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The Basics of Searching MEDLINE

US.DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Services
National Institutes of Health

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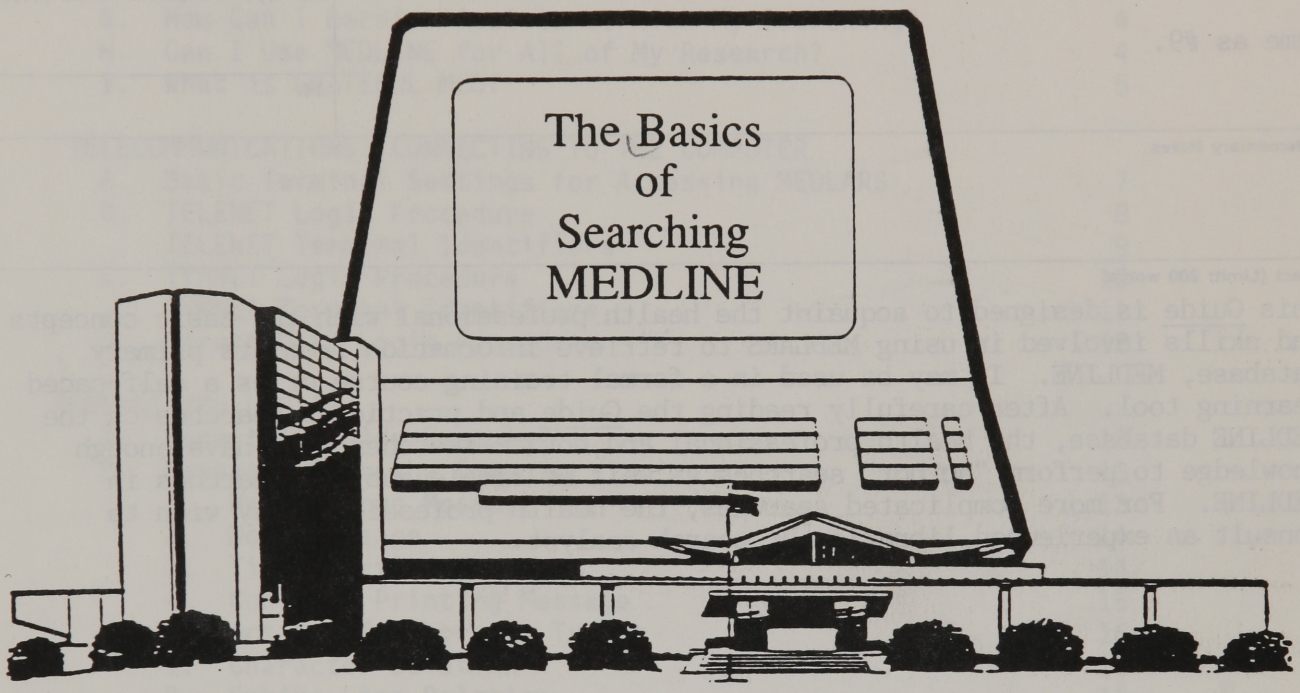

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PREFACE

Since 1879, the U.S. National Library of Medicine (NLM) has indexed the biomedical literature to provide health professionals with access to information necessary for research, health care, and education. In recent years, the use of modern computer and telecommunications technology has enabled NLM and other library and information services to develop and provide direct access to machine-readable databases containing bibliographic references to the literature, and, in some cases, the actual document.

In 1965, the National Library of Medicine announced its computerized bibliographic retrieval system, **MEDLARS** - Medical Literature Analysis and Retrieval System, for providing access to the biomedical literature. Since then, thousands of librarians and information specialists have used the powerful retrieval capability of this system to provide searches of the literature for the health professionals. In recent years, an increasing number of health professionals have begun searching the system for themselves. This GUIDE is designed to acquaint the health professional and other novice searchers with the basic concepts and skills involved in using MEDLARS to retrieve information from its primary database, **MEDLINE**. Although the MEDLINE database is produced by the National Library of Medicine, it is also available through other database vendors. This GUIDE provides the information necessary to search MEDLINE at NLM.

The GUIDE is designed to be used in a formal training course or to serve as a self-paced tool. It provides an introduction to the basic techniques used in searching MEDLINE. It does not replace the regular "Fundamentals of MEDLARS Searching" course offered by NLM. That course covers searching in greater detail and presents more sophisticated searching techniques. Other more effective and efficient searching techniques can be acquired through experience and from additional training as well as a careful study of reference guides such as the Online Services Reference Manual and other publications as listed in the Appendix.

All examples in the GUIDE were generated from MEDLINE. It is important to keep in mind that the number of citations retrieved in the search exercises may vary with the current size of the database. They will, however, be representative of the size and scope of MEDLINE. Please note: Special non-billed codes and passwords are available for searching while studying this Guide. Please consult the Appendix (page 167) for the form you should use to request these training codes. Anyone using the training codes should complete the "Participant's Profile" found on page 168 and return it to NLM. After carefully reading this GUIDE and practicing the searches on MEDLINE, the health professional will have sufficient knowledge to perform author searches and less complicated subject searches. For more detailed, complicated searches, the health professional should consult an experienced librarian or searcher.

It is hoped that as health professionals learn more about searching MEDLINE, they will explore the use of other related databases as available from the National Library of Medicine. A list of these databases can be found in the Appendix of this GUIDE.

INTRODUCTION

A. WHAT IS MEDLARS?

MEDLARS is an acronym for Medical Literature Analysis and Retrieval System, the computerized information system developed by and based at the National Library of Medicine (NLM) in Bethesda, Maryland. More than twenty-five databases are available on the NLM system. Of these databases, MEDLINE is the most heavily used and well known. (See the Appendix of this GUIDE for a complete listing of MEDLARS databases.)

B. WHAT IS MEDLINE?

MEDLINE is a bibliographic database which, as the computerized counterpart of Index Medicus, is the primary source in the United States for current information from the biomedical literature. As a bibliographic database, it contains references to articles which have appeared in more than 3500 journals. These journals have been carefully reviewed and selected for inclusion because of their importance to health professionals. Each reference to an article is referred to as a **unit record** or a bibliographic citation. The full text of each article is not in the database; however, approximately 60% of the citations do contain author-generated **abstracts** (summaries) of the articles.

MEDLINE is international in scope with approximately 75% of the citations published in the English language. It contains publications from **1966 to the present**. The scope of MEDLINE includes such topics as microbiology, delivery of health care, nutrition, pharmacology, and environmental health. The categories which are covered by MEDLINE include anatomy; organisms; diseases; chemicals and drugs; technics and equipment; psychiatry and psychology; biological sciences; physical sciences; social sciences and education; technology, agriculture, food, industry; humanities; information science and communications; and health care.

In addition to containing all references that appear in Index Medicus, MEDLINE contains citations that appear in the Index to Dental Literature and the International Nursing Index.

At the National Library of Medicine, MEDLINE (as of December 1988) is segmented into separate files or databases as follows:

FILE NAME	YEARS OF COVERAGE	NUMBER OF CITATIONS
MEDLINE	1988 to 1989	199,449+
MED86	1986 to 1987	639,512
MED83	1983 to 1985	889,211
MED80	1980 to 1983	803,286
MED77	1977 to 1979	775,193
MED72	1972 to 1976	1,175,527
MED66	1966 to 1971	1,310,396

This group of seven files is referred to as **MEDLINE** and its **Backfiles**. The years of coverage for the MEDLINE files may change at the end of each year. Contact MMS for the current configuration.

When you log in to MEDLARS you are automatically connected to the most current file, MEDLINE. Each of the backfiles is accessible, one at a time, by using the FILE command and naming the file you want. (For example, FILE MED72.) Detailed information about the FILE command appears later in this GUIDE.

Over 99% of MEDLINE's nearly 6 million citations are references to **journal articles**. Information provided for each article includes author(s), title of article, publication source (i.e., journal title), publication date, NLM-assigned subject headings, and author-generated abstracts (when present). Issues of journals included in MEDLINE are received at the National Library of Medicine, relevant articles are indexed, and the references are added to the database.

The National Library of Medicine is both the producer and the vendor of MEDLINE. MEDLINE data are leased to other organizations who, in turn, make the database available for searching on their information systems.

C. WHEN IS MEDLINE AVAILABLE?

The National Library of Medicine databases are available for searching on the MEDLARS system twenty-four hours a day ("round-the-clock computer service"). Current **prime time is 10:00 a.m. to 5:00 p.m. ET Monday-Friday**; all other time is **non-prime time**. Non-prime time is billed at a reduced rate.

D. HOW MUCH DOES IT COST TO SEARCH MEDLINE?

There is no subscription or start-up fee associated with access to MEDLINE. The National Library of Medicine has established a pricing algorithm upon which MEDLINE charges are based. This algorithm is outlined in the Appendix of this GUIDE. On the average, the algorithm provides charges equivalent to **$23.50/hour for prime time** and **$16.50/hour non-prime time** for most users. Your individual monthly bill, however, will be reflective of your personal searching habits and needs. Some computer operations are more costly than others; searchers who print or download large numbers of citations online are charged accordingly, etc.

The **Student Code Program** features two types of access codes, both of which reduce the usual search costs by about one-half. The Individual Student Code, good for two years, permits an individual student in a professional or graduate school or a residency program to access most MEDLARS files. The Institutional Student Code may be requested by educational institutions for use by their students, including interns, residents, and post-doctoral fellows.

E. HOW DO I APPLY FOR ACCESS TO MEDLINE?

Applications for access to the NLM Online Services are received and processed by the MEDLARS Management Section (MMS) at the National Library of Medicine. A Memorandum of Understanding and an Online Billing Agreement must be signed by the participating organization or individual and forwarded to the MMS. An application packet can be requested by writing or calling the MEDLARS Management Section. Specify the type of application you wish to receive - a Regular Packet or a Student Code Packet.

Upon receipt of the application in the MMS, a five-character alphanumeric code (e.g., ABCØ1) is assigned to all users of the MEDLARS system. This code is known as the **User Identification** (User ID) Code and is used when logging into the MEDLARS databases. All charges accrued to the User ID while connected to the system are forwarded to the **National Technical Information Service** (**NTIS**) for customer billing.

Three billing options are available: 1) Deposit Account: This type of account requires an advance deposit of funds. The amount deposited should be sufficient to cover 3 month's usage. 2) Direct Payment: Monthly invoices will be sent. Payment is due upon receipt by check or money order. 3) Credit Card: VISA, MasterCard, or American Express accounts can be indicated on the Online Billing Agreement.

F. HOW DO I SEARCH MEDLINE ONLINE?

Online searching is a means of immediately searching for and retrieving information with the help of a computer. You can search MEDLINE online by using either a computer terminal or a microcomputer equipped with a software package allowing it to emulate a terminal. The connection between the remote terminal and NLM's computer is made through the telephone and a modem.

The interaction between the searcher at a terminal and the computer is the process of online searching. Search terms and commands are entered at the terminal and sent to the computer. The database is searched according to the instructions received and responses are sent to the searcher. These responses may be printed immediately at the searcher's terminal; they may be printed overnight by the computer at NLM and mailed to the searcher the next working day (called offline prints); or they may be captured to a separate disk (downloaded) by the searcher and reviewed at a later time. This GUIDE does not attempt to instruct the searcher how to download search results; that is a function of the searcher's individual software capabilities.

Subject searching is accomplished through the use of the controlled vocabulary called **Medical Subject Headings (MeSH)**. This vocabulary can be found in a published list entitled, Annotated Alphabetic List, Medical Subject Headings. A distinctive feature of MEDLINE is the careful and extensive indexing of the articles done by subject specialists using MeSH. Use of this controlled vocabulary by the searcher eliminates the need to think of all possible synonyms or variations for a particular concept.

Although the MeSH vocabulary has over 15,000 subject headings, not all search topics may be included. In such instances, it is possible to enter a MEDLINE search "in your own words." By using a technique called **Text Word** searching, you can search for words that may appear in the titles and/or abstracts of citations in the database. This Text Word searching capability provides a great deal of flexibility in MEDLINE searching.

This GUIDE will discuss the Medical Subject Headings (MeSH) and Text Word searching in greater detail in subsequent chapters.

G. HOW CAN I RECEIVE ASSISTANCE WITH MY SEARCHING?

The MEDLARS Management Section (MMS) is the organizational unit of the National Library of Medicine responsible for providing assistance to the users of the NLM databases. Professional staff at the **Service Desk** will assist you with questions concerning the MEDLARS system, development of search strategy, use of the Medical Subject Headings, logging in procedures, telecommunications and equipment problems, etc. MMS staff members can also provide you with information on application procedures, online training courses, offline printouts, and other administrative matters. The **MMS Service Desk** can be reached by calling the following:

TELEPHONE NUMBERS		HOURS
301/496-6193	(within Maryland)	8:30 A.M - 5:00 P.M (ET)
800/638-8480	(toll-free outside Maryland)	MONDAY-FRIDAY

H. CAN I USE MEDLINE FOR ALL OF MY RESEARCH?

Remember, as comprehensive as MEDLINE is, it covers approximately 3500 journals which represent a fraction of health science publications. Currently, non-journal literature is not covered at all. Always consider the scope and content of MEDLINE to determine if it is the proper source for the information you seek.

Requests for information such as federal regulations, drug patents, unpublished papers read at recent meetings, material published before 1966, newspaper articles, and statistical data cannot be located directly by a MEDLINE search. Many questions are still best answered by using text books, reference manuals, and other databases. These are available from NLM and other commercial vendors such as BRS, DIALOG, and ORBIT. Their addresses and telephone numbers follow:

BRS (Bibliographic Retrieval Services)
1200 Route 7
Latham, NY 12110
800/345-4BRS

DIALOG
3460 Hillview Avenue
Palo Alto, CA 94304
800/3DI-ALOG

Pergamon ORBIT Infoline, Inc.
8000 Westpark Drive
Mclean, VA 22102
800/421-7229

There are many hundreds of machine-readable databases currently available. If you have a special interest, you should contact one of the vendors above or your local librarian to determine what special resources are available.

I. **WHAT IS GRATEFUL MED?**

The National Library of Medicine developed GRATEFUL MED for people who want easy access to the Library's vast collection of medical and health science information. GRATEFUL MED is a microcomputer-based software package that provides a user-friendly interface to a number of databases (including MEDLINE) on the MEDLARS system.

It comes on floppy disks (both 5 1/4" and 3 1/2") with an easy-to-follow User's Guide, including instructions for installation on your IBM PC or compatible machine equipped with a Hayes or compatible modem. GRATEFUL MED simplifies searching by breaking down the process into four easy steps: 1) Helps formulate your search; 2) Calls the NLM computer in Bethesda, Maryland; 3) Runs the search and disconnects from the NLM computer; and 4) Displays search results, and, if requested, prints the results on your printer.

GRATEFUL MED bypasses the need for extended, formalized training. To search any of the databases directly requires knowledge of the MEDLARS command language. GRATEFUL MED does not require a knowledge of the command language as its software performs a conversion of whatever the user enters into the language necessary to process the search. Many GRATEFUL MED searchers find, however, that a better understanding of the MEDLARS commands provide much more relevant searching and more useful retrieval.

More detailed information about GRATEFUL MED, including price and order numbers, can be found in the Appendix of this GUIDE.

TELECOMMUNICATIONS: CONNECTING TO THE COMPUTER

The National Library of Medicine has contracted with two telecommunications networks to provide access to its computer in Bethesda, Maryland. These two networks are TELENET and TYMNET. By dialing a TELENET or TYMNET telephone number that is local to you, and by following the appropriate login procedure, most users of NLM's online system have toll-free access to the computer. The networks transfer your telephone call from their local node to the NLM computer thereby eliminating long distance charges. Telecommunications costs are included in the online charges billed to each user by NLM.

For users in the local calling area to Bethesda, Maryland, direct dial access is also available.

The login procedures for the networks and for direct dial are outlined on the following pages. A list of telephone numbers for the networks appears in the Appendix of this GUIDE. If you cannot find a listing for your locale, please contact the MEDLARS Management Section.

A. BASIC TERMINAL SETTINGS FOR ACCESSING MEDLARS

Communications Protocol:	Asynchronous TTY (Teletypewriter-compatible)
Transmission Code:	ASCII
Transmission Speed:	30, 120, 240 cps (characters per second) = 300, 1200, 2400 baud (bits per second) (*Note: Your local telecommunications network number and your own equipment must support 2400 baud in order to access the system at this transmission speed.)
Duplex:	FULL for network access; HALF for Direct Dial
Parity:	EVEN
Number of Data Bits:	7
Number of Parity Bits:	1
Number of Stop Bits:	1
Number of Start Bits:	1
Automatic Line Feed or LF:	Turn off this feature.

B. TELENET LOGIN PROCEDURE

1. Dial the appropriate TELENET telephone number; connect telephone to terminal.

2a. Type ENTER twice: **<enter> <enter>** [for 300 & 1200 bps]
b. Type @ then ENTER: **<@> <enter>** [for 2400 bps]

3. TELENET will respond with a network herald followed by your terminal port address and prompt you for a terminal identifier:

```
TELENET
202 08C

TERMINAL = _____   <ENTER>
```

The representative TELENET Terminal Identifier list is on the following page.

For most microcomputers, use '**d1**'.

4. TELENET responds with: @ symbol, which is the prompt for the address of the host computer.

@ C 301 20 <enter> <- This is the network address for NLM.

5. TELENET responds with: '301 20 CONNECTED'.

6. Type **/login <enter>** .

7. TELENET responds with: PLEASE ENTER USERID/PASSWORD OR LOGON
############################

Type your User ID/Password over the disguising marks in the '**abc01/word**' format.

EXAMPLE:

(You have dialed your local TELENET phone number and connected the telephone to the terminal.)

<enter> <enter>

TELENET
202 19N

TERMINAL = **d1 <enter>**

@ c 301 20

301 20 CONNECTED
/login <enter>

PLEASE ENTER USERID/PASSWORD OR LOGON
############################
abc01/word <enter> <- Actually on disguising marks.

TELENET TERMINAL IDENTIFIERS

The TELENET network allows you to specify terminal types, which customize your network connection. The terminal type should be set at the: "TERMINAL = " prompt during your initial network login.

To optimize your terminal's performance, select a terminal type from the list below that matches the characteristics of the terminal that you are using.

TERMINAL TYPE	IDENTIFIER
CRT'S and PC's (with a screen)	D1
PRINTING TERMINALS	
- Bi-directional printers	B3
- Uni-directional printers	A2
- Printing terminals losing data on the left side of the paper	A5 or A9
TERMINAL TYPE UNKNOWN If you are unsure of your terminal type, press the ENTER key at the "TERMINAL = " prompt, which automatically sets A2 (the standard network terminal type).	**<enter>**

C. TYMNET LOGIN PROCEDURE

1. Dial the appropriate TYMNET telephone number; connect telephone to terminal.

2a. TYMNET will immediately prompt you with:
'PLEASE TYPE YOUR TERMINAL IDENTIFIER' [300 bps]

b. 'mx¦¦x'¦xxx<'xx'xx<'xx^xx@x<'xxx@xxxxxx<^xx<'xxx¦xx@xxxx'¦xxx@xx x<'xx<^xx@xxxx@xxx<'xx ' [1200 bps]

c. (no response) [2400 bps]

These are the requests for your Terminal Identifier. The representative list of TYMNET Identifiers is on the following page. Type the appropriate terminal identifier for your computer following the computer response. Do not press <enter>.

(For microcomputers, use '**a**')

3. TYMNET responds: -2545-014-
PLEASE LOG IN:

Type: **[ctl] p nlmmenu <enter>**

4. TYMNET responds:

WELCOME TO NATIONAL LIBRARY OF MEDICINE'S COMPUTER SERVICES

NLM Main Menu

1. ELHILL (Bibliographic Retrieval)
2. MEDLEARN (Computer Assisted Instructions for MEDLINE)
3. PDQ (NCI Cancer Information)
4. TOXNET (Toxicology Data Network)
5. DOCLINE/TSO (IBM Timesharing Option)

THE FOLLOWING ARE FOR NLM RESEARCH AND DEVELOPMENT ONLY

6. CMT (ASCII/3270 Protocol Converter)
7. LHNCBC (Lister Hill - VAX)
8. NPSI (X.25 Testing)

Q Log off

Please select a service number >> ____

Select a number from the NLM Main Menu. '**1 <enter>**' for MEDLINE.

5. TYMNET responds: NLM: call connected
PLEASE ENTER USERID/PASSWORD OR LOGON
##########################

Type your User ID/Password over the disguising marks in the '**abc01/word**' format.

TYMNET TERMINAL IDENTIFIERS

The following identifiers are characters you type to indicate to TYMNET the characteristics of the terminal you are using. Some terminals may fall into more than one category, but most can be addressed effectively by the '**a**' terminal identifier. The 'e' or 'i' identifiers can be used to add an <enter> delay time for those terminals that require this feature.

TERMINAL TYPE	BPS RATE	IDENTIFIER
CRT/PC's (with a screen)	300-9600	A
PRINTING TERMINALS		
- Impact Printer	300	C
- Thermal Printer	300	E, I
- Belt Printer	300	G
- Matrix Printer	1200	I
OTHER TERMINALS		
- G.E. Terminet	1200	G
- Transaction Terminal	300	Y

D. **DIRECT DIAL LOGIN PROCEDURE** (Local Calls to Bethesda, Maryland)
300 or 1200 baud = 301/480-3150
2400 baud = 301/480-4360

1. Set your terminal for **half duplex.**

2. Dial the appropriate telephone number for DIRECT DIAL; connect telephone to terminal.

3. Type the letter '**p**' and then press the **<enter>** key.

4. The computer will respond with: PLEASE ENTER /LOGIN

   Type **/login <enter>**

5. The NLM computer responds with:
   PLEASE ENTER USERID/PASSWORD OR LOGON
   ############################

   Type your User ID/Password over the disguising marks in the '**abc01/word**' format.

EXAMPLE

p <enter>

PLEASE ENTER /LOGIN
/login <enter>

PLEASE ENTER USERID/PASSWORD OR LOGON
############################
abc01/word <enter> <- Actually on disguising marks.

NLM TIME 10:11:38 DATE 88:242 LINE 686 GM#030

WELCOME TO THE NATIONAL LIBRARY OF MEDICINE'S ELHILL RETRIEVAL SYSTEM. YOU ARE NOW CONNECTED TO THE MEDLINE (1986 FORWARD) FILE.

SS 1 /C?
USER:

A. FORMAT OF GUIDE EXAMPLES

All examples in this GUIDE are formatted so that computer responses can be differentiated from searcher input. Computer responses are shown in capital letters and all searcher input is shown in lower case, highlighted letters. For example:

Computer Response:	SS 1 /C? USER:	<- Search Statement # 1. User: cue.
Searcher Input:	**heart diseases**	<- User enters a search term or command. Always press the <**enter**> key after the input to send to the computer.
Computer Response:	PROG: SS (1) PSTG (450)	<- PROGram responds with the number of postings (PSTG) or citations retrieved by the search term.

When searching using your own terminal or computer, upper or lower case may be used. The output from the NLM computer may differ from the example above. The format of this GUIDE is for illustrative purposes only.

B. MESSAGES FROM THE COMPUTER

1. NO POSTINGS (NP) MESSAGE

```
SS 1 /C?
USER:
herat valve diseases          <- Misspelled term.
PROG:
NP (HERAT VALVE DISEASES)
```

The program responds with a NP (No Postings) message when the search term is not found in the database. This may be due to a misspelling or the absence of the desired term in that particular database. You will be returned to the same Search Statement number after a NP message.

```
SS 1 /C?
USER:
heart valve diseases          <- Correctly spelled term.
PROG:
SS (1) PSTG (160)
```

2. NONE MESSAGE

```
SS 1 /C?
USER:
heart diseases and kidney calculi
PROG:
*NONE-
```

The program responds with a NONE message indicating that no citations contain both terms as specified.

3. TIME OVERFLOW MESSAGE (TIME OVFLW: CONT? (Y/N)

```
SS 1 /C?
USER:
heart diseases and human
PROG:
TIME OVFLW: CONT? (Y/N)

USER:
y                              <- Responding y for yes will instruct the
PROG:                             program to continue processing your
SS (1) PSTG (426)                 search request. Answering n for no
                                  will halt the processing and return
                                  you to the same SS # without retriev-
                                  ing any postings.
```

This message indicates that the search or procedure requested requires more computer time than allotted in one "slice" of time (the computer is "shared" by simultaneous searchers).

Several Time Overflow messages may occur within a single Search Statement. Answering **y** to each continuation question is necessary to complete the process.

4. CONTINUE PRINTING MESSAGE (CONTINUE PRINTING? (YES/NO))

This message occurs when the number of records requested to be printed online exceeds the number of lines allowed to be printed at one time.

```
SS 4 /C?
USER:
print
PROG:

1
UI - 89016894
AU - Slater R
TI - Vertigo.  How serious are recurrent and single attacks?
RF - REVIEW ARTICLE: 13 REFS.
SO - Postgrad Med 1988 Oct;84(5):58-63, 67

2
UI - 89013612
AU - Murphy M
AU - Bass C
TI - Cerebral blood flow in panic disorder [letter]
SO - Lancet 1988 Oct 29;2(8618):1027
.
.
.

4
UI - 89011610
AU - Spitzer RL
AU - Williams JB
TI - Revised diagnostic criteria and a new structured interview for
     diagnosing anxiety disorders.
SO - J Psychiatr Res 1988:22 Suppl 1:55-85
CONTINUE PRINTING? (YES/NO)

USER:
y                          <- Responding y for yes instructs the program
PROG:                         to continue the online printout.

5
UI - 89011609
AU - Roth M
AU - Argyle N
TI - Anxiety, panic and phobic disorders: an overview.
RF - REVIEW ARTICLE: 92 REFS.
SO - J Psychiatr Res 1988:22 Suppl 1:33-54
```

C. CORRECTION OF ERRORS IN TYPING

1. CHARACTER DELETION

If you detect a typographical error before you press the <enter> key, you can correct the mistyped character(s). The following are several character correction alternatives:

a. Backward slash (\)
b. Backward arrow (<-) key.
c. Underscore (_)

Using any of the above, enter that character for each character following and including the character in error. Then re-input the correct series of characters. For example:

SS 1 /C?		SS 1 /C?		SS 1 /C?
USER:		USER:		USER:
heert\\\art	or	**heert_ _ _art**	or	**heert<-<-<-art**

d. Control (CTRL) H

An alternate method for error correction is to back up to the mistyped character by holding down the Control (CTRL) key while depressing the letter '**h**'. (H does not print.) Again enter the correct series of characters.

Different types of terminal equipment and software require other correction characters. Consult your documentation for the appropriate method for your equipment.

2. ENTIRE LINE DELETION

To delete an entire line of input, type the dollar ($) sign at the end of the line, press the <enter> key, and begin typing the correct input at the next USER: cue. For example:

SS 1 /C?
USER:
heert valve diseases$

USER:
heart valve diseases

D. CHANGING DATABASES

Each time you log in to the NLM computer, you are automatically connected to the MEDLINE database. If you want to search a database other than MEDLINE, you would type the command **file** and the name of the database that you want to search. This may be done at any USER: cue.

****

WELCOME TO THE NATIONAL LIBRARY OF MEDICINE'S ELHILL RETRIEVAL SYSTEM.
YOU ARE NOW CONNECTED TO THE MEDLINE (1988 FORWARD) FILE.

SS 1 /C?
USER:
file med80

PROG:
YOU ARE NOW CONNECTED TO THE BACK80 (1980-82) FILE.

SS 1 /C?
USER:

****

E. DISCONNECTING FROM THE NLM COMPUTER

To log off or disconnect, type the command **stop y** at any USER: cue.

****

SS 8 /C?
USER:
stop y

TIME 0:05:44 NLM TIME 10:36:09
. . .

PROG:

GOOD-BYE!
THE ESTIMATED TOTAL ONLINE COST FOR THIS 6 MINUTE TERMINAL SESSION IS $2.41.

****

In response, the time of day will be given (Eastern Time) as well as an estimated cost of the entire search session.

F. SAMPLE MEDLINE UNIT RECORD

A unit record is the computer-stored information representing a reference to a single journal article. The pieces of information are called **data elements** or fields. A sample MEDLINE unit record follows:

DATA ELEMENTS	RECORD
UNIQUE IDENTIFIER	89009404
AUTHOR	Harper CM
AUTHOR	Lyles YM
TITLE	Physiology and complications of bed rest.
LANGUAGE	Eng
MESH HEADING	Aged
MESH HEADING	Aging/PHYSIOLOGY
MESH HEADING	Bed Rest/*ADVERSE EFFECTS
MESH HEADING	Cardiovascular System/PHYSIOLOGY
MESH HEADING	Constipation
MESH HEADING	Human
MESH HEADING	Musculoskeletal System/PHYSIOLOGY
MESH HEADING	Respiratory System/PHYSIOLOGY
MESH HEADING	Review
MESH HEADING	Review, Tutorial
MESH HEADING	Sensory Deprivation
MESH HEADING	Skin/PHYSIOLOGY
DATE OF ENTRY	881123
DATE OF PUBLICATION	1988 Nov
INTL STAND SER NO	0002-8614
TITLE ABBREVIATION	J Am Geriatr Soc
PAGINATION	1047-54
SUBSET	M
MESH Z TREE NUMBER	Z1.107.567.875
ISSUE/PART/SUPPL	11
VOLUME ISSUE	36
JOURNAL TITLE CODE	H6V
ABSTRACT AUTHOR	Author
ENTRY MONTH	8901
ABSTRACT	Prolonged bed rest causes major cardiovascular, respiratory, musculoskeletal, and neuropsychological changes. Complications often result from these effects of bed rest, especially when aging has already decreased the reserves in these systems. These problems can be limited by judicious prescriptions of modified bed rest.
ADDRESS	Portland Veterans Administration Medical Center, Oregon.
NUMBER OF REFERENCES	REVIEW ARTICLE: 80 REFS.
SOURCE	J Am Geriatr Soc 1988 Nov;36(11):1047-54

G. UNIT RECORD CHART

The chart below shows all the MEDLINE data elements with their qualifiers (abbreviations) used when searching. Each data element has a two-letter abbreviation, known as a category qualifier, identifying the element. In most cases, these qualifiers are also used for searching the data element. The two notable exceptions, the search qualifier for the Title (TI) and the Abstract (AB) is TW, which stands for Text Words. When qualifiers are used for **searching**, always enclose the two-letter abbreviation in **parentheses**. Data elements shown without qualifiers are not searchable.

CATEGORY QUALIFIER	DATA ELEMENT	SEARCH QUALIFIER
AA	Abstract Author	(AA)
AB	Abstract	(TW)
AD	Address	
AU	Author	(AU)
CA	Call Number	(CA)
DA	Date of Entry	(DA)
DP	Date of Publication	(DP)
EA	English Abstract Indicator	
EM	Entry Month	(EM)
ID	ID Number	(ID)
IP	Issue/Part/Supplement	
IS	Internat'l Standard Serial Number	(IS)
JC	Journal Title Code	(JC)
LA	Language	(LA)
LI	Special List Indicator	(LI)
LR	Last Revision Date	(LR)
MH	MeSH Headings	(MH)
MN	MeSH Tree Number	(MN)
MR	Major Revision Date	(MR)
NI	No-Author Indicator	
NM	Name of Substance	(NM)
PG	Pagination	
PS	Personal Name as Subject	(PS)
RF	Number of References	
RI	Revision Indicator	
RN	CAS Registry Number	(RN)
RO	Record Originator	
SB	Journal Subset	(SB)
SH	Subheadings	(SH)
SI	Secondary Source ID	(SI)
SO	Source	
TA	Title Abbreviation	(TA)
TI	Title	(TW)
TT	Transliterated/Vernacular Title	
UI	Unique Identifier	(UI)
VI	Volume Issue	
YR	Year	(YR)
ZN	MeSH Z Tree Number	(ZN)

SEARCHING BY AUTHORS' NAMES

A. SEARCH FORMAT

To search for articles by a particular author, enter the author's last name separated by a space from the first and middle initials (with no space between the initials) and followed by the (AU) qualifier. Authors' names are included in the database as they appeared in the journal article. If no middle name was used in the article, no middle initial will be included in the MEDLINE citation.

```
SS 1 /C?
USER:
scheinman mm (au)
PROG:
SS (1) PSTG (7)     <-- 7 citations are written by M. M.
                        Scheinman.
```

No commas or periods are used when searching authors' names. If used, a NP (No Postings) message will result:

```
SS 1 /C?
USER:
scheinman, m. m. (au)   <-- Must remove commas and periods.
PROG:
NP (SCHEINMAN, M.M. (AU))
```

The (AU) is the two-letter abbreviation or **qualifier** for the data element AUTHOR. Qualifiers identify for the computer the fields to be searched.

Authors' names may also include JR or SR (junior or senior) or 2d, 3d, or 4th (designations of family rank). To search this form of an author's name, enter:

```
SS 1 /C?
USER:
dwyer em jr (au)
PROG:
SS (1) PSTG (1)
```

(Honorifics such as Ph.D., M.D., Sir, Dr., Ms., etc., are never included in the database.)

If an author search fails to retrieve any citations, a NP (No Postings) message will result. For example:

1)
```
SS 1 /C?
USER:
wallingford tm (au)
PROG:
NP (WALLINGFORD TM (AU))
```

2)
```
SS 1 /C?
USER:
smiith jg (au)
PROG:
NP (SMIITH JG (AU))
```

In the first example, the author received a No Postings message because no articles were found in the database for that particular author's name; in the second example, the author's name does not exist in the database as you entered it (note the misspelling of Smith).

B. SAMPLE AUTHOR SEARCHES

Search for articles in MEDLINE by the following authors:

1. Richard E. Scully

   SS 1 /C?
   USER:

2. John Gregory Morris, Jr.

   SS 1 /C?
   USER:

3. Robin Johnson

   SS 1 /C?
   USER:

4. Jerry P. Gerard, Ph.D.

   SS 1 /C?
   USER:

5. Joyce M. Hamilton-Miller

   SS 1 /C?
   USER:

6. David J. Elpern, M.D.

   SS 1 /C?
   USER:

B. SAMPLE AUTHOR SEARCHES: SUGGESTED ANSWERS

Search for articles by the following authors:

1. Richard E. Scully

```
SS 1 /C?
USER:
scully re (au)
PROG:
SS (1) PSTG (18)
```

2. John Gregory Morris, Jr.

```
SS 1 /C?
USER:
morris jg jr (au)
PROG:
SS (1) PSTG (5)
```

3. Robin Johnson

```
SS 1 /C?
USER:
johnson r (au)
PROG:
SS (1) PSTG (11)
```

4. Jerry P. Gerard, Ph.D.

```
SS 1 /C?
USER:
gerard jp (au)
PROG:
SS (1) PSTG (1)
```

5. Joyce M. Hamilton-Miller

```
SS 1 /C?
USER:
hamilton-miller jm (au)
PROG:
SS (1) PSTG (7)
```

6. David J. Elpern, M.D.

```
SS 1 /C?
USER:
elpern dj (au)
PROG:
SS (1) PSTG (1)
```

C. NEIGHBORING AUTHORS' NAMES: THE NEIGHBOR COMMAND

The NLM does not verify the spelling nor control the format of any author's name. Authors' names are taken directly from the journal article and entered into MEDLINE in the 'last name with initials' format. As a result, an author's name may exist in more than one format in a database, e.g., with either one or two initials, with or without JR., etc.

MEDLINE contains an **index** of all terms that may be used for searching including authors' names. The **NEIGHBOR (NBR)** command is used to scan or browse this index. NBRing the index can help you determine the format to use in searching for an author.

To NEIGHBOR an author's name in the database index, you would enter the command in the following manner:

```
SS 1 /C?
USER:
nbr jackson (au)
PROG:

SELECT #  POSTINGS  TERM
  1          1     JACKS T
  2          4     JACKSCH R
  3          3     JACKSON A      <-- First author with the last
  4          1     JACKSON AA         name of Jackson.
  5          4     JACKSON AC
UP N OR DOWN N OR ENTER A SELECT COMMAND.
USER:
```

The program displays five terms from the alphabetic listing of authors' names with the name closest to the one you entered in the third position. Several options are available to you at this point. If you want to **continue scanning the index** you would respond to the 'UP N OR DOWN N' portion of the computer response. "**UP**" with a number would take you toward 'A' in the alphabet, or, "**down**" with a number would take you toward 'Z' in the alphabet. You are limited to 10 terms at a time. For example:

```
USER:
down 10              <-- 'Down' can be abbreviated to 'd'.
PROG:

SELECT #  POSTINGS  TERM
  6          1     JACKSON AD
  7          1     JACKSON AE
  8          1     JACKSON AH
  9          1     JACKSON AL
 10          1     JACKSON AO
 11          4     JACKSON AP
 12          4     JACKSON AR
 13          1     JACKSON AS
 14          1     JACKSON AW
 15          1     JACKSON AW 3D
UP N OR DOWN N OR ENTER A SELECT COMMAND.
```

Remember, when you NEIGHBOR a term, you are only browsing the index; you are not retrieving the postings which are displayed for each term. If, however, you want to retrieve a particular term from the list, you have the option to do so with the **SELECT** command. This list of terms is referred to as the "SELECT LIST." For example, if you wanted to retrieve the articles written by **JACKSON AC**, you would respond to the program as follows:

```
UP N OR DOWN N OR ENTER A SELECT COMMAND.
USER:
select 5          <-- 'Select' can be abbreviated to 'sel'.
PROG:
SS (1) PSTG (4)
```

'JACKSON AC' was the fifth term from the SELECT LIST. The SELECT LIST will remain intact until you choose to remove it and subsequent terms will be added as you continue to use the NEIGHBOR command throughout your search session. A maximum of 140 terms can be retained in your SELECT LIST. If you wish to delete the SELECT LIST, use the command **PURGESELECT** (PURGESEL) at any USER: cue.

If you wanted to choose more than one author from the list, you may do so by SELECTing several numbers separated by commas, or you may SELECT a range of numbers. For example:

```
USER:
sel 3, 12   <-- This would retrieve the postings for JACKSON A and
PROG:                   for JACKSON AR.
SS (2) PSTG (7)

SS 3 /C?
USER:
sel 8-10    <-- This would retrieve the postings for JACKSON AH,
PROG:           JACKSON AL, and JACKSON AO.
SS (3) PSTG (3)
```

If the author's name does not exist in the database as you entered it with the NEIGHBOR command, the name that is closest to it alphabetically will display in the third position. For example:

```
USER:
nbr jackson ci (au)
PROG:

SELECT #  POSTINGS  TERM
 16          1     JACKSON CF
 17          3     JACKSON CG
 18          4     JACKSON CL     <-- If present in the database,
 19          1     JACKSON CP         JACKSON CI would display here.
 20          2     JACKSON CV
UP N OR DOWN N OR ENTER A SELECT COMMAND.
```

Notice that the SELECT #'s continue to increment (16-20, etc.).

D. TRUNCATING AUTHORS' NAMES

After NEIGHBORing the author's name in the index, you may decide to search for all authors listed with the same last name. For example, to search for any author with the last name of ZIPSER (regardless of any first and middle initials), enter the following:

```
SS 1 /C?
USER:
zipser : (au)
```

The colon (:) is a **truncation** symbol which, in this case, allows for any number of characters and spaces to follow the author's last name.

Because more than one ZIPSER is found in MEDLINE, you will receive a Multi-Meaning (MM) message and a display of a list of authors' names:

```
PROG:
MM (ZIPSER :) (3)
              1  ZIPSER B (AU)
              2  ZIPSER D (AU)
              3  ZIPSER RD (AU)
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
2, 3          <-- You may select by number the author(s) you want
PROG:             from those displayed above.
SS (1) PSTG (8)
```

You have retrieved 8 Postings for articles written by either ZIPSER D or ZIPSER RD.

If you want to search for all of the ZIPSERs displayed by the Multi-Meaning message, respond in the following manner:

```
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
all
PROG:
SS (1) PSTG (9)  <-- There are 9 articles written by the three
                     authors whose last name is ZIPSER.
```

Answering **none** to the Multi-Meaning message will return you to the Search Statement USER: cue.

When truncating, if there are more than 10 authors with the same last name, a display of the names will not be shown. Instead, the Multi-Meaning message will indicate the number of possibilities and offer you the choice of searching 'ALL OR NONE' of those. For example:

```
SS 1 /C?
USER:
richardson : (au)  <-- Searching for articles by any author with
PROG:                  the last name of RICHARDSON.
MM (RICHARDSON :) (92)
ALL OR NONE?       <-- 92 authors have been found in MEDLINE
                       with the last name of RICHARDSON.
USER:
all
PROG:
SS (1) PSTG (207)    <-- 207 articles have been written by the
                         92 authors named RICHARDSON.
```

If you know an **author's first name only**, you can also choose to search for all authors with the same last name and first initial. For example:

```
SS 1 /C?
USER:
jackson a: (au)
PROG:
MM (JACKSON A:) (13)
ALL OR NONE?

USER:
all                <-- Searching for articles written by any
PROG:                  author whose last name is JACKSON and
SS (1) PSTG (24)       first initial is A.
```

HOW TO AVOID THE MULTI-MEANING (MM) MESSAGE

When using the colon (:) truncation symbol with an author's last name, you frequently receive a Multi-Meaning message for that name. If you have already NEIGHBORed the index and made the decision to search for all the variations of a particular name, you can avoid the Multi-Meaning message. To do so, type the word ALL before entering the author's name (with or without initials) followed by a space and the truncation symbol and then the qualifier (AU). For example:

```
SS 1 /C?
USER:
all zipser : (au)
PROG:              <-- Note that it does not list all of the
SS (1) PSTG (9)        authors with the last name ZIPSER.
```

This search has retrieved 9 articles written by any author whose last name is ZIPSER.

E. TO VIEW CITATIONS ONLINE: THE PRINT COMMAND

To look at the citations you have retrieved, enter the PRINT (abbreviated PRT) command:

```
SS 1 /C?
USER:
greene gw (au)
PROG:
SS (1) PSTG (1)

SS 2 /C?
USER:
print                <--  PRINT (PRT) in MEDLINE displays the Unique
PROG:                     Identifier, Author(s), Title, and Source
                          (i.e., journal title abbreviation, date of
1                         publication, volume, issue, and pagination)
UI  - 88189561            of each citation.
AU  - Greene GW
AU  - Smiciklas-Wright H
AU  - Scholl TO
AU  - Karp RJ
TI  - Postpartum weight change: how much of the weight gained in
      pregnancy will be lost after delivery?
SO  - Obstet Gynecol 1988;71(5):701-7
```

To see only the titles of the article(s), enter PRINT TI (or PRT TI) at the USER: cue.

```
SS 1 /C?
USER:
greene gw (au)
PROG:
SS (1) PSTG (1)

SS 2 /C?
USER:
print ti
PROG:

1
TI  - Postpartum weight change: how much of the weight gained in
      pregnancy will be lost after delivery?
```

In MEDLINE, the PRINT BROWSE (PRT BR) command will also display only the titles for the retrieved citations. Both PRINT TI and PRINT BR are economical ways to look through your retrieval. When issuing either of these commands, you do not pay for the characters which are printed; you pay only for the computer processing time.

To see the unique identifier, author(s), title, source, and abstract of each citation, enter PRINT AR (PRT AR) at the USER: cue.

```
SS 1 /C?
USER:
greene gw (au)
PROG:
SS (1) PSTG (1)

SS 2 /C?
USER:
print ar          <-- Standardized PRINT command to display the
PROG:                 unique identifier, author(s), title, source,
                      and abstract (if present) for each citation.
1
UI  - 88189561
AU  - Greene GW
AU  - Smiciklas-Wright H
AU  - Scholl TO
AU  - Karp RJ
TI  - Postpartum weight change: how much of the weight gained in
      pregnancy will be lost after delivery?
AB  - In a large sample (N = 7116) of women who had two
      pregnancies within six years, the 50th percentile of weight
      gain between pregnancies was 2 lb (0.9 kg). Weight gain in
      pregnancy, week of registration, cigarette smoking, race,
      percent of ideal body weight, complications of pregnancy,
      and marital status in the first pregnancy, as well as
      breast-feeding in the hospital and interval between the two
      pregnancies, correlated significantly with interpregnancy
      weight change, and explained 24% of the variance (P less
      than .0001). Weight gain in the first pregnancy alone
      explained 21% of the variance in weight change between
      pregnancies. After adjustment of the effects of other
      variables on weight change, weight gains in pregnancy of 20
      lb (9.1 kg) or more were statistically significant (P less
      than .05); the more weight a woman gained above 20 lb (9.1
      kg), the more she retained by the start of her next
      pregnancy.
SO  - Obstet Gynecol 1988 May;71(5):701-7
```

If you want to specify the number of titles or citations to be printed from your retrieval, add a number to your print request. For example:

```
USER:
print 5 ti    <-- Will print only the first five titles.
```

Citations most recently added to the database will appear first in the PRINT display. More detailed information on PRINTing can be found on page 103 of the GUIDE.

F. COMBINING AUTHORS' NAMES

A search may require the use of more than one author's name. To combine authors' names, use the Boolean logical operators AND and OR.

1. LOGICAL OPERATOR **AND**

When you use the Boolean logical operator AND, you will retrieve only citations with both (or all if more than two are entered) authors' names present in the unit record. For example, if you are looking for articles co-authored by both A. M. Kligman and R. M. Lavker, enter the following:

```
SS 1 /C?
USER:
kligman am (au) and lavker rm (au)
PROG:
SS (1) PSTG (1)

SS 2 /C?
USER:
print
PROG:

1
UI  - 88154573
AU  - Lavker RM
AU  - Kligman AM
TI  - Chronic heliodermatitis: a morphologic evaluation of
      chronic actinic dermal damage with emphasis on the role of
      mast cells.
SO  - J Invest Dermatol 1988 Mar;90(3):325-30
```

2. LOGICAL OPERATOR **OR**

The Boolean logical operator OR is used to search for articles written by one author or by another. For example, if you are looking for articles written by either A. M. Kligman or R. M. Lavker, enter the following:

```
SS 1 /C?
USER:
kligman am (au) or lavker rm (au)
PROG:
SS (1) PSTG (3)
```

Note that there are a total of three articles written by either author; however, there was only one article which they co-authored.

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G. AUTHORS' NAMES - EXERCISE

Search for articles written by the following authors. Consider NBRing (NEIGHBORing) the Author index before searching.

1. Michael Debakey

2. Nathan Aaronson

3. Co-authored by Peter H. Stone and Barbara E. Sobel

4. Peter H. Stone or Barbara E. Sobel

Suggested answers are on the following pages.

AUTHORS' NAMES - EXERCISE -- SUGGESTED ANSWERS

1. Michael Debakey

```
SS 1 /C?
USER:
nbr debakey m (au)    <--  Specify (au) to restrict the NBR to the
PROG:                      Author portion of the index.

SELECT #  POSTINGS   TERM
  1          1     DEBAENE B
  2          1     DEBAKEY L          A middle initial is shown for
  3          3     DEBAKEY ME  <--    M. Debakey and is needed for
  4          1     DEBANDI HO         searching.
  5          2     DEBARD ML
UP N OR DOWN N OR ENTER A SELECT COMMAND.

USER:
sel 3      <-- 'SEL 3' (or SELECT 3) is used to select the term
PROG:          DEBAKEY ME from the index for retrieval.
SS (1) PSTG (3)
```

If you had not NBRed the Author index first, an alternate way of searching for Michael Debakey would be the following:

```
SS 1 /C?
USER:
debakey m: (au)       <-- The colon is used to allow for any initial
PROG:                     following the 'M'.  In this case, there is
SS (1) PSTG (9)           only one author with the last name of
                          Debakey and the first initial M (as was seen
                          from the portion of the index displayed
                          above).
```

2. Nathan Aaronson

```
SS 1 /C?
USER:
nbr aaronson n (au)
PROG:

SELECT #  POSTINGS  TERM
  1          1     AARONSON LR
  2          4     AARONSON LS      NBRing the author index shows that
  3          1     AARONSON N  <-- there are two authors whose last name
  4          4     AARONSON NK      is AARONSON and first initial is N.
  5          2     AARONSON PI
UP N OR DOWN N OR ENTER A SELECT COMMAND.

USER:
sel 3, 4              <-- If you are unsure of which AARONSON is the
PROG:                     author you want, SELECT both of them.  By
SS (1) PSTG (5)           browsing the titles you may be able to discern
                          which is the author you sought.
```

Again, an alternate way to search for Nathan Aaronson if you did not NBR the Author index first would be to enter the following:

```
SS 1 /C?
USER:
aaronson n: (au)      <-- The colon can be used to allow for anything
PROG:                     to follow the initial 'N'.
MM (AARONSON N:) (2)
            1  AARONSON N (AU)
            2  AARONSON NK (AU)
SPECIFY NUMBERS, ALL, OR NONE-

USER:
all
PROG:
SS (1) PSTG (5)       <-- Note the same retrieval as above.
```

If you wanted to avoid the multi-meaning message, you could search for Nathan Aaronson as follows:

```
SS 1 /C?
USER:
all aaronson n: (au)  <-- The ALL instruction overrides the multi-
PROG:                     meaning message and will retrieve any author
SS (1) PSTG (5)           with the last name AARONSON and the first
                          initial of 'N'.
```

3. Peter H. Stone and Barbara E. Sobel

```
SS 1 /C?
USER:
stone ph (au) and sobel be (au)  <-- Combine the two authors' names
PROG:                                with the logical operator AND to
SS (1) PSTG (2)                      find articles written by both.

SS 2 /C?
USER:
print ti
PROG:

1
TI  - Electrocardiographic diagnosis of myocardial infarction in the
      presence of complete left bundle branch block.

2
TI  - Myocardial infarct extension: occurrence, outcome, and risk
      factors in the Multicenter Investigation of Limitation of
      Infarct Size.
```

4. Peter H. Stone or Barbara E. Sobel

```
SS 1 /C?
USER:
stone ph (au) or sobel be (au)  <-- Combine the two authors' names
PROG:                               with the logical operator OR to
SS (1) PSTG (19)                    find articles written by either.
```

Note that the total number of articles written by either author is 19, but together they have shared the authorship on only two articles as seen in the search above.

SEARCHING BY SUBJECT

A. MeSH HEADINGS (MH)

The most common way to search a subject in MEDLINE is to use the **Medical Subject Headings (MeSH)**. MeSH is the NLM authority list for subject analysis of the biomedical literature. It may be referred to as a controlled vocabulary or thesaurus. MeSH is a distinctive feature of MEDLINE which gives uniformity and consistency to the indexing of the literature. MeSH can lead you from a synonym to the preferred MeSH heading, give information about the use of the MeSH heading, and show relationships between MeSH headings.

1. MEDICAL SUBJECT HEADINGS, ANNOTATED ALPHABETIC LIST

MeSH headings (MH) can be found in the printed publication Medical Subject Headings, Annotated Alphabetic List. A sample entry follows:

```
1]  OBSESSIVE-COMPULSIVE DISORDER
2]   F3.709.438.180.490+
3]   do not use /drug eff /physiol /rad eff
4]   81; was NEUROSES, OBSESSIVE-COMPULSIVE 1963-80; OBSESSION
     was see under NEUROSES, OBSESSIVE-COMPULSIVE 1963-78
5]   use OBSESSIVE-COMPULSIVE DISORDER to search NEUROSES,
     OBSESSIVE-COMPULSIVE back thru 1966 & OBSESSION 1966-78
6]   see related
          COMPULSIVE BEHAVIOR
     X    NEUROSIS, OBSESSIVE-COMPULSIVE
     XU   TRICHOTILLOMANIA
     XR   COMPULSIVE BEHAVIOR
```

LEGEND

1] Main Heading - Any MeSH heading which is used in online searching. Also called "major descriptor."

2] Tree Number - An alphanumeric string indicating the location of the MeSH heading in the Tree Structures. The + (plus symbol) indicates there are indented headings in the Trees at this number.

3] Indexing Annotation - Brief informative note for the guidance of indexers and searchers.

4] History Note - Information on the year the MeSH heading entered the system and any heading changes.

5] Online Note - Information provided for online searchers.

6] Cross References - Related terms to consider when searching.

BOVINE KUNITZ PANCREATIC TRYPSIN INHIBITOR see KALLIKREIN-TRYPSIN INACTIVATOR
D8.373.745.896.584 D12.776.950.500

BOVINE LEUKEMIA VIRUS
B4.909.574.807.250 B4.909.777.731.250
do not use /blood-csf-urine /cytol; infection: coord NIM with LEUKEMIA, EXPERIMENTAL (IM) or LEUKEMIA (IM)
(77); was see under LEUKOVIRUSES 1978-80, was see under LEUKEMOGENIC VIRUSES 1977, was CATTLE LEUKEMIA VIRUS see under LEUKEMOGENIC VIRUSES 1975-76
use BOVINE LEUKEMIA VIRUS to search CATTLE LEUKEMIA VIRUS back thru 1975
see under RETROVIRIDAE
X CATTLE LEUKEMIA VIRUS

BOVINE PAPILLOMATOSIS VIRUS
B4.909.204.585.460.200 B4.909.574.204.711.460.200
do not use /blood-csf-urine /cytol; infection: coord NIM with TUMOR VIRUS INFECTIONS (IM)
(75); was see under PAPILLOMA VIRUSES 1975-77
see under PAPILLOMAVIRUSES
X BOVINE PAPULAR DERMATITIS VIRUS
X BOVINE WART VIRUS

BOVINE PAPULAR DERMATITIS VIRUS see BOVINE PAPILLOMATOSIS VIRUS
B4.909.204.585.460.200 B4.909.574.204.711.460.200

BOVINE ULCERATIVE MAMMILLITIS VIRUS
B4.909.204.382.110
do not use /blood-csf-urine /cytol; infection: coord NIM with HERPESVIRUS INFECTIONS (IM)
(75); was see under HERPESVIRUSES 1975-80; ALLERTON VIRUS INFECTIONS was indexed under LUMPY SKIN DISEASE 1970-76
search ALLERTON VIRUS INFECTIONS under LUMPY SKIN DISEASE 1970-76
see under HERPESVIRIDAE
X ALLERTON VIRUS
X BHM VIRUS
X BOVINE HERPES MAMMILLITIS VIRUS
X BOVINE HERPESVIRUS 2

BOVINE VIRUS DIARRHEA-MUCOSAL DISEASE
C2.782.930.140 C22.196.106
do not use /vet; don't forget also CATTLE (NIM) & check tag ANIMAL; DF: BVD DIS
(72)
see under CATTLE DISEASES

BOVINE WART VIRUS see BOVINE PAPILLOMATOSIS VIRUS
B4.909.204.585.460.200 B4.909.574.204.711.460.200

BOWEN'S DISEASE
C4.557.117.490.318 C17.882.137
IM; coord with SKIN NEOPLASMS (IM)
(75); was see under CARCINOMA, EPIDERMOID 1969-80
search CARCINOMA, SQUAMOUS CELL 1969-74
see under CARCINOMA, SQUAMOUS CELL

BOWMAN-BIRK SOYBEAN TRYPSIN INHIBITOR see TRYPSIN INHIBITOR, BOWMAN-BIRK SOYBEAN
D8.373.745.896.700 D12.776.950.900

BOXING
I3.450.642.845.210
no qualif; for inj, coord IM with ATHLETIC INJURIES (IM) + specific inj (IM)

BP VIRUSES see ADENOVIRUSES, HUMAN
B4.909.204.97.170

BRACES
E7.858.442.743.319
only /adv eff /class /stand /vet; orthodontic brackets goes under ORTHODONTIC APPLIANCES

BRACHIAL ARTERY
A7.231.114.139
do not use /blood supply

BRACHIAL-BASILAR INSUFFICIENCY SYNDROME see SUBCLAVIAN STEAL SYNDROME
C10.228.140.300.459.832 C14.907.253.459.832

BRACHIAL PLEXUS
A8.796.828.169+
do not use /innerv

BRACHIOCEPHALIC TRUNK see INNOMINATE ARTERY
A7.231.114.468

BRACHIOPODA see INVERTEBRATES
B1+

BRACHYDANIO see ZEBRAFISH
B2.493.200.244.828

BRACHYTHERAPY
E2.810.150
a type of radiother; only /adv eff /class /econ /hist /instrum /methods /psychol /stand /vet; curietherapy goes here
80
X IMPLANT RADIOTHERAPY
X PLAQUE THERAPY, RADIOISOTOPE
X RADIOISOTOPE BRACHYTHERAPY
X RADIOTHERAPY, INTERSTITIAL
X RADIOTHERAPY, INTRACAVITY
X RADIOTHERAPY, SURFACE

BRADYCARDIA
C14.280.67.319
TN 99: BRADYCARDIA vs HEART RATE

BRADYKININ
D12.644.320.169 D12.644.456.193
D12.776.641.650.90 D24.185.798.354.169
/biosyn /physiol permitted

●BRAIN
A8.186.211+
GEN; /anal = BRAIN CHEMISTRY; /blood supply: consider also CEREBROVASCULAR CIRCULATION, CEREBRAL ARTERIES, CEREBRAL VEINS, CRANIAL SINUSES; /cytol: do not routinely convert to NEURONS; /drug eff: consider terms in D14 & D15; /inj = BRAIN INJURIES; do not use /innerv; /surg: consider also PSYCHOSURGERY; /transpl: permitted only NIM for invertebrates; for vertebrates index as NERVE TISSUE /transpl (IM) or NEURONS /transpl (IM) + BRAIN (NIM) or specific part of brain /transpl (IM or NIM); inflammation = ENCEPHALITIS & its specifics; infarct = CEREBRAL INFARCTION; malacia = ENCEPHALOMALACIA; brain-isolated, encéphale isolé, cerveau isolé: index DECEREBRATE STATE; consider also terms under CEREBR- & ENCEPHAL-
/enzymology was BRAIN ENZYMOLOGY 1964-65; /physiology was BRAIN PHYSIOLOGY 1965; BRAIN ELECTROPHYSIOLOGY was heading 1964-65
X CEREBRUM

BRAIN ABSCESS
C1.539.26.194 C10.228.140.116
C10.228.228.114
SUBDURAL EMPYEMA is also available
X ABSCESS, CEREBRAL

BRAIN CHEMISTRY
G6.184.202
only /drug eff /rad eff; TN 29: differentiate from BRAIN /metab; consider also /anal with specific parts of the brain but probably as NIM with BRAIN CHEMISTRY (IM) if site is merely locational & illustrative
65
XR CHEMISTRY

BRAIN CONCUSSION
C21.866.460.152.194 C21.866.974.150
brain contusion goes here & do not coord with CONTUSIONS: see Dorland under concussion of the brain
65(63)

BRAIN DAMAGE, CHRONIC
C10.228.140.140+

BRAIN DEATH
C23.240.169
no qualif
72(69)

BRAIN DISEASES
C10.228.140+
GEN; prefer specifics; inflamm dis = ENCEPHALITIS & its specifics; cerebromalacia = ENCEPHALOMALACIA; infarct = CEREBRAL INFARCTION
XR ORGANIC MENTAL DISORDERS, PSYCHOTIC

+ INDICATES THERE ARE INDENTED DESCRIPTORS IN MESH TREE STRUCTURES AT THIS NUMBER

a. Searching With MeSH Headings

The NLM indexers scan the articles and assign the **most specific** MeSH heading(s) appropriate to describe each major concept completely. When there is no single specific MeSH heading to cover the concept, the indexer will use the closest, more general MeSH heading available. The indexer will assign as many MeSH headings as appropriate to cover the topics in the article (generally five to fifteen). The searcher should also select the most specific MeSH heading to cover their subject concept.

You should enter the MeSH heading online as the heading appears in the printed Annotated MeSH, including punctuation and spaces. For example:

```
SS 1 /C?
USER:
heart valve diseases    <-- No qualifier is needed when searching
PROG:                       MeSH headings.
SS (1) PSTG (160)
```

This retrieval of 160 represents all citations which have been indexed with the MeSH heading HEART VALVE DISEASES.

The following is an example of an incorrectly entered MeSH heading:

```
SS 1 /C?
USER:
heart vavle diseases    <-- Misspelled the word 'valve'.
PROG:
NP (HEART VAVLE DISEASES)
```

A NP (No Postings) Message resulted because the word 'valve' is misspelled.

If the word 'AND' is found within a MeSH heading, replace one of the characters of that word with a # sign. The # sign is the symbol of a single variable character. This is necessary because the system will interpret the word 'AND' as a Boolean logical operator. For example:

```
SS 1 /C?
USER:
stains a#d staining     <-- The # sign disguises the 'AND' so it
PROG:                       is not mistaken for the Boolean
SS (1) PSTG (712)           logical operator.
```

If this had been entered incorrectly as:

```
SS 1 /C?
USER:
stains and staining
PROG:
NP (STAINING)         <-- 'STAINING' is not a MeSH heading by
*NONE-                    itself, so No Postings is received.
                          *NONE means No Match between the terms.
```

b. NEIGHBORing MeSH Headings

The NEIGHBOR (NBR) command can be used to verify MeSH headings online. To do so, enter the command NBR (or NEIGHBOR) followed by the MeSH heading with the qualifier MH in parentheses. For example:

```
SS 1 /C?
USER:
nbr heart valve diseases (mh)    <-- Use the (MH) qualifier when
PROG:                                NBRing to limit to MeSH
                                     headings.
SELECT #  POSTINGS  TERM
  1         19     HEART SOUNDS
  2        185     HEART SURGERY
  3        160     HEART VALVE DISEASES
  4        357     HEART VALVE PROSTHESIS
  5         55     HEART VALVES
UP N OR DOWN N OR ENTER A SELECT COMMAND.

USER:
sel 3                    <-- Use the SELECT command to choose the
PROG:                        number corresponding to the MH you
SS (1) PSTG (160)            want to search.
```

c. Limiting Retrieval to the Main Point of the Article

To limit retrieval of a MeSH heading search to only those articles in which the MeSH heading is one of the main points of the article, place an * (asterisk) immediately in front of the heading. For example:

```
SS 1 /C?
USER:
*heart valve diseases
PROG:
SS (1) PSTG (70)
```

Notice that fewer citations are retrieved than in the previous search in which the MeSH heading was searched without the asterisk.

d. Specificity of MeSH Headings

It is possible to retrieve articles on individual types of heart valve diseases for which we have headings as well as for articles on the general topic. As a rule, **NLM indexers assign the most specific subject heading(s) available.**

For example, if an article discusses 'stenosis of the aortic valve', the MeSH heading assigned will not be the general heading HEART VALVE DISEASES, but instead will be to the more specific heading AORTIC VALVE STENOSIS.

e. Order Information

Order information for purchasing the most current edition of the Annotated Alphabetic List can be obtained from the MEDLARS Service Desk.

2. MEDICAL SUBJECT HEADINGS, TREE STRUCTURES

Each MeSH heading in the Annotated MeSH has at least one alphanumeric string known as a **Tree Number**, which is listed immediately below the heading. Often, a + (plus) sign will be found at the end of this number indicating that at least one more specific MeSH heading is indented under the given heading in the Medical Subject Headings, Tree Structures. For example:

HEART VALVE DISEASES
C14.280.484+

The Tree Structures is another publication used in searching MEDLINE. It is a publication which lists each MeSH heading, represented by its Tree Number(s), and is categorized by subject. The Trees are a rearrangement of the same MeSH headings found in the Annotated MeSH. MeSH headings in each subject category are arranged hierarchically from the most general term to the most specific term. For example:

CARDIOVASCULAR DISEASES	C14
HEART DISEASES	C14.280
.	
.	
.	
HEART VALVE DISEASES	C14.280.484
AORTIC VALVE INSUFFICIENCY	C14.280.484.95
AORTIC VALVE PROLAPSE	C14.280.484.110
AORTIC VALVE STENOSIS	C14.280.484.150
MITRAL VALVE INSUFFICIENCY	C14.280.484.461
MITRAL VALVE PROLAPSE	C14.280.484.505
MITRAL VALVE STENOSIS	C14.280.484.517
PULMONARY VALVE INSUFFICIENCY	C14.280.484.660
PULMONARY VALVE STENOSIS	C14.280.484.716
TRICUSPID VALVE INSUFFICIENCY	C14.280.484.856
TRICUSPID VALVE PROLAPSE	C14.280.484.870
TRICUSPID VALVE STENOSIS	C14.280.484.911

Notice that the length of the Tree Number extends with each new indention. The maximum number of allowable "extensions" is seven.

A sample page from the Tree Structures is on the following page.

SENSE ORGANS

SENSE ORGANS	A9		
EAR	A9.246	A1.456.313	
EAR, EXTERNAL	A9.246.272		
EAR CANAL	A9.246.272.396		
EAR CARTILAGES •	A9.246.272.405	A2.165.207	
EAR, MIDDLE	A9.246.397		
EAR OSSICLES	A9.246.397.247		
INCUS •	A9.246.397.247.362		
MALLEUS •	A9.246.397.247.524		
STAPES •	A9.246.397.247.806		
EUSTACHIAN TUBE	A9.246.397.369		
STAPEDIUS •	A9.246.397.727	A2.633.802	
TENSOR TYMPANI •	A9.246.397.749	A2.633.893	
TYMPANIC MEMBRANE	A9.246.397.873		
LABYRINTH	A9.246.631		
BASILAR MEMBRANE •	A9.246.631.125		
COCHLEA	A9.246.631.246		
COCHLEAR DUCT •	A9.246.631.246.292		
SPIRAL GANGLION •	A9.246.631.246.292.851	A8.796.214.	
STRIA VASCULARIS •	A9.246.631.246.292.876		
TECTORIAL MEMBRANE •	A9.246.631.246.292.906		
ORGAN OF CORTI	A9.246.631.246.577	A8.796.511.	
HAIR CELLS	A9.246.631.246.577.325	A8.796.511.	
HAIR CELLS, INNER •	A9.246.631.246.577.325.315	A8.796.511.	
LABYRINTH SUPPORTING CELLS •	A9.246.631.246.577.543	A11.436.495	
ROUND WINDOW •	A9.246.631.246.814		
SCALA TYMPANI •	A9.246.631.246.848		
SPIRAL LAMINA •	A9.246.631.246.930		
COCHLEAR AQUEDUCT •	A9.246.631.280		
ENDOLYMPHATIC DUCT •	A9.246.631.360		
ENDOLYMPHATIC SAC •	A9.246.631.360.701		
SACCULE AND UTRICLE	A9.246.631.800		
MACULAE, ACOUSTIC •	A9.246.631.800.576		
OTOLITHIC MEMBRANE •	A9.246.631.800.576.680		
VESTIBULAR APPARATUS	A9.246.631.909		
OVAL WINDOW •	A9.246.631.909.551		
SEMICIRCULAR CANALS	A9.246.631.909.663		
VESTIBULAR AQUEDUCT •	A9.246.631.909.957		
EYE	A9.371	A1.456.505.	
ANTERIOR EYE SEGMENT	A9.371.60		
ANTERIOR CHAMBER	A9.371.60.67		
AQUEOUS HUMOR	A9.371.60.67.70	A12.207.86	
ENDOTHELIUM, CORNEAL	A9.371.60.67.318	A9.371.60.	A10.272.491.
CILIARY BODY	A9.371.60.200		
CORNEA	A9.371.60.217		
CORNEAL STROMA •	A9.371.60.217.228		
DESCEMET'S MEMBRANE	A9.371.60.217.271		
ENDOTHELIUM, CORNEAL	A9.371.60.217.318	A9.371.60.	A10.272.491.
IRIS	A9.371.60.513		
PUPIL	A9.371.60.513.784		
TRABECULAR MESHWORK	A9.371.60.932		
CONJUNCTIVA	A9.371.192		
EYELIDS	A9.371.337	A1.456.505.	
EYELASHES	A9.371.337.338	A1.456.505.	A1.835.288.
MEIBOMIAN GLANDS •	A9.371.337.614	A10.336.827.	
LACRIMAL APPARATUS	A9.371.463	A10.336.422	
HARDERIAN GLAND •	A9.371.463.373		
NASOLACRIMAL DUCT •	A9.371.463.640		
LENS, CRYSTALLINE	A9.371.509		
LENS CAPSULE, CRYSTALLINE •	A9.371.509.155		
LENS CORTEX, CRYSTALLINE •	A9.371.509.225		
LENS NUCLEUS, CRYSTALLINE •	A9.371.509.670		
OCULOMOTOR MUSCLES	A9.371.613	A2.633.600	

a. To See the Tree Structures Online: The TREE Command

As an alternative to consulting the printed Tree Structures, you may display the tree structure for a MeSH heading online by using the **TREE** command. The display will consist of the MeSH heading one level more general than the one you have typed and all of the MeSH headings one level more specific. For example:

```
SS 1 /C?
USER:
tree face
PROG:

HEAD  A1.456                  <-- One level more general than FACE.
    FACE  A1.456.505
        CHEEK  A1.456.505.173
        CHIN  A1.456.505.259
        EYE  A1.456.505.420 (+)       <-- All the MeSH headings
        FOREHEAD  A1.456.505.580          one level more specific
        MOUTH  A1.456.505.631 (+)         than FACE.
        NOSE  A1.456.505.733
```

Those headings with a plus sign (+) after the tree number indicate that further indentations are found beneath them in the tree structure. In this example, EYE and MOUTH have more specific headings indented beneath them. To take it one step further, you may want to TREE one of these MeSH headings.

1) Multi-Meaning Message When Using the TREE Command

In some cases a MeSH heading may be assigned to more than one MeSH category or may sometimes appear in more than one position in the same category. When this occurs when you TREE a MeSH heading, a Multi-Meaning (MM) message will result. This message lists the tree numbers assigned to the heading.

```
SS 1 /C?
USER:
tree eye
PROG:
MM (EYE) (2)
  1   A1.456.505.420
  2   A9.371
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
```

The acceptable responses to the 'SPECIFY NUMBERS, ALL, OR, NONE' prompt are the following:

a) NUMBERS - enter the choice number(s) separated by commas (not the tree number), for the tree structure you want to display.

```
SS 1 /C?
USER:
tree eye
PROG:
MM (EYE)  (2)
 1    A1.456.505.420
 2    A9.371
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
1
PROG:

FACE  A1.456.505
   EYE  A1.456.505.420
       EYEBROWS  A1.456.505.420.338
       EYELIDS  A1.456.505.420.504 (+)
```

b) ALL - entering the word ALL will allow for the display of all of the tree numbers for the MeSH heading being "TREEd".

```
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
all
PROG:

FACE  A1.456.505
    EYE  A1.456.505.420
       EYEBROWS  A1.456.505.420.338
       EYELIDS  A1.456.505.420.504 (+)

SENSE ORGANS  A9
    EYE  A9.371
       ANTERIOR EYE SEGMENT  A9.371.60 (+)
       CONJUNCTIVA  A9.371.192
       EYELIDS  A9.371.337 (+)
       LACRIMAL APPARATUS  A9.371.463 (+)
       LENS, CRYSTALLINE  A9.371.509 (+)
       OCULOMOTOR MUSCLES  A9.371.613
       PIGMENT EPITHELIUM OF EYE  A9.371.670
       RETINA  A9.371.729 (+)
       SCLERA  A9.371.784
       UVEA  A9.371.894 (+)
       VITREOUS BODY  A9.371.943
```

Note the significant difference between the two tree structures.

c) NONE - entering the word NONE will cancel the request to tree the MeSH heading and you will be returned to the USER: cue.

```
SPECIFY NUMBERS, ALL, OR, NONE-
USER:
none

PROG:
SS 1 /C?
USER:
```

After using the TREE command or consulting the printed version of the Tree Structures, decide if you should include all or any of the more specific headings in your search.

b. To Increase Or Expand Retrieval: The EXPLODE Command

To search for all the articles that have been indexed with any of the **specific** HEART VALVE DISEASES headings listed in the Tree Structures, use the EXPLODE (EXP) command. This command instructs the computer to gather together the named MeSH heading with all of the more specific MeSH headings indented under that heading in the Tree Structures.

This saves the searcher the time and effort of typing in each heading individually combined with the Boolean logical operator OR.

```
SS 1 /C?
USER:
heart valve diseases
PROG:
SS (1) PSTG (160)
```

Note the difference in retrieval when you EXPLODE the same heading:

```
SS 2 /C?
USER:
exp heart valve diseases
PROG:
SS (2) PSTG (749)
```

Many more citations are retrieved in SS 2 than in SS 1 when the EXPLODE command is used because all of the specific types of HEART VALVE DISEASES are being simultaneously retrieved, not just the general heading.

The asterisk (*) can also be used with an EXPLODEd MeSH heading to limit the retrieval to only those articles in which any of the MeSH headings in that particular tree structure are one of the main points of the article.

```
SS 1 /C?
USER:
exp *heart valve diseases      <-- The asterisk always precedes
PROG:                              the MeSH heading.
SS (1) PSTG (541)
```

1) Multi-Meaning (MM) Message When Using the EXPLODE Command

If a MeSH heading is in more than one tree, and, therefore, has more than one tree number, you will receive a Multi-Meaning (MM) message in response to EXPloding that MeSH heading. It is recommended that you always look at the displays in the Tree Structures or use the online TREE command to determine the most suitable tree number for your use. For many MeSH headings the displays are identical; for others, the displays may be quite different (e.g., as shown with the heading EYE).

The interaction when EXPloding a MeSH heading with more than one tree number looks like the following:

```
SS 1 /C?
USER:
explode eye
PROG:
MM (EYE) (2)
              1  A1.456.505.420
              2  A9.371
NUMBER, NONE, OR EXPAND-
```

The acceptable answers to the 'NUMBER, NONE, OR EXPAND' prompt are:

a) NUMBER - Enter the choice number (not the tree number) of the tree structure you want included in your search. Only **one** number may be entered here. For example:

```
NUMBER, NONE, OR EXPAND-
USER:
1                        <-- In this case selecting #1 retrieves
PROG:                        articles indexed with headings from the
SS (1) PSTG (540)            A1.456.505 tree structure.
```

Notice the difference in retrieval if you selected the second tree number (A9.371):

```
USER:
2                        <-- In this case selecting #2 retrieves
PROG:                        articles indexed with headings from the
SS (1) PSTG (2830)           A9.371 tree structure.
```

The reason for this higher retrieval is that there are more terms indented under EYE in the A9.371 tree than there are in the A1.456.505 tree. See page 42 for the display of terms found in each tree structure.

b) NONE - enter the word NONE, and the system responds that the term does not post, and returns you to the same USER: cue.

```
USER:
none
PROG:
NP (EYE.: (MN))

SS 1 /C?
```

c) EXPAND - enter the word EXPAND, and a display of the MeSH headings one level more general than the one you are EXPloding will be shown for each of its tree numbers. For example:

```
NUMBER, NONE, OR EXPAND-
USER:
expand

PROG:

FACE
    A1.456.505

SENSE ORGANS
    A9
MM (EYE) (2)
NUMBER, NONE, OR EXPAND-
```

2) Avoiding the Multi-Meaning (MM) Message When EXPloding

The Multi-Meaning message can be avoided by EXPloding the desired tree number in place of the MeSH heading.

```
SS 1 /C?
USER:
exp a9.371          <-- The second tree number for EYE.
PROG:
SS (1) PSTG (2830)
```

An asterisk (*) can precede a tree number as well as a MeSH heading.

```
SS 1 /C?
USER:
exp *a9.371
PROG:
SS (1) PSTG (2072)
```

c. Pre-Explosions

Sixty-four MeSH headings requiring excessive computer time to EXPLODE in MEDLINE can be retrieved as "Pre-explosions." That is, all the citations that are retrieved by EXPloding these headings are already stored online. These Pre-explosions are identified by a bold, black dot (●) preceding the heading in the Annotated MeSH and the MeSH Tree Structures. A complete, current list can be found in the Introductory pages of Annotated MeSH and on page 48 of this Guide.

To search for a Pre-exploded MeSH heading, use the Pre-explosion name followed by the (PX) qualifier. The Pre-explosion name may differ slightly from the actual MeSH heading. If a Pre-explosion is available, use it rather than EXPloding the MeSH heading. You will receive the same retrieval and also save yourself a considerable amount of time. Note the difference:

```
SS 1 /C?
USER:
exp heart diseases
PROG:
TIME OVFLW: CONT? (Y/N)     <-- When the computer generates a
                                TIME OVERFLOW message, you are
USER:                           being asked if you want to
y                               continue searching. Answer 'Y'
PROG:                           or 'YES' to continue; 'N' or 'NO'
TIME OVFLW: CONT? (Y/N)         to stop.

USER:
y
PROG:
SS (1) PSTG (8236)
```

Compare the above interaction to the following strategy:

```
SS 1 /C?
USER:
heart diseases (px)
PROG:
SS (1) PSTG (8236)
```

The number of POSTINGS in your retrieval is the same, however, it takes much less computer time to process the same search.

Asterisks (*) can be used with Pre-explosions to retrieve only those citations with the MeSH headings as the main point of the articles.

```
SS 1 /C?
USER:
*heart diseases (px)      <-- The 'PX' qualifier must always be
PROG:                         included.
SS (1) PSTG (6912)
```

Note the retrieval is less now that this limiter has been placed on it.

Tree numbers may not be used when searching using Pre-explosions. The Pre-explosion name must always be used.

```
SS 1 /C?
USER:
c14.280.400 (px)          <-- This is the tree number for HEART
PROG:                         DISEASES. The correct entry is
NP (C14.280.400 (PX))         HEART DISEASES (PX).
```

If the word 'AND' is found within the Pre-explosion name, remember to disguise it by using the # sign. This will distinguish the word 'AND' from the Boolean logical operator 'AND'.

```
SS 1 /C?
USER:
signs a#d symptoms (px)
PROG:
SS (1) PSTG (9301)
```

d. Order Information

Order information for purchasing the most current edition of the Medical Subject Headings, Tree Structures can be obtained from the MEDLARS Service Desk.

AVAILABLE PRE-EXPLOSIONS, 1989

ABNORMALITIES
ANTIBIOTICS
ANTIBODIES
BACTERIA
BACTERIAL INFECTIONS
BEHAVIOR
BEHAVIOR A#D BEHAVIOR MECHANISMS
BEHAVIORAL A#D MENTAL DISORDERS
BIOCHEM PHENOM METAB
BLOOD PROTEINS
BRAIN
CARBOHYDRATES
CARDIOVASCULAR AGENTS
CARDIOVASCULAR DISEASES
CARDIOVASCULAR SYSTEM
CELLS
CENTRAL NERVOUS SYSTEM
CENTRAL NERVOUS SYSTEM DISEASES
CHEMISTRY, ANALYTICAL
CIRCULATORY, RESPIRATORY PHYSIOLOGY
DENTISTRY
DIAGNOSIS, LABORATORY
DIGESTIVE SYSTEM DISEASES
ENZYMES
EQUIPMENT A#D SUPPLIES
GASTROINTESTINAL DISEASES
GENETICS
HEALTH FACILITIES
HEALTH SERVICES
HEART DISEASES
HORMONES
IMMUNITY
IMMUNOLOGIC FACTORS
LIPIDS
MAMMALS
MENTAL DISORDERS
METABOLIC DISEASES
METALS
MISCELLANEOUS TECHNICS
MUSCULOSKELETAL DISEASES
NEOPLASMS
NERVOUS SYSTEM
NERVOUS SYSTEM DISEASES
NEUROLOGIC MANIFESTATIONS
ORGANIZATION A#D ADMINISTRATION
PHYSIOLOGY, GENERAL
PROTEINS
PSYCHOLOGIC PROCESSES PRINCIPLES
REPRODUCTION, UROGENITAL PHYSIOLOGY
RESPIRATORY TRACT DISEASES
RODENTIA
SIGNS A#D SYMPTOMS
SKIN DISEASES
STEROIDS
STOMATOGNATHIC DISEASES
SURGERY, OPERATIVE
UNITED STATES MC (as a MeSH Heading)
UNITED STATES (place of publication)
VASCULAR DISEASES
VERTEBRATE VIRUSES
VERTEBRATES
VIRUS DISEASES
VIRUSES
WOUNDS A#D INJURIES

New Pre-explosions may be added annually. Refer to the Introductory pages of the current year's Annotated MeSH for the most up-to-date list.

3. PERMUTED MeSH

The Permuted Medical Subject Headings is a computer-produced publication presenting an additional rearrangement of the MeSH headings found in the Annotated Alphabetic MeSH. Permuted MeSH lists each significant word that appears in every MeSH heading and, indented under that word, lists all the MeSH headings in which that word appears. It can be useful for the following purposes:

a. It expedites locating a multi-worded MeSH heading by any word in that MeSH heading. For example:

   If you were looking for 'hypertrophic stenosis', you could consult the Permuted MeSH under either 'hypertrophic' or 'stenosis' and you would find the MeSH heading 'IDIOPATHIC HYPERTROPHIC SUBVALVULAR STENOSIS'.

b. It permits identifying MeSH headings which may be related to the MeSH heading that you have in mind, but does not happen to start with the same word. For example:

   If you looked in the Permuted MeSH for headings with the word 'child' within them, you would find MeSH headings such as 'MOTHER-CHILD RELATIONS' as well as 'FATHER-CHILD RELATIONS'. Both could be related to your particular search.

c. It provides yet another source to consult when you are searching for an unfamiliar or complicated topic. If a searcher is not "familiar" with medical terminology in the format of the Medical Subject Headings of NLM, the Permuted MeSH may be the first publication to consult for vocabulary ideas.

Order information for purchasing the most current edition of the Permuted MeSH can be obtained from the MEDLARS Service Desk.

See the following page for sample portions from the Permuted MeSH.

SAMPLE ENTRIES FROM PERMUTED MeSH

IRRADIATION
FOOD IRRADIATION
LYMPHATIC IRRADIATION
LYMPHOID IRRADIATION see LYMPHATIC IRRADIATION
PITUITARY IRRADIATION
TOTAL BODY IRRADIATION see WHOLE BODY IRRADIATION
WHOLE BODY IRRADIATION

DISTRESS
ADULT RESPIRATORY DISTRESS SYNDROME see RESPIRATORY DISTRESS SYNDROME, ADULT
FETAL DISTRESS
RESPIRATORY DISTRESS SYNDROME
RESPIRATORY DISTRESS SYNDROME, ADULT

MUSCLES
FACIAL MUSCLES
INTERCOSTAL MUSCLES
LARYNGEAL MUSCLES see under MUSCLES
MASTICATORY MUSCLES
MIMETIC MUSCLES see FACIAL MUSCLES
MUSCLES
NECK MUSCLES see under MUSCLES
OCULOMOTOR MUSCLES
PALATAL MUSCLES see under MUSCLES
PAPILLARY MUSCLES
PECTORALIS MUSCLES
PHARYNGEAL MUSCLES see under MUSCLES
PTERYGOID MUSCLES see under MASTICATORY MUSCLES
RESPIRATORY MUSCLES
VENTILATORY MUSCLES see RESPIRATORY MUSCLES

VEINS
CEREBRAL VEINS
HEPATIC VEINS
JUGULAR VEINS
MESENTERIC VEINS
PULMONARY VEINS
RENAL VEINS
UMBILICAL VEINS
VARICOSE VEINS
VEINS

4. SUBHEADINGS USED WITH MeSH HEADINGS

You can limit your search to a specific aspect or facet of the topic by attaching a **subheading** to the MeSH heading. Seventy-seven subheadings are available, but not every subheading can be used with every MeSH heading. The lists of these subheadings with their abbreviations for searching can be found in the Introductory pages of the Annotated MeSH as well as on page 54 of this GUIDE.

To search using a subheading, enter the MeSH heading followed immediately by a slash followed by the two-letter abbreviation for the subheading. For example:

```
SS 1 /C?
USER:
heart valve diseases/pa     <-- pa = pathology
PROG:
SS (1) PSTG (21)
```

This indicates that 21 articles discuss the pathology of heart valve diseases, whereas, the example below shows 160 articles discuss any aspect of heart valve diseases.

```
SS 1 /C?
USER:
heart valve diseases
PROG:
SS (1) PSTG (160)
```

When limiting to the main point of the article, you can also use a MeSH/subheading combination. Remember to precede the MeSH heading with the asterisk. For example:

```
SS 1 /C?
USER:
*heart valve diseases/pa
PROG:
SS (1) PSTG (4)
```

Note the reduction in the number of postings when you use both "limiters" - the asterisk and the subheading. These four articles will discuss the pathology of heart valve diseases as the main point of the articles.

a. Using Multiple Suheadings

1) Subheadings Attached Separately

To search for a MeSH heading with more than one subheading, each subheading must be attached separately to the MeSH heading. For example, to search for both the pathology (pa) or the diagnosis (di) of heart valve diseases:

```
SS 1 /C?
USER:
heart valve diseases/pa or heart valve diseases/di
PROG:
SS (1) PSTG (50)
```

2) Using the SUBS APPLY Command

Alternatively, the SUBS APPLY command may be used to attach more than one subheading at the same time to a MeSH heading. SUBS APPLY takes the place of ORing together several subheadings attached to a particular MeSH heading. For example, the following example shows the use of the SUBS APPLY command to retrieve the same citations as the search strategy in #1).

```
SS 1 /C?
USER:
subs apply pa, di    <-- Separate subheadings with a comma.
PROG:
SUBHEADINGS ACCEPTED.

SS 1 /C?
USER:
heart valve diseases    <-- Enter the MeSH heading as usual.
PROG:
SS (1) PSTG (50)
```

The same 50 citations to articles concerning either the diagnosis or pathology of HEART VALVE DISEASES are retrieved.

Always remember to cancel the SUBS APPLY command at the next USER: cue with the SUBS CANCEL command.

```
SS 2 /C?
USER:
subs cancel
PROG:
SUBHEADINGS CANCELLED.
```

The SUBS CANCEL command only **cancels the attachment of subheadings to subsequent search statements.** It does not affect what has already been retrieved. It is important to cancel the SUBS APPLY command before searching further. Otherwise, the computer will attempt to keep "attaching" those subheadings to all other search input. This could result in irrelevant retrieval, or, more frequently, cause a No Postings (NP) message.

b. Subheading Groupings

Frequently, multiple subheadings are grouped together in a SUBS APPLY command due to their common subject matter. ADVERSE EFFECTS (AE), POISONING (PO), and TOXICITY (TO) are three such related subheadings. For example:

```
SS 1 /C?
USER:
subs apply ae, po, to  <-- Separate each subheading by a comma.
PROG:
SUBHEADINGS ACCEPTED.

SS 1 /C?
USER:
morphine
PROG:
SS (1) PSTG (54)          <-- Articles discussing either the
                              adverse effects, poisoning, or tox-
SS 2 /C?                      icity of MORPHINE.
USER:
subs cancel
PROG:
SUBHEADINGS CANCELLED.
```

Another group of subheadings commonly searched together are those dealing with 'therapy'. To look for general articles discussing any type of therapy or treatment for brain neoplasms, enter the following:

```
SS 1 /C?
USER:
subs apply dt, dh, rt, su, th   <-- dt = drug therapy; dh = diet
PROG:                               therapy; rt = radiotherapy;
SUBHEADINGS ACCEPTED.               su = surgery; th = therapy

SS 1 /C?
USER:
brain neoplasms
PROG:
SS (1) PSTG (296)

SS 2 /C?
USER:
subs cancel
PROG:
SUBHEADINGS CANCELLED.
```

Remember, if you search a MeSH heading/subheading combination that results in a No Postings (NP) message, consider using different subheading(s) or none at all.

A list of all of the subheadings (current for 1989) with their search abbreviations can be found on the following pages.

c. ALPHABETIC LIST OF SUBHEADINGS

SUBHEADING	ABBREVIATION FOR SEARCHING	ALLOWABLE CATEGORIES
abnormalities	ab	A (except A10-12,16); B2
administration & dosage	ad	D
adverse effects	ae	D; E; F4; H; J; and SMOKING+
analogs & derivatives	aa	D (except D8)
analysis	an	A; B (except B2); C4; D; G3; J+
anatomy & histology	ah	A; B1-2; B5-6
antagonists & inhibitors	ai	D
biosynthesis	bi	D
blood	bl	B2; C; D; F3; +
blood supply	bs	A (except A7, A11-12); C4
cerebrospinal fluid	cf	B2; C; D; F3; +
chemical synthesis	cs	D
chemically induced	ci	C; F3
classification	cl	A11; B-N
complications	co	C; F3
congenital	cn	C (except C16)
cytology	cy	A; B1; B3; B5-6 +
deficiency	df	D
diagnosis	di	C; F3
diagnostic use	du	D; H
diet therapy	dh	C; F3
drug effects	de	A; B (except B2); F1-2; G4-11+
drug therapy	dt	C; F3; SMOKING +
economics	ec	C; E; F3-4; G1-3; I2; J; L; N2-4;+
education	ed	E; F; G1-3; H-M; N1-2
embryology	em	A (except A11-12,16); B1-2,6; C
enzymology	en	A; B (except B2); C; F3
epidemiology	ep	C; F3; SMOKING +
ethnology	eh	C; F3; Z; +
etiology	et	C; F3
genetics	ge	B; C; D6; D8-13,24; F3 +
growth & development	gd	A (except A10-12,16); B; +
history	hi	C-F; G1-3; H-N
immunology	im	A-D; F3; +
injuries	in	A (except A10-12,16); B2
innervation	ir	A (except A8,10-12)
instrumentation	is	E (except E7); F2; F4
isolation & purification	ip	B1; B3-5; D
legislation & jurisprudence	lj	G2-3; I1-2; L; N2-4; SMOKING +
manpower	ma	E6; F4; G1-2; H-J; L; N2-4
metabolism	me	A-D; F3; +
methods	mt	E (except E7); F4; G1-3; H-J; L; N
microbiology	mi	A; B1-2; B6; C; F3; +
mortality	mo	C; E; F3-4; +
nursing	nu	C; E; F3
organization & administration	og	G2; I2; L; N2-4

+These subheadings may be used with other selected MeSH headings. Consult the Introductory pages of the Annotated MeSH for further details.

SUBHEADING	ABBREVIATION FOR SEARCHING	ALLOWABLE CATEGORIES
parasitology	ps	A; B1-2,6; C; F3; +
pathogenicity	py	B1,3-5
pathology	pa	A; C; F3; AGING+; SMOKING+
pharmacokinetics	pk	D
pharmacology	pd	D
physiology	ph	A; B; D; F1-2; +
physiopathology	pp	A; C; F3; SMOKING+
poisoning	po	D; J
prevention & control	pc	C; F1,3; G3; I1
psychology	px	C; E (except E7); F3; M; +
radiation effects	re	A; B; D; F1-2; G4-12; J
radiography	ra	A; C; F3
radionuclide imaging	ri	A; C; F3
radiotherapy	rt	C
rehabilitation	rh	C; E4; F3
secondary	sc	C4
secretion	se	A; C4; D
standards	st	D; E; F4; G1-3; H-J; L; N
statistics & numerical data	sn	E; F1-2,4; H-N; ACCIDENTS+
supply & distribution	sd	D; E; F4; H-J; L; N2-4
surgery	su	A; B2; C; F3
therapeutic use	tu	D; H
therapy	th	C; F3; SMOKING+
toxicity	to	D; J
transmission	tm	C
transplantation	tr	A
trends	td	E; F4; G1-3; I; L; N; SMOKING+
ultrastructure	ul	A (except A12); B1,3-6; C4 +
urine	ur	B2; C; D; F3; +
utilization	ut	E; G1-3; H-J; L; N
veterinary	ve	C (except C22); E; +

+These subheadings may be used with other selected MeSH headings. Consult the Introductory pages of the Annotated MeSH for further details.

d. Subheadings with EXPLODEd MeSH Headings

Subheadings or the SUBS APPLY command can be used with EXPLODEd MeSH headings. For example, to look for articles concerning the pathology of all kinds of heart valve diseases:

```
SS 1 /C?
USER:
exp heart valve diseases/pa     <-- pa = pathology
PROG:
SS (1) PSTG (91)
```

To look for articles concerning the pathology of all types of arthritis, enter the following:

```
SS 1 /C?
USER:
exp arthritis/pa
PROG:
SS (1) PSTG (249)
```

Subheadings (or the SUBS APPLY command) cannot be used with Pre-explosion names. You must EXPLODE the MeSH heading with the subheading attached. For example, to search for surgery involved with all types of heart diseases, enter the following:

```
SS 1 /C?
USER:
exp heart diseases/su
PROG:
SS (1) PSTG (932)
```

Although HEART DISEASES (PX) is a Pre-explosion name, subheadings must be attached directly to the EXPLODEd MeSH heading. The following would not work:

** WRONG WAY!! **

```
SS 1 /C?
USER:
heart diseases/su (px)
PROG:
NP (HEART DISEASES/SU (PX))
```

5. COMBINING MeSH HEADINGS

A search may necessitate the use of more than one MeSH heading to define a topic fully. To combine the MeSH headings, use the Boolean logical operators AND, OR, and AND NOT.

a. Logical Operator AND

When you use the Boolean logical operator AND, you will retrieve citations with all of the MeSH headings on the same unit record. For example, if you are looking for articles on 'postoperative complications following a mastectomy', you would enter the following:

```
SS 1 /C?
USER:
mastectomy and postoperative complications
PROG:
SS (1) PSTG (17)
```

These 17 articles will have both MeSH headings on every unit record.

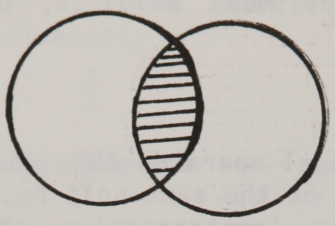
You may want to consider entering each MeSH heading in separate search statements. This way the individual term can be used later in conjunction with other headings. For example:

```
SS 1 /C?
USER:
mastectomy
PROG:
SS (1) PSTG (207)              <-- Allows you to see the number
                                   of postings each heading
SS 2 /C?                           retrieves individually.
USER:
postoperative complications
PROG:
SS (2) PSTG (3194)

SS 3 /C?
USER:
1 and 2          <-- Enter the Search Statement number only -
PROG:                no SS should precede the numbers.
SS (3) PSTG (17)
```

Your retrieval will be exactly the same using either technique.

Use of the Boolean logical operator AND is represented by the following Venn diagram. The shaded area represents the articles which are indexed to both MASTECTOMY and POSTOPERATIVE COMPLICATIONS.



MASTECTOMY POSTOPERATIVE COMPLICATIONS

In addition, you can use the logical operator AND to combine other data elements. For example, to search for general articles about mastectomy that are written by K. I. Bland:

1)
```
SS 1 /C?
USER:
mastectomy
PROG:
SS (1) PSTG (207)

SS 2 /C?
USER:
1 and bland ki (au)
PROG:
SS (2) PSTG (2)
```

2)
```
SS 1 /C?
USER:
mastectomy and bland ki (au)
PROG:
SS (1) PSTG (2)
```

If there are no articles available with both components of your search request, you will receive a 'NONE' message. There is no match between the terms. For example:

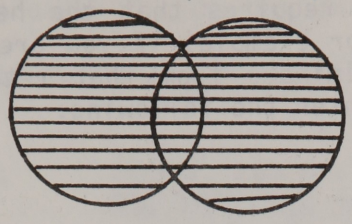
```
SS 1 /C?
USER:
mastectomy and stress
PROG:
*NONE-
```

b. Logical Operator OR

The Boolean logical operator OR is used to coordinate related MeSH headings that you want to use in your search. If you are looking for articles discussing either CISPLATIN or DOXORUBICIN, you need to use the logical operator OR to retrieve articles indexed with one or the other of these MeSH headings. For example:

```
SS 1 /C?
USER:
cisplatin or doxorubicin
PROG:
SS (1) PSTG (1130)
```

Use of the logical operator OR is represented by the following Venn diagram. The shaded area represents those articles which are indexed to either CISPLATIN or DOXORUBICIN (or both).

CISPLATIN  DOXORUBICIN

It is recommended in searches which use both the logical operator AND and the logical operator OR that the ORed components be entered in a separate search statement. For example, if you were looking for the relationship between MASTECTOMY and either CISPLATIN or DOXORUBICIN, enter the following:

```
SS 1 /C?
USER:
cisplatin or doxorubicin
PROG:
SS (1) PSTG (1130)

SS 2 /C?
USER:
mastectomy
PROG:
SS (2) PSTG (207)

SS 3 /C?
USER:
1 and 2
PROG:
SS (3) PSTG (8)
```

When used in the same search statement, the Boolean logical operator AND is processed before the logical operator OR.

DANGLING OR

Be careful when using ANDs and ORs in the same search statement. Notice what happens below:

```
SS 1 /C?
USER:
cisplatin or doxorubicin and mastectomy
          \__________/\__________/
PROG:           This part is processed before the OR.
SS (1) PSTG (717)
```

Note the difference in retrieval! In this example, your retrieval (717) is much larger than the 8 postings which had previously been retrieved in the example above. You have retrieved all articles about the relationship of DOXORUBICIN and MASTECTOMY as well as all articles about CISPLATIN by itself. The CISPLATIN has not been connected with MASTECTOMY! This creates what is called a 'Dangling OR' effect.

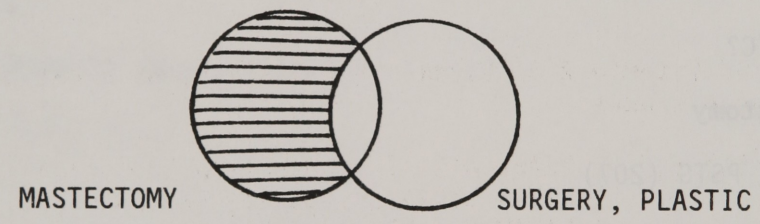
c. Logical Operator AND NOT

The Boolean logical operator AND NOT is used to make certain a concept is not included in a search. It requires that the heading entered not be present on the unit record. For example, if you are looking for articles on MASTECTOMY, but want to eliminate from that retrieval those articles dealing with PLASTIC SURGERY, enter the following:

```
SS 1 /C?
USER:
mastectomy and not surgery, plastic
PROG:
SS (1) PSTG (84)
```

Caution should be taken in using the Boolean logical operator AND NOT to avoid losing some potentially useful and relevant retrieval.

Use of the logical operator AND NOT is represented by the following Venn diagram. The shaded area represents the articles which are indexed to MASTECTOMY but not to PLASTIC SURGERY.



d. Continuing Input of a Search

Boolean logical operators also allow you to continue entering search terms in a single search statement although you may be approaching the end of the line on which you are typing. To receive a continuation prompt, end the line with the logical operator. For example:

```
SS 1 /C?
USER:
heart valve diseases or heart failure, congestive or
PROG:
CNT 1              <-- No new SS is given; only a continuation
                       prompt for the current SS #.
USER:
heart surgery or heart rupture
PROG:
SS (1) PSTG (1680)
```

e. Combining MeSH Headings - Exercise

Use the correct Boolean logical operators (AND, OR, AND NOT) to combine the given MeSH headings in order to retrieve citations on the following topics:

1. Low birth weight of infants in relation to social and economic conditions.

   Use MeSH Headings:
   INFANT, LOW BIRTH WEIGHT
   SOCIOECONOMIC FACTORS (can be EXPLODEd)

2. Leukemia (as the main point of the article) in adults over age 50.

   Use MeSH Headings:
   LEUKEMIA (can be EXPLODEd)
   MIDDLE AGE
   AGED

3. Relationship of Vitamin A or Vitamin B deficiency with various types of heart or liver diseases.

   Use MeSH Headings:
   HEART DISEASES (is a Pre-Explosion)
   LIVER DISEASES (can be EXPLODEd)
   VITAMIN A DEFICIENCY
   VITAMIN B DEFICIENCY (can be EXPLODEd)

4. Amniocentesis in the first six months of pregnancy.

   Use MeSH Headings:
   PREGNANCY TRIMESTER, FIRST
   PREGNANCY TRIMESTER, SECOND
   AMNIOCENTESIS

5. Head or spinal cord injuries caused by gunshot, stabbing, or automobile accidents. No case reports are to be included.

   Use MeSH Headings:
   HEAD INJURIES (can be EXPLODEd)
   SPINAL CORD INJURIES (can be EXPLODEd)
   WOUNDS, PENETRATING (can be EXPLODEd)
   ACCIDENTS, TRAFFIC
   CASE REPORT

Combining MeSH Headings - Exercise -- Suggested Answers

1. Low birth weight of infants in relation to social and economic factors.

```
SS 1 /C?
USER:
infant, low birth weight
PROG:
SS (1) PSTG (301)

SS 2 /C?
USER:
exp socioeconomic factors
PROG:
MM (SOCIOECONOMIC FACTORS) (2)
             1  I1.880.840
             2  N1.824
NUMBER, NONE, OR EXPAND-

USER:
2              <-- The N1 tree has a larger number of headings indented
PROG:              under it in the Tree Structures.
SS (2) PSTG (1972)

SS 3 /C?
USER:
1 and 2
PROG:
SS (3) PSTG (25)

SS 4 /C?
USER:
prt 5 ti
PROG:

1
TI  - Rehospitalization of very-low-birth-weight infants.

2
TI  - The influence of work on the outcome of low-risk pregnancies.

3
TI  - Very low birth weight infants at 8 and 11 years of age: role of
      neonatal illness and family status.

4
TI  - The enigma of preterm birth.

5
TI  - The effect of cocaine abuse on birth weight and gestational age.
```

2. Leukemia (as the main point of the article) in adults over age 50.

SS 1 /C?
USER:
exp *leukemia
PROG:
SS (1) PSTG (2044)

SS 2 /C?
USER:
1 and middle age
PROG:
SS (2) PSTG (472)

SS 3 /C?
USER:
1 and aged
PROG:
SS (3) PSTG (298)

SS 4 /C?
USER:
2 or 3
PROG:
SS (4) PSTG (545)

SS 5 /C?
USER:
prt 5 ti
PROG:

1
TI - Myelogenous leukemia and electric blanket use.

2
TI - [Clinical study on the effect of natural alpha-interferon (HLBI) in the treatment of adult T-cell leukemia]

3
TI - [Clinical studies of natural interferon alpha (HLBI) in chronic myelogenous leukemia--a multi-institutional cooperative study in Japan]

4
TI - Next-of-kin attitudes regarding participation in an epidemiologic case-control study.

5
TI - Extramedullary disease in myelodysplastic syndromes.

3. Relationship of Vitamin A or Vitamin B deficiency to various types of heart or liver diseases.

SS 1 /C?
USER:
heart diseases (px) <-- The Pre-explosion should be used in place of EXPloding the heading.
PROG:
SS (1) PSTG (8236)

SS 2 /C?
USER:
exp liver diseases
PROG:
SS (2) PSTG (3525)

SS 3 /C?
USER:
1 or 2
PROG:
SS (3) PSTG (11693)

SS 4 /C?
USER:
vitamin a deficiency or exp vitamin b deficiency
PROG:
SS (4) PSTG (202)

SS 5 /C?
USER:
3 and 4
PROG:
SS (5) PSTG (10)

SS 6 /C?
USER:
prt 4 ti
PROG:

1
TI - Serum vitamin A deficiency and increased intrahepatic expression of cytokeratin antigen in alcoholic liver disease.

2
TI - [The physiological role of L-carnitine in the human body: causes and effects of its deficiency]

3
TI - Shoshin beriberi: a fulminant beriberi heart disease.

4
TI - [Cardiac beriberi of fulminating course (letter)]

4. Amniocentesis in the first 6 months of pregnancy.

SS 1 /C?
USER:
pregnancy, trimester, first or pregnancy, trimester, second
PROG:
SS (1) PSTG (272)

SS 2 /C?
USER:
1 and amniocentesis
PROG:
SS (2) PSTG (8)

SS 3 /C?
USER:
prt ti
PROG:

1
TI - Maternal serum alpha-fetoprotein levels in second trimester.

2
TI - First trimester chorionic villus sampling versus mid-trimester genetic amniocentesis--preliminary results of a controlled prospective trial.

3
TI - Genetic amniocentesis at 14 weeks or less.

4
TI - Genetic amniocentesis in twin pregnancies.

5
TI - Severe Rh isoimmunization--current methods of in utero diagnosis and treatment.

6
TI - Amniotic fluid alpha-fetoprotein and acetylcholinesterase in early genetic amniocentesis.

7
TI - Intrauterine growth retardation in the first trimester associated with triploidy.

8
TI - Questionable role of amniocentesis in the etiology of amniotic band formation. A case report.

5. Head or spinal cord injuries caused by gunshot, stabbing, or automobile accidents. No case reports are to be included.

SS 1 /C?
USER:
exp head injuries
PROG:
SS (1) PSTG (959)

SS 2 /C?
USER:
1 or exp spinal cord injuries
PROG:
SS (2) PSTG (1293)

SS 3 /C?
USER:
exp wounds, penetrating or accidents, traffic
PROG:
SS (3) PSTG (691)

SS 4 /C?
USER:
2 and 3
PROG:
SS (4) PSTG (131)

SS 5 /C?
USER:
4 and not case report
PROG:
SS (5) PSTG (81)

SS 6 /C?
USER:
prt 4 ti
PROG:

1
TI - [Etiology of the neurastheniform psychosyndrome following injuries of the cervical spine, including cervicocephalic acceleration trauma]

2
TI - Adolescents with closed head injuries. A report of initial cognitive deficits.

3
TI - Results and prognostic factors in penetrating ocular injuries with retained intraocular foreign bodies.

4
TI - California mandatory seat belt law: the effect of recent legislation on motor vehicle accident related maxillofacial injuries.

6. USE OF MeSH PUBLICATIONS IN DESIGNING A SEARCH STRATEGY

The following ten steps summarize the search process when using MeSH headings, including the use of the MeSH publications (Annotated, Tree Structures, and Permuted MeSH).

1. Find the heading by using:
   a. Annotated MeSH, Permuted MeSH, or **NBR** the heading online.

2. Read the annotation for the heading in Annotated MeSH.

3. Check the tree number in Annotated MeSH.

4. If the tree number has a plus (+) sign, consult the Tree Structures or use the **TREE** command online to view the list of specific headings that fall within the tree.

5. Check the list of subheadings to see if there are any applicable to your search. Is that subheading "allowable" with your MeSH heading?

6. Decide if you should EXPLODE the MeSH heading and/or use any subheadings.

7. Sketch out your strategy incorporating Boolean logical operators before you go online. Consider alternate strategies for increasing or limiting retrieval (use of the asterisk (*), add a more specific MeSH heading, etc.).

8. Log in and execute the search strategy online.

9. Browse a few titles of the retrieved citations. Consider scanning some of their associated MeSH headings for possible incorporation into your strategy.

10. Modify your search strategy, if necessary, and re-execute the search, and then print out the final retrieval.

7. MeSH SUMMARY

The following shows the various approaches you can use when searching with MeSH headings. Note the differences in retrieval.

HEADING	POSTINGS	
HEART DISEASES	450	
*HEART DISEASES	296	<-- * = central point
EXP HEART DISEASES	8236	<-- EXP = explode
HEART DISEASES (PX)	8236	<-- PX = Pre-explosion
EXP *HEART DISEASES	6912	
*HEART DISEASES (PX)	6912	
HEART DISEASES/SU	45	<-- SU = surgery
*HEART DISEASES/SU	28	
EXP HEART DISEASES/SU	932	
EXP *HEART DISEASES/SU	572	

USING SUBHEADINGS

Subheadings may be attached individually to MeSH headings or with the SUBS APPLY command.

SS 1 /C?	HEART DISEASES/SU	45 POSTINGS
SS 2 /C?	HEART DISEASES/DT	26 POSTINGS
SS 3 /C?	HEART DISEASES/TH	34 POSTINGS
SS 4 /C?	1 OR 2 OR 3	104 POSTINGS

COMPARE TO:

SS 1 /C?	SUBS APPLY SU, DT, TH	
SS 1 /C?	HEART DISEASES	104 POSTINGS
SS 2 /C?	SUBS CANCEL	

8. SELECTING AND COMBINING MeSH HEADINGS - EXERCISE

Using the MeSH publications, select the appropriate combinations of MeSH headings or MeSH heading/subheading combinations for the following search topics:

1) Motor neuron disease.

2) Metastases of cancer of the mouth or pharynx to the jaw.

3) Use of aspirin in the treatment of arthritis, limited to arthritis as the one of the main points of the article.

4) Narcotic or alcohol addiction among various groups of health care providers.

5) Tobacco smoke as a cause of lung cancer.

SELECTING AND COMBINING MESH HEADINGS - EXERCISE -- Suggested Answers

1) Motor neuron disease.

SS 1 /C?
USER:
motor neurons and neuromuscular diseases <-- The annotation in the
PROG: Annotated MeSH instructs you
SS (1) PSTG (58) to use this combination.

SS 2 /C?
USER:
prt 5 ti
PROG:

1
TI - Nerve conduction studies in upper limbs of patients with cervical spondylosis and motor neurone disease.

2
TI - Progressive neuronopathy in the cairn terrier [letter]

3
TI - [Clinical application of the F-wave in various pathological conditions of the peripheral nervous system]

4
TI - Painless weakness of the leg [letter]

5
TI - Progressive weakness in infancy and childhood.

2) Metastases of cancer of the mouth or pharynx to the jaw.

```
SS 1 /C?
USER:
exp mouth neoplasms
PROG:
MM (MOUTH NEOPLASMS) (2)
              1  C4.588.443.591  <-- Consult the Tree Structures to
              2  C7.465.565           see which tree to EXPLODE.
NUMBER, NONE, OR EXPAND-
USER:
1
PROG:
SS (1) PSTG (533)

SS 2 /C?
USER:
exp pharyngeal neoplasms
PROG:
MM (PHARYNGEAL NEOPLASMS) (3)
              1  C4.588.443.665.710
              2  C7.550.745
              3  C9.775.549
NUMBER, NONE OR EXPAND-
USER:
1
PROG:
SS (2) PSTG (106)

SS 3 /C?
USER:
1 or 2
PROG:
SS (3) PSTG (603)

SS 4 /C?
USER:
3 and exp jaw neoplasms/sc   <-- SC = secondary.  Use this subheading
PROG:                            to note the area of metastasis.
MM (JAW NEOPLASMS) (3)
              1  C4.588.149.450
              2  C5.500.499
              3  C7.320.515
NUMBER, NONE, OR EXPAND-
USER:
1
PROG:
SS (4) PSTG (3)
```

SAMPLE TITLES:

Metastatic bronchial carcinoid tumor of the soft palate: report of a case.

Lower lip carcinoma. Infiltration of the mandible along the mental nerve.

3) Use of aspirin in the treatment of arthritis, limited to arthritis as one of the main points of the article.

```
SS 1 /C?
USER:
subs apply ad, tu        <-- AD = Administration and Dosage; TU =
PROG:                        Therapeutic Use.
SUBHEADINGS ACCEPTED.

SS 1 /C?
USER:
aspirin
PROG:
SS (1) PSTG (190)

SS 2 /C?
USER:
subs cancel              <-- Always cancel the subheadings when finished
PROG:                        searching with them.
SUBHEADINGS CANCELLED.

SS 2 /C?
USER:
exp *arthritis/dt        <-- The (*) asterisk can be used to limit to the
PROG:                        main point of the article.
SS (2) PSTG (204)            DT = Drug Therapy.

SS 3 /C?
USER:
1 and 2                  <-- The logical operator AND connects the terms.
PROG:
SS (3) PSTG (2)

SS 4 /C?
USER:
prt -2                   <-- To selectively print just one record from
PROG:                        the retrieval, precede the citation number
                             with a hyphen.
2
UI  - 88277421
AU  - Kishore V
TI  - Antiinflammatory activities of copper-aspirinate and aspirin in
      adjuvant arthritic rats.
SO  - Res Commun Chem Pathol Pharmacol 1988 May;60(2):257-60
```

4) Narcotic and alcohol addiction among various groups of health care providers.

```
SS 1 /C?
USER:
exp physicians
PROG:
MM (PHYSICIANS) (2)
            1  M1.526.485.810
            2  N2.350.759
NUMBER, NONE, OR EXPAND-
USER:
1
PROG:
SS (1) PSTG (612)

SS 2 /C?
USER:
exp nurses
PROG:
MM (NURSES) (2)
            1  M1.526.485.650
            2  N2.350.630              All groups are EXPLODEable.
NUMBER, NONE, OR EXPAND-
USER:
1
PROG:
SS (2) PSTG (760)

SS 3 /C?
USER:
exp dentists
PROG:
MM (DENTISTS) (2)
            1  M1.526.485.330
            2  N2.350.283
NUMBER, NONE, OR EXPAND-
USER:
1
PROG:
SS (3) PSTG (196)

SS 4 /C?
USER:
1 or 2 or 3          <-- Use the logical operator OR to combine the
PROG:                    three groups of health professionals.
SS (4) PSTG (1533)

SS 5 /C?
USER:
exp substance dependence
PROG:
SS (5) PSTG (1299)
```

4) Continued

```
SS 6 /C?
USER:
4 and 5
PROG:
SS (6) PSTG (26)

SS 7 /C?
USER:
prt 10 br          <-- In MEDLINE, 'PRT BR' is the same as 'PRT TI'.
PROG:                  Printing titles only is an economical way to
                       review citations.

1
TI  - Recognizing and helping alcoholics.

2
TI  - Prevalence and recognition of alcohol abuse in a primary care
      population.

3
TI  - P.R.N. success story.

4
TI  - The impaired physician and dentist: the role of peer assistance.

5
TI  - Shattered dreams.

6
TI  - Avoiding medico-legal complications when prescribing controlled
      substances.

7
TI  - Smoking cessation strategies and evaluation.

8
TI  - Co-dependence and nursing.

9
TI  - Chemical abuse and co-dependence.

10
TI  - Available support for chemically dependent nurses: is it
      comprehensive enough?
```

5) Tobacco smoke as a cause of lung cancer.

```
SS 1 /C?
USER:
exp lung neoplasms/et              <-- ET = etiology.
PROG:
MM (LUNG NEOPLASMS) (2)
            1  C4.588.894.797.520
            2  C8.381.540
NUMBER, NONE, OR EXPAND-
USER:
1
PROG:
SS (1) PSTG (128)

SS 2 /C?
USER:
tobacco and smoke          <-- The annotation under 'SMOKE' in MeSH
PROG:                          instructs you  to use this combination of
SS (2) PSTG (31)               MeSH headings to search for tobacco smoke.

SS 3 /C?
USER:
2 or smoking or tobacco smoke pollution     <-- Other related MeSH
PROG:                                           headings.
SS (3) PSTG (1292)

SS 4 /C?
USER:
1 and 3
PROG:
SS (4) PSTG (57)

SS 5 /C
USER:
prt 4 ti
PROG:

1
TI  - [Lung tumors and occupational exposure in an industrial area of
      Northern Italy]

2
TI  - Continuing high lung cancer mortality among ex-amosite asbestos
      factory workers and a pilot study of individual anti-smoking
      advice.

3
TI  - Lung cancer and air pollution in an industrial city--a
      geographical analysis.

4
TI  - Air pollution and lung cancer mortality in Harris County, Texas,
      1979-1981.
```

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B. TEXT WORDS (TW)

1. SEARCH FORMAT

Text words are the single terms that appear in the title and/or abstract of the article. They provide an alternate approach to subject searching and will generally be used in searching when there are no MeSH headings available for a concept or if the existing MeSH headings are not specific enough. Searching with Text Words can lead you to appropriate MeSH headings when you are uncertain of those headings.

Unlike searching for MeSH headings, two conventions must be observed when searching Text Words:

a. Text Words must be qualified with the (TW) qualifier. This qualifier is necessary to indicate to the system that you are searching a Text Word as opposed to a MeSH heading. The qualifier may appear either after each Text Word or before an entire search statement.

```
SS 1 /C?
USER:
caffeine (tw)              <-- (TW) = Text Word.
PROG:
SS (1) PSTG (267)
```

This indicates that there are 267 citations which have the word 'CAFFEINE' in either the title or in the abstract.

```
SS 1 /C?
USER:
caffeine          <-- When no qualifier is used, the term will be
PROG:                 searched as a MeSH heading.
SS (1) PSTG (233)
```

This indicates that there are 233 citations which have been indexed with the MeSH heading 'CAFFEINE'.

Text Words should not be used as a substitute for MeSH headings.

b. Text Words must be single words; multi-word concepts may only be searched by using the Boolean logical operator AND to combine two (or more) single Text Words in a search statement. For example:

```
SS 1 /C?
USER:
agent (tw) and orange (tw)
PROG:
SS (1) PSTG (12)
```

If a multi-word concept is searched without ANDing the single Text Words together (e.g., AGENT ORANGE (TW)), a No Postings (NP) message will be received.

2. QUALIFICATION

Text Words may be "pre-qualified" at the beginning of the entire search statement or they may be "post-qualified" with the (TW) qualifier after each word within the statement.

a. Pre-qualification

Using the (TW) qualifier at the beginning of the entire search statement eliminates the necessity of typing the qualifier more than once. For example:

```
SS 1 /C?
USER:
(tw) snout and suffocation
PROG:
SS (1) PSTG (1)
```

The (TW) qualifier may only precede the entire statement. It may never precede individual Text Words in the middle of the search statement. For example:

```
SS 1 /C?
USER:
(tw) snout and (tw) suffocation
PROG:
NP ((TW) SUFFOCATION (TW))
*NONE-
```

b. Post-qualification

Post-qualification requires that the (TW) qualifier be typed after entering each single Text Word within a search statement. For example:

```
SS 1 /C?
USER:
snout (tw) and suffocation (tw)
PROG:
SS (1) PSTG (1)
```

Remember, if a Text Word is entered without the (TW) qualifier, it will be searched as a MeSH heading. If the term does not exist as a MeSH heading, you will receive a No Postings (NP) message. For example:

```
SS 1 /C?
USER:
snout and suffocation (tw)  <-- The first (TW) is missing.
PROG:
NP (SNOUT)      <-- 'SNOUT' does not exist as a MeSH
*NONE-              heading, so you receive No Postings.
```

3. HOW TEXT WORD SEARCHING DIFFERS FROM MeSH HEADING SEARCHING

Text Word (TW) searching differs from using MeSH headings in the following ways:

a. Text Words are always single words; MeSH headings can be multi-word concepts.

b. The asterisk (*) may not be used with Text Words for indicating that the topic be the main point of the article.

c. The EXPLODE command used with MeSH headings may not be used with Text Words.

d. Subheadings can only be attached to MeSH headings, never to Text Words.

e. Text Words are not controlled, i.e., their use depends entirely on the author's use of them in the title or abstract. Consider the following when searching with Text Words: variant spellings, synonyms, adjective and noun forms. Combine the various terms with the logical operator OR for maximum retrieval.

f. No punctuation or special characters should be used when searching for Text Words. For example, a search for 'USHER'S SYNDROME':

```
SS 1 /C?
USER:
(tw) usher and syndrome
PROG:
SS (1) PSTG (4)
```

Note that the apostrophe (') "s" has been dropped. No punctuation may be used when searching Text Words.

4. WHEN TO CONSIDER USING TEXT WORDS IN YOUR SEARCH

a. "Buzzwords" or Relatively New Concepts

Text Words can be used to search for new concepts, "buzzwords" or other terms which are not likely to be MeSH headings. For example:

```
SS 1 /C?
USER:
heimlich (tw) and maneuver (tw)
PROG:
SS (1) PSTG (2)
```

b. MeSH Headings Not Specific Enough - To Limit Retrieval

Text Words can be used to search for concepts which are not covered specifically enough by the MeSH vocabulary. First, locate the most appropriate MeSH heading for your concept; it will probably be broader than what you are seeking. Search for that heading. Consider using the EXPLODE command or the asterisk (*). Then limit that retrieval by more specific Text Word(s). For example, to search for 'SPONTANEOUS HYPERTENSION':

```
SS 1 /C?
USER:
exp hypertension          <-- Closest MeSH heading for concept.
PROG:                         'HYPERTENSION' is EXPLODEable.
SS (1) PSTG (2722)

SS 2 /C?
USER:
spontaneous (tw)          <-- More specific Text Word.
PROG:
SS (2) PSTG (2387)

SS 3 /C?
USER:
1 and 2                   <-- Combine MH with TW for most precise
PROG:                         retrieval.
SS (3) PSTG (33)
```

c. To Increase or Expand Your MeSH Heading Search

Text Words can be used to increase your retrieval on a subject beyond what would be retrieved by use of MeSH headings alone. For example:

```
SS 1 /C?
USER:
chronic disease     <-- This MeSH heading is a very general one
PROG:                   that would only appear on citations about
SS (1) PSTG (1936)      the general concept of 'chronic diseases',
                        it would not be present on articles about a
SS 2 /C?                particular type of chronic disease, e.g.,
USER:                   chronic kidney disease.
chronic (tw)
PROG:
SS (2) PSTG (6701)  <-- Many more citations have the word
                        'CHRONIC' either in the title or the
SS 3 /C?                abstract.
USER:
1 or 2
PROG:
SS (3) PSTG (7245)   <-- ORing the concepts together creates a
                         much larger set of citations. The Text
                         Word 'CHRONIC' greatly expanded the MeSH
                         heading search.
```

d. To Lead You to MeSH Headings

Text Words can be used to obtain ideas for the correct MeSH heading or for other related headings. If you are unable to find the appropriate heading from Annotated MeSH, try a Text Word search. From the search retrieval, print out a sampling of titles with MeSH headings to find the best approach. For example, searching for 'MORNING SICKNESS':

```
SS 1 /C?
USER:
(tw) morning and sickness
PROG:
SS (1) PSTG (3)

SS 2 /C?
USER:
prt 2 ti, mh          <-- Print the titles with the MeSH headings
PROG:                     to determine the most appropriate MH.

1
TI  - P6 acupressure reduces morning sickness.
MH  - *Acupuncture
MH  - Female
MH  - Human
MH  - Pregnancy
MH  - Pregnancy Complications/*PREVENTION & CONTROL
MH  - Prospective Studies
MH  - Random Allocation
MH  - Support, Non-U.S. Gov't
MH  - Vomiting/*PREVENTION & CONTROL

2
TI  - Acupressure and morning sickness [editorial]
MH  - *Acupuncture
MH  - Female
MH  - Human
MH  - Pregnancy
MH  - Pregnancy Complications/*PREVENTION & CONTROL
MH  - Vomiting/*PREVENTION & CONTROL
```

In this case, the MeSH headings 'VOMITING' and 'PREGNANCY' appear to be the preferred terms. Modify your search by using that combination of MeSH headings. For example:

```
SS 2 /C?
USER:
vomiting and pregnancy          <-- Could also have used the MeSH
PROG:                               Heading 'PREGNANCY COMPLICA-
SS (2) PSTG (12)                    TIONS', but 'PREGNANCY' will
                                    provide a broader approach.
```

The retrieval can be combined with the results of SS 1 increasing the size of the relevant citations.

5. Terms Not Able to Be Searched as Text Words

There are two types of terms you are not able to search as Text Words. These are:

a. Numerals

Free-standing numbers, i.e., numbers with spaces surrounding the number, cannot be searched as Text Words. For example:

```
SS 1 /C?
USER:
(tw) icrf and 159
PROG:
NP (159 (TW))
*NONE-
```

b. Stopwords

Stopwords are common words which are found on the "Stopword List" (see the entire list on the following page). They may be present in a title or in an abstract, but, because of their frequency of use, they are not able to be searched as Text Words. For example:

```
SS 1 /C?
USER:
(tw) adverse and effects
PROG:
NP (EFFECTS (TW))
*NONE-
```

Because 'EFFECTS' is on the Stopword List, it receives a No Postings (NP) message, even though it may appear in numerous titles and/or abstracts.

STOPWORD LIST

A
ABOUT
ABS
ACCORDINGLY
AFFECT
AFFECTED
AFFECTING
AFFECTS
AFTER
AGAIN
AGAINST
ALL
ALMOST
ALREADY
ALSO
ALTHOUGH
ALWAYS
AMONG
AN
AND
ANOTHER
ANY
ANYONE
APPARENTLY
ARE
ARISE
AS
ASIDE
AT
AWAY
BE
BECAME
BECAUSE
BECOME
BECOMES
BEEN
BEFORE
BEING
BETWEEN
BIOL
BOTH
BRIEFLY
BUT
BY
CAME
CAN
CANNOT
CERTAIN
CERTAINLY
CHEM
COPYRIGHT
COULD
DID
DIFFERENT
DO
DOES
DONE
DUE
DURING
EACH
EFFECT
EFFECTS
EITHER
ELSE
ENOUGH
ESPECIALLY
ETC
EVER
EVERY
FOLLOWING
FOR
FOUND
FROM
FURTHER
GAVE
GETS
GIVE
GIVEN
GIVING
GONE
GOT
HAD
HARDLY
HAS
HAVE
HAVING
HERE
HOW
HOWEVER
IF
IMMEDIATELY
IMPORTANCE
IMPORTANT
IN
INTO
IS
IT
ITS
ITSELF
JUST
KEEP
KEPT
KG
KM
KNOWLEDGE
LARGELY
LIKE
MADE
MAINLY
MAKE
MANY
MAY
MG
MIGHT
ML
MORE
MOST
MOSTLY
MUCH
MUG
MUST
NEARLY
NECESSARILY
NEITHER
NEXT
NO
NONE
NOR
NORMALLY
NOS
NOT
NOTED
NOW
OBTAIN
OBTAINED
OF
OFTEN
ON
ONLY
OR
OTHER
OUGHT
OUR
OUT
OVERALL
OWING
PARTICULARLY
PAST
PERHAPS
PLEASE
POORLY
POSSIBLE
POSSIBLY
POTENTIALLY
PREDOMINANTLY
PRESENT
PREVIOUSLY
PRIMARILY
PROBABLY
PROMPT
PROMPTLY
QUICKLY
QUITE
RATHER
READILY
REALLY
RECENTLY
REFS
REGARDING
REGARDLESS
RELATIVELY
RESPECTIVELY
RESULTED
RESULTING
RESULTS
SAID
SAME
SEEM
SEEN
SEVERAL
SHOULD
SHOW
SHOWED
SHOWN
SHOWS
SIGNIFICANTLY
SIMILAR
SIMILARLY
SINCE
SLIGHTLY
SO
SOME
SOMETIME
SOMEWHAT
SOON
SPECIFICALLY
STATE
STATES
STRONGLY
SUBSTANTIALLY
SUCCESSFULLY
SUCH
SUFFICIENTLY
THAN
THAT
THE
THEIR
THEIRS
THEM
THEN
THERE
THEREFORE
THESE
THEY
THIS
THOSE
THOUGH
THROUGH
THROUGHOUT
TO
TOO
TOWARD
UNDER
UNLESS
UNTIL
UP
UPON
USE
USED
USEFULLY
USEFULNESS
USING
USUALLY
VARIOUS
VERY
WAS
WERE
WHAT
WHEN
WHERE
WHETHER
WHILE
WHO
WHOSE
WHY
WIDELY
WILL
WITHIN
WITHOUT
WOULD
YET

6. NEIGHBORING TEXT WORDS

Remember, there is no control over the format, the spelling, or the endings that a Text Word might have because the terms are entered exactly as written by the author in the title and/or abstract. If no abstract exists, Text Words are retrieved from the title only. To verify the existence and/or format of Text Words in the index, use the **NEIGHBOR (NBR)** command.

```
SS 1 /C?
USER:
nbr standard (tw)     <-- Use the qualifier (TW) to limit your NBR
PROG:                     to limit your NBR to Text Words.

SELECT #  POSTINGS   TERM
  1          2     STANCHION
  2         81     STAND
  3       3463     STANDARD
  4         13     STANDARDBRED
  5          2     STANDARDBREDS
UP N OR DOWN N OR ENTER A SELECT COMMAND.

USER:
down 10
PROG:

SELECT #  POSTINGS   TERM
  6         13     STANDARDISATION
  7          8     STANDARDISE
  8         77     STANDARDISED
  9          2     STANDARDISING
 10          1     STANDARDIZABLE
 11        193     STANDARDIZATION
 12          1     STANDARDIZATIONS
 13         37     STANDARDIZE
 14        692     STANDARDIZED
 15         20     STANDARDIZING
UP N OR DOWN N OR ENTER A SELECT COMMAND.

USER:
down 5
PROG:

SELECT #  POSTINGS   TERM
 16          1     STANDARDLY
 17        567     STANDARDS
 18          3     STANDBY
 19          1     STANDEN
 20          1     STANDER
UP N OR DOWN N OR ENTER A SELECT COMMAND.

USER:
sel 3, 17
PROG:
SS (1) PSTG (3947)
```

As a result of NEIGHBORing a Text Word, you may see other terms to incorporate into your search. For example, note the various forms of the word 'STANDARD' that have been displayed in the previous example.

7. TRUNCATION

Because of the variety of endings and spellings that authors use in the words in their titles and abstracts, consider using TRUNCATION in your Text Word searches. If you NEIGHBOR a term that have has five possible endings attached to the root word, you can either SELECT those five from the NEIGHBOR display, or, you can use the **colon (:)** truncation symbol to retrieve all five at the same time. For example:

```
SS 1 /C?
USER:
threat: (tw)
PROG:
MM (PERSPIR:) (6)
              1  THREAT (TW)
              2  THREATEN (TW)
              3  THREATENED (TW)
              4  THREATENING (TW)
              5  THREATENS (TW)
              6  THREATS (TW)
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
all
PROG:
SS (1) PSTG (589)
```

Instead of typing ALL in response to the above message, you could select specific numbers representing the terms you want. Separate the numbers by a comma. For example, to select 'THREAT' or 'THREATS', enter the following:

```
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
1, 6
PROG:
SS (1) PSTG (132)
```

a. Avoiding the Multi-Meaning (MM) Message When Truncating

The Multi-Meaning (MM) message can be avoided by using the word **ALL** with the Text Word. Use ALL with caution and use a qualifier after the term. For example:

```
SS 1 /C?
USER:
all threat: (tw)
PROG:
SS (1) PSTG (589)
```

b. Judicious Use of Truncation

Think carefully about where to place the colon (:) truncation symbol. If you truncate a term too near the beginning without NEIGHBORing first to see what the potential retrieved terms will be, you could obtain a high number of irrelevant postings. For example:

```
SS 1 /C?
USER:
weight: (tw)              <-- Looking for information on "weight".
PROG:
MM (WEIGHT:) (11)         <-- Eleven words start with the root
ALL OR NONE?                  WEIGHT.
```

If there are more than ten possible words that could be retrieved, no list of terms will display. You receive only the option to retrieve ALL of them, or NONE of them.

When there are so many choices and you have not previously NBRed the term, answer 'NONE' to return to the next USER: cue. It is not wise to search for so many "unknown" terms.

```
USER:
none
PROG:

SS 1 /C?
USER:
nbr weight (tw)           <-- NEIGHBOR the word to see the
                              possible variations of the word.
PROG:

SELECT #  POSTINGS   TERM
  1         201     WEIGHING
  2           7     WEIGHS
  3        6320     WEIGHT
  4          12     WEIGHTBEARING
  5         362     WEIGHTED
UP N OR DOWN N OR ENTER A SELECT COMMAND.

USER:
down 10
PROG:

SELECT #  POSTINGS   TERM
  6          50     WEIGHTING
  7           1     WEIGHTLESS
  8          15     WEIGHTLESSNESS
  9           1     WEIGHTLIFTERS
 10           2     WEIGHTLIFTING
 11           1     WEIGHTLOSS
 12         890     WEIGHTS
 13           1     WEIGHTO
 14           1     WEIGLE
 15           1     WEIL
UP N OR DOWN N OR ENTER A SELECT COMMAND.
```

To retrieve only WEIGHT or WEIGHTS, a second truncation technique is available. Unlike using the colon truncation symbol which allows for any number of characters, the hash mark **(#)** placed at the end of a word is commonly used for searching the singular and the plural forms of a word at the same time. For example:

```
SS 1 /C?
USER:
weight# (tw)
PROG:
MM (WEIGHT#) (3)
             1  WEIGHT (TW)
             2  WEIGHTS (TW)
             3  WEIGHTO (TW)
SPECIFY NUMBERS, ALL, OR, NONE-
USER:
1, 2
PROG:
SS (1) PSTG (6805)
```

Another example:

```
SS 1 /C?
USER:
heart# (tw)
PROG:
MM (HEART#) (3)
             1  HEART (TW)
             2  HEARTS (TW)
             3  HEARTY (TW)
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
1, 2              <-- Separate the numbers with a comma.
PROG:
SS (1) PSTG (6050)
```

CAUTION: NEIGHBORing Text Words is also important when using the single character truncation symbol (#) in combination with ALL in searching for singular and plural forms of a word. Unexpected results may sometimes be obtained.

8. TEXT WORD SUMMARY

Use (TW) Qualifier:

Pre-Qualifying:	**(tw) spontaneous**
Post-Qualifying:	**spontaneous (tw)**

Use AND between Multi-Word Terms:

Pre-Qualifying:	**(tw) soft and tissue**
Post-Qualifying:	**soft (tw) and tissue (tw)**

Use OR to Connect Synonyms:

Pre-Qualifying:	**(tw) severe or acute**
Post-Qualifying:	**severe (tw) or acute (tw)**

Use the NBR Command to Identify Variant Endings, Spellings, etc.:

nbr immunologic (tw)
PROG:

SELECT #	POSTINGS	TERM
1	2	IMMUNOLOCATED
2	2	IMMUNOLOCATION
3	650	IMMUNOLOGIC
4	1162	IMMUNOLOGICAL
5	420	IMMUNOLOGICALLY

UP N OR DOWN N OR ENTER A SELECT COMMAND.

Use Truncation Symbols to Retrieve Terms with Variant Endings:

(:)	Colon	**immunolog: (tw)**
(#)	Hash Mark	**monkey# (tw)**

Use Synonyms Freely:

To find articles on cancer in aged pets:

SS 1	**all animal# (tw) and all domestic: (tw)**
SS 2	**all pet# (tw) or animals, domestic**
SS 3	**1 or 2**
SS 4	**neoplasms (px)**
SS 5	**3 and 4**
SS 6	**(tw) aged or old or older or elderly or aging**
SS 7	**5 and 6**

9. TEXT WORD SEARCHING - EXERCISE

Using the information presented in the Text Word section, prepare search strategies using Text Words for the following search questions.

1. Are there any articles discussing the concept of 'smoke-free hospitals'?

2. Find articles discussing the drug 'ecstasy'.

3. Find articles on oral rehydration.

4. Locate articles discussing exposure to the cold in humans.

5. Locate articles discussing 'oat bran'.

Suggested search strategies can be found on the following pages.

TEXT WORD SEARCHING - EXERCISE -- SUGGESTED ANSWERS

1. Are there any articles discussing the concept of 'smoke-free hospitals'?

```
SS 1 /C?
USER:
(tw) smoke and free and hospital#
PROG:
MM (HOSPITAL#) (2)
             1  HOSPITAL (TW)
             2  HOSPITALS (TW)
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
all
PROG:
SS (1) PSTG (4)

SS 2 /C?
USER:
prt ti        <-- Printing all four titles.
PROG:

1
TI  - Cites smokey ER incident to plea for smoke-free hospitals
      [letter]

2
TI  - Are veterans really different? The feasibility of smoke-
      free hospitals [letter]

3
TI  - Correlates of reported smoke detector usage in an inner-
      city population:  participants in a smoke detector
      give-away program.

4
TI  - The smoke-free hospital.
```

2. Find articles discussing the drug 'ecstasy'.

```
SS 1 /C?
USER:
(tw) ecstasy     <-- Pre-qualified.
PROG:
SS (1) PSTG (8)

SS 2 /C?
USER:
prt 2 ti, mh          <-- Printing titles with MeSH headings for
PROG:                     two records.

1
TI  - The complications of 'ecstasy' (MDMA) [letter]
MH  - Adult
MH  - Amphetamines/*POISONING
MH  - Case Report
MH  - Human
MH  - Male
MH  - 3,4-Methylenedioxyamphetamine/ANALOGS & DERIVATIVES
      /ANALYSIS/METABOLISM/*POISONING

2
TI  - The threshold lowering effects of MDMA (ecstasy) on brain-
      stimulation reward.
MH  - Amphetamines/*PHARMACOLOGY
MH  - Animal
MH  - Behavior, Animal/DRUG EFFECTS
MH  - Male
MH  - Rats
MH  - Rats, Inbred F344
MH  - *Reward
MH  - Support, U.S. Gov't, P.H.S.
MH  - 3,4-Methylenedioxyamphetamine/ANALOGS & DERIVATIVES/
      *PHARMACOLOGY
```

Printing out MeSH headings will give you ideas as to other headings to use in your search. In this example, AMPHETAMINES and the chemical name 3,4-METHYLENEDIOXYAMPHETAMINE appear to be relevant.

3. Find articles on oral rehydration.

```
SS 1 /C?
USER:
nbr rehydrat (tw)
PROG:

SELECT #  POSTINGS   TERM
  1         81     REHUMANIZING
  2          2     REHYBRIDIZED
  3          1     REHYDRATE
  4         10     REHYDRATED
  5          2     REHYDRATING
UP N OR DOWN N OR ENTER A SELECT COMMAND.
USER:
down 5
PROG:

SELECT #  POSTINGS   TERM
  6         70     REHYDRATION
  7          3     REI
  8          1     REIBER
  9          2     REICHARDT
 10          1     REICHART
UP N OR DOWN N OR ENTER A SELECT COMMAND.
USER:
sel 3-6        <-- Can selectively choose terms to search.
PROG:
SS (1) PSTG (84)

SS 2 /C?
USER:
(tw) oral or orally
PROG:
SS (2) PSTG (4172)

SS 3 /C?
USER:
1 and 2
PROG:
SS (3) PSTG (43)

SS 4 /C?
USER:
prt 5, 6 ti          <-- To print selectively, separate the
PROG:                    citation numbers by a comma.

5
TI  - [Stability of salts for oral rehydration]

6
TI  - Oral rehydration with fizz but no chloride [letter]
```

Remember, Text Words come from both the Title and the Abstract, so you may not always see the combination of words in the title.

4. Locate articles discussing exposure to the cold in humans.

```
SS 1 /C?
USER:
cold            <-- Use the MeSH heading when one exists.
PROG:
SS (1) PSTG (394)

SS 2 /C?
USER:
all expos: (tw)        <-- Retrieving all forms of the root EXPOS.
PROG:
SS (2) PSTG (7164)

SS 3 /C?
USER:
immers: (tw)
PROG:
MM (IMMERS:) (7)
              1  IMMERSE (TW)
              2  IMMERSED (TW)
              3  IMMERSIBLE (TW)
              4  IMMERSING (TW)
              5  IMMERSION (TW)
              6  IMMERSIONS (TW)
              7  IMMERSUS (TW)
SPECIFY NUMBERS, ALL, OR, NONE-
USER:
all
PROG:
SS (3) PSTG (188)

SS 4 /C?
USER:
2 or 3
PROG:
SS (4) PSTG (7324)

SS 5 /C?
USER:
1 and 4      <-- Combining COLD with EXPOS: and IMMERS: terms.
PROG:
SS (5) PSTG (108)

SS 6 /C?
USER:
5 and human  <-- Limiting to the MeSH heading HUMAN.
PROG:
SS (6) PSTG (40)
```

4. Continued.

SS 7 /C?
USER:
prt 5 ti
PROG:

1
TI - Prediction of human thermoregulatory responses and endurance time in water at 20 and 24 degrees C.

2
TI - The effects of cold immersion and hand protection on grip strength.

3
TI - [Digital systolic pressure during cold test: standardization, reproducibility and validity of a method for the evaluation of digital vasospasm in normal subjects and in subjects exposed to hand-arm vibrations]

4
TI - Prostaglandin D2 and histamine release in cold urticaria unaccompanied by evidence of platelet activation.

5
TI - Human adaptation to repeated cold immersions.

Notice the variety of titles you receive with a Text Word search. You would probably want to browse the MeSH headings to see if there may be some other relevant headings which would narrow the topic.

USER:
prt ti, mh -2

PROG:

2
TI - The effects of cold immersion and hand protection on grip strength.
MH - Adult
MH - ***Cold**
MH - Electromyography
MH - Forearm/PHYSIOLOGY
MH - Hand/*PHYSIOLOGY
MH - Human
MH - **Immersion**/*PHYSIOPATHOLOGY
MH - Male
MH - *Protective Clothing
MH - Skin Temperature

5. Locate articles discussing 'oat bran'.

```
SS 1 /C?
USER:
oat (tw) and bran (tw)
PROG:
SS (1) PSTG (6)

SS 2 /C?
USER:
prt ti, mh 2        <-- Look at titles with MeSH headings to
PROG:                   discover other relevant MeSH headings.

1
TI  - Oat bran [letter]
MH  - *Cereals
MH  - Dietary Fiber/*ADMINISTRATION & DOSAGE
MH  - Human

2
TI  - Oat bran as a cholesterol-reducing dietary adjunct in a
      young healthy population.
MH  - Adult
MH  - *Cereals
MH  - Cholesterol/*BLOOD
MH  - Dietary Fiber/*ADMINISTRATION & DOSAGE
MH  - Double-Blind Method
MH  - Female
MH  - Human
MH  - Male
MH  - Prospective Studies
MH  - Random Allocation
MH  - Support, U.S. Gov't, P.H.S.
MH  - Triglycerides/BLOOD
```

These MeSH headings show that you might want to also consider:
CEREALS, CHOLESTEROL, DIETARY FIBER

LIMITING YOUR SEARCHES

A. SPECIFIC LANGUAGES

To narrow your search topic to articles written in a particular language, combine your search with the three-letter abbreviation for the language. Usually this is the first three letters of the language name. The most common exception is for Japanese-language articles; the abbreviation is JPN. For example:

```
SS 1 /C?
USER:
stress and ger (la)              <-- Ger = German
PROG:
SS (1) PSTG (14)
```

To search for all non-English language articles, i.e., foreign language articles, use FOR (LA). All foreign language articles have the notation FOR in the language (LA) field in addition to the specific three-letter abbreviation for the language in which the article is written.

```
SS 1 /C?
USER:
skin diseases (px) and for (la)
PROG:
SS (1) PSTG (1230)
```

Because of the large number of articles in MEDLINE written in English, limiting your search to English-language articles by searching for ENG (LA) will require some extra computer time. To avoid the wait, you should use the AND NOT FOR (LA) limiter. For example, to search for articles about SKIN DISEASES written in English, enter the following:

```
SS 1 /C?
USER:
skin diseases (px) and not for (la)
PROG:
SS (1) PSTG (4449)
```

If you intend to combine two or more languages at a time, it is best to enter each in a separate statement combined with the search topic. For example, to search for articles about STRESS written in either GERMAN or in ENGLISH, enter the following:

```
SS 1 /C?
USER:
stress and ger (la)
PROG:
SS (1) PSTG (14)
```

Continued on next page.

```
SS 2 /C?
USER:
stress and not for (la)      <-- For English language articles.
PROG:
SS (2) PSTG (354)

SS 3 /C?
USER:
1 or 2
PROG:
SS (3) PSTG (368)    <-- Combination of GERMAN and ENGLISH-
                         language articles about STRESS.
```

B. ARTICLES WITH ABSTRACTS ONLINE

To limit your retrieval to articles which have an abstract online, combine your search with the word AUTHOR and the (AA) qualifier. (AA) refers to Abstract Author. For example:

```
SS 1 /C?
USER:
meningitis and author (aa)
PROG:
SS (1) PSTG (124)
```

All abstracts in MEDLINE have been written by the author and must appear in the journal itself; NLM never prepares abstracts. Abstracts are available online since **1975** and are only written in **English**. Approximately 60% of the citations contain abstracts.

C. FOREIGN-LANGUAGE ARTICLES WITH ENGLISH ABSTRACTS IN THE JOURNAL

Some foreign-language articles contain English-language abstracts with the articles. To search for these, combine your search with the MeSH heading ENGLISH ABSTRACT. This MeSH heading will never be used with English-language articles. For example:

```
SS 1 /C?
USER:
asthma and english abstract   <-- Never abbreviate ENGLISH in
PROG:                             this MeSH heading.
SS (1) PSTG (125)
```

The existence of an English-language abstract with foreign-language articles does not necessarily indicate that the abstract is available online. To find abstracts online for foreign-language articles, combine your search with AUTHOR (AA). For example, from the retrieval above:

```
SS 2 /C?
USER:
1 and author (aa)    <-- Foreign-language articles with English-
PROG:                    language abstracts online.
SS (2)  PSTG (55)
```

D. PUBLICATION YEAR OF ARTICLE

To limit your retrieval to articles published in a particular year, combine your search with the last two digits of the year and the qualifier (YR).

```
SS 1 /C?
USER:
malocclusion and 88 (yr)
PROG:
SS (1) PSTG (164)
```

To search for more than one publication year, it is advisable to keep each year in a separate search statement. For example, if you are in MED83 and want to search only 1984 or 1985 data, enter the following:

```
FILE MED83

SS 1 /C?
USER:
jogging
PROG:
SS (1) PSTG (87)

SS 2 /C?
USER:
1 and 84 (yr)              <-- Limiting by year will frequently
PROG:                          generate TIME OVERFLOW messages
SS (2) PSTG (25)               as each (YR) has so many POSTINGS.

SS 3 /C?
USER:
1 and 85 (yr)
PROG:
SS (3) PSTG (24)

SS 4 /C?
USER:
2 or 3
PROG:
SS (4) PSTG (49)           <-- Articles about JOGGING written in
                               either 1984 or 1985.
```

E. REVIEW ARTICLES

To limit your retrieval to review articles about a particular subject, combine your search with the MeSH heading REVIEW.

```
SS 1 /C?
USER:
circadian rhythm and review
PROG:
SS (1) PSTG (45)
```

The MeSH heading REVIEW is used when articles contain information on the current thinking on a given subject. In 1988, additional REVIEW headings were added to the vocabulary to enable searchers to limit to a more specific type of REVIEW. These include: REVIEW, ACADEMIC; REVIEW OF REPORTED CASES; CONSENSUS DEVELOPMENT CONFERENCES; REVIEW, MULTICASE; and REVIEW, TUTORIAL. Any of these specific headings may be used or the term REVIEW may be used by itself.

F. ARTICLES FROM THE ABRIDGED INDEX MEDICUS (AIM) SUBSET

Abridged Index Medicus contains references to articles from approximately 115 core biomedical journals, primarily clinical in nature, which can be found in most medical libraries. To limit your retrieval to articles indexed in AIM, combine your retrieval with A (SB). For example:

```
SS 1 /C?
USER:
myocardial infarction and a (sb)
PROG:
SS (1) PSTG (619)
```

A list of AIM journal titles can be found on the next two pages. All AIM journals are written in English.

G. ARTICLES FROM A SPECIFIC JOURNAL

To limit your search to articles published in a particular journal, combine your search with the standard abbreviation for that journal, qualified by (TA). For example, to search for articles about MENINGITIS published in the New England Journal of Medicine, enter the following:

```
SS 1 /C?
USER:
interferons
PROG:
SS (1) PSTG (266)

SS 2 /C?
USER:
1 and n engl j med (ta)  <-- TA = Title Abbreviation
PROG:
SS (2) PSTG (3)
```

MEDLINE citations contain only journal title abbreviations (TA), never the full title. This abbreviation is the only one to use when searching. The List of Serials Indexed for Online Users can be used to ascertain the abbreviated titles. See the List of Searching Aids in the Appendix for ordering information or call the MEDLARS Service Desk for the most current information.

LIST OF JOURNALS INDEXED

ABRIDGED INDEX MEDICUS (AIM)

A

AJR. AMERICAN JOURNAL OF ROENTGENOLOGY (BALTIMORE)
AJR

AMERICAN FAMILY PHYSICIAN (KANSAS CITY MO)
Am Fam Physician

AMERICAN HEART JOURNAL (ST LOUIS)
Am Heart J

AMERICAN JOURNAL OF CARDIOLOGY (NEW YORK)
Am J Cardiol

AMERICAN JOURNAL OF CLINICAL NUTRITION (BETHESDA MD)
Am J Clin Nutr

AMERICAN JOURNAL OF CLINICAL PATHOLOGY (PHILADELPHIA)
Am J Clin Pathol

AMERICAN JOURNAL OF DISEASES OF CHILDREN (CHICAGO)
Am J Dis Child

AMERICAN JOURNAL OF THE MEDICAL SCIENCES (THOROFARE NJ)
Am J Med Sci

AMERICAN JOURNAL OF MEDICINE (NEW YORK)
Am J Med

AMERICAN JOURNAL OF NURSING (NEW YORK)
Am J Nurs

AMERICAN JOURNAL OF OBSTETRICS AND GYNECOLOGY (ST. LOUIS)
Am J Obstet Gynecol

AMERICAN JOURNAL OF OPHTHALMOLOGY (CHICAGO)
Am J Ophthalmol

AMERICAN JOURNAL OF PATHOLOGY (PHILADELPHIA)
Am J Pathol

AMERICAN JOURNAL OF PHYSICAL MEDICINE (BALTIMORE)
Am J Phys Med

AMERICAN JOURNAL OF PSYCHIATRY (WASHINGTON)
Am J Psychiatry

AMERICAN JOURNAL OF PUBLIC HEALTH (WASHINGTON)
Am J Public Health

AMERICAN JOURNAL OF SURGERY (NEW YORK)
Am J Surg

AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE (LAWRENCE KS)
Am J Trop Med Hyg

AMERICAN REVIEW OF RESPIRATORY DISEASE (NEW YORK)
Am Rev Respir Dis

ANAESTHESIA (LONDON)
Anaesthesia

ANESTHESIA AND ANALGESIA (NEW YORK)
Anesth Analg

ANESTHESIOLOGY (PHILADELPHIA)
Anesthesiology

ANNALS OF EMERGENCY MEDICINE (DALLAS TX)
Ann Emerg Med

ANNALS OF INTERNAL MEDICINE (PHILADELPHIA)
Ann Intern Med

ANNALS OF OTOLOGY, RHINOLOGY AND LARYNGOLOGY (ST LOUIS)
Ann Otol Rhinol Laryngol

ANNALS OF SURGERY (PHILADELPHIA)
Ann Surg

ANNALS OF THORACIC SURGERY (BOSTON)
Ann Thorac Surg

ARCHIVES OF DERMATOLOGY (CHICAGO)
Arch Dermatol

ARCHIVES OF DISEASE IN CHILDHOOD (LONDON)
Arch Dis Child

ARCHIVES OF ENVIRONMENTAL HEALTH (WASHINGTON)
Arch Environ Health

ARCHIVES OF GENERAL PSYCHIATRY (CHICAGO)
Arch Gen Psychiatry

ARCHIVES OF INTERNAL MEDICINE (CHICAGO)
Arch Intern Med

ARCHIVES OF NEUROLOGY (CHICAGO)
Arch Neurol

ARCHIVES OF OPHTHALMOLOGY (CHICAGO)
Arch Ophthalmol

ARCHIVES OF OTOLARYNGOLOGY — HEAD AND NECK SURGERY (CHICAGO)
Arch Otolaryngol Head Neck Surg

ARCHIVES OF PATHOLOGY AND LABORATORY MEDICINE (CHICAGO)
Arch Pathol Lab Med

ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION (CHICAGO)
Arch Phys Med Rehabil

ARCHIVES OF SURGERY (CHICAGO)
Arch Surg

ARTHRITIS AND RHEUMATISM (ATLANTA GA)
Arthritis Rheum

B

BLOOD (NEW YORK)
Blood

BRAIN (OXFORD)
Brain

BRITISH HEART JOURNAL (LONDON)
Br Heart J

BRITISH JOURNAL OF OBSTETRICS AND GYNAECOLOGY (OXFORD)
Br J Obstet Gynaecol

BRITISH JOURNAL OF RADIOLOGY (LONDON)
Br J Radiol

BRITISH JOURNAL OF RHEUMATOLOGY (LONDON)
Br J Rheumatol

BRITISH JOURNAL OF SURGERY (LONDON)
Br J Surg

BRITISH MEDICAL JOURNAL (LONDON)
Br Med J

BRITISH MEDICAL JOURNAL [CLINICAL RESEARCH ED.] (LONDON)
Br Med J [Clin Res]

C

CA: A CANCER JOURNAL FOR CLINICIANS (NEW YORK)
CA

CANADIAN MEDICAL ASSOCIATION JOURNAL (OTTAWA)
Can Med Assoc J

CANCER (PHILADELPHIA)
Cancer

CHEST (PARK RIDGE IL)
Chest

CIRCULATION (DALLAS TX)
Circulation

CLINICAL ORTHOPAEDICS AND RELAT RESEARCH (PHILADELPHIA)
Clin Orthop

CLINICAL PEDIATRICS (PHILADELPHIA
Clin Pediatr (Phila)

CLINICAL PHARMACOLOGY AND THERAPEUTICS (ST LOUIS)
Clin Pharmacol Ther

CRITICAL CARE MEDICINE (BALTIMOR
Crit Care Med

CURRENT PROBLEMS IN SURGERY (CH
Curr Probl Surg

D

DIABETES (NEW YORK)
Diabetes

DIGESTIVE DISEASES AND SCIENCES (N YORK)
Dig Dis Sci

DM. DISEASE-A-MONTH (CHICAGO)
DM

E

ENDOCRINOLOGY (BALTIMORE)
Endocrinology

G

GASTROENTEROLOGY (NEW YORK)
Gastroenterology

GERIATRICS (MIDDLEBURG OH)
Geriatrics

GUT (LONDON)
Gut

H

HEART AND LUNG (ST LOUIS)
Heart Lung

HOSPITAL PRACTICE (OFFICE EDITION) YORK)
Hosp Pract [Off]

HOSPITALS (CHICAGO)
Hospitals

J

JAMA (CHICAGO)
JAMA

JOURNAL OF ALLERGY AND CLINICAL IMMUNOLOGY (ST LOUIS)
J Allergy Clin Immunol

JOURNAL OF THE AMERICAN COLLEG CARDIOLOGY (NEW YORK)
J Am Coll Cardiol

JOURNAL OF THE AMERICAN DIETETI ASSOCIATION (CHICAGO)
J Am Diet Assoc

JOURNAL OF BONE AND JOINT SURGE AMERICAN VOLUME (BOSTON)
J Bone Joint Surg [Am]

JOURNAL OF BONE AND JOINT SURGE BRITISH VOLUME (LONDON)
J Bone Joint Surg [Br]

JOURNAL OF CLINICAL ENDOCRINOLO METABOLISM (BALTIMORE)
J Clin Endocrinol Metab

JOURNAL OF CLINICAL INVESTIGATION YORK)
J Clin Invest

LIST OF JOURNALS INDEXED (AIM)

JOURNAL OF CLINICAL PATHOLOGY (LONDON)
J Clin Pathol

JOURNAL OF FAMILY PRACTICE (EAST NORWALK CT)
J Fam Pract

JOURNAL OF GERONTOLOGY (WASHINGTON)
J Gerontol

JOURNAL OF IMMUNOLOGY (BALTIMORE)
J Immunol

JOURNAL OF INFECTIOUS DISEASES (CHICAGO)
J Infect Dis

JOURNAL OF LABORATORY AND CLINICAL MEDICINE (ST LOUIS)
J Lab Clin Med

JOURNAL OF LARYNGOLOGY AND OTOLOGY (ASFORD)
J Laryngol Otol

JOURNAL OF MEDICAL EDUCATION (WASHINGTON)
J Med Educ

JOURNAL OF NERVOUS AND MENTAL DISEASE (BALTIMORE)
J Nerv Ment Dis

JOURNAL OF NEUROSURGERY (BALTIMORE)
J Neurosurg

JOURNAL OF NURSING ADMINISTRATION (WAKEFIELD MA)
J Nurs Adm

JOURNAL OF ORAL AND MAXILLOFACIAL SURGERY (PHILADELPHIA)
J Oral Maxillofac Surg

JOURNAL OF PEDIATRICS (ST LOUIS)
J Pediatr

JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY (ST LOUIS)
J Thorac Cardiovasc Surg

JOURNAL OF TOXICOLOGY. CLINICAL TOXICOLOGY (NEW YORK)
J Toxicol Clin Toxicol

JOURNAL OF TRAUMA (BALTIMORE)
J Trauma

JOURNAL OF UROLOGY (BALTIMORE)
J Urol

L

LANCET (LONDON)
Lancet

M

MAYO CLINIC PROCEEDINGS (ROCHESTER MN)
Mayo Clin Proc

MEDICAL CLINICS OF NORTH AMERICA (PHILADELPHIA)
Med Clin North Am

MEDICAL LETTER ON DRUGS AND THERAPEUTICS (NEW ROCHELLE NY)
Med Lett Drugs Ther

MEDICINE (BALTIMORE)
Medicine (Baltimore)

N

NEUROLOGY (CLEVELAND OH)
Neurology

NEW ENGLAND JOURNAL OF MEDICINE (BOSTON)
N Engl J Med

NURSING CLINICS OF NORTH AMERICA (PHILADELPHIA)
Nurs Clin North Am

NURSING OUTLOOK (NEW YORK)
Nurs Outlook

NURSING RESEARCH (NEW YORK)
Nurs Res

O

OBSTETRICS AND GYNECOLOGY (NEW YORK)
Obstet Gynecol

ORTHOPEDIC CLINICS OF NORTH AMERICA (PHILADELPHIA)
Orthop Clin North Am

P

PEDIATRIC CLINICS OF NORTH AMERICA (PHILADELPHIA)
Pediatr Clin North Am

PEDIATRICS (EVANSTON IL)
Pediatrics

PHYSICAL THERAPY (WASHINGTON)
Phys Ther

PLASTIC AND RECONSTRUCTIVE SURGERY (BALTIMORE)
Plast Reconstr Surg

POSTGRADUATE MEDICINE (MINNEAPOLIS MN)
Postgrad Med

PROGRESS IN CARDIOVASCULAR DISEASES (NEW YORK)
Prog Cardiovasc Dis

PUBLIC HEALTH REPORTS (HYATTSVILLE MD)
Public Health Rep

R

RADIOLOGIC CLINICS OF NORTH AMERICA (PHILADELPHIA)
Radiol Clin North Am

RADIOLOGY (EASTON PA)
Radiology

S

SOUTHERN MEDICAL JOURNAL (BIRMINGHAM AL)
South Med J

SURGERY (ST LOUIS)
Surgery

SURGERY, GYNECOLOGY AND OBSTETRICS (CHICAGO)
Surg Gynecol Obstet

SURGICAL CLINICS OF NORTH AMERICA (PHILADELPHIA)
Surg Clin North Am

U

UROLOGIC CLINICS OF NORTH AMERICA (PHILADELPHIA)
Urol Clin North Am

H. OTHER MeSH HEADINGS COMMONLY USED TO LIMIT SEARCHES

Some other MeSH headings are useful for limiting your searches.

To limit your search to human studies only, use HUMAN as a MeSH heading:

```
SS 1 /C?
USER:
heparin and human          <-- TIME OVERFLOW messages may occur
PROG:                          when you use HUMAN in your search
SS (1) PSTG (397)              because it is so highly posted.
```

To limit your search to males (or females) only:

```
SS 2 /C?
USER:
1 and male          <-- MALE and FEMALE applies to either HUMAN
PROG:                   or ANIMAL.
SS (1) PSTG (140)
```

To limit your search to a particular age group:

```
SS 1 /C?
USER:
nursing homes and aged
PROG:
SS (1) PSTG (187)
```

The following are the age group MeSH headings available for searching:

Infant, Newborn	(birth to 1 month)
Infant	(1-23 months)
Child, Preschool	(age 2-5 years)
Child	(age 6-12 years)
Adolescence	(age 13-18 years)
Adult	(age 19-44 years)
Middle Age	(age 45-64 years)
Aged	(age 65 and over)
Aged, 80 and over	(age 80 and over - added in 1987)

If you are searching for more than one age group at a time, it is advisable to enter each in a separate search statement combined with the search topic. For example, searching for articles about LEUKEMIA in people ages 2 to 18 years old:

```
SS 1      exp leukemia
SS 2      1 and child, preschool
SS 3      1 and child
SS 4      1 and adolescence
SS 5      2 or 3 or 4
```

PRINTING UNIT RECORDS

After retrieving a group of citations or unit records, you will probably want to look at some of them online. The following discusses the various types of PRINT commands.

A. STANDARD PRINT COMMANDS

Four standard print commands are available on MEDLINE. They are:

1. PRINT (abbreviated PRT)

Displays: Unique Identifier (UI), Author (AU), Title (TI), Source (SO)

```
SS 2 /C?
USER:
prt
PROG:

1
UI  - 88154230
AU  - Asken S
TI  - Facial liposuction and microlipoinjection.
SO  - J Dermatol Surg Oncol 1988 Mar;14(3):297-305
```

2. PRINT FULL (abbreviated PRT FU)

Displays: Unique Identifier (UI), Author (AU), Title (TI), Source (SO), Language (LA) and MeSH Headings (MH)

```
SS 2 /C?
USER:
prt fu
PROG:

1
UI  - 88154230
AU  - Asken S
TI  - Facial liposuction and microlipoinjection.
LA  - Eng
MH  - Adipose Tissue/*SURGERY
MH  - Face/*SURGERY
MH  - Female
MH  - Human
MH  - Microinjections
MH  - Suction
MH  - *Surgery, Plastic
SO  - J Dermatol Surg Oncol 1988 Mar;14(3):297-305
```

3. PRINT AR (abbreviated PRT AR)

Displays: Unique Identifier (UI), Author (AU), Title (TI), Source (SO), and Abstract (AB)

```
SS 2 /C?
USER:
prt ar
PROG:

1
UI  - 88154230
AU  - Asken S
TI  - Facial liposuction and microlipoinjection.
AB  - Liposuction and microlipoinjection can be used to improve
      the contour of the face, correct certain defects, and
      improve signs of aging.  The technique of facial lipo-
      suction as well as that of collecting and injecting the
      fat used for microlipoinjection (autologous fat
      transplantation), is described.
SO  - J Dermatol Surg Oncol 1988 Mar;14(3):297-305
```

4. PRINT DETAILED (abbreviated PRT DL)

Displays: All available data for a citation. Much of this information is useful for NLM needs only; PRT DL is not usually used by searchers on a regular basis.

```
USER:
prt dl
PROG:

1
UI  - 88154230
AU  - Asken S
TI  - Facial liposuction and microlipoinjection.
LA  - Eng
MH  - Adipose Tissue/*SURGERY
MH  - Face/*SURGERY
MH  - Female
MH  - Human
MH  - Microinjections
MH  - Suction
MH  - *Surgery, Plastic
DA  - 880413
DP  - 1988 Mar
IS  - 0148-0812
TA  - J Dermatol Surg Oncol
PG  - 297-305
SB  - M
SB  - X
ZN  - Z1.107.567.875
IP  - 3
VI  - 14
```

PRT DL (continued)

```
JC  - HZA
AA  - Author
EM  - 8806
AB  - Liposuction and microlipoinjection can be used to improve
      the contour of the face, correct certain defects, and
      improve signs of aging.  The technique of facial lipo-
      suction as well as that of collecting and injecting the
      fat used for microlipoinjection (autologous fat
      transplantation), is described.
AD  - New York Medical College.
SO  - J Dermatol Surg Oncol 1988 Mar:14(3):297-305
```

B. TAILORED PRINT COMMANDS

To see information other than that displayed with the standard PRINT commands, you may tailor your PRINT command to specify any data element you want to see. To do so, enter the command PRT followed by the two-letter abbreviation for the specific data element(s). For multiple elements, separate each abbreviation by a comma and a space. For example:

```
SS 2 /C?
USER:
prt ti, mh              <-- Do not enclose data elements in
PROG:                       parentheses.

1
TI  - Facial liposuction and microlipoinjection.
MH  - Adipose Tissue/*SURGERY
MH  - Face/*SURGERY
MH  - Female
MH  - Human
MH  - Microinjections
MH  - Suction
MH  - *Surgery, Plastic
```

C. COMPRESSED; INDENTED PRINT COMMANDS

Any PRINT command, whether 'standard' or 'tailored', may be compressed or indented. The addition of the word COMPRESSED (abbreviated COMP or COMPR) will cause any multiply-occurring data element to print out on the same line thus saving space and paper. For example:

```
USER:
prt ti, mh comp
PROG:

1
TI  - Facial liposuction and microlipoinjection.
MH  - Adipose Tissue/*SURGERY ; Face/*SURGERY ; Female ; Human ;
      Microinjections ; Suction ; *Surgery, Plastic
```

The addition of the word INDENTED (never abbreviated) will cause the data element abbreviations to be spelled out in full and in columnar format. This format is useful when searching an unfamiliar database or when demonstrating the system to non-searchers. For example:

```
SS 2 /C?
USER:
prt indented
PROG:

1
UNIQUE IDENTIFIER       88154230
AUTHOR                  Asken S
TITLE                   Facial liposuction and microlipoinjection.
SOURCE                  J Dermatol Surg Oncol 1988 Mar;14(3):
                        297-305
```

D. MORE INFORMATION ABOUT THE PRINT COMMAND

1. Citations will print out from the immediately preceding search statement. A PRINT command at SS 4 /C? will display records from the retrieval of SS 3 /C?.

   To print from a search statement other than the immediately preceding one, add 'SS' with the appropriate search statement number to the PRINT command. For example:

```
SS 4 /C?
USER:
prt ti ss 2          <-- Be sure to separate the number from 'ss'
PROG:                    with a space.

1
TI  - The house call: an important service for the frail elderly.

2
TI  - House calls: current status and rationale.

3
TI  - Revival of house calls essential to improving health care
      practices.
```

2. Citations most recently entered into the database are always printed out first. Generally this corresponds to the most recent publication date.

3. In response to a PRINT command, a maximum of 25 lines of text will print out before the program gives the message 'CONTINUE PRINTING (YES/NO)'. By responding Y or YES, the remaining citations requested in your PRINT command will print out in segments of 25 lines. If you respond with N or NO, you will return to a USER: cue without seeing the remainder of the citations.

4. Unlike searching, printing does not take up a search statement number. If you print at SS 4 /C?, your next USER: cue will still be SS 4 /C?. For example:

```
SS 4 /C?
USER:
prt ti
PROG:

1
TI  - The house call: an important service for the frail elderly.

SS 4 /C?
USER:
```

5. PRINT BROWSE (abbreviated PRT BR) in MEDLINE will display titles only but at a reduced charge. To encourage browsing the titles of your citations, no citation or character charge is applied.

E. SELECTIVELY PRINTING CITATIONS

1. QUANTITY

To request a specific quantity of citations to be printed, add a number surrounded by spaces to your PRINT command. To display the first five titles from your search, enter the following:

```
SS 2 /C?
USER:
prt 5 ti
PROG:

1
TI  - Patellar chondropathy and apicitis, and muscle imbalances
      of the lower extremities in competitive sports.

2
TI  - Mechanical muscular output and work during ergometer
      cycling at different work loads and speeds.

3
TI  - Eccentric and concentric torque and power of the knee
      extensors of females.

4
TI  - The prognosis of repaired and intact menisci in unstable
      knees--a comparative study.

5
TI  - Running exercise as a modulatory of proteoglycan matrix in
      the articular cartilage of young rabbits.
```

2. PRINTING SELECTIVELY

To print out citations other than the first ones, enter the PRINT command follow by the specific numbers of the citations you wish to display. For example, to print out a range of citations:

```
SS 2 /C?
USER:
prt ti 6-8        <-- Will display the titles for citations number
PROG:                 6, 7, 8.

6
TI  - Muscle blood flow is not reduced in humans during moderate
      exercise and heat stress.

7
TI  - Effects of prior exercise on the performance of intense
      isometric exercise.

8
TI  - Skeletal muscle glucose uptake during dynamic exercise in
      humans: role of muscle mass.
```

To print out citations for the titles of citations numbered 10, 12, and 20, enter the following PRINT command:

```
USER:
prt ti 10, 12, 20  <-- Separate numbers with a comma and a space.
PROG:

10
TI  - Light resistance and stretching exercise in elderly women:
      effect upon strength.

12
TI  - Moderate running exercise augments glycosaminoglycans and
      thickness of articular cartilage in the knee joint of young
      beagle dogs.

20
TI  - Relationship between distance running mechanics, running
      economy, and performance.
```

To print out only one citation which is not the first, enter the PRINT command followed by the number of the citation with a hyphen preceding the number. For example:

```
SS 2 /C?
USER:
prt -10 ti        <-- Will display the title of the 10th citation.
PROG:                 (PRT 10 TI will display the titles of the
                      first 10 citations.)
10
TI  - Light resistance and stretching exercise in elderly women:
      effect upon strength.
```

F. PRINTING OFFLINE

You may prefer to have your output printed at NLM overnight and sent out on the next working day. Consider printing offline when:

1. Your retrieval is large; especially if you want abstracts printed out. Because of the size of the retrieval, the online charges may be higher than the per page charge of offline printing (currently $ .25 per page).

2. The time you have at your computer terminal may be limited.

3. The time delay for mailing (up to several days) is acceptable.

1. REQUESTING AN OFFLINE PRINT

Offline prints will be mailed to the address which you specify. All of the print enhancements discussed previously apply to offline prints as well; however, the word OFFLINE must appear in the PRINT command. A sample offline print interaction follows. It is based on a search concerning the relationship between EXERTION and CORONARY DISEASE.

```
SS 1 /C?
USER:
exertion and coronary disease
PROG:
SS (1) PSTG (85)

SS 2 /C?
prt ar offline        <-- Requesting UI, AU, TI, SO, and AB.
PROG:
TASKNAME = P4144241       <-- A unique TASKNAME will be generated
                              as a result of the PRT OFFLINE
NAME?                         command.  It should be retained for
USER:                         tracking the offline printout.

pamela stone    <-- Prompted for mailing information.  Only three
PROG:               lines will be provided.  Each line may contain
ADDRESS?            no more than 50 characters including spaces.

USER:
4545 palm court
PROG:
CITY, STATE (PLEASE DO NOT ABBREVIATE), AND ZIP-

USER:
dallas, texas  75234
PROG:
REQUESTER'S NAME, OR SAME-

USER:
same     <-- Enter 'same' if the requester is also the addressee.
PROG:
```

```
SEARCH TITLE, OR NONE-

USER:
heart exertion     <-- This title will appear on all the pages of
PROG:                  the offline print.
OK? (Y/N/C/ADDRESS)

USER:
y                  <-- 'Y' = yes.  'N' = no.  'C' = cancel.
PROG:                  'ADDRESS' will display any previously
OFFLINE PRINT COMPLETED.  stored address for that User ID.
```

If you had answered 'NO' to the 'OK?' question, the system will re-prompt you for name, address, etc., information. Answering 'C' for cancel will cancel the request to print the retrieval offline.

2. CANCELLING AN OFFLINE PRINT REQUEST

The only way to cancel an offline print request after the 'OFFLINE PRINT COMPLETED' message is received is by calling the MEDLARS Management Section before 5:00 p.m. ET the same day the offline print was requested. You will be asked for the TASKNAME (that appeared immediately after entering PRINT OFFLINE). Remember, the MEDLARS Service Desk is staffed Monday through Friday from 8:30 a.m. to 5:00 p.m. ET.

3. REQUESTING MORE THAN 300 CITATIONS OFFLINE

You may not request more than 300 citations with any individual PRINT OFFLINE command. To obtain the complete retrieval of more than 300 citations, follow the format below:

```
SS 1 /C?
USER:
*pneumonia and human
PROG:
SS (1) PSTG (338)

SS 2 /C?
USER:
prt offline 300          <-- Limit the first group to 300.
PROG:
TASKNAME = P8155050
.
.                        <-- All the questions must be answered
.                            as before.
PROG:
OFFLINE PRINT COMPLETED.

SS 2 /C?
USER:
prt offline 301-338      <-- Request a separate offline print
PROG:                        to receive the remaining 38
TASKNAME = P8156012          citations.
   etc.
```

G. PRINT COMMAND SUMMARY

COMMAND	DISPLAYS
PRINT (PRT)	Unique Identifier, Author, Title, Source
PRINT FULL (PRT FU)	Unique Identifier, Author, Title, Language, MeSH Headings, Source
PRINT AR (PRT AR)	Unique Identifier, Author, Title, Abstract, Source
PRINT DETAILED (PRT DL)	All data elements
PRINT COMPRESSED (PRT COMP)	Prints multiply-occurring fields across screen or page rather than one per line.
PRINT INDENTED (PRT INDENTED)	Prints full data element name rather than abbreviation only; in columnar format.
PRINT BR (PRT BR)	Displays titles only; no citation charge is applied.
PRINT 10	To print first 10 citations.
PRINT -10	To print the single citation #10, use hyphen followed by a number.
PRINT 5, 9, 17-21	Use commas & hyphens to print selected citations and ranges.
PRINT TI, MH	Separate individual data elements with commas.
PRINT AR OFFLINE	Add the word OFFLINE to have retrieval printed and mailed to you by NLM.
PRINT 300 OFFLINE	Each offline print command is limited to printing up to 300 citations. If number is less than 300, there is no need to specify it.
PRINT 301-400 OFFLINE	Use a print range to print larger retrieval offline.

H. PRINT - EXERCISE

This is a sample search in which the searcher is looking for articles on the use of ELECTROCARDIOGRAPHY in HEART DISEASE. The searcher wants the retrieval limited to English-language REVIEW articles.

```
SS 1 /C?
USER:
*heart diseases (px)        <-- HEART DISEASES is a Pre-explosion.
PROG:                           The * limits to the main point of
SS (1) PSTG (6912)              the article.

SS 2 /C?
USER:
*electrocardiography
PROG:
SS (2) PSTG (609)

SS 3 /C?
USER:
1 and 2
PROG:
SS (3) PSTG (427)

SS 4 /C?
USER:
3 and not for (la)          <-- Searches English-language.
PROG:
SS (4) PSTG (324)

SS 5 /C?
USER:
4 and review                <-- MeSH heading REVIEW as limiter.
PROG:
SS (5) PSTG (38)
```

Based upon the above interaction, review the following PRINT exercises.

PRINT - EXERCISE (continued)

1. Enter the PRINT command to display the unique identifiers, authors, titles, and sources for the retrieval obtained from search statement #3.

   USER:

2. Print two citations from search statement number #4.

   USER:

3. Print the unique identifier, author, title, source, and abstract from the the first citation from the final retrieval.

   USER:

4. Print the fifth through tenth titles from the final retrieval.

   USER:

5. Print citations numbered 11, 18, 19-25, 38 from the final retrieval.

   USER:

6. Print the first three titles and MeSH headings from search statement #4 in the compressed format.

   USER:

7. Print offline all 38 citations that are retrieved in the final search statement. Include abstracts with your retrieval.

   USER:

8. Print the authors for the tenth through twentieth citations from your first search statement.

   USER:

H. PRINT - EXERCISE -- SUGGESTED ANSWERS

1. Enter the PRINT command to display the unique identifiers, authors, titles, and sources for the retrieval obtained from search statement #3.

   USER:
   prt ss 3 <-- Separate the number 3 from 'ss' with a space.

2. Print two citations from search statement number #4.

   USER:
   prt 2 ss 4 <-- Quantity is denoted by the number surrounded by spaces.

3. Print the unique identifier, author, title, source, and abstract from the the first citation from the final retrieval.

   USER:
   prt ar 1 <-- 'PRT AR -1' will also work.

4. Print the fifth through tenth titles from the final retrieval.

   USER:
   prt ti 5-10 <-- Will automatically display from the final retrieval.

5. Print citations numbered 11, 18, 19-25, 38 from the final retrieval.

   USER:
   prt 11, 18, 19-25, 38 <-- PRT is the standard PRINT command to display UI, AU, TI, SO.

6. Print the first three titles and MeSH headings from search statement #4 in the compressed format.

   USER:
   prt 3 ss 4 comp <-- COMP = compressed.

7. Print offline all 38 citations that are retrieved in the final search statement. Include abstracts with your retrieval.

   USER:
   prt offline ar <-- AR will include AB with UI, AU, TI, SO.

8. Print the authors for the tenth through twentieth citations from your first search statement.

   USER:
   prt au 10-20 ss 1

If you need further clarification on any of these examples, consult the section of this GUIDE on printing.

NEIGHBOR (NBR) COMMAND SUMMARY

Throughout this GUIDE, the NEIGHBOR (NBR) command has been discussed as it pertains to various data elements. This section is designed to summarize all of the information on NEIGHBORing.

A. NEIGHBORING THE GENERAL INDEX

The NEIGHBOR command is used to scan the index of the database to see if and how a term exists in that database. This is useful to verify the spelling or format of the authors' names, to see variant spellings of Text Words, and to view alphabetic listings of MeSH headings online. For example, to NBR the word HEART in the general index, enter the following:

```
SS 1 /C?
USER:
nbr heart
PROG:

SELECT #  POSTINGS  TERM
  1          8     HEARST JE (AU)
  2          1     HEARST N (AU)
  3       1981     HEART (MH)
  4       5821     HEART (TW)
  5         65     HEART ANEURYSM (MH)
UP N OR DOWN N OR ENTER A SELECT COMMAND.

USER:
```

In response to the NBR command, terms that are alphabetically adjacent to the term specified will be displayed. Terms in the index are arranged in one continuous alphabetical listing. The term you entered will appear in the third position of the display. The number of POSTINGS will be displayed for each term as well as a SELECT number for each term.

If the term you specified does not exist in the database, the term that is closest to it alphabetically will display in the third position. For example, NBRing the term 'SUCRE' in MEDLINE:

```
nbr sucre
PROG:

SELECT #  POSTINGS  TERM
  6          13     SUCRASE-ISOMALTASE COMPLEX (MH)
  7          13     SUCRASE-ISOMALTASE COMPLEX (NM)
  8         168     SUCROSE (MH)    <-- If 'SUCRE' had been in
  9         662     SUCROSE (TW)        MEDLINE, it would display
 10         171     SUCROSE (NF)        here.
UP N OR DOWN N OR ENTER A SELECT COMMAND.
```

B. NEIGHBORING A SPECIFIC PORTION OF THE INDEX

To NEIGHBOR a specific portion of the index, enter the term followed by its qualifier enclosed in parentheses. For example, to see if there is an author with the last name of HEART, enter the following:

```
USER:
nbr heart (au)
PROG:

SELECT #  POSTINGS  TERM
 11          8     HEARST JE
 12          1     HEARST N        <-- Because only AUTHORS were
 13          1     HEARTLEIN MW        requested, (AU) does not show
 14          1     HEARTY PJ           up after the name.
 15          2     HEASLEY LE
UP N OR DOWN N OR ENTER A SELECT COMMAND.
```

To look at the online alphabetic display of MeSH headings beginning with the word HEART, enter the following:

```
USER:
nbr heart (mh)
PROG:

SELECT #  POSTINGS  TERM
 16        134     HEARING LOSS, SENSORINEURAL
 17         52     HEARING TESTS
 18       1981     HEART
 19         65     HEART ANEURYSM
 20        217     HEART ARREST
UP N OR DOWN N OR ENTER A SELECT COMMAND.
```

C. RESPONDING TO THE 'UP N OR DOWN N OR ENTER A SELECT COMMAND' MESSAGE

1. TO CONTINUE NBRING

To move up or down the index, enter UP (to go toward A in the alphabet) or DOWN (to go toward Z in the alphabet) followed by a space and the number of terms to be displayed. You can display a maximum of 10 terms at a time. For example, to continue NBRing from the above example:

```
USER:
down 5
PROG:

SELECT #  POSTINGS  TERM
 21         88     HEART ARREST, INDUCED
 22        427     HEART ATRIUM
 23         38     HEART AUSCULTATION
 24        207     HEART BLOCK
 25        405     HEART CATHETERIZATION
UP N OR DOWN N OR ENTER A SELECT COMMAND.
```

To move up five terms from the above interaction, enter the following:

```
USER:
up 5
PROG:

SELECT #  POSTINGS  TERM
 26         43     HEARING LOSS, CONDUCTIVE
 27          2     HEARING LOSS, FUNCTIONAL
 28         11     HEARING LOSS, HIGH-FREQUENCY
 29         49     HEARING LOSS, NOISE-INDUCED
 30         78     HEARING LOSS, PARTIAL
UP N OR DOWN N OR ENTER A SELECT COMMAND.
```

Notice that when you go UP in the NBR, you proceed upwards from the first group of NEIGHBORed terms.

2. ENTERING A SELECT COMMAND

To SELECT a term from the NEIGHBOR display, enter the SELECT command followed by the number corresponding to the term you wish to retrieve. For example:

```
UP N OR DOWN N OR ENTER A SELECT COMMAND.

USER:
select 28          <-- SELECT can be abbreviated 'SEL'.
PROG:
SS (1) PSTG (11)
```

Note that the numbers under 'SELECT #' have continued to increment with every NBR command or instruction that has been issued. A total of 140 terms can be retained in your SELECT LIST. If you wish to delete the SELECT LIST, use the command **PURGESELECT** (PURGESEL).

If you want to choose more than one term from the SELECT LIST, enter the numbers separated by commas. For example:

```
USER:
sel 27, 28, 29   <-- These terms will be ORed together.
```

To display the entire list of terms in the SELECT LIST, enter the command **LISTSELECT** (LISTSEL). To display only specific numbers from the List, enter the command **LISTSEL 28** (or the particular numbers you want to see).

3. TO DISCONTINUE NBRING

To cancel the NEIGHBOR command and return to a USER: cue without SELECTing any terms from the display, enter NO or NONE in response to the 'UP N OR DOWN N OR ENTER A SELECT COMMAND' message.

Remember, when NBRing you are only looking at the index of the database to which you are presently connected.

OTHER USEFUL COMMANDS

There are several commands that you may find useful while searching MEDLINE. The functions of these commands are described below and are discussed more fully on the following pages.

FUNCTION	COMMAND
To send a user's question/comment to MEDLARS Management Section at NLM.	COMMENT
To show search strategy - terms and strategy - for current search session.	DISPLAY
To clear the user's workspace, returning user to SS 1 /C?.	ERASEALL
To erase the immediately preceding search statement. Command may be used with a number to delete all search statements greater than or equal to that number.	ERASEBACK ERASEBACK 6
To print a brief description of the last standard program message received by the user or a description of any other online function. An online help command.	EXPLAIN EXPLAIN NBR
To change from one database to another.	FILE FILE MED83
To display recent items of importance concerning MEDLARS.	NEWS
To retain search strategies in the computer's memory for future online use.	SAVE SAVESEARCH
To enable the user to see estimated costs of a search or terminal session while online.	SHOW COST
To stop search session; disconnect user from computer.	STOP

A. COMMENT

This command enables you to send messages to the MEDLARS Management Section at the National Library of Medicine. It is especially useful when the MEDLARS Service Desk is not staffed (before 8:30 a.m. and after 5:00 p.m. ET Monday-Friday or on weekends).

To send a comment, enter the command COMMENT. The system will begin a series of prompts as shown below:

```
SS 1 /C?
USER:
comment
PROG:
DOES YOUR COMMENT REQUIRE A RESPONSE FROM NLM?  (YES/NO)

USER:
yes                    <-- Typing no will bypass the address
PROG:                      information.
NAME & TELEPHONE NUMBER:

USER:
shannon westerfield   213/654-3210
PROG:
ADDRESS?

USER:
1001 magnolia street
PROG:
CITY, STATE (PLEASE DO NOT ABBREVIATE), AND ZIP-

USER:
los angeles, california  90025
PROG:
CONTINUE YOUR COMMENT OR TYPE THE WORD FINISHED.

USER:          <-- Type your comment in natural English.
please send me a 1989 schedule of training classes for
PROG:
CONTINUE YOUR COMMENT OR TYPE THE WORD FINISHED.

USER:
the "fundamentals of medlars searching".  thank you.
PROG:
CONTINUE YOUR COMMENT OR TYPE THE WORD FINISHED.

USER:
finished     <-- This signals to the computer that you have
PROG:            completed your comment.
SS 1 /C?
```

Type your message in natural English. There are no length limitations. Remember to include your telephone number so that you may receive a reply as promptly as possible.

B. **DISPLAY**

This command provides a descriptive online display of the search statements entered during the current search session. The search statements are displayed in numerical order with the number of postings retrieved by each statement. For example:

```
SS 1 /C?
USER:
cat diseases
PROG:
SS (1) PSTG (153)

SS 2 /C?
USER:
dog diseases
PROG:
SS (2) (413)

SS 3 /C?
USER:
1 or 2
PROG:
SS (3) PSTG (510)

SS 4 /C?
USER:
display
PROG:

SEARCH FORMULATION BEGINNING AT SS 1 :
(CAT DISEASES )   --  153 ITEMS IN MEDLINE

SEARCH FORMULATION BEGINNING AT SS 2 :
(DOG DISEASES )   --  413 ITEMS IN MEDLINE

SEARCH FORMULATION BEGINNING AT SS 3 :
(1 OR 2)          --  510 ITEMS IN MEDLINE

NO SUBHEADINGS APPLIED TO ANY SEARCH STATEMENT.

SS 4 /C?
```

This command is especially useful when a searcher is using a terminal with a screen and the strategy has scrolled off the screen.

C. ERASEALL

The command ERASEALL (abbreviated ERSLL) clears all previous search statements, eliminates all retrieved citations, and returns you to SS 1/C?. This command can be used after any search statement when you wish to return to the first search statement to begin a new search. After the search statements have been erased, they are unavailable for printing or for further inclusion in subsequent search statements.

```
SS 1 /C?
USER:
education, medical
PROG:
SS (1) PSTG (251)

SS 2 /C?
USER:
education, dental
PROG:
SS (2) PSTG (90)

SS 3 /C?
USER:
1 or 2
PROG:
SS (3) PSTG (340)

SS 4 /C?
USER:
prt 1 comp
PROG:

1
UI  - 88308947
AU  - Krivisky M ; Aberbouch L ; Shochat I ; Ribak J ; Tamir A ;
      Froom P
TI  - Left anterior hemiblock in otherwise healthy pilots.
SO  - Aviat Space Environ Med 1988 Jul; 59(7):651-2

SS 4 /C?
USER:
eraseall
PROG:

SS 1 /C?
```

The ERASEALL command can be used when the limit of 25 search statements has been reached and more space is needed. When you receive the 'SF,C' (Search Series Full, enter Command) message at the 25th search statement, the ERASEALL command allows the user to delete all search statements and begin anew at SS 1.

D. ERASEBACK

The command ERASEBACK (abbreviated ERSBK) is a means of deleting search statements selectively. The command, when entered by itself, will delete the last search statement with postings. For example, entering ERASEBACK at SS 21 eliminates the old SS 20 and re-prompts you for it.

```
PROG:
SS (20) PSTG (326)

SS 21 /C?
USER:
eraseback
PROG:

SS 20 /C?
USER:
```

When entered with a number, the ERASEBACK command will delete all search statements with numbers greater than or equal to the one entered with the command. The user will then be prompted for the search statement with the same number as that entered with the command. For example, entering ERASEBACK 9 at the USER: cue for SS 21 will re-prompt you for SS 9, thus deleting all search statements between and including SS 9 and SS 21.

```
SS (20) PSTG (326)

SS 21 /C?
USER:
eraseback 9
PROG:

SS 9 /C?
USER:
```

The ERASEBACK command is particularly useful at the end of a search series when the user has received the SF,C (Search Series Full, enter Command) message, as it allows the user to save some search statements while also gaining more work space.

E. EXPLAIN

The EXPLAIN command when entered by itself will provide an explanation of the last standard program message received by the searcher. For example:

```
SS 1 /C?
USER:
teratogenesis
PROG:
NP (TERATOGENESIS)

SS 1 /C?
USER:
explain
PROG:
NO POSTINGS MESSAGE:

NP---NO POSTINGS---THERE ARE NO POSTINGS FOR THE TERM (      )
EXACTLY AS ENTERED.  SEARCH ABORTED.

THIS IDENTIFIES TERMS IN THE SEARCH STATEMENT WHICH HAVE NO
POSTINGS.  USE THE NEIGHBOR COMMAND TO CHECK WHETHER YOU MIS-
SPELLED THE TERM OR WHETHER IT DOES NOT EXIST IN THE INDEX.
```

In addition, you may request an explanation of any command, program message, or online function by typing the command EXPLAIN followed by the item to be explained. For example:

```
SS 1 /C?
USER:
explain time ovflw
PROG:
TIME OVERFLOW
IT IS POSSIBLE FOR A USER TO ENTER A REQUEST THAT REQUIRES SO
MUCH PROCESSING THAT IT MUST BE INTERRUPTED TO PERMIT OTHER USERS
TO BE SERVICED.  THE PARTIALLY-COMPLETED REQUEST IS SAVED, AND
THE USER IS GIVEN THE TIME OVERFLOW MESSAGE.  IN SUCH A CASE, YOU
MAY CANCEL THE REQUEST BY ENTERING THE WORD 'NO' (WHICH, IN THE
CASE OF A SEARCH, WILL ABORT IT), OR MAY HAVE IT CONTINUE BY
ANSWERING 'YES'.
```

The complete list of explainable items will be printed in response to the command EXPLAIN EXPLAIN.

F. FILE

The command FILE is used to change from one NLM database to another. It may be entered at any USER: cue. When you enter the command FILE with the name of the new database, the program terminates interaction with the database you were currently searching and logs you into the new database. All search statements from the database previously connected to are erased.

For example, if you wanted to search the MEDLINE backfile, MED83, you would enter the following:

```
SS 1 /C?
USER:
file med83      <-- Be sure there is no space between MED and 83.
PROG:
YOU ARE NOW CONNECTED TO THE BACK83 (1983 - 85) FILE.
```

BACK83 is another acceptable name for the MED83 file.

A breakdown of MEDLINE and its backfiles as of December 1988 is:

NAME	ALIASES	YEARS
MEDLINE	(MED)	1988 - 1989
MED86	(BACK86, B86, M86)	1986 - 1987
MED83	(BACK83, B83, M83)	1983 - 1985
MED80	(BACK80, B80, M80)	1980 - 1982
MED77	(BACK77, B77, M77)	1977 - 1979
MED72	(BACK72, B72, M72)	1972 - 1976
MED66	(BACK66, B66, M66)	1966 - 1971

Each year the configuration of the Backfiles changes. Contact the MEDLARS Service Desk for the most recent configuration.

G. NEWS

The command NEWS enables you to receive information of immediate importance about the NLM online system. The news is printed out one item at a time with the most recent item printed first. The news may be updated daily and most items will only be retained in the NEWS for approximately one week. The NLM database called INFORM can be accessed to look at the current news items, because, unlike MEDLINE, this database is not charged on characters transmitted.

After each item of news is displayed, you will be prompted to continue the display of additional news items. The NEWS is arranged chronologically.

```
SS 1 /C?
USER:
file inform
PROG:
YOU ARE NOW CONNECTED TO THE INFORM FILE.

SS 1 /C?
USER:
news
PROG:

NEW 01/30/89

DATE OF ITEM          TOPIC
01/30/89      RECENT DATABASE UPDATES CHART
01/30/89      MEDLINE/AIDSLINE UPDATE: PT 2 OF 2 FOR 8903 (EM)
01/30/89      NEW TOXNET DATABANKS & SYSTEM ENHANCEMENTS
00/00/00      MEDLARS MANAGEMENT PHONE NUMBERS
PDQ           PDQ NEWS LAST UPDATED ON 9/27/88
TOXNET        TOXNET NEWS LAST UPDATED ON 9/25/88

MORE NEWS? (YES/NO)

USER:
yes
PROG:

NEW 01/30/89
                    RECENT DATABASE UPDATES
NLM          FILE NAME          UPDATE       CITATIONS     TOTAL
DATE                              TAG          ADDED     CITATIONS
01/28        AIDSLINE*          8903 (EM)        262        15,869
01/28        MEDLINE*           8903 (EM)     13,706       247,950
01/28        SDILINE            8903 (EM)     24,745        24,745
  NOTE:   PART 2 OF 2 FOR 8903 (EM)
MORE NEWS? (YES/NO)
```

Once you see a NEWS note that you have seen previously, say 'no' to the MORE NEWS? prompt. Because the NEWS items are arranged chronologically (most recent date first), there will be no news newer than the ones you have just seen.

H. SAVESEARCH

The SAVESEARCH command is used to keep search strategies in the computer's memory so that they can be used again later during online searching. A saved search enables you to keep a strategy to be run again against different databases (such as any of the MEDLINE backfiles) or to keep a "grouping" of related concepts to be used frequently when searching.

1. FORMAT FOR SAVING THE SEARCH

The command SAVESEARCH is used before the search terms have been entered. It alerts the computer that the terms to follow are to be saved in the memory whether or not they retrieve postings as you are entering the strategy. For example:

```
SS 1 /C?
USER:
savesearch
PROG:
ENTER SEARCH-

*STS* SS 1 /C?        <-- The *STS* symbol reminds you that all the
USER:                     terms you are typing will be saved.
synovial cyst
PROG:
SS (1) PSTG (44)

*STS* SS 2 /C?
USER:
1 and female
PROG:
SS (2) PSTG (20)

*STS* SS 3 /C?
USER:
finished          <-- Type the word 'FINISHED' to signal the
PROG:                 computer that you have completed the search.
SEARCHNAME?

USER:              <-- See the rules below for naming a search.
cysts
PROG:
SEARCH SET FROM SS 1 FORWARD SAVED AS 'CYSTS'.
SAVESEARCH COMPLETED.

SS 3 /C?
```

Only the last search statement will be used for the final printout or postings message; any terms that are not logically pulled together in the last statement will not be used for retrieval.

2. NAMING THE SAVESEARCH

The program will ask you to name the SAVESEARCH so that it may be recalled from the computer's memory by name for later use. There are limitations for names of saved searches:

1) The name can be no longer than 30 characters in length, including spaces.

2) The name must have at least one alphabetic character (i.e., not all numeric) and the name may not begin with a number.

3) A name can be used for only one saved strategy (i.e., each saved search name must be unique).

4) A name must not contain a Boolean logical operator (AND, OR) or any special characters (punctuation, etc.) - only alphabetic and numeric characters should be used.

3. USING THE SAVESEARCH

The search formulations may be recalled from the computer's memory by name as soon as the search has been saved. Enter the name of the SAVESEARCH followed by the qualifier (SN). For example:

```
SS 1 /C?
USER:
cysts (sn)          <-- SN = Search Name
PROG:
SS (1) PSTG (20)
```

SAVESEARCH names can be logically combined with other search terms. For example, to recall a previously saved search named 'ANTIBIOTICS', and combine its retrieval with a MeSH heading in one search statement, enter:

```
SS 1 /C?
USER:
kidney diseases and antibiotics (sn)
PROG:
SS (1) PSTG (56)
```

Only one set of postings will be retrieved, combining the results of the MeSH heading with the retrieval from the saved search. It is normal to incur TIME OVERFLOW messages when recalling saved searches.

4. DELETING SAVED SEARCHES

Saved searches are retained in the computer's memory until you remove them. To remove a SAVESEARCH, type SAVE followed by the name of the search followed by the word REMOVE (or DELETE). Do not qualify the search name with (SN). For example:

Removing a SAVESEARCH:

```
SS 1 /C?
USER:
save cysts remove
PROG:
SAVED SEARCH 'CYSTS' DELETED.
```

The search strategy is removed immediately.

5. LISTING SAVED SEARCHES

You can generate a list of your saved searches by using the SAVE LIST command. You will be shown how many saved searches exist for your User ID code, each search name, and how much free space is remaining in the saved search area.

```
SS 2 /C?
USER:
save list
PROG:
YOU NOW HAVE 2 SAVED SEARCHES.
CYSTS
ANTIBIOTICS
THERE IS 75 PERCENT FREE SPACE IN YOUR SAVESEARCH/PROFILE AREA.
```

Never save additional searches if the amount of free space in the SAVESEARCH area falls beneath 10%. In that situation, remove some saved searches before saving others.

6. DISPLAYING SAVED SEARCHES

The search formulation of a particular saved search can be viewed online by entering the command DISPLAY followed by the name of the saved search. Do not qualify (SN).

```
SS 1 /C?
USER:
display cysts
PROG:
SEARCH FORMULATION BEGINNING AT SS 1:
  (SYNOVIAL CYST)

SEARCH FORMULATION BEGINNING AT SS 2:
  (1 AND FEMALE)

NO SUBHEADINGS APPLIED TO ANY SEARCH STATEMENT.

SS 1 /C?
```

I. SHOW COST

The SHOW COST command enables users to see online the estimated costs of a search or of a total terminal session.

When used alone, SHOW COST displays cumulated totals and costs since you became connected to a particular database. For example:

```
SS 1 /C?
USER:
show cost
PROG:
THE ESTIMATED TOTAL ONLINE COST FOR THIS 3 MINUTE MEDLINE SESSION
IS $1.06.
```

To display cumulated totals and costs for all databases searched from the time of your initial login, use the command SHOW COST TOTAL. For example, if you have changed files from the time of your initial login and are entering the SHOW COST TOTAL command, the information received pertains to the entire online session, not only to the database to which you are presently connected.

```
SS 5 /C?
USER:
show cost total
PROG:
THE ESTIMATED TOTAL ONLINE COST FOR THIS 12 MINUTE TERMINAL
SESSION IS $4.56.
```

J. **STOP**

The command STOP ends the search session and disconnects the searcher from the system. After the command STOP is entered, the searcher will be asked "DONE? (YES/NO)". If you are finished searching, enter YES or Y; if not, enter NO or N. Information concerning the estimated cumulated charges and the amount of time you were connected to the system will be displayed before you receive the END OF SESSION message. For example:

```
SS 11 /C?
USER:
stop
PROG:
DONE? (YES/NO)

USER:
yes            <-- 'Y' is sufficient.
PROG:
TIME 0:05:36          NLM TIME 17:28:53
. . .

PROG:

GOOD-BYE!
THE ESTIMATED TOTAL ONLINE COST FOR THIS 6 MINUTE TERMINAL
SESSION IS $1.28.

***END OF SESSION***
```

It is possible to pre-answer the 'DONE? (YES/NO)' question by typing 'STOP Y'.

```
USER:
stop y
PROG:
TIME 0:21:02          NLM TIME 14:15:24
. . .

PROG:

GOOD-BYE!
THE ESTIMATED TOTAL ONLINE COST FOR THIS 21 MINUTE TERMINAL
SESSION IS $9.52.

***END OF SESSION***
```

MEDLINE SEARCH STRATEGY WORKSHEET

A. STATEMENT OF SEARCH TOPIC (what do I specifically want).

B. BREAKDOWN OF SEARCH TOPIC INTO CONCEPTS.

CONCEPT 1	CONCEPT 2	CONCEPT 3

C. POSSIBLE SEARCH TERMS (MeSH HEADINGS, TEXT WORDS, ETC.)

CONCEPT 1	CONCEPT 2	CONCEPT 3

D. SEARCH STRATEGY (include limiters for age groups, language, year, online abstracts, etc.)

SS 1

SS 2

SS 3

SS 4

SS 5

etc.

E. ALTERNATE TERMS/STRATEGIES FOR BROADER OR NARROWER RETRIEVAL.

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MEDLINE SEARCHING - EXERCISE

The following practice search questions have been designed to reinforce many of the searching techniques presented in this GUIDE. Using information presented within, as well as in the Medical Subject Headings, Annotated Alphabetic List, the Tree Structures, and Permuted MeSH, locate citations on the topics listed below. Use the MEDLINE database unless otherwise specified.

1. Articles written by Vincent T. DeVita, Jr.

2. English-language in vitro studies of glucose.

3. Review articles in which heart-lung transplantation is one of the main points.

4. Citations discussing prognosis of breast neoplasms in males.

5. Articles about drug holidays.

6. Recombinant DNA studies in E. coli, limited to the English language.

7. The negative effects associated with the use of sedatives in humans. Limit to English-language articles or foreign ones with English abstracts.

8. Studies on the use of fish oils in treating asthma.

9. English-language articles discussing the diagnosis of Alzheimer's disease in females.

10. Articles published in either LANCET or JAMA about bulimia since 1986. (Hint: Single word journal titles use that single word as the Title Abbreviation (TA).)

MEDLINE SEARCHING - EXERCISE -- SUGGESTED ANSWERS

1. Articles written by Vincent T. DeVita, Jr.

```
SS 1 /C?
USER:
nbr devita vt (au)              <-- Good idea to NBR authors' names.

PROG:

SELECT  #  POSTINGS  TERM
  1           1     DEVITA CL
  2           1     DEVITA J
  3           1     DEVITA VT
  4           4     DEVITA VT JR
  5           2     DEVITALE PL
UP N OR DOWN N OR ENTER A SELECT COMMAND.

USER:
sel 3, 4          <-- You may want to SELECT both variations of VT DEVITA
                      as he may have written without the JR at some time.
PROG:
SS (1) PSTG (5)

SS 2 /C?
USER:
prt 2 comp        <-- COMP will compress multiply-occurring data elements.

PROG:

1
UI  - 89068070
AU  - Surbone A ; Longo DL ; DeVita VT Jr ; Ihde DC ; Duffey PL ; Jaffe
      ES ; Solomon D ; Hubbard SM ; Young RC
TI  - Residual abdominal masses in aggressive non-Hodgkin's lymphoma after
      combination chemotherapy: significance and management.
SO  - J Clin Oncol 1988 Dec;6(12):1832-7

2
UI  - 88290713
AU  - DeVita VT JR ; Hubbard SM ; Young RC ; Longo DL
TI  - The role of chemotherapy in diffuse aggressive lymphomas.
RF  - REVIEW ARTICLE: 47 REFS.
SO  - Semin Hematol 1988 Apr;25(2 Suppl 2):2-10
```

2. English-language in vitro studies of glucose.

```
SS 1 /C?
USER:
tree glucose          <-- To see if there are any more specific terms
                          indented under GLUCOSE in the Tree Structures.
PROG:

Hexoses  D9.203.546.359
    Glucose  D9.203.546.359.448
        Glucose Solution, Hypertonic  D9.203.546.359.448.400

SS 1 /C?
USER:
exp glucose           <-- EXPloding GLUCOSE will pick up both GLUCOSE and
                          and GLUCOSE SOLUTION, HYPERTONIC.
PROG:
SS (1) PSTG (1511)

SS 2/C?
USER:
1 and in vitro

PROG:
SS (2) PSTG (182)

SS 3 /C?
USER:
2 and not for (la)    <-- AND NOT FOR (LA) used to search for English-
                          language articles.
PROG:
SS (3) PSTG (180)

SS 4 /C?
USER:
prt 4 ti

PROG:

1
TI  - Modulation by cytosolic pH of calcium and rubidium fluxes in rat
      pancreatic islets.

2
TI  - Vanadate raises fructose 2,6-bisphosphate concentrations and
      activates glycolysis in rat hepatocytes.

3
TI  - Metabolic acidosis induced by N-methyl-D-aspartate in brain slices
      of the neonatal rat: 31P- and 1H-magnetic resonance spectroscopy.

4
TI  - Translocation of glucose transporters in response to anoxia in
      heart.
```

3. Review articles in which heart-lung transplantation is one of the main points.

```
SS 1 /C?
USER:
*heart/tr          <-- The annotation in MeSH instructs you to use the sub-
                       heading TRANSPLANTATION (TR) for this concept.
PROG:
SS (1) PSTG (441)

SS 2 /C?
USER:
*lung/tr           <-- The asterisk (*) denotes that this term will be one of
                       the main points of the article.
PROG:
SS (2) PSTG (80)

SS 3 /C?
USER:
1 and 2            <-- The logical operator AND combines the two concepts.

PROG:
SS (3) PSTG (54)

SS 4 /C?
USER:
3 and review       <-- The MeSH heading REVIEW used to limit to review
                       articles.
PROG:
SS (4) PSTG (2)

SS 5 /C?
USER:
prt ti             <-- PRT without a number will print all of the citations.

PROG:

1
TI  - [Current developments in heart-lung transplantation and unilateral
      lung transplantation]

2
TI  - Cytomegalovirus infections in renal, heart, heart-lung and liver
      transplantation.
```

4. Citations discussing prognosis of breast neoplasms in males.

```
SS 1 /C?
USER:
tree breast neoplasms

PROG:
MM (Breast Neoplasms) (2)        <-- BREAST NEOPLASMS is found in two
  1     C4.588.180                   different Tree Structures.
  2     C19.146.170
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
all              <-- To look at both Tree Structures.

PROG:

Neoplasms By Site (Non Mesh)  C4.588
    Breast Neoplasms  C4.588.180
        Mammary Neoplasms, Experimental  C4.588.180.525

Breast Diseases   C19.146.170
    Breast Neoplasms  C19.146.170

SS 1 /C?
USER:
breast neoplasms       <-- After seeing the Tree Structures, the decision
                           was made NOT to EXPLODE this MeSH heading.
PROG:
SS (1) PSTG (2096)

SS 2 /C?
USER:
1 and prognosis and male       <-- Check Tag MALE used as limiter.

PROG:
SS (2) PSTG (16)

SS 3 /C?
USER:
prt ti 3         <-- PRT command elements may follow in any order as long
                     as the command PRT is used at the beginning.
PROG:

1
TI  - [Evaluation of the effectiveness of screening programs as a method
      of detection of malignant neoformations]

2
TI  - [Breast carcinoma in men: radiotherapy and treatment results]

3
TI  - Psychological response to cancer diagnosis--I. Correlations with
      prognostic variables.
```

5. Articles about drug holidays.

```
SS 1 /C?
USER:
(tw) drug and holiday#    <-- Prequalifier (TW) used for both Text Words.
                              The single character variation symbol (#)
PROG:                         used to search singular and plural.
MM (HOLIDAY#) (2)
            1  HOLIDAY (TW)
            2  HOLIDAYS (TW)
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
all

PROG:
SS (1) PSTG (4)
```

Another alternative:

```
SS 1 /C?
USER:
drug (tw) and all holiday# (tw)     <-- Post-qualifier (TW) used.
                                        ALL overrides the multi-meaning
PROG:                                   message.
SS (1) PSTG (4)

SS 2 /C?
USER:
prt -2 ar comp      <-- PRT -2 indicates the second citation, PRT 2 would
                        display the first two citations.
PROG:

2
UI  - 88297310
AU  - Di Rosa AE ; Morgante L ; Coraci MA ; Crisafulli A ; Cacciola G ;
      Di Stefano G ; Meduri M ; Di Perri R
TI  - Functional hyperthermia due to central dopaminergic impairment.
AB  - The clincal cases described are characterized by rigidity, mutism
      and hyperthermia, with cutaneous pallor and diaphoresis.  This
      symptomatology marks the "malignant neuroleptic syndrome" and can
      be found, at times, in parkinsonians on "drug holiday". The cases
      described, which comprehend patients with both disorders, lead us
      to a single pathogenetic hypothesis: a central dopaminergic
      impairment. Hyperthermia, secondary to functional hypothalamic
      deficiency, is maintained by defective heat dispersion due to the
      lack of cutaneous vasodilation.
SO  - Funct Neurol 1988 Apr-Jun;3(2):211-5
```

6. Recombinant DNA studies in E. coli, limited to the English language.

```
SS 1 /C?
USER:
dna, recombinant

PROG:
SS (1) PSTG (594)

SS 2 /C?
USER:
escherichia coli

PROG:
SS (2) PSTG (3110)

SS 3 /C?
USER:
1 and 2

PROG:
SS (3) PSTG (90)

SS 4 /C?
USER:
3 and not for (la)   <-- AND NOT FOR (LA) limits to English language.

PROG:
SS (4) PSTG (85)

SS 5 /C?
USER:
prt ti 4

PROG:

1
TI  - Expression of the Moloney murine leukemia virus and human
      immunodeficiency virus integration proteins in Escherichia coli.

2
TI  - Genetic manipulation of major P-fimbrial subunits and consequences
      for formation of fimbriae.

3
TI  - Characterization of a unique methyl-specific restriction system in
      Streptomyces avermitilis.

4
TI  - Composite IS1-tetracycline resistance elements in aerobactin-
      encoding FIme plasmids from epidemic Salmonella wien.
```

7. The negative effects associated with the use of sedatives in humans. Limit to English-language articles or foreign ones with English abstracts.

```
SS 1 /C?
USER:
subs apply ae, po, to    <-- AE = ADVERSE EFFECTS; PO = POISONING; TO =
                             TOXICITY subheadings.
PROG:
SUBHEADINGS ACCEPTED.

SS 1 /C?
USER:
exp hypnotics a#d sedatives  <-- Disguise the AND in this MeSH heading
                                 with a # sign to distinguish from the
PROG:                            logical operator AND.
SS (1) PSTG (147)

SS 2 /C?
USER:
subs cancel      <-- Remember to cancel the application of subheadings.

PROG:
SUBHEADINGS CANCELLED.

SS 2 /C?
USER:
1 and human            <-- Limits to HUMAN articles.

PROG:
SS (2) PSTG (106)

SS 3 /C?
USER:
2 and not for (la)       <-- Limits to English language.

PROG:
SS (3) PSTG (89)

SS 4 /C?
USER:
2 and english abstract   <-- Use MeSH heading ENGLISH ABSTRACT to search
                             foreign articles with English Abstracts.
PROG:
SS (4) PSTG (9)

SS 5 /C?
USER:
3 or 4       <-- Use logical operator OR to combine the retrieval from
                 both search statements.
PROG:
SS (5) PSTG (98)      <-- Print some sample titles from retrieval.
```

8. Studies on the use of fish oils in treating asthma.

```
SS 1 /C?
USER:
tree fish oils

PROG:
MM (Fish Oils) (3)
  1    D10.516.627.430
  2    J1.341.370.550
  3    J1.740.350
SPECIFY NUMBERS, ALL, OR, NONE-

USER:
all
PROG:

Oils   D10.516.627
    Fish Oils   D10.516.627.430
        Cod Liver Oil   D10.516.627.430.354
        Docosahexaenoic Acids   D10.516.627.430.375
        5,8,11,14,17-Eicosapentaenoic Acid   D10.516.627.430.390

Fish Products   J1.341.370
    Fish Oils   J1.341.370.550

Oils   J1.740
    Fish Oils   J1.740.350
        Cod Liver Oil   J1.740.350.300
        5,8,11,4,17-Eicosapentaenoic Acid   J1.740.350.375

SS 1 /C?
USER:
exp d10.516.627.430  <-- EXPloding by the Tree Number prevents a
                         Multi-Meaning Message.

PROG:
SS (1) PSTG (187)

SS 2 /C?
USER:
exp asthma

PROG:
MM (ASTHMA) (4)
            1  C8.127.108
            2  C8.381.495.108
            3  C8.674.95
            4  C20.543.480.680.95
NUMBER, NONE, OR EXPAND-

USER:
1       <-- Consulting the annotation in MeSH shows that only the first
            Tree Number has a + sign - indicating more specific terms
            available.
```

8. Continued.

PROG:
SS (2) PSTG (1119)

SS 3 /C?
USER:
1 and 2

PROG:
SS (3) PSTG (4)

SS 4 /C?
USER:
prt ti

PROG:

1
TI - Effect of eicosapentaenoic acid in asthma.

2
TI - Effects of a fish oil enriched diet on aspirin intolerant asthmatic patients: a pilot study.

3
TI - Effect of dietary supplementation with fish oil lipids on mild asthma.

4
TI - Fish oil in asthma.

9. English-language articles discussing the diagnosis of Alzheimer's disease in females.

```
SS 1 /C?
USER:
alzheimer's disease/di        <-- DI = DIAGNOSIS subheading.

PROG:
SS (1) PSTG (71)

SS 2 /C?
USER:
1 and female

PROG:
SS (2) PSTG (29)

SS 3 /C?
USER:
2 and not for (la)

PROG:
SS (3) PSTG (26)

SS 4 /C?
USER:
prt 5 br        <-- BR = BROWSE; in MEDLINE this is the same as PRT TI.
                    When using the BROWSE feature, printing is much more
PROG:               economical as characters are not charged.

1
TI  - Long-term occupational exposure and the diagnosis of dementia.

2
TI  - Is determination of plasma lipids useful in the differentiation of
      multi-infarct dementia from Alzheimer's disease?

3
TI  - Platelet tritiated imipramine binding and MAO activity in
      Alzheimer's disease patients with agitation and delusions.

4
TI  - Diagnosing dementia: do we get it right?

5
TI  - Correlation of phosphorus-31 magnetic resonance spectroscopy and
      morphologic findings in Alzheimer's disease.
```

10. Articles published in either LANCET or JAMA about bulimia since 1986.

FILE MEDLINE

```
SS 1 /C?
USER:
savesearch          <-- Execute a SAVESEARCH because you also need to search
                        the MED86 database; SAVESEARCH precludes the need to
PROG:                   type the strategy in twice.
ENTER SEARCH-

*STS* SS 1 /C?      <-- *STS* reminds you that you are in a storage mode.
USER:
bulimia

PROG:
SS (1) PSTG (119)

*STS* SS 2 /C?
USER:
1 and jama (ta)     <-- TA = Title Abbreviation for journal.

PROG:
SS (2) PSTG (2)

*STS* SS 3 /C?
USER:
1 and lancet (ta)   <-- One word journal titles will always be the Title
                        Abbreviation.
PROG:
SS (3) PSTG (2)

*STS* SS 4 /C?
USER:
2 or 3

PROG:
SS (4) PSTG (4)

*STS* SS 5 /C?
USER:
finished            <-- FINISHED signals the computer that you have completed
                        your SAVESEARCH strategy.
PROG:
SEARCHNAME?         <-- Prompts for search name; it should not be longer than
                        30 characters or contain any logical operators.
USER:
bulimia

PROG:
SEARCH SET FROM SS 1 FORWARD SAVED AS 'BULIMIA'.
SAVESEARCH COMPLETED.
```

10. Continued.

```
SS 5 /C?
USER:
prt ti     <-- Can still print from the above retrieval.

PROG:

1
TI  - Relapse to cocaine abuse after initiating desipramine treatment.

2
TI  - Self-poisoning in eating disorders [letter]

3
TI  - Slimming and serotonin [editorial]

4
TI  - Bulimia: when is a binge a binge? [letter]

SS 5 /C?
USER:
file med86          <-- FILE command used to change to another database.

PROG:
YOU ARE NOW CONNECTED TO THE BACK86 (1986 - 87) FILE.

SS 1 /C?
USER:
bulimia (sn)    <-- When executing a SAVESEARCH, always use the (SN)
                    qualifier.
PROG:
SS (1) PSTG (2)

SS 2 /C?
USER:
prt ti

PROG:

1
TI  - Bulimia vs bulimic behaviors on a college campus.

2
TI  - Naltrexone and bulimic symptoms [letter]

SS 2 /C?
USER:
save bulimia remove      <-- To remove the SAVESEARCH after you no longer
                             need it.  Do not use the (SN) qualifier.
PROG:
SAVED SEARCH 'BULIMIA' DELETED.
```

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APPENDIX

- Databases Available on the NLM MEDLARS System
- NLM Database Descriptions
- Searching Aids (Publications and Products)
- Regional Medical Libraries
- Charges for Domestic Users
- NLM Online Pricing Algorithm
- GRATEFUL MED Fact Sheet
- Telephone Numbers for TELENET, TYMNET, and Direct Dial
- Request for Online Training Code(s)
- Participant's Profile/Training Code Use Form

DATABASES AVAILABLE ON THE NLM MEDLARS SYSTEM

****

AIDSLINE	HISTLINE	NAME AUTHORITY FILE
AVLINE	INFORM	PDQ (User Friendly System)
BIOETHICSLINE	MEDLINE	POPLINE
CANCERLIT	MED86	SDILINE
CATLINE	MED83	SERLINE
CHEMLINE	MED80	TOXLINE
CLINPROT	MED77	TOXLIT
DIRLINE	MED72	TOXLIT65
DOCUSER	MED66	TOXNET SYSTEM - CCRIS
HEALTH PLANNING & ADMINISTRATION	MeSH Vocabulary File	- HSDB - RTECS

****

MEDLARS HOURS

ELHILL SYSTEM HOURS INCLUDING PDQ AND *MEDLEARN* :

"24 HOURS" ROUND-THE-CLOCK COMPUTER SERVICE

Guaranteed service: Sunday 11:15 p.m. ET - Saturday 5:00 pm ET
Non-guaranteed service: Saturday 5:00 pm ET - Sunday 11:00 pm ET

(Scheduled Daily Down Time: 11:00 pm ET - 11:15 pm ET)

TOXNET SYSTEM HOURS

"24 HOURS" ROUND-THE-CLOCK COMPUTER SERVICE

Scheduled down times do exist; are subject to change as system evolves.

FOR USER ASSISTANCE

MEDLARS MANAGEMENT SECTION SERVICE DESK --
Hours : 8:30 am ET - 5:00 pm ET - Monday thru Friday
Phone numbers: 301/496-6193 (within Maryland)
800/638-8480 (outside Maryland)

NATIONAL LIBRARY OF MEDICINE
ONLINE FILE DESCRIPTIONS

Following are brief descriptions of databases available on the NLM's Medical Literature Analysis and Retrieval System (MEDLARS):

AIDSLINE The AIDSLINE database is a collection of bibliographic references to journal articles on acquired immunodeficiency syndrome (AIDS). The initial database (made available in summer 1988) is extracted from the MEDLINE file covering the years 1980 forward. It is identical in structure to the MEDLINE database and is, therefore, searched in the same manner. Currently, the file contains over 15,500 records.

AVLINE AVLINE (AudioVisuals onLINE contains citations to more than 18,000 audiovisual teaching packages used in health sciences education at the college level and for the continuing education of practitioners. AVLINE may be searched by words in abstracts, medical subject headings, titles, names, sources, and elements of physical description such as medium and playing time. Media types include motion pictures, videocassettes, slide/ and filmstrip/cassette programs.

BIOETHICSLINE BIOETHICSLINE (BIOETHICS onLINE) is a file of about 26,400 references to materials on bioethical topics such as euthanasia, human experimentation, organ donation and transplantation, the allocation of health care resources, patients' rights, codes of professional ethics, in vitro fertilization and other reproductive technologies, genetic intervention, abortion, behavior control and mental health therapies. BIOETHICSLINE is produced by the Kennedy Institute of Ethics at Georgetown University.

CANCERLIT CANCERLIT (CANCER LITerature) is sponsored by the National Cancer Institute (NCI) and contains about 633,000 references dealing with various aspects of cancer. Since 1983 most journal literature has been derived from MEDLINE. NCI contractors continue to screen approximately 200 additional foreign language journal as wells as published literature references. All records from non-MEDLINE sources contain abstracts. Records added since January 1980 have been indexed using Medical Subject Headings (MeSH).

CATLINE CATLINE (CATalog onLINE) contains about 638,000 references to books and serials cataloged at NLM since 1965. CATLINE gives medical libraries in the network immediate access to authoritative cataloging information, thus, reducing the need for these libraries to do their own original cataloging. Librarians also find this database a useful source of information for ordering books and journals and for providing reference and interlibrary loan services.

CCRIS

CCRIS (Chemical Carcinogenesis Research Information System) is a scientifically evaluated and fully referenced database developed and maintained by the National Cancer Institute (NCI). It contains carcinogenicity, tumor promotion, and mutagenicity test results. Data is derived from the scanning of primary journals, current awareness tools, and a special core set of sources including a wide range of NCI reports. Test results have been reviewed by experts. CCRIS is organized by chemical name with some 1200 records.

CHEMLINE

CHEMLINE (CHEMical dictionary onLINE) is a file of some 1,000,000 names for chemical substances, representing 833,000 unique compounds. CHEMLINE, created by NLM in collaboration with Chemical Abstracts Service (CAS), contains such information as CAS Registry Numbers, molecular formulas, preferred chemical nomenclature, and generic and trivial names. The file may be searched by any of these elements and also by nomenclature fragments, making chemical structure searches possible.

CLINPROT

CLINPROT (CLINicial PROTocols) contains summaries of clinical investigations of new anti-cancer agents and treatment modalities. This database, which is sponsored by NCI, provides descriptions of the clinical trials, including patient entry criteria, the therapy regimen, and special study parameters. All the records in this database are retrievable by free text searching or by using a special list of more than 300 clinical protocol terms is used to index CLINPROT.

DIRLINE

DIRLINE (DIRectory of information resources onLINE) is derived from the National Referral Center (NRC) database, developed and maintained by the Library of Congress. It contains approximately 16,000 organization descriptions called information resources. The concept of an information resource is broadly defined to included any organization, institution, group, or individual with specialized information in a particular field and a willingness to share it with others on a reasonable basis. A description of each resource includes its special field of interest and the types of information service it is willing to provide.

DOCUSER

DOCUSER is a new (1988) ELHILL database containing directory information about libraries. Each of the 11,000+ records contains the name and address of the institution as well as the interlibrary loan policy, DOCLINE system information, and other network/consortium information for that library.

HEALTH

HEALTH PLANNING & ADMIN (Health Planning and Administration) contains about 439,000 references to literature on health planning, organization, financing, management, manpower, and related subjects. The references are from journals indexed for MEDLINE, Hospital Literature Index, and other journals selected for their emphasis on health care matters. This file is produced in cooperation with the American Hospital Association and the National Health Planning Information Center (NHPIC).

HISTLINE

HISTLINE (HISTory of Medicine onLINE) contains some 85,700 references to articles, monographs, symposia, and other publications dealing with the history of medicine and related sciences. This database is the source of NLM's annual Bibliography of the History of Medicine. Although there are selected references back to 1964, most of the material cited in the HISTLINE file has been published since 1970.

HSDB

HSDB (Hazardous Substances Data Bank) is a scientifically reviewed and edited databank containing toxicological information enhanced with data related to the environment, emergency situations, and regulatory issues. Organized by chemical name, the file contains over 4,190 records.

INFORM

The INFORM file is a file which contains only system information. It is suggested that users enter FILE INFORM to see the NEWS, issue EXPLAINS, display SAVE or STORESEARCHes, etc., because there is no character transmission charge for this file. It is not a database to be used for searching. Costs of displaying informational items will generally be less than half as much as they would be in MEDLINE.

MEDLEARN

MEDLEARN is a computer-assisted-instruction (CAI) program which teaches the novice user how to search the online system. It instructs the user to perform basic MEDLINE searches. The program provides online instruction including simulated subject searching and a quiz which is designed to evaluate the user's understanding of the material presented.

MEDLINE

MEDLINE (MEDLARS onLINE) contains approximately 250,000 references to biomedical journal articles published in the current and upcoming year. An English abstract, if published with the article, is frequently included. The articles are from 3500 journals published in the U.S. and 70 foreign countries. Coverage of earlier years (back to 1966) is provided by backfiles that total nearly 6,000,000 records.

MeSH

MeSH Vocabulary (Medical Subject Headings Vocabulary File) is an online vocabulary file of the 15,000+ subject headings that are used for indexing and retrieving citations and for subject cataloging. Also included are approximately 20,000 chemical term records.

NAF — NAF (Name Authority File) is an authority list of 312,000 personal names, series names, corporate names and series decision records used in the descriptive cataloging of NLM's monograph and serial collection. The NAF is primarily a support file for CATLINE, SERLINE, AVLINE, and HISTLINE.

PDQ — PDQ (Physician Data Query) is a user-friendly, menu-driven system designed by NCI to assist physicians in the treatment of cancer patients. It contains state-of-the-art treatment information on the major tumor types; directory information for approximately 10,000 physicians who devote a major portion of their practice to the treatment of cancer patients; directory information for approximately 2,000 organizations that provide care to cancer patients; and detailed summaries on more than 1,000 active clinical protocols for the treatment or various types of cancer.

POPLINE — POPLINE (POPulation Information onLINE) contains about 165,000 citations and abstracts to journal articles, monographs, and technical reports in the field of population, including basic research in reproductive biology, applied research in contraceptive technology, family planning, and demography. The database covers literature primarily from 1970 to the present with selected citations dating back to 1886.

RTECS — RTECS (Registry of Toxic Effects of Chemical Substances), formerly the Toxic Substances List, is an annual compilation prepared by the National Institute for Occupational Safety and Health (NIOSH). RTECS contains toxicity data for approximately 95,400 substances. Threshold limit values, recommended standards in air, and aquatic toxicity data are also included in this file on the TOXNET system.

SDILINE — SDILINE (Selective Dissemination of Information onLINE) contains references to the most current month of MEDLINE. The entire contents of the file are changed monthly and usually consist of approximately 28,000 citations. Users may store searches and have them run automatically by NLM each month against the new SDILINE file as a current awareness service.

SERLINE — SERLINE (SERials onLINE) contains bibliographic information for about 72,000 serial titles, including all journals which are on order or cataloged for the NLM collection. Location symbols for approximately 150 resource and selected major biomedical libraries in the RML Network appear for about one-third of the titles in the file. SERLINE is used by librarians to obtain information needed to order journals and to refer interlibrary loan requests.

TOXLINE

TOXLINE (TOXicology information onLINE) is a collection of about 918,000 references from 1965 on published human and animal toxicity studies, effects of environmental chemicals and pollutants and adverse drug reactions. Almost all references in TOXLINE have abstracts or indexing terms and many chemical compounds mentioned in TOXLINE are further identified with Chemical Abstracts Service Registry Numbers. The citations found in TOXLINE are derived from 12 secondary sources. All citations are from non-royalty sources and, therefore, the cost of searching TOXLINE is identical to MEDLINE searching.

TOXLIT

TOXLIT (TOXicology LITerature) is a collection of about 1,700,000 references from 1965 on published human and animal toxicity studies, effects of environmental chemicals and pollutants and adverse drug reactions. Almost all references in TOXLIT have abstracts and all chemical compounds mentions in TOXLIT are further identified with Chemical Abstracts Service Registry Numbers. The citations found in TOXLIT are derived from four secondary sources. All citations are from royalty sources, and, therefore, the cost of searching TOXLIT is higher than TOXLINE. Older material (771,593 records) is in the TOXLIT65 file (1965-1980).

TOXNET

TOXNET (TOXicology data NETwork) is a computerized system of toxicologically-oriented databanks. Currently operating on TOXNET are the following three files: CCRIS, HSDB and RTECS. More information on each file can be found under that file's name in this section.

SEARCHING AIDS

******ESSENTIAL FOR SEARCHING NLM ONLINE FILES******

NTIS Order Number	Title	Price/Copy
PB88-156252/GBB	Online Services Reference Manual, 1988	$ 55.00
PB89-100010/GBB	Medical Subject Headings - Annotated Alphabetic List, 1989	$ 28.50
PB89-100028/GBB	Medical Subject Headings - Tree Structures, 1989	$ 23.00
	******OTHER HELPFUL AIDS******	
PB89-100036/GBB	Permuted MeSH, 1989	$ 23.00
PB89-113054/GBB	Medical Subject Headings - Supplementary Chemical Records, 1989	$ 30.00
PB89-135610/GBB	List of Serials Indexed for Online Users, 1989	$ 20.50
	******FOR HEALTH PROFESSIONALS******	
PB89-146179/GBB	The Basics of Searching MEDLINE	$20.50
PB86-158482/GBB	GRATEFUL MED - A front-end software package for accessing MEDLARS via an IBM PC (or compatible) microcomputer and HAYES (or compatible) modem	$ 29.95
	******FOR INFORMATION ABOUT INDEXING******	
PB-254-270/GBB	MEDLARS Indexing Manual (Part I: Bibliographic Principles and Descriptive Indexing), 1977	$ 7.25
PB84-104280/GBB	MEDLARS Indexing Manual (Part II), 1983	$ 16.00
PB84-104298/GBB	Technical Notes: MEDLARS Indexing Instructions, 1984	$ 10.00
PB89-108013/GBB	Technical Notes: MEDLARS Indexing Instructions, Tumor Key Supplement, 1989	$ 12.00

ALL NLM SEARCHING AIDS LISTED ARE ORDERED FROM NTIS

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
SPRINGFIELD, VA 22161

NTIS ORDER FORM

TELEPHONE ORDERS
Call (703) 487-4650

TELEX 89-9405 Telecopier (703) 321-8547 Subscriptions: (703) 487-4630
(See reverse side for RUSH and EXPRESS ordering options)

- HANDLING FEE: A handling fee is required for each order except for Express, Rush, Subscription, or Pickup orders.
- SHIPPING: **U.S.:** Printed reports and microfiche copies are shipped First Class Mail or equivalent.
  FOREIGN: Regular service: Printed reports and microfiche copies are shipped surface mail.
  Air Mail service to Canada and Mexico: add $3 per printed report; 75¢ per microfiche copy.
  Air Mail service to all other addresses: add $6 per printed report; 75¢ per microfiche copy.
  SUBSCRIPTIONS and standing orders are sent surface mail; contact NTIS for air mail rates.

1 *Address Information*

PURCHASER: DATE: _____

Last Name First Initial

Title

Company/Organization

Address

City/State/ZIP

Attention

Telephone number

DTIC Users Code: _____ Contract No. _ _ _ _ _ _ (Last six digits)

SHIP TO (Enter ONLY if different from purchaser):

Last Name First Initial

Title

Company/Organization

Address

City/State/ZIP

Attention

Telephone number

2 *Method of Payment*

☐ Charge my NTIS Deposit Account _ _ _ _ _ _-_ _

Charge my ☐ Amer. Express ☐ VISA ☐ MasterCard

Account No. _____ Exp. _____

Signature: _____
(Required to validate all orders)

☐ Check/Money order enclosed for $ _____

☐ Please bill **ADD $7.50 per Order** (See below for restrictions)†

Purchase Order No. _____

Employer Identification No. _ _ _ _ _ _ _ _ _

3 *Order Selection* (For Computer products, see reverse)

Enter NTIS order number(s) (Ordering by title only will delay your order)	Customer Routing†† (up to 8 digits)	QUANTITY Paper Copy	QUANTITY Micro-fiche	UNIT PRICE	Foreign Air Mail	TOTAL PRICE
1.						
2.						
3.						
4.						
5.						
6.						
7.						

☐ **OVER** - Order continued on reverse

SUBTOTAL From Other Side	
Regular Service Handling Fee per order ($3 U.S., Canada, Mexico; $4 others)	
Billing Fee if required ($7.50)	
GRAND TOTAL	

† Billing Service: This service is restricted to U.S. addresses for an additional $7.50 per order. Your business employer identification number plus phone number of the office paying the bill are required. A late payment charge will be applied to all billings more than 30 days overdue.

†† Customer Routing Code: NTIS can label each item for routing within your organization. If you want this service, put your routing code in this box.

Rev. 2/19/87

U.S DEPARTMENT OF COMMERCE
National Technical Information Service
SPRINGFIELD, VA 22161

NTIS ORDER FORM - Side 2

3 *Order Selection (Cont.)*

Enter the NTIS order number(s) (Ordering by title only will delay your order)	Customer Routing ††	QUANTITY: Paper Copy	QUANTITY: Micro-fiche	UNIT PRICE	Foreign Air Mail	TOTAL PRICE
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						
16.						
17.						
18.						
19.						
				Subtotal		

ENTER this amount on the other side of this form. ⇨

4 *Computer Products Order Selection*

If you have questions about a particular computer product, please call our Computer Products Support Group at (703) 487-4763.

Enter the NTIS order number(s) (Ordering by title only will delay your order)	Customer Routing ††	TAPE DENSITY (9 track): 1600bpi	TAPE DENSITY (9 track): 6250bpi	TOTAL PRICE
20.				
21.				
22.				
23.				
		Subtotal		

All magnetic tapes are sent air mail or equivalent service to both U.S. and foreign addresses.

ENTER this amount on the other side of this form. ⇨

SPECIAL RUSH and EXPRESS ORDERING OPTIONS

Telephone: (800) 336-4700
in Virginia call
(703) 487-4700

RUSH SERVICE: Orders are processed within 24 hours and sent First Class or equivalent.
- Pick up at NTIS - $7.50 *per item*
- Delivery to U.S. addresses - $10 *per item*

EXPRESS SERVICE (U.S. Addresses Only): Orders are processed within 24 hours AND delivered by overnight courier for an additional $20 *per item*.

Rev. 3/19/97

REGIONAL MEDICAL LIBRARIES

The Regional Medical Library Program is intended to provide health science practitioners, investigators, educators, and administrators in the United States with timely, convenient access to health care and biomedical information resources. The Program is coordinated by the National Library of Medicine and carried out through a nationwide network of more than 4,000 health science libraries and information centers. The Network includes seven Regional Medical Libraries, or RMLs. These are major institutions under contract with NLM to administer and coordinate services in each of seven geographical regions. Services offered through the Network include document delivery; reference service, development and maintenance of regional bibliographic locator tools, referral service for basic library training and consultation, and online access to more than 20 databases on the NLM Medical Literature Analysis and Retrieval System (MEDLARS). Some 17,000 individuals and Network libraries, including medical schools, hospitals, public health and other institutions, currently have access to MEDLARS. Three of the Regional Medical Libraries have been designated Online Training and Service Centers, conducting NLM online training classes and coordinating other online services within their "mega-region."

****

1. **Greater Northeastern Regional Medical Library Program**
   The New York Academy of Medicine
   2 East 103rd Street
   New York, NY 10029
   Phone: 212/876-8763
   States Served: CT, DE, MA, ME, NH, NJ, NY, PA, RI, VT, and Puerto Rico
   ONLINE CENTER for Regions 1 and 2

2. **Southeastern/Atlantic Regional Medical Library Services**
   University of Maryland
   Health Sciences Library
   111 South Greene Street
   Baltimore, MD 21201
   Phone: 301/328-2855
   800/638-6093
   States Served: AL, FL, GA, MD, MS, NC, SC, TN, VA, WV, the District of Columbia, and the Virgin Islands

3. **Greater Midwest Regional Medical Library Network**
   University of Illinois at Chicago
   Library of the Health Sciences
   P.O. Box 7509
   Chicago, IL 60680
   Phone: 312/996-2464
   States Served: IA, IL, IN, KY, MI, MN, ND, OH, SD, WI

4. **Midcontinental Regional Medical Library Program**
University of Nebraska
Medical Center Library
42nd and Dewey Avenue
Omaha, NE 68105-1065
Phone: 402/559-4326
800/633-7654
States Served: CO, KS, MO, NE, UT, WY
ONLINE CENTER for Regions 3, 4, and 5

5. **South Central Regional Medical Library Program**
University of Texas
The Southwestern Medical Center at Dallas
5323 Harry Hines Boulevard
Dallas, TX 75235-2085
Phone: 214/688-2085
States Served: AR, LA, NM, OK, TX

6. **Pacific Northwest Regional Health Sciences Library Service**
Health Sciences Library and Information Center
University of Washington
Seattle, WA 98195
Phone: 206/543-8262
States Served: AK, ID, MT, OR, WA

7. **Pacific Southwest Regional Medical Library Service**
Louise Darling Biomedical Library
University of California
10833 Le Conte Avenue
Los Angeles, CA 90024-1798
Phone: 213/825-1200
States Served: AZ, CA, HI, NV, and U.S. Territories in the Pacific Basin
ONLINE CENTER for Regions 6 and 7

EFFECTIVE MARCH 1, 1989

NLM ONLINE PRICING ALGORITHM CHARGES TO DOMESTIC USERS[1/]

File	Connect Charge (Per Hour)		Search Statement Charge	Online Citation Charge	Interaction Charge (Carriage Returns)	Computer Resources Disk Accesses (Per 100)		Online Character Charge (Per 1,000)		Average Searcher Charges* (Per Hour)	
	Non-Prime	Prime				Non-Prime	Prime	Non-Prime	Prime	Non-Prime	Prime
ELHILL SYSTEM											
MEDLINE & Backfiles	$ 5.10	$ 7.85	$.02	$.01	$.01	$.07	$.13	$.08	$.12	$16.50	$23.50
TOXLIT & TOXLIT65	44.10**	46.85**	.54**	.41**	.01	.07	.13	.08	.12	158.00	165.00
TOXLINE	5.10	7.85	.02	.01	.01	.07	.13	.08	.12	16.50	23.50
CHEMLINE	44.10***	46.85***	.28***	.40***	.01	.07	.13	.08	.12	88.00	95.00
INFORM	5.10	7.85	.02	--	.01	.07	.13	--	--	8.50	11.50
All Other	5.10	7.85	.02	.01	.01	.07	.13	.08	.12	16.50	23.50
MEDLEARN	16.50	23.50	--	--	--	--	--	--	--	16.50	23.50
PDQ	16.50	23.50	--	--	--	--	--	--	--	16.50	23.50
TOXNET SYSTEM											
HSDB	$ 8.00	10.00	.04	--	.02	--	--	.08	.12	18.60	25.70
CCRIS	8.00	10.00	.04	--	.02	--	--	.08	.12	18.60	25.70
DBIR	8.00	10.00	.04	--	.02	--	--	.08	.12	18.60	25.70
ETICBACK	8.00	10.00	.04	--	.02	--	--	.08	.12	18.60	25.70
RTECS	8.00	10.00	.04	--	.02	--	--	.08	.12	18.60	25.70

* Average searcher charges per hour may differ according to computer resources used and citations and characters printed online.

** Includes royalty charges of $39.00 per Connect Charge, $0.52 per Search Statement, and $0.40 per Online Citation Charge for TOXLIT and its Backfile (TOXLIT65).

***Includes royalty charges of $39.00 per Connect Charge, $0.262 per Search Statement, and $0.39 per Online Citation Charge for CHEMLINE.

NLM OFFLINE CHARGES TO DOMESTIC USERS[1/]

Pages	Per Page	
MEDLINE and other databases	$0.25	
TOXLIT & TOXLIT65	1.20	(Includes $0.95 royalty charge per page)
CHEMLINE	1.77	(Includes $1.52 royalty charge per page)
TOXNET (HSDB, RTECS or CCRIS)	0.25	
Offsearches	**Per File**	
All Databases	$1.00	(plus page charges)
Automatic SDI Searches		
SDILINE, HEALTH, AVLINE, CATLINE, CANCERLIT, POPLINE, TOXLINE	1.00	(plus page charges)
TOXLIT	5.00	(plus page charges; includes $4.00 royalty charge)

Current prime time is 10:00 AM to 5:00 PM Eastern Time, Monday through Friday. All other time is non-prime.

1/Non-U.S. online users incur charges under the NLM online pricing algorithm and are charged $3.00 extra on the connect charge (per hour) portion and $0.10 extra per offline printed page.

NLM'S ONLINE PRICING ALGORITHM

The National Library of Medicine's Online Searching is being billed on the basis of an algorithm (see preceding page) that includes connect hour use, work performed by the NLM computer, and characters created for transmission to the searcher's terminal. Online revenues are designed to recover the costs associated with database access.

The pricing algorithm distributes costs equitably to users based on actual work performed and system resources used rather than simply by time. Searchers making extensive use of the system to retrieve and process large number of citations (e.g., downloading) should expect to pay somewhat higher charges.

The components of the online pricing algorithm are:

CONNECT TIME: The algorithm includes an amount for prime and non-prime time connect hours* to cover telecommunication costs. Royalty or use charges, when applicable, are included in this component.

COMPUTER WORK: Users are charged for the actual computer work, i.e., entering a search statement, carriage return (interactions), citations printed, and disk accesses (accesses to a disk for retrieval of citations).

CHARACTERS PRINTED: A charge is made for the number of characters prepared for transmission to the user's terminal. PRINT commands will have the greatest effect on the amount of this charge. Users printing a large number of citations or downloading will pay proportionately. Two users, one using a 300 baud terminal and the other a 2400 baud terminal, will pay the same amount for characters transmitted to the terminal regardless of the speed of transmission.

In order to encourage the browsing of retrieved citations to achieve relevancy, the NLM has decided that the printing of a single NLM-specified data element (usually the title) will not incur the citation charge. This will save $.01 per citation and much more in the case of the royalty databases such as TOXLIT, TOXLIT65, and CHEMLINE. The 'PRINT BROWSE' ('PRT BR') feature allows for this savings. Consult the Online Services Reference Manual to determine the "Browse" data element for each database.

*Current prime time is 10:00 a.m. to 5:00 p.m. Eastern Time, Monday through Friday. All other time is non-prime.

GRATEFUL MED
Version 4.0

GRATEFUL MED is a microcomputer based software package which provides a user-friendly interface to selected databases of the National Library of Medicine's (NLM) MEDLARS system. GRATEFUL MED was designed to simplify access to biomedical information, therefore, the user is not required to know the formal search language of the NLM system. In addition, it assumes telecommunications procedures and search commands which often frustrate database searchers. More than 13,000 copies have been sold since it was introduced in February 1986. Version 4.0, which added a number of enhancements, was released in December 1988.

HARDWARE/SOFTWARE REQUIREMENTS

- o IBM PC or compatible with at least 256K memory
- o At least one double-sided, double density disk drive
- o DOS operating system (Version 2.0 or higher)
- o Hayes Smartmodem or completely compatible modem

HOW IT WORKS

Before connecting to the NLM computer over a local phone line, the user formulates a search. (Since this is done first, there is no cost for the formulation time.) An input screen for the database to be searched appears on the screen and the user formulates the search by entering relevant terms or perhaps an author's name. When formulating a search on an Input Form Screen, GRATEFUL MED users can enter terms of their choosing or browse and select from NLM's controlled vocabulary, Medical Subject Headings (MeSH) of more than 15,000 MeSH terms. Any combination of terms may be selected. Terms selected from the MeSH display will then be automatically transferred to the Input Form Screen. Once the formulation is complete, the searcher decides whether or not to retrieve abstracts, then instructs GRATEFUL MED to send the search to the NLM computer. GRATEFUL MED takes over at this point and connects to the NLM computer, enters the search (making any necessary changes in format), and downloads the resulting references.

After downloading, GRATEFUL MED presents each citation for review. Citations the user selects as relevant can be printed on a printer, or written to a file named by the searcher. GRATEFUL MED can also analyze the relevant citations and suggest additional search terms from MeSH.

VERSION 4.0 FEATURES

Moving through the program is now faster and easier. Many screens have been revised and input screens have been added for two more databases, AIDSLINE and SDILINE. Screen formulations can now be saved to use later. This is especially useful for searchers using SDILINE to update bibliographies. After each search, the number of postings retrieved for each line of the Input Form Screen is displayed to show how each line affected the results of the search.

The MeSH display is bigger (more terms), easier ("point and shoot" selection of terms), and clearer (explanations provided to differentiate between similar terms).

There is now easier access to PDQ and added access to the TOXNET system of databanks.

Searches can be limited to citations from a user-selected list of 10-15 journals.

Citations can be easily transferred to bibliographic management programs.

PC mouse interaction is available.

There is now simple activation for special applications, e.g., multiple users; and a user log to record information about each search session.

DATABASES AVAILABLE

A GRATEFUL MED user can select from the following databases to search:

AIDSLINE -- references to articles about AIDS

AVLINE -- records of audiovisual materials for health science education

CANCERLIT -- citations, 1976 forward, for cancer-related literature

CATLINE -- catalog records for books and journals

CHEMLINE -- entries in a dictionary file of chemical substance appearing in MEDLARS databases.

DIRLINE -- organizations that provide information for the general public

HEALTH -- bibliographic records on the non-clinical aspects of health care delivery

MEDLINE -- biomedical references back to 1966, (approximately six million references)

SDILINE -- the current month on MEDLINE citations

TOXLINE -- citations to toxicological information from non-royalty sources

TOXLIT -- citations to toxicological information from royalty sources

Direct access is also available for the following systems:

PDQ - a menu-driven database designed to assist physicians in the treatment and referral of cancer patients.

TOXNET - (Toxicology Data Network) factual databanks:
Hazardous Substances Data Bank (HSDB),
Registry of Toxic Effects of Chemical Substances (RTECS),
Chemical Carcinogenesis Research Information System (CCRIS).

ATTENTION SYSTEMS DESIGNERS

GRATEFUL MED includes a "Search Engine" which will permit those who are creating customized information systems or artificial intelligence programs to include the GRATEFUL MED search capability. For example, an artificial intelligence information system developed at NLM (AI/RHEUM) utilizes the GRATEFUL MED search engine in its software so that the system will automatically retrieve references and abstracts pertinent to the question at hand.

COSTS

The GRATEFUL MED software is available from the National Technical Information Service. (See NTIS Order Form in Appendix) The cost of the software package is $29.95 and the order number is PB86-158482/GBB. Phone orders will be accepted for credit card or deposit account orders only. The GRATEFUL MED package includes the Master Program Disk and a Master MeSH Disk, a User's Guide, and an application form for a code to the NLM system. Those who already have a MEDLARS code need not get another. GRATEFUL MED is available in both the 5 1/4" and 3 1/2" disk sizes.

If you have questions about the GRATEFUL MED program, please contact:

MEDLARS Management Section
National Library of Medicine
8600 Rockville Pike
Bethesda, MD 20894

(800) 638-8480 (toll-free)
(301) 496-6193

Telephone Numbers for TYMNET,

TELENET and Direct Dial Access

to the NLM Computer

This list is regularly produced by the Systems Support Branch, Office of Computer and Communications Systems, NLM. MEDIARS Management Section reproduces and distributes it as an enclosure with the NLM Technical Bulletin.

Please note the following features when using this list:

The list is alphabetized by the full spelling of the state; however, the two-letter abbreviations appear on the list. Not all suburban areas are listed; therefore, when looking for a specific city, one should check for cities in the entire calling area as well as the specific exchange.

To locate the speed of the line, read the modem designation at the right of each number and refer to the legend at the beginning of the list. For example, "A" following a telephone number indicates Bell 212A compatible, 300 or 1200 bps (bits per second, or baud).

The networks are offering an increasing number of 2400 bps nodes. As indicated in the legend, these numbers are followed by a dollar sign ($). A compatible 2400 bps modem is required to use these nodes.

NOVEMBER 29, 1988

NETWORK ACCESS NUMBERS

```
**************************************
*                                    *
*  X = Bell 113: 300 bps             *
*  A = Bell 212A: 300/1200 bps       *
*  V = vadic 3405:1200 bps           *
* BV = Bell 212A/Vadic  3467         *
*  $ = 2400 bps:must have compatible *
*       2400 bps modem               *
*  * = NLM Direct Dial Number        *
*                                    *
* AN = AlaskaNet (does not work with *
*      Grateful Med)                 *
* CN = ConnNet (does not work with   *
*      Grateful Med)                 *
**************************************
```

City	St	Tymnet		Telenet	
Anniston	AL	205/236-3342 BV		205/236-9711 BV	
Birmingham	AL	205/942-4141 BV		205/328-2310 BV	
Birmingham	AL	205/942-7898 $		205/251-1885 $	
Decatur	AL			205/355-0206 BV	
Dothan	AL	205/794-7954 BV		205/793-5034 BV	
Florence	AL	205/760-0030 BV		205/767-7960 BV	
Gadsden	AL	205/543-3550 BV			
Huntsville	AL	205/882-3003 BV		205/539-2281 BV	
Mobile	AL	205/343-8414 BV		205/432-1680 BV	
Mobile	AL			205/438-6881 $	
Montgomery	AL	205/265-4570 BV		205/269-0090 BV	
Montgomery	AL			205/832-4314 $	
Tuscaloosa	AL	205/349-5670 BV		205/752-1472 BV	
Anchorage	AK	907/258-7222 BV	AN	907/276-0453 BV/$	AN
Anchorage	AK			907/276-0453 $	
Barrow	AK	907/852-2425 BV	AN	907/852-2425 BV	AN
Bethel	AK	907/543-2411 BV	AN	907/543-2411 BV	AN
Cold Bay	AK	907/532-2371 BV	AN	907/532-2371 BV	AN
Cordova	AK	907/424-3744 BV	AN	907/424-3744 BV	AN
Dead Horse	AK	907/659-2777 BV	AN	907/659-2777 BV	AN
Delta Junction	AK	907/895-5070 BV	AN	907/895-5070 BV	AN
Dillingham	AK	907/842-2688 BV	AN	907/842-2688 BV	AN
Fairbanks	AK	907/456-3282 BV	AN	907/456-3282 BV	AN
Glennallen	AK	907/822-5231 BV	AN	907/822-5231 BV	AN
Homer	AK	907/235-5239 BV	AN	907/235-5239 BV	AN
Iliamna	AK	907/571-1364 BV	AN	907/571-1364 BV	AN
Juneau	AK	907/789-7009 BV	AN	907/789-7009 BV	AN
Kenai	AK	907/262-1990 BV	AN		
Ketchikan	AK	907/225-1871 BV	AN	907/225-1871 BV	AN
King Salmon	AK	907/246-3049 BV	AN	907/246-3049 BV	AN
Kodiak	AK	907/486-4061 BV	AN	907/486-4061 BV	AN
Kotzebue	AK	907/442-2602 BV	AN	907/442-2602 BV	AN
McGrath	AK	907/524-3256 BV	AN	907/524-3256 BV	AN
Nome	AK	907/443-2256 BV	AN	907/443-2256 BV	AN
Northway	AK	907/778-2301 BV	AN	907/778-2301 BV	AN
Palmer	AK	907/745-0200 BV	AN	907/745-0200 BV	AN
Prudhoe Bay	AK	907/659-2777 BV	AN	907/659-2777 BV	AN
Seward	AK	907/224-3126 BV	AN	907/224-3126 BV	AN
Sitka	AK	907/747-5887 BV	AN	907/747-5887 BV	AN
Soldotina	AK	907/262-1990 BV	AN	907/262-1990 BV	AN
St. Paul	AK	907/546-2320 BV	AN	907/546-2320 BV	AN
Talkeetna	AK	907/733-2227 BV	AN	907/733-2227 BV	AN
Tanana	AK	907/366-7167 X	AN	907/366-7167 BV	X
Valdez	AK	907/835-4987 BV	AN	907/835-4987 BV	AN
Wasilla	AK	907/745-0200 BV	AN		
Whittier	AK	907/472-2467 BV	AN	907/472-2467 BV	AN
Yakutat	AK	907/784-3453 BV	AN	907/784-3453 BV	AN
Mesa	AZ	602/254-5811 BV			
Mesa	AZ	602/258-0554 $			
Phoenix	AZ	602/254-5811 BV		602/254-0244 BV	
Phoenix	AZ	602/258-0554 $		602/256-6955 $	

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REQUEST FOR ONLINE TRAINING CODE(S)

FOR USE IN PRACTICING MATERIAL COVERED IN "BASICS" OR GRATEFUL MED TRAINING

CHECK ONE:

____ I AM EITHER ENGAGING IN SELF STUDY OR TEACHING A COURSE USING THE MANUAL, "THE BASICS OF SEARCHING MEDLINE"

____ I AM TEACHING A COURSE ON SEARCHING USING NLM'S GRATEFUL MED AND NEED CODES FOR STUDENTS

NAME OF REQUESTING INDIVIDUAL OR TRAINER _____

ORGANIZATION (IF APPLICABLE) _____

ADDRESS _____

_____

CITY/STATE/ZIP CODE _____

PHONE NUMBER (INCLUDE AREA CODE) _____

LOCATION OF TRAINING (IF A COURSE) _____

DATE(S) CODE(S) NEEDED _____

NUMBER OF CODES* _____

I agree to send the National Library of Medicine a profile sheet for myself or for persons trained after use of the training code(s).

SIGNATURE _____

DATE _____

*One code per terminal/microcomputer. No more than 10 codes for one course without written request for special consideration. Each code is limited to no more than six hours over a time period not to exceed 3 weeks total time.

Return this form to the MEDLARS Management Section. Fold as indicated on reverse and affix postage. Allow two weeks for return of code(s). Call the MMS Service Desk, M-F, 8:30 am - 5 pm, 1-800-638-8480, if you need code(s) for a special rush situation.

FOR NLM USE ONLY

DATE(S) CODE(S) NEEDED _____

CODE(S) ASSIGNED _____

MMS 1989

PARTICIPANT'S PROFILE / TRAINING CODE USE

A training code was used to practice searching for: (please check one):

☐ The Basics of Searching MEDLINE (either self-study or attendance at course) OR ☐ GRATEFUL MED training course

1. Name: _____

2. Organization (if applicable) _____

3. Address: _____

4. City/State/Zip Code _____

5. Daytime Telephone Number ( )_____ Ext. _____

6. Profession (general, such as):

____ Physician ____ Researcher ____ Medical Student

____ Dentist ____ Nurse ____ Librarian/Information Specialist

____ Other (please specify): _____

7. If a physician, please check your area of specialization:

____ ALLERGY AND IMMUNOLOGY
____ ANESTHESIOLOGY
____ COLON AND RECTAL SURGERY
____ DERMATOLOGY
____ EMERGENCY MEDICINE
____ FAMILY PRACTICE
____ INTERNAL MEDICINE
____ NEUROLOGICAL SURGERY
____ NUCLEAR MEDICINE
____ OBSTETRICS AND GYNECOLOGY
____ OPHTHALMOLOGY
____ ORTHOPAEDIC SURGERY
____ OTOLARYNGOLOGY
____ PATHOLOGY
____ PEDIATRICS
____ PHYSICAL MEDICINE AND REHABIL.
____ PLASTIC SURGERY
____ PREVENTIVE MEDICINE
____ PSYCHIATRY AND NEUROLOGY
____ RADIOLOGY
____ SURGERY
____ THORACIC SURGERY
____ UROLOGY

8. Date(s) of training/self study: ___/___/___ City/site of training (if course): _____

Thank you for providing this information and for returning the form. We hope you enjoyed your practice time on the MEDLARS databases. Fold along indicated lines on reverse and return to NLM.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1989— 233-109/001

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