings (in tables) 18, 19**
- Scanning menus 10**
- Screen contrast 8**
- Search line 21**
- Search menu 21, 26, 27**
- Search widths**
 - changing 26
 - understanding 27
- Search words**
 - boxed in matches 21
 - entering 21
 - misspelling 22
 - picking in text 24
- Searches**
 - entering search words at the Search line 21
 - expanding 28
 - fine-tuning 26
 - for words in other digital books 29
 - ordered searches 26
 - picking search words in text 24
 - search widths 26
 - viewing matches 21
- Set Search Width 26**
- SHIFT + ?* 23**
- Shutoff time 11**
- SPACE key 14**
- SPEC key 15, 22, 25**
- Specifications 40**
- Spellings**
 - correcting 22
 - finding with the Fragment Finder™ key 23
- Symbols 35**

Index

**Synonyms. See Finding:
synonyms**

Tables

understanding 19
viewing 18

Trademarks 40

Type size 11

Typing

asterisks 23
capital letters 21
Greek letters 23
numbers 13

UP key 10, 14

User note list. See also

Notes

removing notes 33
viewing 32

Viewing

figures 19
full menu items 10
help messages 9
Index menu 16
menus 9
multiple-word searches 25
note contents 32
Outline location 15
Outline menu 13
Search line 21

self-demonstration 11
tables 18

Warranty 41

Word Search 21

XREF symbol 17

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