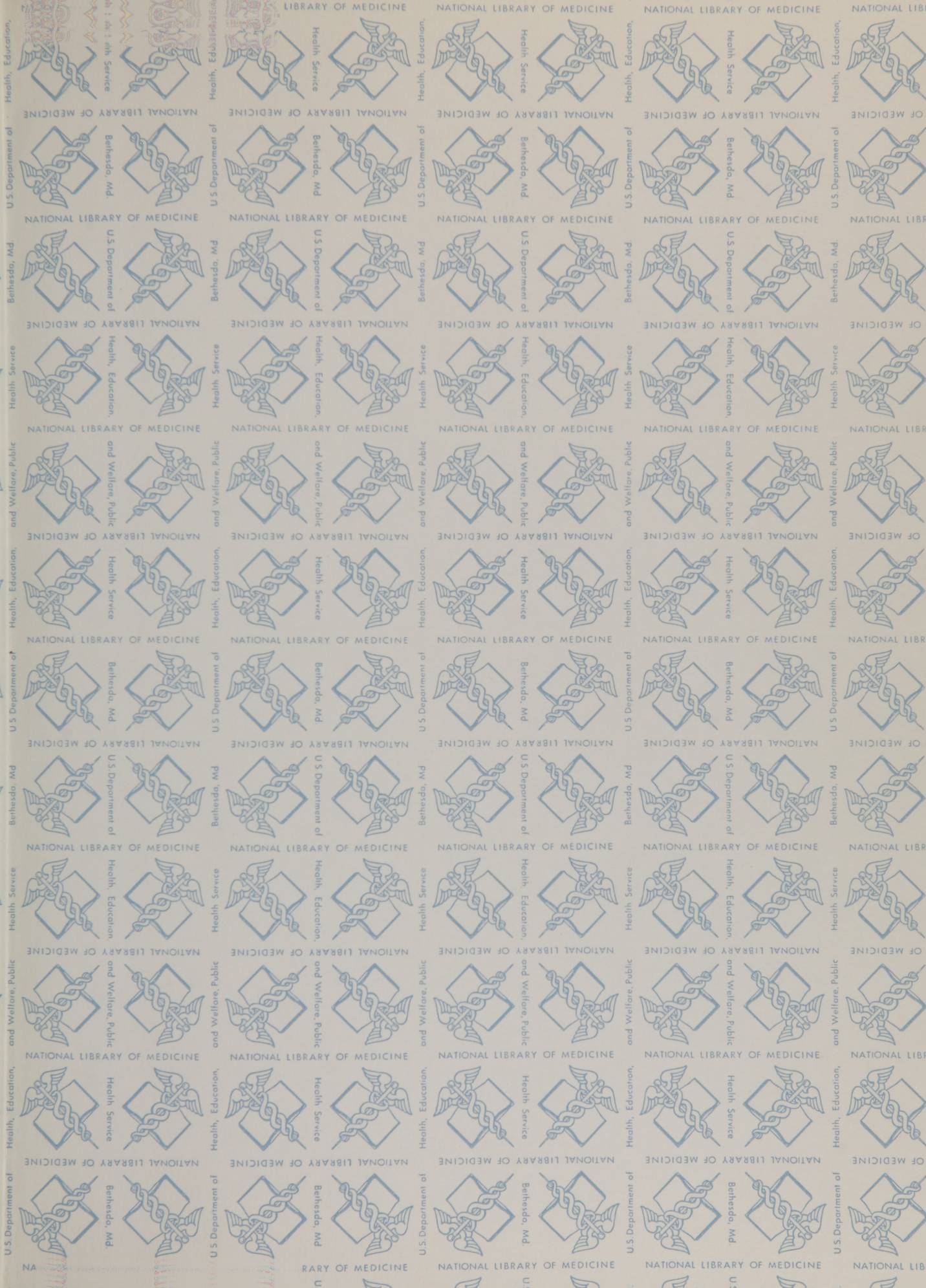
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IMMUNOLOGY

MEDLARS
Indexing Instructions

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Public Health Service
National Institutes of Health

IMMUNOLOGY

MEDLARS
INDEXING INSTRUCTIONS

BY

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This indexing guide is intended primarily for the use of MEDLARS analysts at the National Library of Medicine and at MEDLARS and Indexing Centers

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PREFACE

Much research in medicine today centers about immunology. The field has grown not only because of continued efforts on the part of health officials in the prevention of disease by immunological activities, but also because allergy and hypersensitivity loom large in man's discomfort today. Even greater contributions have been made and will be made as man continues to extend life by the substitution of tired or diseased organs. So, the need for more intensive research on histocompatibility in the field of organ and tissue transplants faces us.

The purpose of this brochure is to give MEDLARS analysts hints on approaches to indexing in the field of immunology in order to make both indexing and retrieval easier.

Special thanks must go to Dr. Sotiras D. Chaparas of the Division of Biologics Standards, National Institutes of Health, who gave professional advice on this brochure as a practicing immunologist. The manuscript was read also by David Millson and Christopher Norris of the National Lending Library for Science and Technology in Boston Spa, England, by Dr. Keiji Goto of Keio University in Tokyo, and by Herbert Naylor and Esther Lawrence of Index Section, National Library of Medicine here. Their criticism helped make this more complete as an indexing aid.

SCOPE OF IMMUNOLOGY

For the purposes of this brochure, immunology will be defined as the sum of all knowledge on the immune processes of the body which allow it to resist and to protect itself against attack by foreign mechanisms. Immunology here will include not only the prevention of disease by immunization, but will include also all processes attendant upon antigen-antibody reactions and antibody formation, and the more recent developments on the induction of specific reactivities in lymphocytes and their immunoglobulin products.

By this definition immunology will exclude hematology which treats of the morphology and coagulation of the blood. It will include serology which treats of the diagnostic and experimental procedures relating to serum factors, with special reference to antigen-antibody reactions. Further, it will include allergy and hypersensitivity which Boyd calls "a phenomenon which is the reverse of increased resistance." It also includes transplantation immunology, but rheumatology is excluded. Although the term "autoimmune diseases" appears in the hierarchical array on page 40, we have excluded specific diseases studied as autoimmune in research, such as thyroiditis or systemic lupus erythematosus.

The literature of research tends to be highly specific, and in indexing the bulk of immunological literature the MEDLARS Analyst has available in MEDICAL SUBJECT HEADINGS (MeSH) many specific terms to serve the field of immunology. Often it is not the specific term which is difficult to use, but the general one, for generality poses the problem of its scope: how much does the general term indeed cover and what precisely or imprecisely are its limitations?

The most general terms in MeSH are here defined immediately since, frankly, they are little used in attacking the specificity of immunological research. We can define their scope here and then dismiss them for they will be used only in articles speaking of them in very general terms.

IMMUNOLOGY — This term is reserved for the field or specialty concerned with immunity and immune processes. It is a specialty heading in the same way that OPHTHALMOLOGY is a specialty while EYE or EYE DISEASES refers to the patient, or in the way that DERMATOLOGY is a specialty heading while SKIN or SKIN DISEASES refers to the patient. This is a basic principle of indexing in INDEX MEDICUS and MEDLARS.

IMMUNOLOGY will cover articles on both the field and the immunologist. It is categorized by MeSH as a G2 term and as such finds a place among the other specialties in medicine and science and in indexing.

As a specialty, it will garner articles on immunology as a field, the economic aspects of the field, technics and technology in immunology, laboratories, immunological equipment and instrumentation, and any concern of the immunologist as a practitioner in this specialty, his training, his personality, his role in medicine, etc.

An article on the history of immunology is properly indexed under this term as IMMUNOLOGY *history. An article, "Trends in immunology" is indexed under IMMUNOLOGY. Financing an immunology laboratory in underdeveloped countries is indexed under IMMUNOLOGY as is an article on the rising cost of immunological equipment (IMMUNOLOGY *instrumentation).

IMMUNITY — This is placed in Subcategory G1 in MeSH where are found all the physiological headings. In this way IMMUNITY is for the fact of the immune reaction of the human or animal body against infection and foreign matter.

Articles on IMMUNITY will emphasize the physiological mechanism of immunity and the immune processes.

The following actual titles were found indexed correctly under IMMUNITY: "The evolution of adaptive immunity in vertebrates", "The hierarchy of body defenses", "The human gut and immune homeostasis", "The function of macrophages in the immune response", "An immunological approach to aging."

IMMUNIZATION — This is categorized by MeSH in Subcategory E2, one devoted to preventive and therapeutic technics and equipment. This heading will, therefore, be used for the various methods of rendering man or animal immune - by serums, by antitoxins, by vaccines and the like.

Articles entitled as follows were correctly indexed under IMMUNIZATION: "Oral immunization with non-living organisms", "New thoughts on immunization programs in general practice", "Influence of immunization procedures on the titer of antisera to glycopolypeptides", "Immunization of goats with human immunoglobulins and complement." It should be mentioned here that under the principle of multiple-indexing (indexing under all facets of an article) in all of the above articles other headings were used besides IMMUNIZATION.

SEROLOGY — This is the field of immunology dealing with in vitro antigen-antibody reactions. Like all -OLOGY headings in MeSH, it refers to the specialty field and to the practitioner, the serologist.

It is little used in INDEX MEDICUS and MEDLARS since indexers are daily confronted with articles dealing with far more specific aspects of serology for which MeSH happily provides many more specific terms (see pages 38 to 48).

INDEXING POLICY

In the area of immunology all the usual patterns of indexing for INDEX MEDICUS and MEDLARS will obtain.

In this field as in all others, the analyst will adhere to the policy of indexing for both publication in INDEX MEDICUS (IM) and for storage in the MEDLARS computer for retrieval upon demand (NIM or Non-INDEX MEDICUS).

Too, the analyst will follow the principle of depth and non-depth indexing as outlined in the MEDLARS Indexing Manual.

The principle of maximum specificity will always be followed. An article on the Wassermann test will be indexed under WASSERMANN REACTION, not under SERODIAGNOSIS nor under SYPHILIS SERODIAGNOSIS. An article on streptococcal vaccines will be indexed for the vaccine term as BACTERIAL VACCINES, not VACCINES. An article on immunoglobulins will be indexed under IMMUNOGLOBULINS or even better under a specific immunoglobulin, not under GLOBULINS or SERUM GLOBULINS.

1. Index the field of immunology as a specialty or discipline under the heading IMMUNOLOGY as IM. IMMUNOLOGY is discussed on page 2.

Here is the complete citation from the MEDLARS Indexing Manual on IMMUNOLOGY:

> "IMMUNOLOGY is to be reserved for the field concerning itself with immunity and the immune process, and will be treated as a specialty heading (like OPHTHALMOLOGY, GASTROENTEROLOGY, etc.). It will cover articles on the immunologist as a specialist, training in immunology, technics in immunology, economics, laboratories, equipment, etc. In such articles, IMMUNOLOGY will probably be IM."
> (Section 24.7)

2. Here is the complete citation from the MEDLARS Indexing Manual on IMMUNITY:

> "IMMUNITY is used to cover the physiological processes of the animal body against foreign matter, poisons, infection, etc. Since MeSH provides many more specific headings related to IMMUNITY (ANTIGEN-ANTIBODY REACTIONS; ANTIBODY FORMATION; GAMMA GLOBULIN; etc.), the more specific heading is usually preferred (IM) to IMMUNITY. Use this heading only when the article discusses the immune process as an entity, irrespective of its specific elements."
> (Section 24.8)

IMMUNITY is discussed with examples on page 2. The array of headings related to IMMUNITY is on page 48.

When indexing IMMUNITY as the immune process, make it IM.

3. Index the prevention of disease in general by immunization under IMMUNIZATION. For a longer discussion with examples, see page 3.

When indexing immunization in general under IMMUNIZATION, do not index also under the main heading DISEASE or under COMMUNICABLE DISEASE CONTROL.

4. Index the prevention of a specific disease by immunization under the name of the disease with the subheading *prevention & control (IM), and IMMUNIZATION (IM).

5. VACCINATION is a specific type of immunization. The following two paragraphs are quoted directly from the MEDLARS Indexing Manual:

> "VACCINATION will include the concept of vaccination, where it is done, when it is done, who is vaccinated, its indications, value and results, etc. VACCINES and the specific vaccine headings will cover articles on the vaccine itself, its composition, preparation, storage and the like."
>
> (Section 20.5.1)

> "Before indexing an article on vaccination, the Analyst must determine whether the point of the vaccination is the immunological aspect and the antibody titer or whether the point is the prevention of a specific disease. For the former, he has available the Subheading *immunology; for the latter, the Subheading *prevention & control."
>
> (Section 20.5.2)

6. Index the prevention of disease in general by vaccination under VACCINATION (IM).

7. Index the prevention of a specific disease by vaccination under the name of the disease with the subheading *prevention & control (IM) and VACCINATION (IM).

Smallpox vaccination

SMALLPOX *prevention & control (IM)
VACCINATION (IM)

8. If the vaccine is discussed in the article, index under the name of the disease with the subheading *prevention & control (IM), VACCINATION (IM) and the name of the vaccine heading if available in MeSH, without a subheading (IM).

Smallpox vaccine in the prevention of smallpox

SMALLPOX *prevention & control (IM)
VACCINATION (IM)
SMALLPOX VACCINE (IM)

If another aspect of the vaccine itself is discussed (such as *administration & dosage), obviously depth indexing demands that the vaccine heading be supplied with the proper subheading.

9. Analysts are often uneasy with regard to the multiple-indexing of VACCINATION and the VACCINES concepts. Does one index under one or the other or both?

There should be no confusion: if the author discusses both, each should be indexed independently of the other. Any confusion should be resolved thus: if the principle of disease prevention by vaccination is discussed, with the slant of the article on vaccination as a preventive measure, then VACCINATION is the correct term, alone.

If, on the other hand, the article discusses a specific vaccine or vaccines in general, with the emphasis on the preparation of the vaccine, its composition, its storage, its stability, its effectiveness, its dosage, its method of administration, etc., then VACCINES or specific MeSH vaccine terms should be used.

Briefly, distinguish, as above, between the fact and act of vaccination and the tangible vaccine substance itself. Obviously, articles can discuss vaccination without discussing a vaccine and a vaccine without discussing vaccination. Just as obviously articles can discuss both. Follow the text of the author and index one, or the other, or both.

10. If a vaccine is used to <u>prevent</u> a disease, index under the name of the disease with the subheading *prevention & control (IM), but DO NOT USE a subheading with the vaccine heading, as in the example in 8 above. This is to distingish between vaccine prevention and vaccine therapy of disease.

11. If a vaccine is used to <u>treat</u> an existing disease, index under the name of the disease with the subheading *therapy (IM) and the name of the vaccine with the subheading *therapeutic use.

Note that with the disease heading you use *therapy, not *drug therapy. This is because vaccines are not "drugs" in the usual sense of either the word or its use in indexing.

Note also that you do NOT use as a coordinate VACCINE THERAPY since, obviously, this is less specific than the name of the vaccine with *therapeutic use.

RABIES *prevention & control (IM)
VACCINATION (IM)
RABIES VACCINE (IM)

but

RABIES *therapy (IM)
RABIES VACCINE *therapeutic use (IM)

12. If the specific vaccine heading is not available in MeSH, index under one of the general vaccine headings from the array on page 44: BACTERIAL VACCINES, FUNGAL VACCINES or VIRAL VACCINES.

Make the vaccine heading IM and coordinate it with the name of the organism with the subheading *immunology (IM).

Prevention of streptococcal infections by vaccination with streptococcal vaccine

STREPTOCOCCAL INFECTIONS *prevention & control (IM)
VACCINATION (IM)
BACTERIAL VACCINES (IM)
STREPTOCOCCUS *immunology (IM)

The apparent redundancy and overlapping of terms must be disregarded. The principle of multiple-indexing and that of coordination demand each of the above terms. Also the print/store rationale of MEDLARS demands IM for each of the above.

13. Index the complications of vaccination in general under the name of the disease with the subheading *prevention & control (IM) and VACCINATION *adverse effects (IM). If the complications are specified, index them with the subheading *etiology, not *chemically induced.

14. Index the adverse effects of specific vaccines under the name of the vaccine with the subheading *adverse effects (IM). If the complications are indexed, use the subheading *etiology, NOT *chemically induced (since a vaccine is not a "chemical" in indexing usage; see section 11 above).

Gangrene caused by smallpox vaccine

SMALLPOX VACCINE *adverse effects (IM)
GANGRENE *etiology (IM)

Gangrene caused by smallpox vaccination

GANGRENE *etiology (IM)
VACCINATION *adverse effects (IM)
SMALLPOX *prevention & control (IM)

Note: in the first example the vaccine itself caused the gangrene, while in the second, the act of vaccination (possibly trauma) caused the gangrene. Follow the text of the author.

15. The terms "serological aspects" or "serology" frequently appear in titles of articles. Examine the text to see whether the author means "serodiagnosis" or "immunology".

If "serology" means "serodiagnosis", index the name of the disease with the subheading *diagnosis. If "serology" means "immunology", index the name of the organ, organism or disease with the subheading *immunology.

16. Index the serodiagnosis of disease in general under SERODIAGNOSIS (IM). Do not index under the main heading DISEASE.

17. Index the serodiagnosis of a specific disease under the name of the disease with the subheading *diagnosis (IM) and SERODIAGNOSIS (NIM).

18. Index a specific serodiagnostic method in a disease under the name of the disease with the subheading *diagnosis (IM) and the specific serodiagnostic technic from the array on pages 45 and 46 (IM). Do NOT also index under SERODIAGNOSIS.

19. Index organs, tissues, organisms or substances as antigens under ANTIGENS with an appropriate subheading (IM) and the name of the antigenic source with the subheading *immunology (if permitted by category) (IM).

Polypeptide antigens

ANTIGENS (IM)
PEPTIDES (IM)

Antigenicity of a cystadenocarcinoma

ANTIGENS (IM)
CYSTADENOCARCINOMA *immunology (IM)
NEOPLASM ANTIGENS (NIM) (Prov)

Corneal antigens

ANTIGENS (IM)
CORNEA *immunology (IM)

House dust antigens

ANTIGENS (IM)
DUST (IM)

Mycoplasma antigens

MYCOPLASMA *immunology (IM)
BACTERIAL ANTIGENS (IM)

20. Index antibodies against organisms, organs and substances, or antibodies formed in various diseases under ANTIBODIES with an appropriate subheading (IM) and the target with the subheading *immunology (if permitted by category) (IM).

Eel antibodies

ANTIBODIES (IM)
EELS *immunology (IM)

Antibodies to adenovirus in cancer

ANTIBODIES (IM)
ADENOVIRUS *immunology (IM)
NEOPLASMS *immunology (IM)
NEOPLASMS *microbiology (NIM)

Neutralizing antibodies in kidneys of swine in African swine fever

ANTIBODIES (IM)
KIDNEY *immunology (IM)
AFRICAN SWINE FEVER *immunology (IM)
NEUTRALIZATION TESTS (NIM)
SWINE (NIM)

Antibodies to estradiol

ESTRADIOL (IM)
ANTIBODIES (IM)

Antibodies in schistosomiasis mansoni

ANTIBODIES (IM)
SCHISTOSOMIASIS *immunology (IM)
SCHISTOSOMA MANSONI *immunology (NIM)

A cytochrome oxidase antibody

ANTIBODIES (IM)
CYTOCHROME OXIDASE (IM)

Note that no subheading appears in the examples after ANTIBODIES. This is merely to simplify the illustrations. The text will decide the proper subheading.

21. Distinguish carefully between antibodies and anti-antibodies. The parlance of authors is sometimes misleading.

"Anti-thymocyte antibodies" means antibodies against thymocytes: it does not mean thymocyte anti-antibodies. Similarly antistreptococcal antibodies means antibodies, not anti-antibodies.

When the author means anti-antibodies, this term usually appears in the text, undisguised.

Note, however, the MeSH cross-reference, "ANTI-GAMMA GLOBULIN ANTIBODIES see under ANTI-ANTIBODIES". This is because gamma globulin itself is an antibody. Anti-globulin antibodies seen in texts in the expression, for example, as "anti-horse globulin antibodies" are also ANTI-ANTIBODIES.

22. IMMUNE SERUMS is a MeSH heading but it should be used by analysts circumspectly.

In immunological research, an immune serum is used mostly as the source of a specific antibody figuring in the article. It is elicited in animals by a specific antigen. When discussed as the source of the antibody in the article, it should be indexed as an NIM coordinate, with no subheading.

Do not index under IMMUNE SERUMS unless it is especially discussed. If it is merely mentioned as the antibody source as above, it must not be indexed at all. Usually a much more specific heading involving immune serums or antiserum (a synonym for immune serum) is in order, especially the specific serodiagnostic procedures routinely using immune serums, such as HEMAGGLUTINATION, PRECIPITIN TESTS, etc.

23. Index the toxic or cytotoxic effects of immune serums on organs under the name of the organ with the subheading *immunology (IM) and IMMUNE SERUMS (IM).

24. Do not automatically use the subheading *toxicity with IMMUNE SERUMS. It is possible to index the combination IMMUNE SERUMS *toxicity but the article must specifically discuss the toxic effects of the immune serum to meet the definition of *toxicity as demanded by MeSH.

Nephrotoxic effect of hyper-immune serum

KIDNEY *immunology (IM)
IMMUNE SERUMS *pharmacodynamics (IM)

Effect of cytotoxic anti-brain serum on conditioned reflex

BRAIN *immunology (IM)
REFLEX, CONDITIONED (IM)
IMMUNE SERUMS *pharmacodynamics (IM)

Note that *toxicity is not used with IMMUNE SERUMS; that BRAIN *drug effects does not appear since no biological product is a "drug" in the indexing sense of the word. See section 50, pages 25 and 26.

25. Do not use the check tag ANIMAL EXPERIMENTS for such concepts as snake venom, sheep erythrocytes, horse serum, pig insulin, etc., even though you must index the name of the animal NIM (SNAKES, SHEEP, HORSES, SWINE, etc.)(Indexing Manual 14.30 and 15.20)

The animal heading is needed for identifying the source of the biological matter, but use of the check tag might result in a misleading search retrieval for experiments on the specific animals.

Obviously if you need the check tag ANIMAL EXPERIMENTS for the usual reason to cover some other aspect of the article, by all means use the tag, but do not check it merely to cover the animal source.

26. Many articles concern one animal as the usual experimental animal and another as the source of substances used in immunological studies.

When two or more such animals figure in an article, index two ways:

1. index the experimental animal in the usual way, whether as a Check Tag or specified as NIM, with NO subheading and with the Check Tag ANIMAL EXPERIMENTS;

2. index the animal source of the immunological feature with the subheading *immunology.

In most instances, both will be NIM.

The subheading *immunology is used with the name of ANY animal supplying the immunological matter in order to refine search retrievals. A searcher requesting articles on the morphology of erythrocytes in sheep does not want irrelevant articles discussing sheep erythrocytes in immunological studies.

The following examples show only the correct use or absence of *immunology as outlined above and the correct use of ANIMAL EXPERIMENTS.

Autoimmune thyroiditis in chickens

CHICKENS + ANIMAL EXPERIMENTS

Effect of whole-body irradiation on delayed hypersensitivity in rats

RATS + ANIMAL EXPERIMENTS

Properties of rabbit antiserum to mouse growth hormone

RABBITS *immunology
MICE (source of growth hormone)

Growth inhibition of newborn rats by plasma of monkeys immunized against rat growth hormone

MONKEYS *immunology
RATS + ANIMAL EXPERIMENTS (for newborn rats)

Hemolytic plaque-forming cells in the hamster; response to sheep and mouse erythrocytes

HAMSTERS + ANIMAL EXPERIMENTS
SHEEP *immunology
MICE *immunology

Rosette formation in vitro between normal human lymphocytes and sheep erythrocytes

SHEEP *immunology

In vitro effect of goat antisera to rabbit thymocytes

GOATS *immunology
RABBITS *immunology

Purification of horse serum

HORSES *immunology
(i.e., IMMUNE SERUMS *isolation & purification)

Antibody response in the guinea pig against pig insulin

GUINEA PIGS + ANIMAL EXPERIMENTS
SWINE *immunology (i.e., source of INSULIN ANTIBODIES)

TRANSPLANTATION IMMUNOLOGY

The field of transplantation and its subdiscipline transplantation immunology are very important in immunological research. Patterns in indexing this area have evolved through use. The conventional aspects are covered below.

27. The main heading TRANSPLANTATION IMMUNOLOGY may be used for the field in general, but more often it will be used for articles dealing with the immune response of the body to specified or unspecified organ or cell transplants. It is usually IM.

Transplantation immunity
in mollusks

TRANSPLANTATION IMMUNOLOGY (IM)
MOLLUSCA *immunology (IM)

28. Index the transplantation of an organ, tissue or cell under the name of the organ, tissue or cell transplanted, with the subheading *transplantation (IM).

Kidney transplants

KIDNEY *transplantation

Skin grafts

SKIN *transplantation

29. An organ tissue or cell with the subheading *transplantation and/or TRANSPLANTATION IMMUNOLOGY is always coordinated with one of the three types of transplantation headings in MeSH: TRANSPLANTATION, HOMOLOGOUS (between the same species - human to human, dog to dog, rat to rat); TRANSPLANTATION, HETEROLOGOUS (between different species - baboon to

man, rat to dog, dog to monkey) or TRANSPLANTATION, AUTOLOGOUS (within the same animal or person).

30. Make TRANSPLANTATION, HOMOLOGOUS NIM since this is the most frequently encountered type of transfer. It will figure largely in search retrievals and must be made accessible.

31. Index TRANSPLANTATION, HETEROLOGOUS and TRANSPLANTATION, AUTOLOGOUS usually as IM since these are less frequently met.

32. Index any type of transplantation as IM when the point of the article is the identity of the type, irrespective of the organ or immunology.

33. Index also under the name of the species (DOGS, MONKEYS, RATS, HUMAN). If cadaveric organs are used, the article should be indexed also under the heading CADAVER. Since the point of using cadaveric tissue is usually the availability of tissue from this source, CADAVER is usually IM. Names of animals used in the experiment or study will be IM or NIM depending upon the slant of the article. It is more often than not, NIM.

Long-term skin allografts in mice

SKIN *transplantation (IM)
TRANSPLANTATION, HOMOLOGOUS (NIM)
MICE (NIM)
TIME FACTORS (NIM)

Antibodies in the blood of recipients of cadaveric kidney transplants

ANTIBODIES (IM)
KIDNEY *transplantation (IM)
TRANSPLANTATION, HOMOLOGOUS (NIM)
TRANSPLANTATION IMMUNOLOGY (IM)
CADAVER (IM)
HUMAN (NIM)

Free ovarian autografts in
the mouse uterus

OVARY *transplantation (IM)
TRANSPLANTATION, AUTOLOGOUS (IM)
UTERUS (IM)
MICE (NIM)
FEMALE (NIM)

34. HISTOCOMPATIBILITY is the degree to which a transplant is accepted or rejected by the body. Since this is indented under TRANSPLANTATION IMMUNOLOGY in Subcategory G1, articles on histocompatibility will be indexed under HISTOCOMPATIBILITY only and not also under TRANSPLANTATION IMMUNOLOGY. It is usually IM.

35. The term HISTOCOMPATIBILITY TESTING also exists but here the emphasis should be on a discussion of the test or technic itself. It is usually NIM.

36. Index articles on the rejection of grafts under GRAFT REJECTION (IM), the name of the organ with the subheading *transplantation (IM) and the specific transplantation type (see section 29ff.) as applicable.

37. To prevent the rejection of transplanted organs, tissues or cells, the natural immune response of the body against the transplant must be suppressed. This is the main heading IMMUNOSUPPRESSION (E2, E5). There are various ways of suppressing immunity and these will be indexed accordingly. IMMUNOSUPPRESSION is usually IM.

38. A popularly encountered method of immunosuppression is by the use of drugs called IMMUNOSUPPRESSIVE AGENTS (D4).

Index immunosuppressive drugs under the name of the specific drug or drug group (IM) and IMMUNOSUPPRESSIVE AGENTS (IM).

39. The correct subheading to be attached to either or both will depend upon the slant of the article, as illustrated by the simple examples here:

Immunosuppressive effects of asparaginase

Note: NO subheading

IMMUNOSUPPRESSIVE AGENTS (IM)
ASPARAGINASE *pharmacodynamics (IM)

Immunosuppressive action of mitomycin on lymphocytes

IMMUNOSUPPRESSIVE AGENTS *pharmacodynamics (IM)
MITOMYCIN *pharmacodynamics (IM)
LYMPHOCYTES *drug effects (IM)

Immunosuppressive therapy in renal transplants

IMMUNOSUPPRESSIVE AGENTS *therapeutic use (IM)
KIDNEY *transplantation (IM)
TRANSPLANTATION, HOMOLOGOUS (NIM)

Note: in the first example, the asparaginase has an effect (that of acting as an immunosuppressive agent) but the article is not discussing "the effects of IMMUNOSUPPRESSIVE AGENTS": the heading IMMUNOSUPPRESSIVE AGENTS is not "affecting" anything.

In the second example, the mitomycin has a two-fold effect: that of acting as an immunosuppressant and of "affecting" the lymphocytes. The IMMUNOSUPPRESSIVE AGENTS this time has an "effect" because the article seems to be discussing ITS effect on lymphocytes.

40. The transplant of whole organs seldom presents a problem for indexers since this is always indexed with the name of the organ and the subheading *transplantation.

Indexers are concerned sometimes by the injection of cell suspensions, such as injected lymphocytes and bone marrow infusions. This is the point at which he hesitates about the correct use of *transplantation.

Since *transplantation has been assigned to Category A, its use with cell terms is perfectly acceptable. LEUKOCYTES *transplantation, LYMPHOCYTES *transplantation, MAST CELLS *transplantation are acceptable coordinations. Since both BONE MARROW and BONE MARROW CELLS are in Category A, an arbitrary decision was made to index bone marrow transfusions under BONE MARROW CELLS *transplantation, rather than under BONE MARROW *transplantation.

41. The question arises as to whether BLOOD TRANSFUSION is applicable. Since it is possible to transfuse whole blood, erythrocytes or other formed elements, the coordination of BLOOD TRANSFUSION + LYMPHOCYTES is not impossible.

The indexer will make this distinction: if the "transfer" is destined for volumetric replacement of elements (as with whole blood, plasma or erythrocytes), use BLOOD TRANSFUSION; if the "transfer" with regard to lymphocytes is destined to produce an antibody against lymphocytes (as in transplantation immunology) or to have the lymphocytes themselves produce antibody or other immunological response, use *transplantation.

Obviously in the field of immunology, LYMPHOCYTES *transplantation will be the more frequently used coordination.

42. IMMUNOCHEMISTRY is the chemistry of antigens and antibodies and the chemical basis of immunity and resistance to disease (MeSH definition).

It will be indexed as IM only when referring to immunochemistry as a discipline or field in the usual INDEX MEDICUS approach. It is indexed usually, however, as an NIM coordinate when a specific antigen or antibody heading or concept is indexed IM. Because of the specificity of MeSH headings and the equal specificity of this field, IMMUNOCHEMISTRY as IM is seldom met by indexers since they are confronted more often by the need for more specific concepts.

"Immunochemical methods in clinical chemistry", "Immunology in clinical chemistry" and "A micromethod for quantitative immunochemical determinations" are correctly indexed as IMMUNOCHEMISTRY (IM).

43. In each of these titles, IMMUNOCHEMISTRY is indexed only as an NIM parameter of the underlined IM concepts: "Immunochemical study of <u>fibrin</u>", "Immunochemical studies on human <u>chorionic gonadotropin</u>", "Immunological properties of <u>thyroid iodoproteins</u>."

44. IMMUNOGENETICS, like IMMUNOCHEMISTRY above, is IM only with reference to the field. It is defined by MeSH as "the branch of genetics concerned with the interrelations of immune reactions and genetic constitution."

45. When a <u>specific genetic</u> concept is indexed in the same article as a <u>specific immunological</u> concept, these will probably be IM and the term IMMUNOGENETICS will probably not appear on the Data Form at all. It may be used as an NIM coordinate to qualify an IM term when the general concept of immunogenetics is needed.

The following titles are correctly indexed with IMMUNOGENETICS as IM: "Genetic control of the immune response in mice", "Self-recognition in colonial marine forms and flowering plants in relation to the evolution of immunity", "Evidence for the polygenic control of the antibody response from further breeding studies" , "Genetic control of graft rejection."

In these titles, IMMUNOGENETICS as IM is indeed questionable since the required IM concepts are inherently genetic and better indexed under the specific terms: "Allotypes of light chains of rat immunoglobulins", "Strain differences in class differentiation and other properties of marrow cells", "A major histocompatibility locus in the dog", "A gene governing the female immune response to the male antigen in mice."

Should indexers be required to index specific concepts and then code in addition for the general concept into which an article falls, IMMUNOGENETICS would be the perfect coding for each of the above titles. However, at the present time, such is not policy and IMMUNOGENETICS as IM in the above examples is wrong.

INFLAMMATION

One of the mechanisms of the body in resisting invasion is thought to be the local inflammatory response. Although the immunological function of this

inflammatory process is not positively known, the concept will be met in immunology journals.

46. INFLAMMATION is the correct heading to be used in indexing the inflammatory process and its mechanisms.

47. As a Category C17 term, INFLAMMATION may be paired with all reasonable subheadings.

When indexed to mean the inflammatory process, INFLAMMATION will almost always be IM.

48. Headings ending in the form -itis are known medically to be inflammatory states: appendicitis, inflammation of the appendix; laryngitis, inflammation of the larynx. "Inflammation" here is not at issue.

The heading INFLAMMATION is to be used for the pathophysiological state as a process or mechanism. When so indexed, as said above, it will undoubtedly be an IM heading. If the article, of course, discusses in addition a specific organ/inflammation (APPENDICITIS, LARYNGITIS, MENINGITIS, etc.), naturally this will be indexed appropriately as discussed by the author.

49. The role of histamine in hypersensitivity is related to the inflammatory reaction. Too, histamine is released during anaphylaxis. Histamine, present in mast cells, is released when the mast cells are damaged as a result of the anaphylactic process.

While HISTAMINE (D2, D12) and HISTAMINE LIBERATION (G1) appear in Appendix I, the histamine liberator COMPOUND 48-80 (D13) and ANTIHISTAMINICS (D6) and all its indentions do not appear in the arrays in Appendix I.

SUBHEADINGS

This section of the brochure will discuss immunological indexing in relation to subheadings. Some information already stated in preceding pages will be repeated here, but repetition is not necessarily an anathema.

We have restricted the discussion of subheadings primarily to those assigned to Category D. Not only do the D subheadings give the most trouble to indexers but also main headings from this category - especially from Subcategories D10 and D12 - have a very heavy use.

Not all D-assigned subheadings are discussed. Those which are easy to use (*administration & dosage, *standards, etc.) are not included. The indexers can rely on the MeSH definitions, instructions in the MEDLARS Indexing Manual, Goto's Main Heading/Subheading Combinations and plain good sense.

Two subheadings not assigned to Category D - *immunology and *transplantation - are discussed.

50.

*adverse effects
*toxicity
*poisoning

*adverse effects and *toxicity are permitted with immunological concepts in Category D but need for their use is not common. To be indexed, the subheadings must refer to exogenously administered substances and must have all the normal requirements of the MeSH definition of *adverse effects and *toxicity as applied to non-immunological substances. Do not use *poisoning at all.

If *adverse effects is used correctly, the subheading with the disease coordinate must be *etiology, not *chemically induced. This is done because an immunological substance or biologic product is not a

"chemical" in the MeSH or indexing sense of the word.

Convulsions caused by
smallpox vaccine

SMALLPOX VACCINE *adverse effects (IM)
CONVULSIONS *etiology (IM)

not CONVULSIONS *chemically induced

51. *analysis — This subheading is over-used by indexers. There seems to be a reluctance to index an immunological substance in the blood (*blood being forbidden; see page 27) without a subheading. To clothe the nakedness the indexer then supplies *analysis. "Adenovirus antigens" thus becomes ADENOVIRUS *immunology and ANTIGENS *analysis when ANTIGENS without a subheading is correct.

Do not routinely index such articles under *analysis. The author should discuss the analytic method or some facet of the analysis if the indexer is to use *analysis correctly.

Obviously most observations in immunology are based on some kind of determinative (analytic) technic and it is, therefore, likely that the author will discuss it. We are merely cautioning the indexer that he should not automatically supply *analysis to every Category D immunological concept: *analysis must be discussed.

52. *antagonists & inhibitors — Although the MeSH definition of this subheading does not exclude endogenous substances, this subheading does not marry well with the main headings in Subcategory D12. Its use is forbidden with such headings as ANTIBODIES, AUTOANTIBODIES, ANTINUCLEAR FACTORS, ANTIGENS, and many others like them. Most form foolish coordinations with *antagonists & inhibitors.

On the other hand, some make perfectly good indexing and pharmacological sense: PROSTAGLANDINS *antagonists & inhibitors is reasonable.

If the indexer keeps in mind the usual demands of pharmacologists for coverage of the concept of drug antagonists and inhibitors, there should be no difficulty in using *antagonists & inhibitors correctly.

In the area of immunology, however, avoid its use. Do not use *antagonists & inhibitors with the main heading BIOLOGICAL PRODUCTS or any of the terms indented under it. Do not use it with ANTIBODIES and all of its indentions. If its mating with a Subcategory D12 term is questionable to you or if it might confuse a non-MEDLARS person, simply do not use it. No subheading is better than a foolish or questionable one.

53. *blood — Since most immunological substances are in the blood, do not use *blood as a subheading with them. The MEDLARS Indexing Manual states general policy on the use of *blood with Catagory D terms:

> "Many headings in Subcategories D7 (Hematologic Agents, etc.) and D12 (Immunologic Factors, etc.) represent substances or factors normally present in blood, like BLOOD COAGULATION FACTORS and the specific factors indented under this heading in D7, or like ABO FACTORS, ANTIBODIES, GAMMA GLOBULIN, etc., in D12.
>
> Before using the Subheading *blood, the Analyst will interpret the significance of the blood heading he is about to use. If it falls into the

above concept, that of an element naturally occurring in the blood, he will bypass *blood and use, instead, another more fitting Subheading."

(Section 18.8.1)

You will see articles on the presence of immunological substances in body fluids or at sites other than the blood. Index, then, with the appropriate subheading, being particularly cautious about using *analysis (see page 26).

This does not mean, however, that in "a comparison of immunoglobulins in the blood and colostrum" you will show the blood angle by using *blood with IMMUNOGLOBULINS. This article would be retrievable as IMMUNOGLOBULINS *analysis coordinated with COLOSTRUM *immunology for colostrum immunoglobulins and IMMUNOGLOBULINS alone for the blood levels.

54. *diagnostic use — The sensitivity and specificity of immune responses has wide application in the diagnosis of infection. Since this is an a priori assumption, and since the diagnostic application takes the form of known immunological or serodiagnostic procedures as given in Subcategory E1, indexers are asked to forego the use of the subheading *diagnostic use with immunological headings in Category D. Do not use it.

Index immunological terms from Category D in various serodiagnostic tests without a subheading and coordinate with one of the diagnostic headings from Subcategory E1.

55. *immunology

The subheading *immunology is so defined by MeSH: "Used for immunologic studies of tissues, organs, bacteria, viruses and fungi and their constituents; includes immunologic aspects of specific diseases but not immunologic procedures used for diagnostic, preventive, or therapeutic purposes."

MeSH allows the subheading *immunology thus to be used with Category A (organs and tissues), Category B (organisms) and Categories C and F2 (diseases) for immunologic studies.

Each time the subheading *immunology is used, a heading from among the immunological terms in MeSH should be indexed as a coordinate. If the heading to which *immunology is attached is IM, the coordinate will also probably be IM.

Antibody formation in rheumatism

ANTIBODY FORMATION (IM)
RHEUMATISM *immunology (IM)

Splenic autoantibodies

SPLEEN *immunology (IM)
AUTOANTIBODIES (IM)

Adenovirus antigens

ADENOVIRUS *immunology (IM)
VIRUS ANTIGENS (IM)

Complement in viral diseases

COMPLEMENT (IM)
VIRUS DISEASES *immunology (IM)

For an extended discussion on the use of *immunology with animal headings, see page 15.

Do not use the subheading *immmunology for "immunologic procedures used for diagnostic, preventive or therapeutic purposes," the MeSH definition quoted above states.

Instead, use the subheadings *diagnosis, *prevention & control or *therapy as applicable to the text.

Hemagglutination inhibition test in the diagnosis of rubella

HEMAGGLUTINATION INHIBITION TESTS (IM)
RUBELLA *diagnosis (IM)

not RUBELLA *immunology

Smallpox vaccination

SMALLPOX *prevention & control (IM)
VACCINATION (IM)

56. *isolation & purification — Like *analysis above, this is not supplied routinely in indexing merely to fill a void and ease an uncomfortable indexer. The author must discuss the method of isolating or purifying the substance or organism if this subheading is to be used correctly.

57. *pharmacodynamics — The subheading *pharmacodynamics is permitted with biological products and immunological substances but only under the conditions of the MeSH definition of *pharmacodynamics.

*pharmacodynamics is permitted when the immune serum, antiserum or other biological substance is administered exogenously, and the article discusses its effect on organ or tissue morphology or function or metabolism, on physiological processes, on organisms - if likely - etc. Do NOT, however, use the coordinate subheading *drug effects.

Effect of phytoagglutinins
on leukocytes

PLANT AGGLUTININS *pharmacodynamics (IM)
LEUKOCYTES (IM)

not LEUKOCYTES *drug effects

Avoiding *drug effects in such cases is consistent with the avoiding of *drug therapy with reference to biologicals as mentioned under *therapeutic use below, illustrated on page 32.

Note also that a disease state induced by a biological product is not to be indexed with the subheading *chemically induced (use instead *etiology): a biological product or immunological component is not a "drug" or "chemical" in the MeSH and indexing meaning of the words. See section 50, pages 25 and 26.

58. *radiation effects — This subheading is permitted with Category D immunological concepts. In indexing with this subheading, however, remember to follow the Indexing Manual rules on RADIATION EFFECTS, 12.3.10.4.1, 18.32 et passim.

59. *therapeutic use — The subheading *therapeutic use is valid with immunological agents but care should be exercised in distinguishing between therapy and prevention. Too, there is the matter of the correct sub-

heading with the disease term. This is discussed in sections 10 and 11 and illustrated on page 9.

Briefly, if an immunological agent is used to prevent a disease, use NO subheading with it but use *prevention & control with the disease. If an immunological substance is used to treat a disease, use *therapeutic use with it but use *therapy with the disease, NOT *drug therapy.

Avoid *drug therapy with reference to treatment by biologicals:

TETANUS *therapy (IM)
TETANUS ANTITOXIN *therapeutic use (IM)

not

TETANUS *drug therapy
TETANUS ANTITOXIN *therapeutic use

Do not use *therapeutic use with a vaccine administered to prevent a disease:

MEASLES *prevention & control (IM)
VACCINATION (IM)
MEASLES VACCINE (IM)

not

MEASLES VACCINE *therapeutic use

*therapeutic use is permitted with the specific vaccine headings (SMALLPOX VACCINE, POLIOVIRUS VACCINE, BACTERIAL VACCINES, FUNGAL VACCINES, etc.) when the vaccine is administered therapeutically. The analyst will make the judgment on the basis of the author's text.

VACCINES *therapeutic use, however, even if correct in intent, is an invalid combination which should be correctly indexed as VACCINE THERAPY. This will be used only for general articles on vaccine therapy or for articles in which the specific vaccine is not mentioned.

60. *transplantation — The literature on transplantation has grown to enormous proportions of late and with it must grow the literature on transplantation immunology. This is discussed as a field, as a concept, and as an immune process of the body at length on pages 17-23.

*transplantation may be used only with Category A headings, but it is correct for indexing articles on the transplant of whole organs or segments of organs, of tissues or of cells.

Index the Category A term with the subheading *transplantation (IM) and the specific type of transplantation (TRANSPLANTATION, HETEROLOGOUS; TRANSPLANTATION, HOMOLOGOUS; TRANSPLANTATION, AUTOLOGOUS). For IM or NIM see sections 29-32.

61. The main headings ANTIGENS, ANTIBODIES and IMMUNE SERUMS are used very often by indexers. There is hardly an article in the field of immunology for which an indexer does not provide one of these three main headings on the Data Form among the indexing terms.

Although all three are terms in Subcategory D12, they do not pair comfortably with most of the subheadings available for Category D drugs and chemicals from other subcategories.

62. The subheading restrictions listed below are meant for use only with reference to the three headings ANTIGENS, ANTIBODIES and IMMUNE SERUMS themselves as words, not as concepts. Other antigen, antibody and immune serum terms indented under each of these respectively, may or may not be paired under the same restrictions. The indexer will have to judge for himself the sensibleness or reasonableness of a proposed pair.

63. When the words ANTIGENS, ANTIBODIES and IMMUNE SERUMS are used as NIM coordinates to qualify an indexed concept, a subheading is not used at all. In

fact, IMMUNE SERUMS as discussed in section 22, suggests that very often it should not even appear on the Data Form! It states further that if it figures in the article routinely as merely the source of the antibody, NO subheading is used.

64. The list of subheadings below refers to the pairing of ANTIGENS, ANTIBODIES and IMMUNE SERUMS with a subheading when any of these headings is IM.

Only the following subheadings are permitted with

65. ANTIGENS:
*administration & dosage
*adverse effects
*analysis
*cerebrospinal fluid (use discreetly)
*classification
*isolation & purification
*radiation effects
*standards
*toxicity (use with discretion)
*urine (use with discretion)

66. ANTIBODIES:
*administration & dosage (use with discretion)
*analysis
*cerebrospinal fluid
*classification
*isolation & purification
*urine

Note: "antibody biosynthesis" = ANTIBODY FORMATION

67. IMMUNE SERUMS:
*administration & dosage
*adverse effects
*analysis
*cerebrospinal fluid (use discreetly)
*classification
*history
*isolation & purification
*pharmacodynamics
*radiation effects
*standards
*supply & distribution
*toxicity (use with discretion)
*urine (use with discretion)

Note: IMMUNE SERUMS *diagnostic use = SERODIAGNOSIS and IMMUNE SERUMS *therapeutic use = SERO-THERAPY

68. Although *classification is permitted, it is not a common need.

69. Although *history is permitted with IMMUNE SERUMS, possibly SEROLOGY *history will be more appropriate.

70. Although *analysis and *isolation & purification are listed above under all three headings, use with caution, following the true MeSH definitions and intent as discussed on pages 26 and 30.

71. Although *adverse effects with its related subheading *toxicity and although *pharmacodynamics are permitted, these subheadings must meet the MeSH definition. See the discussion on pages 25 and 30.

REFERENCES

As in all indexing, the best reference is the article itself and the word of the author. Obtain from the article the maximum amount of information to be described in terms of MEDICAL SUBJECT HEADINGS.

The following is a list of additional useful reference works for the indexing of immunology.

1. Boyd, W.C. Fundamentals of Immunology. 4th ed. New York, Interscience Publishers, 1966

2. Burnet, F.M. Cellular Immunology. Melbourne, University Press, 1969

3. Gell, P.G. & Coombs, R.R. Clinical Aspects of Immunology. 2d ed. Philadelphia, Davis, 1968

4. Humphrey, J.H. & White, R.G. Immunology for Students of Medicine. 3d ed. Philadelphia, Davis, 1970

5. Kabat, E.A. Structural Concepts in Immunology and Immunochemistry. New York, Holt, Rinehart and Winston, 1967

6. Miescher, P.A. & Müller-Eberhard, H.J. Textbook of Immunopathology. 2 vol. New York, Grune & Stratton, 1968

7. Raffel, S. Immunity. 2d ed. New York, Appleton-Century-Crofts, 1961

8. Williams, C.A. & Chase, M.W., eds. Methods in Immunology and Immunochemistry. 3 vol. New York, Academic Press, 1967-1971

APPENDIX I

MEDICAL SUBJECT HEADINGS

1973

The arrays that follow give the 1973 MeSH coverage in the field of immunology. The headings are grouped by the same categorization into which MeSH is divided, but the indentions here are able to show finer hierarchical distinctions than do the categorized lists or the MeSH tree structures, since this brochure is not restricted by computer limitations.

Note that Provisional Headings (terms available for search but not appearing in the printed monthly or cumulated INDEX MEDICUS) are indicated as (Prov).

Category A

Here are terms from the anatomical category in MeSH, Category A, which are involved in the immune processes of the body.

RETICULOENDOTHELIAL SYSTEM (A10)
LYMPHATIC SYSTEM (A7)
ANTIBODY PRODUCING CELLS (A11)
LYMPHOCYTES (A11)
PLASMA CELLS (A11)
LYMPH (A7)
CHYLE (A7)
LYMPHOID TISSUE (A10)
ADENOIDS (A3, A4)
BURSA OF FABRICIUS (A13)
LYMPH NODES (A7)
SPLEEN (A7)
THYMUS GLAND (A7)
TONSIL (A3)
THORACIC DUCT (A7)
[RES cells]
MACROPHAGES (A11)
HISTIOCYTES (A11)
MAST CELLS (A11)

Note: RES cells is not a MeSH term; it is used here to group three cells terms.

Subcategory C9

BLOOD PROTEIN DISORDERS
- AGAMMAGLOBULINEMIA
- HEAVY CHAIN DISEASE
- HYPERGAMMAGLOBULINEMIA
- HYPOPROTEINEMIA
- MACROGLOBULINEMIA
- PURPURA, HYPERGLOBULINEMIC

THYMUS HYPERPLASIA

Subcategory C14

IMMUNOLOGIC DISEASES
- AUTOIMMUNE DISEASES
  - ANEMIA, HEMOLYTIC, AUTOIMMUNE
  - ENCEPHALOMYELITIS, ALLERGIC
- BLOOD GROUP INCOMPATIBILITY
  - ERYTHROBLASTOSIS, FETAL
- HOMOLOGOUS WASTING DISEASE
- HYPERSENSITIVITY
  - DRUG HYPERSENSITIVITY
    - DERMATITIS MEDICAMENTOSA
  - FOOD HYPERSENSITIVITY
  - HYPERSENSITIVITY, DELAYED
    - DERMATITIS, CONTACT
      - POISON IVY DERMATITIS
  - HYPERSENSITIVITY, IMMEDIATE
    - ANAPHYLAXIS
      - DRUG HYPERSENSITIVITY
        - DERMATITIS MEDICAMENTOSA
      - INSECT BITES AND STINGS
      - SERUM SICKNESS
    - ANGIONEUROTIC EDEMA
    - ARTHUS PHENOMENON
    - DERMATITIS, ATOPIC
    - RESPIRATORY HYPERSENSITIVITY
      - ASTHMA
      - HAY FEVER
    - URTICARIA
  - PHOTOSENSITIZATION
  - SHWARTZMAN PHENOMENON
  - WISSLER'S SYNDROME
- IMMUNE COMPLEX DISEASE (Prov)
- IMMUNOLOGIC DEFICIENCY SYNDROMES
  - AGAMMAGLOBULINEMIA
  - CHEDIAK-HIGASHI SYNDROME
  - LYMPHOPENIA
  - PHAGOCYTE BACTERICIDAL DYSFUNCTION

- BLOOD PROTEINS
  - BENCE JONES PROTEINS
  - C-REACTIVE PROTEIN
  - COMPLEMENT
  - OPSONINS
  - SERUM ALBUMIN
    - SERUM ALBUMIN, BOVINE
    - SERUM ALBUMIN, RADIO-IODINATED
  - SERUM GLOBULINS
    - ALPHA GLOBULIN
      - CERULOPLASMIN
      - HAPTOGLOBINS
    - BETA GLOBULIN
      - HEMOPEXIN (Prov)
      - PROPERDIN
    - FETAL GLOBULINS
    - GAMMA GLOBULIN
      - GAMMA GLOBULIN, 7S
      - GAMMA GLOBULIN, 19S
    - IMMUNOGLOBULINS
      - CRYOGLOBULINS
      - IGA
      - IGD
      - IGE
      - IGG
      - IGM
    - MACROGLOBULINS
    - MYELOMA PROTEINS
    - PERMEABILITY GLOBULINS

ANTIGENS (D12)

ANTIGENS
- ANTIGEN-ANTIBODY COMPLEX
- ANTIGENIC DETERMINANTS
- ANTIGENS, HETEROGENETIC
- BACTERIAL ANTIGENS
- HAPTENS
- HEMAGGLUTININS, VIRAL
- HISTOPLASMIN
- ISOANTIGENS
  - ABO FACTORS
  - RH FACTORS
- LEPROMIN
- NEOPLASM ANTIGENS
- POLYSACCHARIDES, BACTERIAL
- TOXINS
  - AGGRESSIN (Prov)
  - BOTULINUM TOXIN
  - DIPHTHERIA TOXIN
  - ENDOTOXINS
    - TOXOHORMONE (Prov)
  - LEUKOCIDIN
  - TETANUS TOXIN
  - TETRODOTOXIN
  - VENOMS
- TOXOIDS
  - DIPHTHERIA TOXOID
  - STAPHYLOCOCCAL TOXOID
  - TETANUS TOXOID
- TRICHOPHYTIN
- TUBERCULIN
- VIRUS ANTIGENS
  - AUSTRALIA ANTIGEN (B4 only)

ANTIBODIES
- ANTI-ANTIBODIES
- ANTIBODIES, HETEROTYPIC
- ANTIGEN-ANTIBODY COMPLEX
- ANTITOXINS
  - ANTIVENINS
  - BOTULINUM ANTITOXIN (Prov)
  - DIPHTHERIA ANTITOXIN
  - TETANUS ANTITOXIN
- AUTOANTIBODIES
  - ANTINUCLEAR FACTORS
- IMMUNE SERUMS
  - ANTILYMPHOCYTE SERUM
  - ANTIRETICULAR CYTOTOXIC SERUM
  - IMMUNOGLOBULINS
    - IGA
    - IGD
    - IGE
    - IGG
    - IGM
- INSULIN ANTIBODIES
- ISOANTIBODIES
- OPSONINS
- PRECIPITINS
- REAGINS

Subcategory D12

Here are miscellaneous immunological factors other than those antigens and antibodies arrayed separately on the two preceding pages.

ADJUVANTS, IMMUNOLOGIC
  FREUND'S ADJUVANT
ALLERGENS
  POLLEN
COMPLEMENT (D10, D12)
HEMOLYSINS
  LYSOLECITHIN
  STREPTOLYSIN
    ANTISTREPTOLYSIN
HISTAMINE
INTERFERON
PLANT AGGLUTININS
PROPERDIN (D10, D12)
PYROGENS
RHEUMATOID FACTOR
SRS-A
VACCINES (see also page 47)
  BACTERIAL VACCINES
    BRUCELLA VACCINE
    CHOLERA VACCINE
    PERTUSSIS VACCINE
    PLAGUE VACCINE
    STAPHYLOCOCCAL VACCINES
    TUBERCULOSIS VACCINES
      BCG VACCINATION (E2 only)
    TYPHOID-PARATYPHOID VACCINES
  FUNGAL VACCINES
  VIRAL VACCINES
    INFLUENZA VACCINE
    MEASLES VACCINE
    MUMPS VACCINE
    POLIOVIRUS VACCINE
      POLIOVIRUS VACCINE, ORAL
    RABIES VACCINE
    RUBELLA VACCINE
    SMALLPOX VACCINE

Category E

Below are terms from Category E, the MeSH category concerned with diagnostic, therapeutic, surgical, anesthetic and analytic technics.

The immunological headings in Category E fall into two natural groups, diagnostic (E1) and therapeutic (E2). Many many E5 (miscellaneous) terms, however, can well apply to diagnosis, and so are included here.

Note that in order to complete the array under VACCINE THERAPY (E2), we have displayed the vaccine headings from Subcategory D12. They are so marked.

Diagnosis

IMMUNOLOGIC TECHNICS
- CELL MIGRATION INHIBITION
- HISTOCOMPATIBILITY TESTING
- IMMUNOASSAY
  - RADIOIMMUNOASSAY
- PASSIVE TRANSFER
- SKIN TESTS
  - HISTOPLASMIN
  - LEPROMIN
  - PASSIVE CUTANEOUS ANAPHYLAXIS
  - TUBERCULIN TEST
- SKIN WINDOW TECHNIC
- SERODIAGNOSIS
  - AGGLUTINATION TESTS
    - HEMAGGLUTINATION TESTS
      - COOMBS' TEST
  - ANTIBODY DISSOCIATION
  - COMPLEMENT FIXATION TESTS
    - WASSERMANN REACTION
  - CYTOTOXICITY TESTS, IMMUNOLOGIC
  - HEMADSORPTION INHIBITION TESTS
  - HEMAGGLUTINATION INHIBITION TESTS
  - HEMOLYTIC PLAQUE TECHNIC

SERODIAGNOSIS (continued)
IMMUNE ADHERENCE REACTION
LATEX FIXATION TESTS
NEUTRALIZATION TESTS
PRECIPITIN TESTS
FLOCCULATION TESTS
KAHN TEST
GEL DIFFUSION TESTS
IMMUNOELECTROPHORESIS
SEROTYPING
SYPHILIS SERODIAGNOSIS
KAHN TEST
TREPONEMA IMMOBILIZATION TEST
WASSERMANN REACTION

FALSE NEGATIVE REACTIONS
FALSE POSITIVE REACTIONS

IMMUNIZATION
- IMMUNIZATION SCHEDULE
- IMMUNIZATION, SECONDARY
- VACCINATION
  - BCG VACCINATION

SEROTHERAPY

VACCINE THERAPY
- BACTERIAL VACCINES (D12)
  - BRUCELLA VACCINE (D12)
  - CHOLERA VACCINE (D12)
  - PERTUSSIS VACCINE (D12)
  - PLAGUE VACCINE (D12)
  - STAPHYLOCOCCAL VACCINES (D12)
  - TUBERCULOSIS VACCINES (D12)
    - BCG VACCINATION
  - TYPHOID-PARATYPHOID VACCINES (D12)
- FUNGAL VACCINES (D12)
- VIRAL VACCINES (D12)
  - INFLUENZA VACCINE (D12)
  - MEASLES VACCINE (D12)
  - MUMPS VACCINE (D12)
  - POLIOVIRUS VACCINE (D12)
    - POLIOVIRUS VACCINE, ORAL (D12)
  - RABIES VACCINE (D12)
  - RUBELLA VACCINE (D12) (Prov)
  - SMALLPOX VACCINE (D12)

IMMUNOSUPPRESSION
- IMMUNOSUPPRESSIVE AGENTS (D4)
  - AZASERINE (D3, D4)
  - AZATHIOPRINE (D4)
  - MERCAPTOPURINE (D2, D4)
  - METHOTREXATE (D4)
  - THIOGUANINE (D4)
- LYMPHOCYTE DEPLETION

Subcategory G1

This subcategory contains all the physiological concepts in MeSH. Thus, all of the terms related to the immune processes of the body fall naturally into this subcategory. The last two terms are in Subcategory G1 as specialty concepts.

IMMUNITY
- ANTIBODY FORMATION
  - IMMUNOLOGIC MEMORY
- ANTIBODY SPECIFICITY
- ANTIGEN-ANTIBODY REACTIONS
  - AGGLUTINATION
    - HEMAGGLUTINATION
      - HEMADSORPTION
  - CROSS-REACTIONS
  - HEMOLYSIS
  - PASSIVE CUTANEOUS ANAPHYLAXIS
- BLOOD BACTERICIDAL ACTIVITY
- BLOOD GROUPS
  - ABO FACTORS (D12 only)
  - LEWIS BLOOD-GROUP SYSTEM (Prov)
  - RH FACTORS (D12 only)
- HISTAMINE LIBERATION
- IMMUNITY, ACTIVE
- IMMUNITY, CELLULAR
- IMMUNITY, PASSIVE
  - PASSIVE TRANSFER (E5 only)
- IMMUNOSUPPRESSION (E2, E5)
  - IMMUNE TOLERANCE
    - RADIATION CHIMERA
  - LYMPHOCYTE DEPLETION
- LYMPHOCYTE TRANSFORMATION
- ORGAN SPECIFICITY
- PHAGOCYTOSIS
- SPECIES SPECIFICITY
- TRANSPLANTATION IMMUNOLOGY
  - GRAFT VS HOST REACTION
  - GRAFT REJECTION
  - HISTOCOMPATIBILITY

IMMUNOCHEMISTRY

IMMUNOGENETICS

APPENDIX II

Journals Covering Immunology Indexed in INDEX MEDICUS

This is a list of journals covering the field of immunology in INDEX MEDICUS. Select titles have been extracted from the Subject Listing of the LIST OF JOURNALS INDEXED IN INDEX MEDICUS (LJI) from under the entries "Communicable Diseases", "Hematology", "Hypersensitivity" and "Immunology".

The list of journals here will be of greater value to searchers and users of MEDLARS products than to indexers. For this reason, we are citing for each journal title, the journal title code (JTC) which is used for searching the MEDLARS magnetic tapes for specific journals.

Note: Distinguish between O (the letter) and Ø (zero) in JTC codes

Journal Title	Abbreviation	JTC
ACTA ALLERGOLOGICA (Kobenhavn)	Acta Allergol (Kbh)	Ø6U
ACTA HAEMATOLOGICA (Basel)	Acta Haematol (Basel)	ØS8
ACTA HAEMATOLOGICA JAPONICA (Kyoto)	Acta Haematol Jap	ØSU
ACTA PATHOLOGICA et MICROBIOLOGICA SCANDINAVICA; SECTION B: MICRO-BIOLOGY and IMMUNOLOGY (Kobenhavn)	Acta Pathol Microbiol Scand [B]	1O2
ADVANCES in IMMUNOLOGY (New York)	Adv Immunol	2N9
ALERGIA; REVISTA IBEROAMERICANA de ALLERGOLOGIA (Mexico)	Alergia	36E
ALLERGIE und ASTHMAFORSCHUNG (Leipzig)	Allerg Asthmaforsch	39G
ALLERGIE und IMMUNOLOGIE (Leipzig)	Allerg Immunol (Leipz)	38U
AMERICAN JOURNAL of EPIDEMIOLOGY (Baltimore)	Am J Epidemiol	3H3
ANNALES de 1'INSTITUT PASTEUR (Paris)	Ann Inst Pasteur (Paris)	58Y

Journal Title	Abbreviation	JTC
ANNALES de 1'INSTITUT PASTEUR de LILLE	Ann Inst Pasteur Lille	59K
ANNALS of ALLERGY (St. Paul)	Ann Allergy	4XC
ANTONIE van LEEUWENHOEK; JOURNAL of MICROBIOLOGY and SEROLOGY (Amsterdam)	Antonie van Leeuwenhoek	6JE
ARBEITEN aus dem PAUL-EHRLICH-INSTITUT, dem GEORG-SPEYER-HAUS und dem FERDINAND-BLUM-INSTITUT zu FRANKFURT a.M. (Stuttgart)	Arb Paul Ehrlich Inst	6LU
ARCHIWUM IMMUNOLOGIAE et THERAPIAE EXPERIMENTALIS (Warszawa)	Arch Immunol Ther Exp (Warsz)	790
BIBLIOTHECA HAEMATOLOGICA; Supplementa ad ACTA HAEMATOLOGICA (Basel)	Bibl Haematol	9SW
BLOOD; JOURNAL of HEMATOLOGY (New York)	Blood	A8G
BLUT (Munchen)	Blut	A8W
BOLLETTINO de11'ISTITUTO SIEROTERAPICO MILANESE	Boll Ist Sieroter Milan	AKG
BRITISH JOURNAL of HAEMATOLOGY (Oxford)	Br J Haematol	AXC
CELL and TISSUE KINETICS (Oxford)	Cell Tissue Kinet	CQA
CELLULAR IMMUNOLOGY (New York)	Cell Immunol	CQ9

Journal Title	Abbreviation	JTC
CESKOSLOVENSKA EPIDEMIOLOGIE, MIKROBIOLOGIE, IMUNOLOGIE (Praha)	Cesk Epidemiol Mikrobiol Imunol	CSH
CLINICAL and EXPERIMENTAL IMMUNOLOGY (Oxford)	Clin Exp Immunol	DD7
CURRENT TOPICS in MICROBIOLOGY and IMMUNOLOGY (Berlin)	Curr Top Microbiol Immunol	DWQ
EUROPEAN JOURNAL of IMMUNOLOGY (Weinheim)	Eur J Immunol	EN5
FOLIA ALLERGOLOGICA (Roma)	Folia Allergol (Roma)	EXX
FOLIA HAEMATOLOGICA (Leipzig)	Folia Haematol (Leipz)	FØF
GIORNALE di BATTERIOLOGIA, VIROLOGIA ed IMMUNOLOGIA (Torino)	G Batteriol Virol Immunol	FA5
GIORNALE di MALATTIE INFETTIVE e PARASSITARIE (Torino)	G Mal Infett Parassit	FD7
HAEMATOLOGIA; INTERNATIONAL QUARTERLY of HAEMATOLOGY (Budapest)	Haematologia (Budap)	FY5
HAEMATOLOGICA (Pavia)	Haematologica (Pavia)	FYB
HAEMATOLOGICA LATINA (Milano)	Haematol Lat	FY1
HAEMATOLOGIE und BLUTTRANSFUSION; Sonderbaende zu BLUT (Munchen)	Haematol Bluttransfus	FXV

Journal Title	Abbreviation	JTC
IMMUNOCHEMISTRY (Oxford)	Immunochemistry	GH2
IMMUNOLOGY (Oxford)	Immunology	GH7
INTERNATIONAL ARCHIVES of ALLERGY and APPLIED IMMUNOLOGY (Basel)	Int Arch Allergy Appl Immunol	GP9
JAPANESE JOURNAL of ALLERGY (Tokyo)	Jap J Allergy	KHJ
JOURNAL of ALLERGY and CLINICAL IMMUNOLOGY (St. Louis)	J Allergy Clin Immunol	H53
JOURNAL of ASTHMA RESEARCH (Baltimore)	J Asthma Res	HGG
JOURNAL of EXPERIMENTAL MEDICINE (New York)	J Exp Med	I2V
JOURNAL of HYGIENE, EPIDEMIOLOGY, MICROBIOLOGY and IMMUNOLOGY (Praha)	J Hyg Epidemiol Microbiol Immunol (Praha)	IEV
JOURNAL of IMMUNOLOGY (New York)	J Immunol	IFB
JOURNAL of INFECTIOUS DISEASES (Chicago)	J Infect Dis	IH3
JOURNAL of the JAPANESE ASSOCIATION for INFECTIOUS DISEASES (Tokyo)	J Jap Assoc Infect Dis	IJR
JOURNAL of the RETICULOENDOTHELIAL SOCIETY (New York)	J Reticuloendothel Soc	JWV

Journal Title	Abbreviation	JTC
LYMPHOLOGY (Stuttgart)	Lymphology	LA3
NOUVELLE REVUE FRANCAISE d'HEMATOLOGIE (Paris)	Nouv Rev Fr Hematol	065
PROBLEMY GEMATOLOGII i PERELIVANIIA KROVI (Moskva)	Probl Gematol Pereliv Krovi	POY
PROGRESS in ALLERGY (Basel)	Prog Allergy	PZS
PROGRESS in HEMATOLOGY (New York)	Prog Hematol	Q18
PROGRESS in IMMUNOBIOLOGICAL STANDARDIZATION (Basel)	Prog Immunobiol Stand	Q1E
REVIEW of ALLERGY (Boston)	Rev Allergy	R9D
REVUE FRANCAISE d'ALLERGOLOGIE (Paris)	Rev Fr Allergol	RYP
REVUE FRANCAISE de TRANSFUSION (Paris)	Rev Fr Transfus	S1E
REVUE d'IMMUNOLOGIE (Paris)	Rev Immunol (Paris)	S7L
RIVISTA di EMOTERAPIA ed IMMUNOEMATOLOGIA (Pavia)	Riv Emoter Immunoematol	TJ5
RIVISTA dell'ISTITUTO SIEROTERAPICO ITALIANO (Napoli)	Riv Ist Sieroter Ital	TKH
SANGRE (Barcelona)	Sangre (Barc)	U93

SCANDINAVIAN JOURNAL of HAEMATOLOGY (Kobenhavn)	Scand J Haematol	UCV
SCANDINAVIAN JOURNAL of INFECTIOUS DISEASES (Stockholm)	Scand J Infect Dis	UCX
SEMINARS in HEMATOLOGY (New York)	Semin Hematol	UN9
SERIES HAEMATOLOGICA (Kobenhavn)	Ser Haematol	UOA
TRANSFUSION (Philadelphia)	Transfusion	WDN
TRANSPLANTATION (Baltimore)	Transplantation	WEJ
TRANSPLANTATION PROCEEDINGS (New York)	Transplant Proc	WE9
TRANSPLANTATION REVIEWS (Kobenhavn)	Transplant Rev	WEE
VOX SANGUINIS (Basel)	Vox Sang	XLI
ZEITSCHRIFT fur IMMUNITAETSFORSCHUNG, EXPERIMENTELLE und KLINISCHE IMMUNOLOGIE (Stuttgart)	Z Immunitaetsforsch	XW2
ZEITSCHRIFT fur MEDIZINISCHE MIKROBIOLOGIE und IMMUNOLOGIE (Berlin)	Z Med Mikrobiol Immunol	XXV
ZENTRALBLATT fur BAKTERIOLOGIE, PARASITENKUNDE, INFEKTIONSKRANKHEITEN und HYGIENE; ERSTE ABTEILUNG: ORIGINALE (Stuttgart)	Zentralbl Bakteriol Orig	Y4Y
ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII i IMMUNOBIOLOGII (Moskva)	Zh Mikrobiol Epidemiol Immunobiol	Y90

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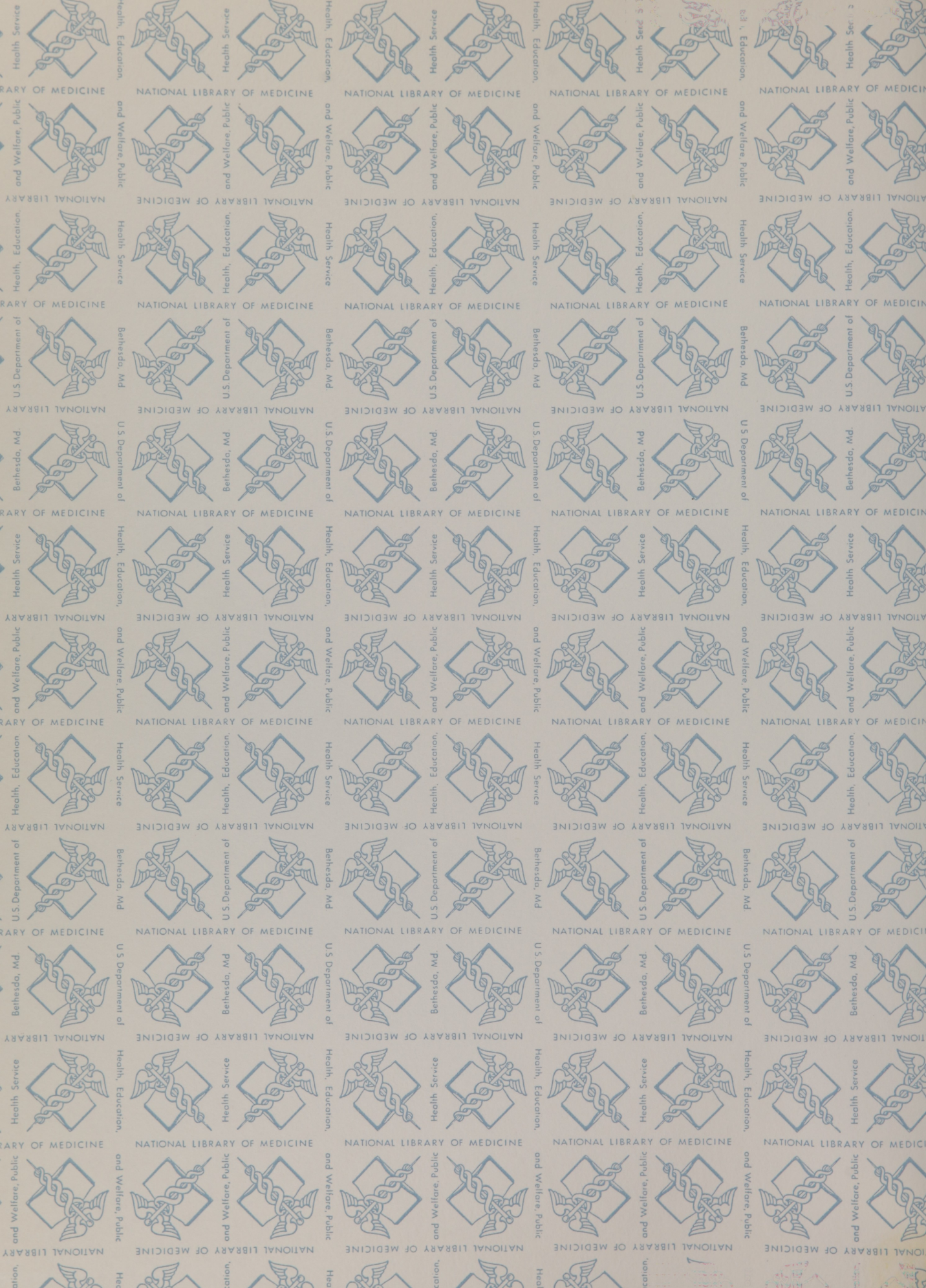
The numbers refer to the section in which the subject may be found. If a section number is not available on a given page, the page will be cited instead as "p." If a section number and a page number will more easily locate a subject, it will appear thus, for example: 25(p.16).

MeSH headings are in capital letters: CADAVER. Subheadings appear with an asterisk: *immunology.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