

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

All searches in MEDLINE follow the basic format as described in the previous sections. Connecting to the database is straight-forward; and down-loading, formatting, printing, and presenting your results are also straight-forward. The complexity is in structuring your search so that you optimize the retrieval for relevant information. Retrieving “review” citations cuts across all aspects of a subject and provides expert summaries. Once that is done and once you have reviewed that material and marked items of interest, then proceed to refine your retrieval by more focused searches. There are numerous ways to structure a search; and the quality of your results will depend on the precision of the terms and tags which you use. Once you become familiar with the database and its structure, then it is possible to construct very specialized searches to suit your particular needs. In this section, we will explain the database in greater detail and provide a variety of MEDLINE searches which serve some of the more obvious medical functions.

However, before explaining these specialized searches, it will be worthwhile to learn two general procedures which researchers use in many situations - the “shotgun” approach and “Related Articles” function. The term “shotgun” is the author’s own metaphor; “Related Articles” is an official descriptor.



DoctorInternet

Note: If you are researching a cancer, then go next to section 11 - CancerNet/PDQ. After doing those routines, return here for these procedures.

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

3(A) - THE SHOTGUN APPROACH. Although we will spend a lot of time explaining precision searches, one variation must be noted first. After doing a preliminary search for “review” articles, many researchers go back and do a “shotgun” search. Using their MeSH term, they will download all of the citations during a period of 3-5 years, without specifying the “Publication Type” or any particular “Sub-heading. This can involved several thousand citations. They will print all of them and read through the titles and abstracts, marking particular citations of interest. This may seem laborious, but once one becomes accustomed to reading citations, a person can cover an immense volume of material, rapidly. Further, with this shotgun approach, one frequently finds many items of interest which would have been missed with more precise searches. Again, with some exceptions, a retrieval comes in reverse chronologic order, so one obtains the most recent, first.

EXPERT SUMMARY

3(A) - THE SHOTGUN SEARCH.

- 1 - Log to [<http://www.ncbi.nlm.nih.gov/PubMed>].
- 2 - **Homepage:** National Library of Medicine / PubMed.
- 3 - Select link for “**MeSH Browser**”, find proper term as in Procedure 2, select “**Add**” button, and select “**PubMed Search**”.
- 4 - Select the link called “**Limits**”, and in the sector for “**Publication Date**”, type in a span of years (try the last 3 years). Select “**Go**”. (If you retrieve more than 4,000 citations, go back and narrow the dates.)
- 5 - In the “**Display**” menu, select “**Abstract**”; and then select the “**Save**” button. This will download all of the citations, up to 10,000. (Note: this download takes time. For the status, observe the meter at the bottom of your browser.)

Most people will not use this shotgun approach. However, all will want to employ the following “Related Articles” function.

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

3(B) - USING THE RELATED ARTICLES LINK. This will be a fairly intricate set of procedures, so if you can do it, consider yourself to be somewhat advanced. MEDLINE has a very sophisticated algorithm which allows you to take one specific citation and, from there, initiate a new search which is automatically designed to retrieve other citations that are very close to that original. Thus, even if you obtain only a few relevant articles from a search, you can then take those articles and use them to launch specialized retrievals. This “**Related Articles**” function is extremely powerful. By using it, together with the previous procedures, you may be able to circumvent the complexities of searching with “Sub-headings”.

□ 1: *Endocr J* 2000 Dec;47(6):787-91

[Related Articles, Books](#)

A case of obesity, diabetes and hypertension treated with very low calorie diet (VLCD) followed by successful pregnancy with intrauterine insemination (IUI).

Katsuki A, Sumida Y, Ito K, Murashima S, Gabazza EC, Furuta M, Yano Y, Sugiyama T, Toyoda N, Adachi Y

Third Department of Internal Medicine, Mie University School of Medicine, Tsu, Japan.

[Medline record in process]

The patient was a 32-year-old obese woman with a history of type 2 diabetes and hypertension for 6 years. Although she was treated with antihypertensive agents and intensive insulin therapy, her hyperglycemia was difficult to control. She wanted to have a baby but pregnancy was not good control without the use of drugs. Five months later, she became pregnant after the fourth trial of intrauterine insemination (IUI) and gave birth to a female baby under insulin therapy. This is the first report that showed the usefulness of VLCD for prepregnant control of glucose metabolism and blood pressure in an obese hypertensive patient with type 2 diabetes mellitus.

PMID: 11228055

In your reading of citations, you will notice that each has an identification number “**PMID**” (PubMed Identifier) or sometimes UI (Universal Identifier). Write down or otherwise record the PMID of the reports which are particularly relevant to you; and then follow the instructions in the following Expert Summary.

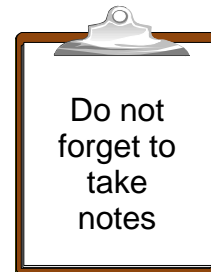
3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

EXPERT SUMMARY

3(B) - THE RELATED ARTICLES FUNCTION

- 1 - Log to [<http://www.ncbi.nlm.nih.gov/PubMed>].
- 2 - In the "Search ... for" box, type the PMID number. Simply type the number (e.g., 11228055). **Do not** type in "PMID 9925080". Select **"Go"** button.
- 3 - You should have retrieved the single citation about which you are interested. (If not, you have used the wrong number or put in characters which confuse the search.) Note on the right, the link called "Related Articles". Select that.
- 4 - A new search is automatically initiated; and you will see the results.
- 5 - Set Options and download as before. (See: Procedure 1.5 et seq., pages 28-31.)

If you are on-line, browsing, and come across a citation which is relevant, simply click on the **"Related Articles"** button; and a new search will be launched at that point. However, if you take that shunt, then you will lose your original search and will have to reinitiate it if you so desired.

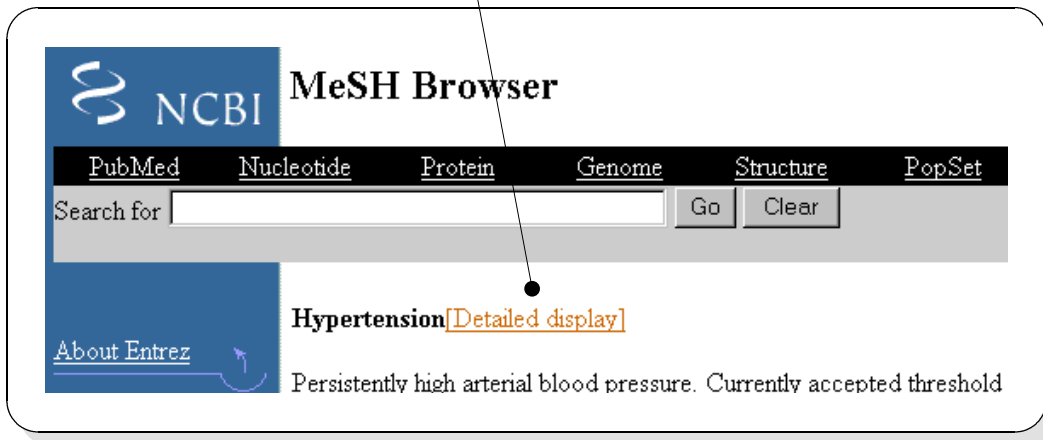


3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

We will now turn our attention to more precision searching. Understanding some of the procedures of indexing will be helpful. When an article is received by the National Library of Medicine, certain contents are transferred verbatim into the database. These include: the **Title** of the report, the **Author(s)**, the **Address** of the lead author, the **Source** or journal with its date, volume, and the pages, and the **Abstract**. Each report is given an **Identification Number**. Those constitute the main content of the report which you receive on-line and upon download. Next, experts study the report and tag it with subject categories such as the various Medical Subject Headings (**MeSH**) which relate to the article and the different Medical **Sub-headings** which apply. Finally, more generic classifications are associated with the report such as Publication Type, gender, language, and other **Limits**. Obviously, you delimit your search first by using the appropriate MeSH term(s). Then, you can further refine the retrieval by using “Limits” and “Sub-headings”. What follows is an over-view of those functions; however, most of your learning will be gained by trial and error in the process of doing searches.

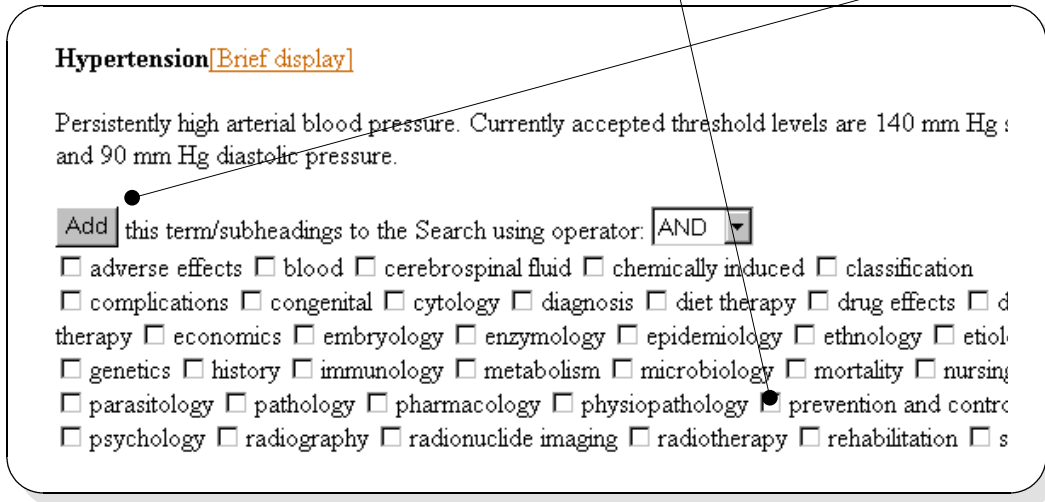
3(C) USING SUB-HEADING WITH YOUR SEARCH TERM.

All medical information is subsumed into 14 general categories and each has various sub-categories or sub-headings which apply to that category. Your search can be narrowed by linking an appropriate sub-heading to your MeSH term. In the MeSH Browser, define your term, and then select the link “**Detailed display**”.



3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

Select the desired sub-heading by clicking on the **box in front** and then select **“Add”**.



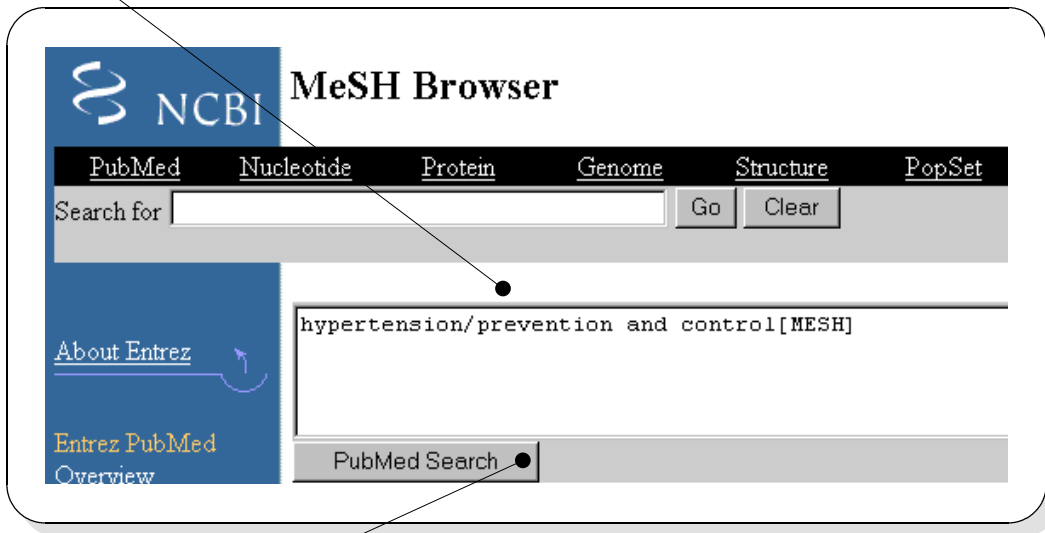
Hypertension [\[Brief display\]](#)

Persistently high arterial blood pressure. Currently accepted threshold levels are 140 mm Hg : and 90 mm Hg diastolic pressure.

Add this term/subheadings to the Search using operator: **AND**

- adverse effects
- blood
- cerebrospinal fluid
- chemically induced
- classification
- complications
- congenital
- cytology
- diagnosis
- diet therapy
- drug effects
- d therapy
- economics
- embryology
- enzymology
- epidemiology
- ethnology
- etiolo
- genetics
- history
- immunology
- metabolism
- microbiology
- mortality
- nursing
- parasitology
- pathology
- pharmacology
- physiopathology
- prevention and control
- psychology
- radiography
- radionuclide imaging
- radiotherapy
- rehabilitation
- s

You will note that your search command has been modified to include the designated **sub-subheading**.



NCBI MeSH Browser

PubMed Nucleotide Protein Genome Structure PopSet

Search for Go Clear

hypertension/prevention and control[MESH]

PubMed Search

Select the button **“PubMed Search”**, and you will now retrieve only those citations on **“hypertension”** which have also been tagged as relating to **“prevention and control”**.

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

A COMPLETE LISTING OF ALL SUB-HEADINGS.

To associate your MeSH term with the desired sub-heading, use the MeSH Browser routines as described previously, or you can type in the command in the “Search ... for” query box. For doing the latter, the command syntax is:

MeSH/sub-heading [mesh].

For example: **hypertension/prevention and control [MESH].**

When associating your MeSH term with a sub-heading, the forward slash “/” is required.

For reference, the following is a complete list of the sub-heading which can be applied to MeSH terms. The ones which are underlined are the more applicable to common medical situations. Not all sub-headings apply to all Medical Subjects.

MeSH/Abnormalities. Used with organs for congenital defects producing changes in the morphology of the organ. It is used also for abnormalities in animals. Congenital structural only: does not include abnormal function (= /physiopathology or disease heading); includes "deformity", "malformation", "anomalous", "teratology"; includes agenesis, aplasia, atresia, ectopy, hypoplasia, etc.; includes more or less than the normal number of organs (as one ureter, six fingers).

MeSH/Administration & dosage. Used with drugs for dosage forms, routes of administration, frequency and duration of administration, quantity of medication, and the effects of these factors. For routes of administration, timing, amounts of doses.

MeSH/Adverse effects. Used with drugs, chemicals, or biological agents in accepted dosage - or with physical agents or manufactured products in normal usage - when intended for diagnostic, therapeutic, prophylactic, or anesthetic purposes. It is used also for adverse effects or complications of diagnostic, therapeutic, prophylactic, anesthetic,

surgical, or other procedures, but excludes contraindications for which "contraindications" is used. Includes "injurious effects", "undesirable effects", "side effects" in normal use; for complications following various procedures; see also /poisoning & /toxicity.

MeSH/Agonists. Used with chemicals, drugs, and endogenous substances to indicate substances or agents that have affinity for a receptor and intrinsic activity at that receptor. For exogenous & endogenous substances; do not confuse with /antagonists & inhibitors.

MeSH/Analogs & derivatives. Used with drugs and chemicals for substances that share the same parent molecule or have similar electronic structure but differ by the addition or substitution of other atoms or molecules. It is used when the specific chemical heading is not available and no appropriate group heading exists. Includes "related compounds", "simulants"; do not use with elements, isotopes, plural chemicals or enzymes.

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

MeSH/Analysis. Used for the identification or quantitative determination of a substance or its constituents and metabolites; includes the analysis of air, water, or other environmental carrier. It excludes the chemical analysis of tissues, tumors, body fluids, organisms, and plants for which "chemistry" is used. The concept applies to both methodology and results. For analysis of substances in blood, cerebrospinal fluid, and urine the specific subheading designating the fluid is used. Includes "assay", "determination", "chemical analysis"; for qualitative or quantitative analysis of substances; chemical composition of organs, organisms & plants, as "chemical composition of the liver" = LIVER /chemistry; for analysis of chemical substances in the blood use /blood; in the cerebrospinal fluid, use /cerebrospinal fluid; in the urine, use /urine.

MeSH/Anatomy & histology. Used with organs, regions, and tissues for normal descriptive anatomy and histology, and for the normal anatomy and structure of animals and plants. Includes "morphology"; normal structure only; for disordered structural change use /pathology; see also /cytology & /ultrastructure; see also /blood supply & /innervation; see also /abnormalities.

MeSH/Antagonists & inhibitors. An antagonist is any agent which blocks, inhibits, or attenuates the pharmacological action of another agent; can be indexed with other agent or receptor terms to cover specific antagonist types when a specific precoordinated term is not available. For exogenous & endogenous substances; do not confuse with /agonists.

MeSH/Biosynthesis. Used for the anabolic formation of chemical substances in organisms, in living cells, or by subcellular fractions. Includes "formation" & "production" of substances by living tissue or organisms.

MeSH/Blood. Used for the presence or analysis of substances in the blood; also for examination of, or changes in, the blood in disease states. It excludes serodiagnosis, for which the subheading "diagnosis" is used, and serology, for which "immunology" is used. For "in blood" or "blood in" animals or diseases; includes the presence of cells, coagulating elements, endogenous & exogenous chemical substances; not for "serology" (= /immunology), nor for "serodiagnosis" (= /diagnosis), nor for the presence of microbes or parasites in the blood in disease (= /microbiology or /parasitology).

MeSH/Blood supply. Used for arterial, capillary, and venous systems of an organ or region whenever the specific heading for the vessel does not exist. It includes blood flow through the organ. Includes arteries, veins, capillaries & microvasculature; covers vascular anatomy, circulation & pressure.

MeSH/Cerebrospinal fluid. Used for the presence or analysis of substances in the cerebrospinal fluid; also for examination of or changes in cerebrospinal fluid in disease states. For "in cerebrospinal fluid" or "cerebrospinal fluid in" animals or diseases; includes the presence of cells & endogenous & exogenous chemical substances; not for the presence of microbes or parasites in the cerebrospinal fluid in disease (= /microbiology or /parasitology).

MeSH/Chemical synthesis. Used for chemical preparation or production of substances in vitro only, in laboratories or industry; not for formation of substances in living tissue (= /biosynthesis).

MeSH/Chemically induced. Used for diseases, syndromes, congenital abnormalities, or symptoms caused by chemical compounds in man or animals. For diseases induced by exogenous substances only.

MeSH/Chemistry. Used with chemicals, biological, and non-biological substances for their

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

composition, structure, characterization, and properties; also used for the chemical composition or content of organs, tissue, tumors, body fluids, organisms, and plants. Excludes chemical analysis and determination of substances for which "analysis" is used; excludes synthesis for which "chemical synthesis" is used; excludes isolation and purification of substances for which "isolation & purification" is used. Includes "chemical structure", "chemical composition", "chemical properties" or "chemical characterization"; includes "chemical composition" or "chemical content" of organs & tissues, organisms & plants; not for chemical analysis or determination (= /analysis) nor chemical synthesis or manufacture (= /chemical synthesis) nor chemical isolation or purification (= /isolation & purification).

MeSH/Classification. The systematic arrangement of entities in any field into categories classes based on common characteristics such as properties, morphology, subject matter, etc.

MeSH/Complications. Used with diseases to indicate conditions that co-exist or follow, i.e., co-existing diseases, complications, or sequelae. Includes "sequelae"; also for "co-existent" or "associated" diseases.

MeSH/Congenital. Used with disease headings to indicate those conditions existing at, and usually before, birth. It excludes morphologic abnormalities and birth injuries, for which "abnormalities" and "injuries" are used. Diseases existing at or before birth; not for structural abnormalities (= /abnormalities) nor for birth injuries (= /injuries).

MeSH/Contraindications. Used with drugs, chemicals, and biological and physical agents in any disease or physical state that might render their use improper, undesirable, or inadvisable. Used also with contraindicated diagnostic, therapeutic, prophylactic, anesthetic, surgical or other procedures. With substances or physical agents possibly rendering

their use improper, undesirable, or inadvisable in the presence of existing conditions & with contraindicated procedures.

MeSH/Cytology. Used for normal cellular morphology of unicellular and multicellular organisms. Normal structure only; for non-normal, use /pathology; includes cellular & intracellular structure, morphology, multiplication, cell cycle, differentiation, etc.; see also /ultrastructure.

MeSH/Deficiency. Used with endogenous and exogenous substances which are absent or in diminished amount relative to the normal requirement of an organism or a biologic system.

MeSH/Diagnosis. Used with diseases for all aspects of diagnosis, including examination, differential diagnosis and prognosis; excludes mass screening for which "prevention & control" is used. Excludes radiographic diagnosis for which "radiography" is used; excludes scintigraphic diagnosis for which "radionuclide imaging" is used; excludes ultrasonic diagnosis for which "ultrasonography" is used. Includes "examination", "symptoms", "differential diagnosis"; not for X-ray diagnosis (= /radiography), nor for radioisotope scanning (= /radionuclide imaging), nor for ultrasonic diagnosis (= /ultrasonography) nor for mass screening (= /prevention & control).

MeSH/Diagnostic use. Used with chemical compounds, drugs, and physical agents when these substances are used for studies of clinical function of an organ, or for the diagnosis of human or animal diseases. For substances & physical agents used in diagnosis of disease or study of organ function.

MeSH/Diet therapy. Used with disease headings for dietary and nutritional management of the disease. The concept does not include vitamin or mineral supplements, for which "drug therapy" may

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

be used. For dietary & nutritional management of a disease by a physician; not for self diets; not for vitamin or mineral supplements prescribed by a physician (= /drug therapy).

MeSH/Drug effects. Used with organs, regions, tissues, or organisms and physiological and psychological processes for the effects of drugs and chemicals.

MeSH/Drug therapy. Used with disease headings for the treatment of disease by the administration of drugs, chemicals, and antibiotics. For diet therapy and radiotherapy, use specific subheadings. Excludes immunotherapy and treatment with biologicals for which "therapy" is used. Includes treatment or prevention by drugs & chemicals; includes therapy with antibiotics; not for immunotherapy nor for tissue therapy or therapy with biological products (= /therapy).

MeSH/Economics. Used for the economic aspects of any subject, as well as for all aspects of financial management. It includes the raising or providing of funds. Includes "finances", "financing", "funding", "costs", "fees", "salaries", "financial management".

MeSH/Education. Acquisition of knowledge as a result of instruction in a formal course of study.

MeSH/Embryology. Used with organs, regions, and animal headings for embryologic and fetal development. It is used also with diseases for embryologic factors contributing to postnatal disorders. Includes "embryonic", "embryonal", "embryological aspects"; for embryonic & fetal development.

MeSH/Enzymology. Used with organisms, except vertebrates, and with organs and tissues. It is also used with diseases for enzymes during the course of the disease, but excludes diagnostic enzyme tests, for which "diagnosis" is used. For enzymatic

metabolism, kinetics, analysis & inhibition; not for enzyme tests (= /diagnosis).

MeSH/Epidemiology. Used with human and veterinary diseases for the distribution of disease, factors which cause disease, and the attributes of disease in defined populations; includes incidence, frequency, prevalence, endemic and epidemic outbreaks; also surveys and estimates of morbidity in geographic areas and in specified populations. Used also with geographical headings for the location of epidemiologic aspects of a disease. Excludes mortality for which "mortality" is used. With diseases & geographicals only; includes "incidence", "frequency", "prevalence", "occurrence", "outbreaks"; not for "mortality" (= /mortality); not for "statistics" on non-disease terms (= /statist).

MeSH/Ethnology. Used with diseases and selected terms for ethnic, cultural, anthropological, or racial aspects, and with geographic headings to indicate the place of origin of a group of people. With disease & selected terms for "the place of origin of a group of people"; with geographical terms for the place of origin of people living outside their native land, as New York City Cubans (= CUBA/ethnology).

MeSH/Etiology. Used with diseases for causative agents including microorganisms and includes environmental and social factors and personal habits as contributing factors. It includes pathogenesis. Includes "pathogenesis" & "causes".

MeSH/Genetics. Used for mechanisms of heredity and the genetics of organisms, for the genetic basis of normal and pathologic states, and for the genetic aspects of endogenous chemicals. It includes biochemical and molecular influence on genetic material. Includes "heredity"; with organisms for genetic discussions; with diseases for the genetic basis & means of inheritance; with endogenous chemicals only for their genetic aspects.

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

MeSH/Growth & development. Used with microorganisms, plants, and the postnatal period of animals for growth and development. It includes also the postnatal growth or development of organs or anatomical parts. For micro-organisms & plants; with animals, for postnatal development only: for prenatal development, see /embryology.

MeSH/History. Used for the historical aspects of any subject. It includes brief historical notes but excludes case histories.

MeSH/Immunology. Used for immunologic studies of tissues, organs, microorganisms, fungi, viruses, and animals. It includes immunologic aspects of diseases but not immunologic procedures used for diagnostic, preventive, or therapeutic purposes, for which "diagnosis", "prevention & control", or "therapy" are used. The concept is also used for chemicals as antigens or haptens. For "immunological aspects" or "serological aspects"; for substances as antigens or haptens; for antibodies to substances, organs or organisms; not for immunotherapy (= /therapy), nor for immunologic prevention, as with vaccines (= /prevention & control), nor for serodiagnosis (= /diagnosis).

MeSH/Injuries. Used with anatomic headings, animals, and sports for wounds and injuries. Excludes cell damage, for which "pathology" is used.

MeSH/Innervation. Used with organs, regions, or tissues for their nerve supply. Includes "nerve supply".

MeSH/Instrumentation. Used with diagnostic or therapeutic procedures, analytic techniques, and specialties or disciplines, for the development or modification of apparatus, instruments, or equipment.

MeSH/Isolation & purification. Used with bacteria, viruses, fungi, protozoa, and helminths for the obtaining of pure strains or for the demonstration of the presence of or identification of organisms by DNA analyses, immunologic, or other methods, including culture techniques. It is used also with biological substances and chemicals for the isolation and purification of the constituents. With micro-organisms & helminths includes obtaining pure strains, demonstrating presence & culture techniques but consider also /growth & development; with chemicals & biological substances includes isolation of constituents.

MeSH/Legislation & jurisprudence. Used for laws, statutes, ordinances, or government regulations, as well as for legal controversy and court decisions. Includes "legal", "laws", "government regulations", "statutes", "ordinances", "medicolegal", "judicial", "juridical", "suits", "avoidance of suits", "litigation", "court decisions".

MeSH/Manpower. Used with disciplines and programs for the demand, supply, distribution, recruitment, and use of personnel.

MeSH/Metabolism. Used with organs, cells and subcellular fractions, organisms, and diseases for biochemical changes and metabolism. It is used also with drugs and chemicals for catabolic changes (breakdown of complex molecules into simpler ones). For anabolic processes (conversion of small molecules into large), BIOSYNTHESIS is used. For enzymology, pharmacokinetics, and secretion use the specific subheadings. Includes "binding", "catabolism", "conversion", "degradation", "incorporation", "mobilization", "pathway", "splitting", "storage", "turnover", "utilization"; not for "anabolism": use instead /biosynthesis; not for "absorption", "distribution", "pharmacokinetics", "release", "transport", "uptake": for these use instead /pharmacokinetics; for excretion into the blood use /blood, into the cerebrospinal fluid use /cerebrospinal fluid, into the urine

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

use /urine; for biosynthesis or synthesis use /biosynthesis; for secretion use /secretion; for any metabolic aspect of enzymes use /enzymology.

MeSH/Methods. Used for Investigative Techniques in Analytical, Diagnostic and Therapeutic Techniques and Equipment Category.

MeSH/Microbiology. Used with organs, animals, and higher plants and with diseases for microbiologic studies. For parasites, "parasitology" is used; for viruses, "virology" is used. For bacteria, rickettsia, fungi; see also /parasitology & /virology; for ability of organisms to cause disease use /pathogenicity.

MeSH/Mortality. Used with human and veterinary diseases for mortality statistics. For deaths resulting from various procedures statistically but for a death resulting in a specific case, use FATAL OUTCOME, not /mortality.

MeSH/Nursing. Used with diseases for nursing care and techniques in their management. It includes the nursing role in diagnostic, therapeutic, and preventive procedures. Includes "nursing care" by professional nurse or physician-prescribed home programs.

MeSH/Organization & administration. Used for administrative structure and management. Includes organizational structure & management.

MeSH/Parasitology. Used with animals, higher plants, organs, and diseases for parasitic factors. In diseases, it is not used if the parasitic involvement is implicit in the diagnosis. For protozoa & higher parasites; see also /microbiology & /virology.

MeSH/Pathogenicity. Used with microorganisms, viruses, and parasites for studies of their ability to cause disease in man, animals, or plants.

MeSH/Pathology. Used for organ, tissue, or cell structure in disease states. For description of tissue or cell structure in disease: not for normal tissue (= /anatomy & histology) nor for normal cells (= /cytology); not a synonym for "disease".

MeSH/Pharmacokinetics. Used for the mechanism, dynamics and kinetics of exogenous chemical and drug absorption, biotransformation, distribution, release, transport, uptake and elimination as a function of dosage, extent and rate of metabolic processes. With exogenous chemicals only; includes "dynamics", "kinetics", "biochemical mechanism", "absorption", "distribution", "release", "transport", "uptake"; on the extent & rate of metabolism; not for pharmacologic effects or pharmacologic action (= /pharmacology).

MeSH/Pharmacology. Used with drugs and exogenously administered chemical substances for their effects on living tissues and organisms. It includes acceleration and inhibition of physiological and biochemical processes and other pharmacologic mechanisms of action. With exogenous chemicals only; includes "effect", "mechanism of action", "mode of action"; not for pharmacokinetics (= /pharmacokinetics); see also /adverse effects, /poisoning & /toxicity.

MeSH/Physiology. Used with organs, tissues, and cells of unicellular and multicellular organisms for normal function. It is used also with biochemical substances, endogenously produced, for their physiologic role. Normal "function" only: for function in disease use /physiopathology; with endogenous chemicals only, for their physiologic role.

MeSH/Physiopathology. Used with organs and diseases for disordered function in disease states. For function of organs in disease states only; not a synonym for "disease".

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

MeSH/Poisoning. Used with drugs, chemicals, and industrial materials for human or animal poisoning, acute or chronic, whether the poisoning is accidental, occupational, suicidal, by medication error, or by environmental exposure. For clinical & veterinary only; for human & animal experiments use /toxicity; see also /adverse effects & /toxicity.

MeSH/Prevention & control. Used with disease headings for increasing human or animal resistance against disease (e.g., immunization), for control of transmission agents, for prevention and control of environmental hazards, or for prevention and control of social factors leading to disease. It includes preventive measures in individual cases. Includes "preventive therapy"; includes vaccination; for prevention on epidemiologic or personal level.

MeSH/Psychology. Study of mental and behavioral phenomena in individuals and groups.

MeSH/Radiation Effects. Biological consequences of radiation.

MeSH/Radiography. Used with organs, regions, and diseases for x-ray examinations. It does not include radionuclide imaging for which "radionuclide imaging" is used. Includes "x-ray diagnosis", "roentgenography"; not for radioisotope scanning (= /radionuclide imaging).

MeSH/Radionuclide imaging. Used for radionuclide imaging of any anatomical structure, or for the diagnosis of disease. Includes "radioisotope scanning".

MeSH/Radiotherapy. Used with disease headings for the therapeutic use of ionizing and nonionizing radiation. It includes the use of radioisotope therapy. Includes x-ray, radioisotope, other ionizing radiation & non-ionizing radiation.

MeSH/Rehabilitation. Used with diseases and surgical procedures for restoration of function of the individual. For restoration of patient to pre-disease or pre-therapy state; for "re-education" in French.

MeSH/Secondary. Used with neoplasms to indicate the secondary location to which the neoplastic process has metastasized. For cancer only; use with organ/neopl precoords & with histol types; use with the secondary organ/neopl precoord & secondary histol type, but not for a primary cancer metastasizing to a secondary site (= /pathology + NEOPLASM METASTASIS).

MeSH/Secretion. Used for the discharge across the cell membrane, into the intracellular space or ducts, of endogenous substances resulting from the activity of intact cells of glands, tissues, or organs. For the act or function of secreting: not for "secretions".

MeSH/Standards. Used with facilities, personnel, and program headings for the development, testing, and application of standards of adequacy or acceptable performance and with chemicals and drugs for standards of identification, quality, and potency. It includes health or safety standards in industries and occupations. For standards in testing & performance of programs & procedures; with drugs for standards in assay techniques, quality & potency.

MeSH/Statistics & numerical data. Used with non-disease headings for the expression of numerical values which describe particular sets or groups of data. It excludes manpower distribution for which "manpower" is used and excludes supply or demand for which "supply & distribution" is used. For statistics on non-disease headings only (statistics on diseases = /epidemiol); not for statistics on manpower (= /manpower); not for "statistics on supply & demand" (= /supply & distribution).

MeSH/Supply & distribution. Used for the quantitative availability and distribution of material,

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

equipment, health services, personnel, and facilities. It excludes food supply and water supply in industries and occupations. Includes "availability"; for personnel, services & facilities; for drugs; not for food (= FOOD SUPPLY) nor for water (= WATER SUPPLY).

MeSH/Surgery. Used for operative procedures on organs, regions, or tissues in the treatment of diseases, including tissue section by lasers. It excludes transplantation, for which "transplantation" is used. Includes "operation", "surgical therapy"; for tissue section or coagulation by laser; not for transplantation (= /transplantation).

MeSH/Therapeutic use. Used with drugs, biological preparations, and physical agents for their use in the prophylaxis and treatment of disease. It includes veterinary use. For treatment or preventive use of drugs or physical agents in clinical or experimental human or animal disease.

MeSH/Therapy. Used with diseases for therapeutic interventions except drug therapy, diet therapy, radiotherapy, and surgery, for which specific subheadings exist. The concept is also used for articles and books dealing with multiple therapies. For general or unspecified therapy & multiple therapies; for tissue therapy & therapy with biological products; not for drug therapy (= /drug therapy), nor for diet therapy (= /diet therapy), nor for surgical therapy (= /surgery), nor for radiotherapy (= /radiotherapy), nor for rehabilitative therapy (= /rehabilitation).

MeSH/Toxicity. Used with drugs and chemicals for experimental human and animal studies of their ill effects. It includes studies to determine the margin of safety or the reactions accompanying administration at various dose levels. It is used also for experimental studies of exposure to environmental agents. For experimental human & animal studies; includes margin of safety & experimental exposure to

environmental agents; see also /adverse effects & /poisoning.

MeSH/Transmission. Used with diseases for studies of the modes of transmission. For transmission & mechanism of transmission of disease from man to man, from man to animal, from animal to man or animal to animal.

MeSH/Transplantation. Used with organs, tissues, or cells for transplantation from one site to another within the same subject, or from one subject to another of the same species or different species. For transmission & mechanism of transmission of disease from man to man, from man to animal, from animal to man or animal to animal.

MeSH/Trends. Used for the manner in which a subject changes, qualitatively or quantitatively, with time, whether past, present, or future. It excludes discussions of the course of disease in particular patients. Includes "forecasting" & "futurology"; for a continuum from past to present, present to future.

MeSH/Ultrasonography. Used with organs and regions for ultrasonic imaging and with diseases for ultrasonic diagnosis. Does not include ultrasonic therapy. Includes "ultrasound", "ultrasonic diagnosis", "echography", "echotomography"; not for ultrasonic therapy (= ULTRASONIC THERAPY).

MeSH/Ultrastructure. Used with tissues and cells (including neoplasms) and microorganisms for microanatomic structures, generally below the size visible by light microscopy. For normal or pathological subcellular structure.

MeSH/Urine. Used for the presence or analysis of substances in the urine, and also for the examination of, or changes in, the urine in disease. For "in urine" or "urine in" animals or diseases; includes the presence of cells & endogenous & exogenous

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

chemical substances; not for the presence of microbes or parasites in the urine in disease (= /microbiology or /parasitology).

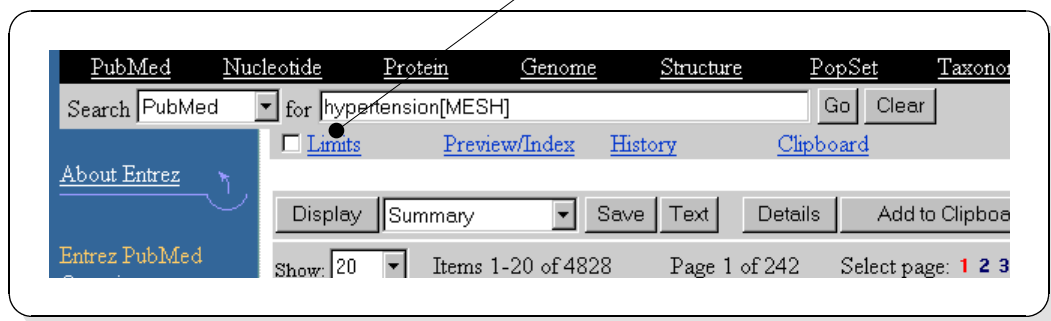
MeSH/Utilization. Used with equipment, facilities, programs, services, and health personnel for discussions, usually with data, of how much they are used. It includes discussions of overuse and underuse. Not for "use" of procedures in treating or diagnosing patients; only for how much equipment, facilities, services & personnel are used, underused, overused or abused.

MeSH/Veterinary. Used for naturally occurring diseases in animals, or for diagnostic, preventive, or therapeutic procedures used in veterinary medicine.

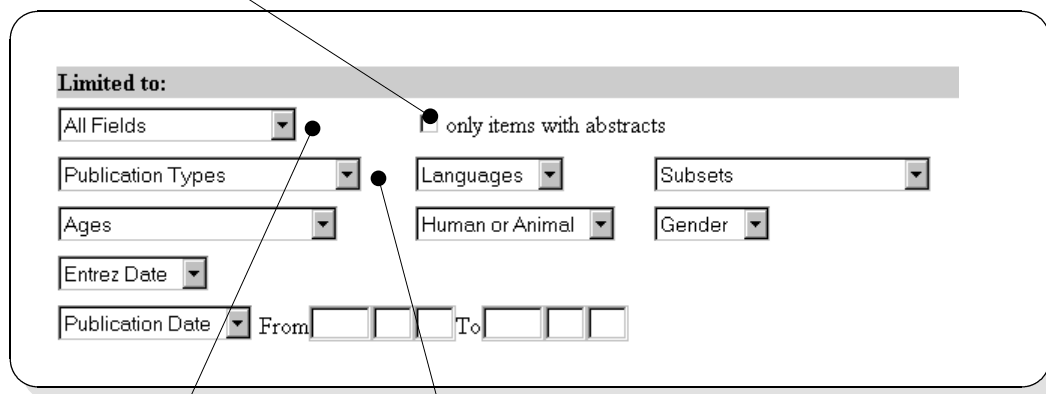
MeSH/Virology. Used with organs, animals, and higher plants and with diseases for virologic studies. For bacteria, rickettsia, and fungi, "microbiology" is used; for parasites, "parasitology" is used. See also /microbiology (for bacteria, rickettsia & fungi) & /parasitology.

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

3(D) DEFINING THE LIMITS OF YOUR SEARCH. After having defined your MeSH term and perhaps having selected an appropriate sub-heading, you are presented with a screen such as the one below. Select the link to “**Limits**”.



You now have, what will look to be, a plethora of options; but most people will use only a few. Using the various pop-up menus, you can select those options which will help you narrow your search according to your desired ends. Most of these are self-evident in terms of what they will do; and some are only relevant to a very specialized technical interest. In most situations, you can ignore “**Entrez Date**” and “**Subsets**“, and leave “**Human or Animal**“ as is. Usually, specifying “**Gender**” is unnecessary, and you will probably want all “**Languages**”. Sometimes, specifying the “**Ages**” can be helpful. And you may want to select “**only items with abstracts**”.



Two sectors, “**Fields**” and “**Publication Types**” warrant more detailed explanation.

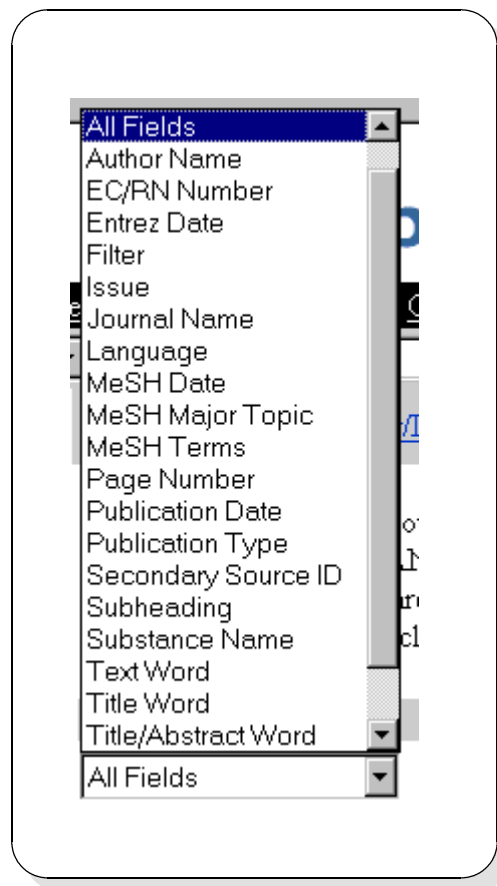
3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

3(D)1 DEFINING FIELDS

You can narrow your research by designating a special field within which your term will be searched. There are a lot of options here; however most of the Field settings are so arcane and their usage so rare that it would complicate understanding by trying to explain them here.

“**All Fields**” is the default setting and will cause the program to look for the search term in all fields, which is the most appropriate for most searches.

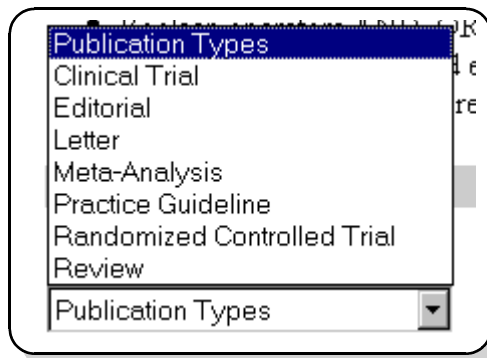
When searching for a particular author, as previously explained, it is not necessary to designate the “**Author Name**” field. Simply type in the search box (LastName FirstInitial) without a comma. The “**EC/RN**” is the identification number for a specific chemical agent; and if you know that it can be helpful. “**Title Word**” can be useful if you want only those reports in which your MeSH term is in the title of the report. Obviously, that makes it almost certain that you term is the major subject of the report.



3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

3(d)2 DEFINING PUBLICATION TYPES

Several “Publication Types” can be very useful. By selecting one of these, you will retrieve only that type of publication on your MeSH term.



Clinical Trial selects for controlled studies, designed to assess the safety and efficacy of new drugs, devices, treatments, or preventive measures in humans by comparing two or more interventions or regimens. This includes several types of Clinical Trials which can be narrowed by using specialized terms. See Clinical Trial in the Complete Listing which follows.

Practice Guidelines are a set of directions or principles to assist the health care practitioner with patient care decisions about appropriate diagnostic, therapeutic, or other clinical procedures for specific clinical circumstances. Practice guidelines may be developed by government agencies at any level, institutions, organizations such as professional societies or governing boards, or by the convening of expert panels. They can provide a foundation for assessing and evaluating the quality and effectiveness of health care in terms of measuring improved health, reduction of variation in the types of services or procedures performed, and reduction of variation in outcomes of health care delivered. This is the same as “Guideline” in the Complete Listing.

Randomized Controlled Trial is a clinical trial that involves at least one test treatment and one control treatment, concurrent enrollment and follow-up of the test and control-treated groups, and in which the treatments to be administered are selected by a random process, such as the use of a random-numbers table.

Review, as discussed previously, is an article or book published which reviews current literature on a subject. It may be comprehensive to various degrees and the time range of material scrutinized may be broad or narrow.

Other than these, there are many different publication types; and they are defined next.

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

A COMPLETE LISTING OF ALL PUBLICATION TYPES.

The general command syntax for selecting specific publication types is:

MeSH AND Publication Type [pt]

For example: **hypertension AND Classical Article [pt]**

in which [pt] stands for “publication type”. Be sure to use the brackets []; and the AND needs to be capitalized . In the following, those of more common interest are emphasized.

Abbreviations [pt] - Lists of shortened forms of written words or phrases used for brevity. Acronyms are included here.

Academic Dissertations [pt] - Dissertations embodying results of original research and especially substantiating a specific view, e.g., substantial papers written by candidates for an academic degree under the individual direction of a professor or papers written by undergraduates desirous of achieving honors or distinction.

Addresses [pt] - Speeches, orations, or written statements, usually formal, directed to a particular group of persons. It is to be differentiated from LECTURES [pt] in that lectures are usually delivered to classes for the purpose of instruction.

Almanacs [pt] - Publications, usually annual, containing a calendar for the coming year, the times of such events and phenomena as anniversaries, sunrises, sunsets, phases of the moon, tides, meteorological, and other statistical information and related topics. Almanacs are also annual reference books of useful and interesting facts relating to countries of the world, sports, entertainment, population groups, etc.

Anecdotes [pt] - Brief factual narratives of interesting, often amusing incidents.

Animation [pt] - A film or video wholly or partially created by photographing drawings, sculptures, or other inanimate things in sequence to create the illusion of motion. Animations are also generated by computers.

Annual Reports [pt] - Annual statements concerning the administrative and operational functions of an institution or organization.

Architectural Drawings [pt] - Drawings of architecture and architectural projects, whether the project was executed or not.

Biobibliography [pt] - Works giving biographical information as well as lists of the writings of those persons.

Biography [pt] - An account of the events, works, and achievements, personal and professional, during a person's life. It includes articles on the activities and accomplishments of living persons as well as the presentation of an obituary.

Bookplates [pt] - Book owner's identification labels. They are usually intended for pasting inside a book.

Broadsides [pt] - Separately published pieces of paper or other material, usually printed on one side and intended to be read unfolded and usually

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

intended to be posted, publicly distributed, or sold, e.g., proclamations, handbills, newsheets, etc.

Caricatures [pt] - Works portraying in a critical or facetious way a real individual or group, or a figure representing a social, political, ethnic, or racial type. The effect is usually achieved through distortion or exaggeration of characteristics.

Catalogs [pt] - Files of bibliographic records, created according to specific and uniform principles of construction and under the control of an authority file, which describe the materials contained in a collection, library, or group of libraries. Catalogs include also lists of materials prepared for a particular purpose, such as exhibition catalogs, sales catalogs, garden catalogs, medical supply catalogs.

Charts [pt] - Information presented in graphic form, for example, graphs or diagrams.

Chronology [pt] - Lists of events arranged in chronological order.

Classical Article [pt] - The current presentation of a previously printed seminal article marking a milestone in the history of medicine or science. It is usually accompanied by introductory remarks heralding its reprinting, often on the anniversary of its original publication or on an anniversary of the author's birth or death. It is usually reprinted in full, with complete bibliographical reference to the original appearance.

Clinical Conference [pt] - A conference of physicians on their observations of a patient at the bedside, regarding the physical state, laboratory and other diagnostic findings, clinical manifestations, results of current therapy, etc. A clinical conference usually ends with a confirmation or correction of clinical findings by a pathological diagnosis performed by a pathologist. "Clinical conference" is often referred to as a "clinico-pathological conference."

Clinical Trial, Phase I [pt] - Clinical trials performed in a small number of subjects to assess the metabolism and pharmacokinetics of drugs and to evaluate safety of drugs, devices, diagnostics or techniques.

Clinical Trial, Phase II [pt] - A pre-planned, usually controlled, clinical study of the safety and efficacy of diagnostic, therapeutic, or prophylactic drugs, devices, or techniques based on several hundred volunteers, including a limited number of patients, and conducted over a period of about two years in either the United States or a foreign country.

Clinical Trial, Phase III [pt] - A pre-planned, usually controlled, clinical study of the safety and efficacy of diagnostic, therapeutic, or prophylactic drugs, devices, or techniques after phase II trials. A large enough group of patients is studied and closely monitored by physicians for adverse response to long-term exposure, over a period of about three years in either the United States or a foreign country.

Clinical Trial, Phase IV [pt] - Planned post-marketing studies of diagnostic, therapeutic, or prophylactic drugs, devices, or techniques that have been approved for general sale after clinical trials, phases I, II, and III. These studies, conducted in the United States or a foreign country, often garner additional data about the safety and efficacy of a product.

Collected Correspondence [pt] - Collected letters by or about a person or on a subject.

Collected Works [pt] - Collections of previously published works.

Comment [pt] - A critical or explanatory note written to discuss, support, or dispute an article or other presentation previously published. It may take

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

the form of an article, letter, editorial, etc. It appears in publications under a variety of names: comment, commentary, editorial comment, viewpoint, etc.

Congresses [pt] - Published records of the papers delivered at or issued on the occasion of individual congresses, symposia, and meetings; abstracts of papers delivered at such congresses; reports of the officers and delegates of such congresses; combinations of the foregoing; or proceedings of the conference of a society if they are not limited to matters of internal organization.

Consensus Development Conference

[pt] - Designation for summary statements representing the majority and current agreement of physicians, scientists, and other professionals meeting to reach a consensus on a selected subject.

Corrected and Republished Article [pt] - The republication of an article to correct, amplify, or restore text and data of the originally published article.

Directory [pt] - An alphabetical or classified list of names, organizations, subjects, etc., giving usually titles, addresses, affiliations, and other professional data.

Drawings [pt] - Graphic representations of objects or ideas by lines.

Duplicate Publication [pt] - Simultaneous or successive publishing of identical or near- identical material in two or more different sources without acknowledgment. It differs from reprinted publication in that a reprint cites sources. It differs from PLAGIARISM in that duplicate publication is the product of the same authorship while plagiarism publishes a work or parts of a work of another as one's own.

Editorial [pt] - A statement of the opinions, beliefs, and policy of the editor or publisher of a journal, usually on current matters of medical or scientific significance to the medical community or society at large. The editorials published by editors of journals representing the official organ of a society or organization are generally substantive.

Electronic Journals [pt] - Journals, serials or other periodicals published and distributed in online or other electronic format.

Essays [pt] - Collections of papers and essays not previously published.

Eulogies [pt] - Speeches or writings in praise of a person or thing, especially a set oration in honor of a deceased person. They differ from FUNERAL SERMONS [pt] in that the latter are delivered at ceremonies for the deceased prior to their burial or cremation.

Festschrift [pt] - A collection of essays or other writings contributed by students, teachers, colleagues, and admirers to honor a scholar, physician, or other scientist on a special occasion noting an event of importance in his or her life.

Funeral Sermons [pt] - Sermons delivered at ceremonies for a dead person prior to burial or cremation.

Guideline [pt] - A set of statements, directions, or principles presenting current or future rules or policy. Guidelines may be developed by government agencies at any level, institutions, organizations such as professional societies or governing boards, or by the convening of expert panels. The text may be cursive or in outline form, but it is generally a comprehensive guide to problems and approaches in any discipline or activity. This concept relates to the general conduct and administration of health care activities rather than to specific decisions for a

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

particular clinical condition. For that aspect, PRACTICE GUIDELINE [pt] is available.

Handbooks [pt] - Concise reference works in which facts and information pertaining to a certain subject or field are arranged for ready reference and consultation rather than for continuous reading and study.

Historical Article [pt] - An article or portion of an article giving an account of past events or circumstances significant in a field of study, a profession, a discovery, an invention, etc. The concept of history is very wide, ranging from the dawn of time to the present. This publication type is often checked in conjunction with BIOGRAPHY [pt].

Humor [pt] - Jokes and facetiae relating to a subject.

Indexes [pt] - Works providing an analytical subject approach to materials in a field of knowledge.

Journal Article [pt] - The predominant publication type for articles and other items indexed for NLM databases.

Juvenile Literature [pt] - Works produced for children through age 15 or through the ninth grade.

Laboratory Manuals [pt] - Works containing concise background information and directions for activities, including conducting experiments or diagnostic tests in the laboratory.

Legal Cases [pt] - Collections of law reports or the published reports of decided cases and documents or filings related to those cases.

Legislation [pt] - Works consisting of the text of laws, statutes, ordinances, or government regulations.

Letter [pt] - Written or printed communication between individuals or between persons and representatives of corporate bodies. The correspondence

may be personal or professional. In medical and other scientific publications the letter is usually from one or more authors to the editor of the journal or book publishing the item being commented upon or discussed. LETTER as a publication type is often accompanied by COMMENT [pt] -

Meeting Abstracts [pt] - For individual abstracts of presentations at meetings, congresses, conferences, symposia, colloquia, seminars, workshops, round tables, and other professional gatherings.

Meta-Analysis [pt] - Quantitative method of combining results of independent studies (usually drawn from published literature) and synthesizing summaries and conclusions which may be used to evaluate therapeutic effectiveness, plan new studies, etc., with application chiefly in areas of research and medicine.

Multicenter Study [pt] - A controlled study executed by several cooperating institutions.

News [pt] - An announcement or statement of recent or current events of new data and matters of interest in the field of medicine or science. In some publications, such as "Nature" or "Science," the news reports are substantively written and herald medical and scientific data of vital or controversial importance to the populace.

Newspaper Article [pt] - A news item printed in a general-interest newspaper or other news periodical, containing information of current and timely interest in the field of medicine or science. This publication type should not be confused with NEWS [pt] which is reserved for news reports published in various medical or other scientific journals, such as "Nature".

Overall [pt] - A single citation covering several articles of various degrees of specificity or a single citation covering papers presented at a meeting. A subject overall refers to a series of articles on a single subject; a congress overall refers to papers

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

presented at a formal local, regional, national, or international gathering; a society overall refers to papers presented at an annual, semi-annual, monthly, weekly, or other meeting of a society, academy, institute, hospital, etc. The publication type may be used for a single citation with or without the additional indexing or cataloging of individual papers. The individual papers, however, are not labeled OVERALL.

Periodicals [pt] - Publications intended to be issued indefinitely at stated, more or less regular intervals.

Periodical Index [pt] - Useful as a subject approach to the contents of a periodical issuing an annual, biennial, quinquennial, decennial, etc., index. The heading is used for the overall body of articles published by a periodical in the same sense that BIBLIOGRAPHY [pt] is useful when published as a single article.

Personal Narratives [pt] - Accounts of personal experience in relation to a particular field or of participation in related activities or autobiographical accounts.

Pharmacopoeias [pt] - Authoritative treatises on drugs and preparations, their description, formulation, analytic composition, physical constants, main chemical properties used in identification, standards for strength, purity, and dosage, chemical tests for determining identity and purity, etc. They are usually published under governmental jurisdiction (e.g., USP, the United States Pharmacopoeia; BP, British Pharmacopoeia; P. Helv., the Swiss Pharmacopoeia). They differ from FORMULARIES in that they are far more complete: formularies tend to be mere listings of formulas and prescriptions.

Popular Works [pt] - Works written for non-professional or lay audiences.

Portraits [pt] - Graphic representations, especially of the face, of real persons, usually posed, living or dead.

Problems and Exercises [pt] - Collections of practice problems and exercises, generally for instructional or review use.

Randomized Controlled Trial [pt] - A clinical trial that involves at least one test treatment and one control treatment, concurrent enrollment and follow-up of the test- and control-treated groups, and in which the treatments to be administered are selected by a random process, such as the use of a random-numbers table. Treatment allocations using coin flips, odd-even numbers, patient social security numbers, days of the week, medical record numbers, or other such pseudo- or quasi-random processes, are not truly randomized and a trial employing any of these techniques for patient assignment is designated simply a CONTROLLED CLINICAL TRIAL [pt] -

Resource Guides [pt] - Works listing and describing various sources of information, from multiple media or in different formats, on a given subject.

Retracted Publication [pt] - Designation of an article or book retracted in whole or in part by an author or authors or an authorized representative. It identifies a citation previously published and now retracted through a formal issuance from the author, publisher, or other authorized agent, and is distinguished from RETRACTION OF PUBLICATION [pt], which identifies the citation retracting the original published item.

Retraction of Publication [pt] - A statement issued by one or more authors of an article or a book, withdrawing or disavowing acknowledgment of their participation in performing research or writing the results of their study. In indexing, the retraction is sent to the editor of the publication in which the article appeared and is published under the rubric "retraction" or in the form of a letter. This

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

publication type designates the author's statement of retraction: it should be differentiated from RETRACTED PUBLICATION [pt] which labels the retracted publication.

Review [pt] - An article or book published after examination of published material on a subject. It may be comprehensive to various degrees and the time range of material scrutinized may be broad or narrow, but the reviews most often desired are reviews of the current literature. The textual material examined may be equally broad and can encompass, in medicine specifically, clinical material as well as experimental research or case reports. State-of-the-art reviews tend to address more current matters. A review of the literature must be differentiated from HISTORICAL ARTICLE [pt] on the same subject, but a review of historical literature is also within the scope of this publication type. Specific headings for specific types of review are also available.

Review, Academic [pt] - A more or less comprehensive review of the literature on a specific subject, with usually an extensive critical analysis and synthesis of the literature.

Review Literature [pt] - Published material which provides an examination of recent or current literature. Reviews can cover a wide range of subject matter of various levels of completeness or comprehensiveness based on analyses of publications on the subject. The presence of research findings or case reports does not preclude designation as a review.

Review, Multicase [Publication Typ] - A type of review literature giving demographic, laboratory, and clinical data on a group of persons or animals ranging from most of the known cases of a rare condition in large populations on whom the results of research will lead to the establishing of epidemiological analyses or predictions of the occurrence and natural history of diseases. It is differentiated from REVIEW OF REPORTED CASES in that the latter

generally reports a single case as a supplement to a presentation, however brief and limited, of other cases known to have been reported.

Review of Reported Cases [pt] - Literature reporting - to the best of the author's ability - all known cases of a disease. The study is usually generated by the investigator's encounter with patients with a given disease and includes the investigator's own cases. The range of time will encompass historical cases and recent cases. The review usually cites the literature in which the known cases were published and may or may not include clinical and laboratory data.

Review, Tutorial [pt] - A type of review citing literature that will give the user a general and reasonably thorough coverage of a subject with which he may or may not be familiar. It often substitutes as a refresher course for a physician to update his or her awareness or as a crash course for a student unfamiliar with the subject.

Scientific Integrity Review [pt] - Designation for reports by the United States Office of Research Integrity, identifying questionable research published in articles or books. Notification of the questionable data is carried in the NIH Guide for Grants and Contracts.

Sermons [pt] - Discourses for the purpose of religious instruction or exhortation, especially one based on a text of Scripture and delivered by a member of the clergy, as part of a religious service.

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

Statistics [pt] - Presentations of numerical data on particular subjects.

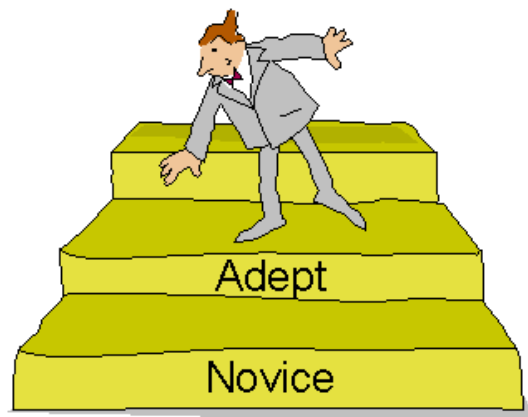
Tables [pt] - Presentation of data in a tabular form.

Terminology [pt] - Lists of the technical terms or expressions used in a specific field. These lists may or may not be formally adopted or sanctioned by usage.

Technical Report [pt] - A formal report giving details of the investigation and results of a medical or other scientific problem. When issued by a government agency or comparable official body, its contents may be classified, unclassified, or declassified with regard to security clearance. This publication type may also cover a scientific paper or article that records the current state or current position of scientific research and development. If so labeled by the editor or publisher, this type is properly used for journal :

Unedited Footage [pt] - picture and video footage or assembled into a finished product.

Union Lists [pt] - Records owned by two or more libraries.



3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

3(E) SEARCHING WITH MULTIPLE TERMS

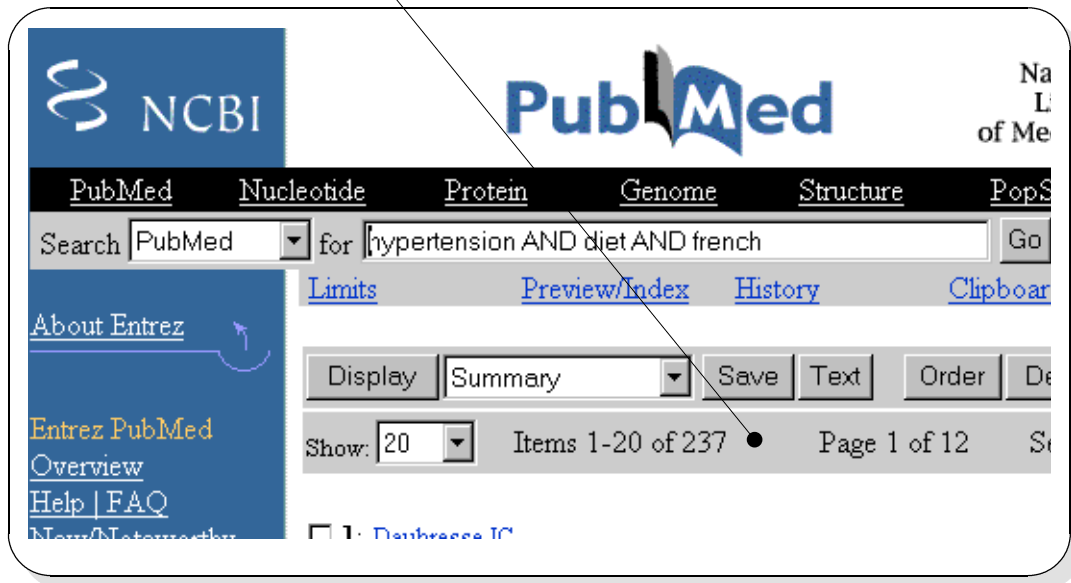
Finally, in our discussion of basic functions, we need to discuss how to search on multiple MeSH terms. Many inquiries will be about the association between two or more subjects. Usually, this will be done by associating the different MeSH terms with the operator “AND”, which should be capitalized.

The general command syntax for multiple terms is:

MeSH-1 AND MeSH-2 and MeSH-3

For example: **hypertension AND diet AND french**

For example, let’s assume that we are interested in the effect of the “French” “diet” on “hypertension”. You have two options: simply type in the command sequence in the main “Search ... for” box and see what you get; or use the MeSH Browser. Using the first, most simple option, you retrieve **237 citations**.



This is a feasible number to review in an effort to find particular citations that are relevant and then use the “Related Articles” function (ref. pg. 41) to launch a more specific search.

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

However, with some experience, you will note that you are picking up some extraneous citations by using the term “French”. If you modify that to “**France**”, the search is narrowed considerably, to 21.

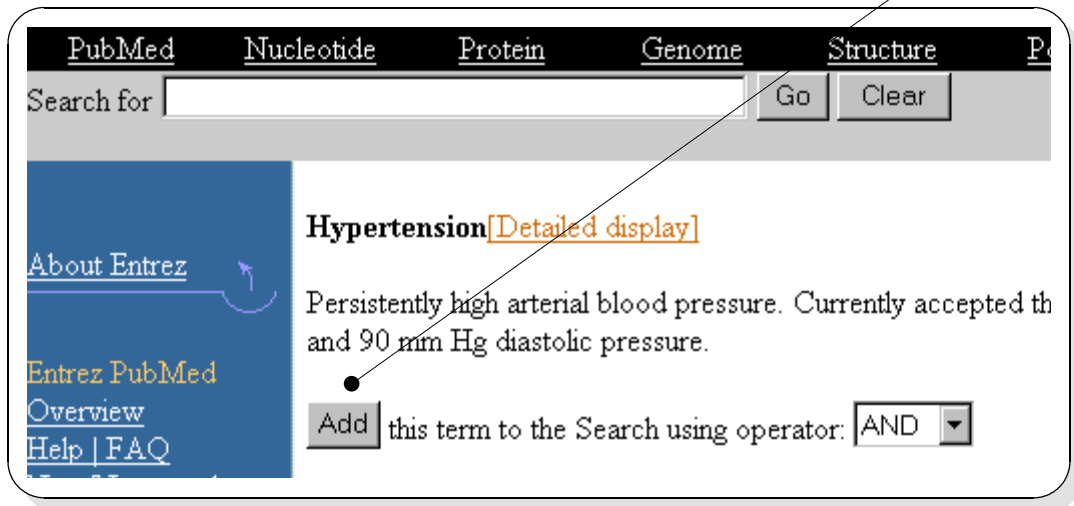
The screenshot shows the PubMed search interface. At the top, there are logos for NCBI, PubMed, and the National Library of Medicine (NLM). Below the logos, there are navigation tabs for PubMed, Nucleotide, Protein, Genome, Structure, PopSet, and Taxonomy. The search bar contains the text "hypertension AND diet AND france" and has "Go" and "Clear" buttons. Below the search bar, there are links for "Limits", "Preview/Index", "History", and "Clipboard". On the left side, there is a sidebar with "About Entrez", "Entrez PubMed", "Overview", and "Help | FAQ". At the bottom, there are buttons for "Display", "Summary", "Save", "Text", "Order", "Details", and "Add". The "Show:" dropdown is set to "20", and it indicates "Items 1-20 of 21" and "Page 1 of 2".

Alternatively, select the MeSH Browser link; type in your **first term**; and select :”Go”.

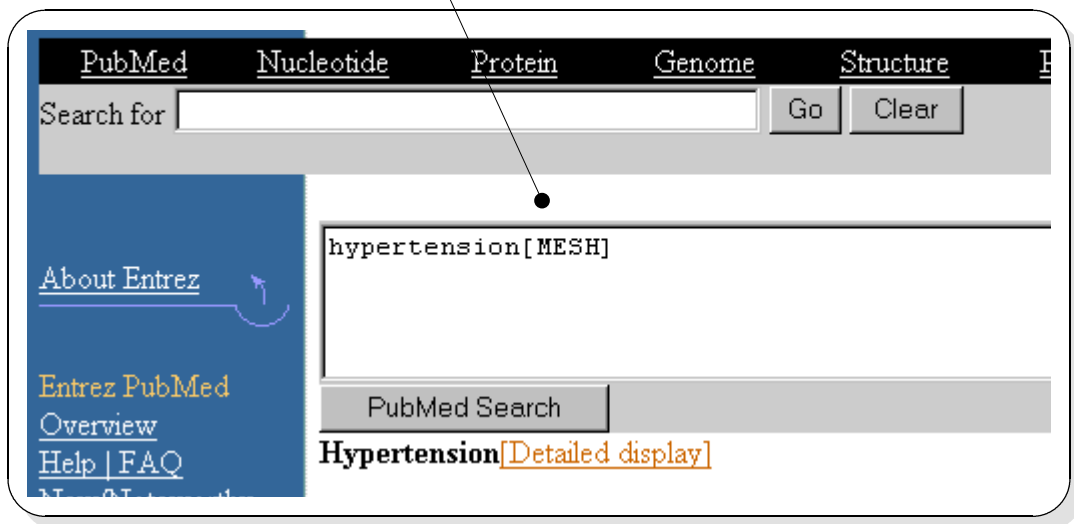
The screenshot shows the MeSH Browser search interface. At the top, there are logos for NCBI and MeSH Browser. Below the logos, there are navigation tabs for PubMed, Nucleotide, Protein, Genome, Structure, and PopSet. The search bar contains the text "hypertension" and has "Go" and "Clear" buttons. Below the search bar, there is a text box with the following text: "MeSH is NLM's controlled vocabulary used for indexing articles in provides a consistent way to retrieve information that may use different concepts." On the left side, there is a sidebar with "About Entrez".

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

You note that “hypertension” is an official MeSH term, so you select the “**Add**” button.



This adds the term to your **command line**.



3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

Do the same for “**diet**”

NCBI MeSH Browser

PubMed Nucleotide Protein Genome Structure

Search for Go Clear

About Entrez

hypertension[MESH] AND diet[MESH]

However, when you attempt to verify that “**French**” is a MeSH term, you find that **it is not**. You are presented, below, with various alternatives, but none seem to fit. The reason is that MeSH terms are all substantives or names of things. Thus, “French” is an adjective and would only modify another noun and would not be an indexing term.

hypertension[MESH] AND diet[MESH]

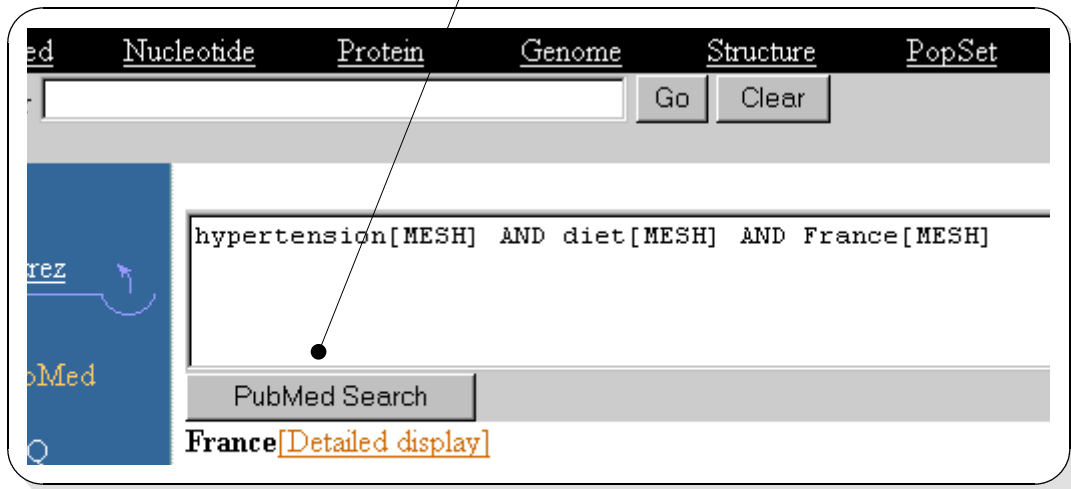
PubMed Search

No exact match for your term was found. Please s...

- Guinea, French
- Freon
- French Guiana
- French Polynesia
- Somaliland, French
- Freedom
- Freckle
- French-Speaking Africa
- Freezing

3 - SPECIALIZED SEARCH ROUTINES - MEDLINE

When you use the term “France”, that is an official MeSH term. Add that to the command, and select the “**PubMed Search**” button.



As it turns out, in this case, using this more precise routine was not as productive as the first two routines. This yielded only **two citations**, which do not seem to be very relevant. But this is the way one learns. There is a fair amount of art to doing literature searches; and a person learns by developing one’s intuitive faculties, which can only be done by lot of trail and error.

