

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### 2-Hydroxypropyl-beta-cyclodextrin

Derivative of beta-cyclodextrin that is used as an excipient for steroid drugs and as a lipid chelator.

**Tree locations:**

beta-Cyclodextrins D04.345.103.333.500  
D09.301.915.400.375.333.500  
D09.698.365.855.400.375.333.500

### AAA Domain

An approximately 250 amino acid domain common to AAA ATPases and AAA Proteins. It consists of a highly conserved N-terminal P-Loop ATPase subdomain with an alpha-beta-alpha conformation, and a less-conserved C-terminal subdomain with an all alpha conformation. The N-terminal subdomain includes Walker A and Walker B motifs which function in ATP binding and hydrolysis.

**Tree locations:**

Amino Acid Motifs G02.111.570.820.709.275.500.913

### AAA Proteins

A large, highly conserved and functionally diverse superfamily of NTPases and nucleotide-binding proteins that are characterized by a conserved 200 to 250 amino acid nucleotide-binding and catalytic domain, the AAA+ module. They assemble into hexameric ring complexes that function in the energy-dependent remodeling of macromolecules. Members include ATPASES ASSOCIATED WITH DIVERSE CELLULAR ACTIVITIES.

**Tree locations:**

Acid Anhydride Hydrolases D08.811.277.040.013  
Carrier Proteins D12.776.157.025

### Abuse-Deterrent Formulations

Drug formulations or delivery systems intended to discourage the abuse of CONTROLLED SUBSTANCES. These may include physical barriers to prevent chewing or crushing the drug; chemical barriers that prevent extraction of psychoactive ingredients; agonist-antagonist combinations to reduce euphoria associated with abuse; aversion, where controlled substances are combined with others that will produce an unpleasant effect if the patient manipulates the dosage form or exceeds the recommended dose; delivery systems that are resistant to abuse such as implants; or combinations of these methods.

**Tree locations:**

Central Nervous System Agents D27.505.954.427.005  
Dosage Forms D26.255.075  
E05.916.250.500  
Drug Delivery Systems E02.319.300.127  
Physiological Effects of Drugs D27.505.696.034  
Sensory System Agents D27.505.696.663.850.007

### Academic Failure

Student's unsuccessful attempt at academic achievement or a marked inadequacy in the areas of scholarship or study. This is not underachievement which is performance, usually in school work, poorer than that predicted from aptitude and/or intelligence testing.

**Tree locations:**

Educational Status N01.824.196.125

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### Academic Performance

A quantitative or qualitative measure of intellectual, scholarly, or scholastic accomplishment.

**Tree locations:**

Educational Measurement I02.399.136

### Academic Success

Level of engagement in educationally purposeful activities, satisfaction, acquisition of desired knowledge, skills, and competencies, persistence and attainment of educational outcomes.

**Tree locations:**

Academic Performance I02.399.136.500

### Adaptive Clinical Trial (*Pub Type*)

Clinical study in which a prospectively planned opportunity is included to modify trial designs and hypotheses based on analysis of data from subjects in the study.

**AN: this heading is used as a Publication Type; for original report of the conduct or results of a specific adaptive clinical trial; a different heading ADAPTIVE CLINICAL TRIALS AS TOPIC is used for general design, methodology, economics, etc. of adaptive clinical trials**

**Tree locations:**

Clinical Trial V03.175.250.050

### Adaptive Clinical Trials as Topic

Works about clinical studies in which a prospectively planned opportunity is included to modify trial designs and hypotheses based on analysis of data from subjects in the study .

**AN: for general design, methodology, economics, etc. of adaptive clinical trials; a different heading ADAPTIVE CLINICAL TRIAL is used for reports of a specific adaptive clinical trial**

**Tree locations:**

Clinical Trials as Topic E05.318.760.250.500.100  
N05.715.360.775.088.500.100  
N06.850.520.450.250.250.100

### Addiction Medicine

A medical specialty focused on the diagnosis and treatment of ADDICTIVE BEHAVIOR disorders, including SUBSTANCE-RELATED DISORDERS and IMPULSE CONTROL DISORDERS; and the management of co-occurring medical and psychiatric conditions

**Tree locations:**

Medicine H02.403.007

### ADP-Ribosylation

Post-translational modification of proteins with ADENOSINE DIPHOSPHATE RIBOSE.

**Tree locations:**

Protein Processing, Post-Translational G02.111.660.871.790.600.200  
G02.111.691.600.200  
G03.734.871.790.600.200  
G05.308.670.600.200

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### Adverse Outcome Pathways

Models connecting initiating events at the cellular and molecular level to population-wide impacts. Computational models may be at levels relating toxicology to adverse effects.

**Tree locations:**

Models, Biological E05.599.395.040  
Risk Assessment E05.318.740.600.800.715.250  
N04.452.871.715.200  
N06.850.505.715.250

### Aeromonadales

An order of Gram-negative bacteria in the class GAMMAPROTEOBACTERIA, phylum PROTEOBACTERIA, which include important pathogens.

**Tree locations:**

Gammaproteobacteria B03.660.250.018

### Agent Orange

A herbicide that contains equal parts of 2,4-dichlorophenoxyacetic acid (2,4-D) and 2,4,5-trichlorophenoxyacetic acid (2,4,5-T), as well as traces of the contaminant 2,3,7,8-tetrachlorodibenzo-p-dioxin.

**Tree locations:**

2,4,5-Trichlorophenoxyacetic Acid D02.241.081.018.386.682.800.500  
D02.241.511.316.682.800.500  
2,4-Dichlorophenoxyacetic Acid D02.241.081.018.386.682.224.500  
D02.241.511.316.682.149.500  
Polychlorinated Dibenzodioxins D02.309.500.450.500  
D03.633.300.786.500

### Alcoholic Korsakoff Syndrome

A neurological disorder characterized by inattentiveness and the inability to form short term memories. It is caused by THIAMINE DEFICIENCY due to chronic ALCOHOLISM.

**Tree locations:**

Alcohol Amnestic Disorder C10.720.112.100.250  
C25.723.705.150.100.250  
C25.775.100.087.193.100.250  
F03.900.100.050.250  
Amnesia F03.615.200.131  
Korsakoff Syndrome C10.597.606.525.400.500  
C23.888.592.604.529.400.500  
F01.700.625.400.500

### Aldo-Keto Reductase Family 1 member B10

Aldo-keto reductase that functions as an all-trans-retinaldehyde reductase. It also reduces aromatic and aliphatic ALDEHYDES.

**Tree locations:**

Aldo-Keto Reductases D08.811.682.047.150.700.156.625  
D08.811.682.047.820.284.813

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### Aldo-Keto Reductase Family 1 Member C2

Aldo-keto reductase that functions with 5-alpha and 5-beta-steroid reductases to convert steroid hormones into the 3-alpha or 5-alpha and 3-alpha or 5-beta-tetrahydrosteroid, including 5-ALPHA-DIHYDROTESTOSTERONE to ANDROSTANE-3,17-DIOL. It also binds to BILE ACIDS. Mutations in the AKR1C2 gene are associated with Type 8 46, XY DISORDERS OF SEX DEVELOPMENT (SRXY8).

**Tree locations:**

Aldo-Keto Reductases D08.811.682.047.150.700.156.750  
D08.811.682.047.820.284.875

### Aldo-Keto Reductase Family 1 Member C3

Aldo-keto reductase that functions as a bi-directional 17 BETA, 20 ALPHA-HYDROXYSTEROID DEHYDROGENASE. It catalyzes the reduction of PROSTAGLANDIN D2 and PROSTAGLANDIN H2, as well as the oxidation of 9alpha,11beta-PGF2 to prostaglandin D2. It can also interconvert estrogens, ANDROGENS; and PROGESTINS between their active forms and inactive metabolites.

**Tree locations:**

17-Hydroxysteroid Dehydrogenases D08.811.682.047.436.375.140  
Aldo-Keto Reductases D08.811.682.047.150.700.156.875  
D08.811.682.047.820.284.937  
Hydroxyprostaglandin Dehydrogenases D08.811.682.047.820.375.500

### Aldo-Keto Reductases

A family of NADPH-dependent oxidoreductases that reduce carbonyl substrates including sugar-aldehydes, KETOSTEROIDS; keto-prostaglandins, and QUINONES. They are monomers of approximately 37 KDa and are characterized by a parallel beta-8 (BETA SHEET)-alpha 8 (ALPHA HELICES)-barrel structure that contains the NADP binding site. This conformation favors aromatic and apolar substrates.

**Tree locations:**

NAD (+) and NADP (+) Dependent Alcohol Oxidoreductases D08.811.682.047.820.284  
Sugar Alcohol Dehydrogenases D08.811.682.047.150.700.156

### Alemtuzumab

An anti-CD52 ANTIGEN monoclonal antibody used for the treatment of certain types of CD52-positive lymphomas (e.g., CHRONIC LYMPHOCYTIC LEUKEMIA; CUTANEOUS T-CELL LYMPHOMA; and T-CELL LYMPHOMA). Its mode of actions include ANTIBODY-DEPENDENT CELL CYTOTOXICITY.

**Tree locations:**

Antibodies, Monoclonal, Humanized D12.776.124.486.485.114.224.060.313  
D12.776.124.790.651.114.224.060.375  
D12.776.377.715.548.114.224.200.375

### Alethinophidia

An infraorder of snakes in the order Serpentes that includes all snakes except blind snakes and thread snakes.

**Tree locations:**

Snakes B01.050.150.900.833.672.125

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### Alphacoronavirus

A genus of the family CORONAVIRIDAE which causes respiratory or gastrointestinal disease in a variety of mammals. Human alphacoronaviruses include Human coronavirus 229E and NL63. All members share the identical core transcription regulatory sequences of 5'-CUAAAC-3' and most have 1 to 2 ORFs downstream to the N protein gene.

**AN: infection: coordinate IM with CORONAVIRUS INFECTIONS (IM)**

**Tree locations:**

Coronavirus B04.820.504.540.150.075

### Alphacoronavirus 1

The type species of ALPHACORONAVIRUS genus causing gastroenteritis, peritonitis and respiratory diseases in dogs, cats and swine. Previously separate species TRANSMISSIBLE GASTROENTERITIS VIRUS; PORCINE RESPIRATORY CORONAVIRUS; CANINE CORONAVIRUS AND FELINE CORONAVIRUS merged into this species on the basis of similar genome nucleotide sequence and genome organization.

**AN: infection: coordinate IM with CORONAVIRUS INFECTIONS (IM)**

**Tree locations:**

Alphacoronavirus B04.820.504.540.150.075.500

### Amniotomy

A method of inducing labor by deliberate rupture of the AMNION to cause the release of amniotic fluid.

**Tree locations:**

Labor, Induced E04.520.252.968.500

### Anesthesia, Cardiac Procedures

A range of methods used to induce UNCONSCIOUSNESS; ANALGESIA; and MUSCLE RELAXATION during cardiac procedures.

**Tree locations:**

Anesthesia E03.155.403

### Angiopoietin-like 4 Protein

A secreted angiopoietin-like protein expressed under hypoxic conditions by ENDOTHELIAL CELLS. It inhibits cell proliferation, cell migration, and tubule formation; the inactive form accumulates in the endothelial EXTRACELLULAR MATRIX, reducing vascular leakage. ANGPTL4 has direct roles in regulating glucose and lipid metabolism, as well as INSULIN SENSITIVITY, and may also function as a regulator of angiogenesis and tumorigenesis.

**Tree locations:**

Angiopoietin-like Proteins D12.644.276.100.050.500  
D12.776.467.100.050.500  
D23.529.100.050.500

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### Angiopoietin-like Proteins

A family of proteins that is structurally similar to ANGIOPOIETINS but do not bind angiopoietin receptors. They are characterized by an amino-terminal coiled-coil domain, a linker region, and a carboxy-terminal FIBRINOGEN-like domain with the exception of ANGPTL8, which lacks the fibrinogen-like domain. They function in a variety of developmental and physiological processes, including INFLAMMATION, lipid metabolism, hematopoietic stem cell activity, and cancer metastasis.

**Tree locations:**

Angiogenic Proteins D12.644.276.100.050  
D12.776.467.100.050  
D23.529.100.050

### Animal Fur

Usually densely-packed hairs on the skin of MAMMALS.

**Tree locations:**

Animal Structures A13.078  
Hair A17.360.148

### Animal Scales

Tough, horny, brittle, smooth, striated or plate-like extensions of the stratum corneum or outer layer of the skin. It serves as a protective layer in fishes, reptiles, birds, and mammals.

**Tree locations:**

Animal Structures A13.079  
Integumentary System A17.907

### Anoctamin-1

An anoctamin chloride channel expressed at high levels in the liver, skeletal muscle, and gastrointestinal muscles that functions in transepithelial anion transport and smooth muscle contraction. It is essential for the function of the INTERSTITIAL CELLS OF CAJAL and plays a major role in chloride conduction by airway epithelial cells and in tracheal cartilage development.

**Tree locations:**

Anoctamins D12.776.157.530.400.175.032.500  
D12.776.543.550.450.175.032.500  
D12.776.543.585.400.175.032.500

### Anoctamins

A family of transmembrane proteins that function primarily as calcium-activated chloride channels. Structurally, they form a homodimer where each subunit consists of eight transmembrane helices with the N and C terminals exposed to the cytosol. The regions between helices 5 and 7 may be important for ion pore formation and calcium ion binding.

**Tree locations:**

Chloride Channels D12.776.157.530.400.175.032  
D12.776.543.550.450.175.032  
D12.776.543.585.400.175.032

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### Anti-Citrullinated Protein Antibodies

Autoantibodies to citrullinated-peptides and proteins.

**Tree locations:**

Autoantibodies D12.776.124.486.485.114.323.095  
D12.776.124.790.651.114.323.095  
D12.776.377.715.548.114.323.095

### Antimicrobial Stewardship

Programs and guidelines for selecting optimal ANTI-INFECTIVE AGENTS regimens in an effort to maintain antibiotic efficacy, reduce CROSS INFECTION related to ANTIBIOTIC RESISTANCE while managing satisfactory clinical and economic outcomes.

**Tree locations:**

Drug Utilization Review N04.452.706.477.400.500  
N04.761.879.300.500  
N05.700.900.300.500

### Antineoplastic Agents, Immunological

Antineoplastic agents containing immunological agents (e.g. MAbs). These pharmacologic preparations inhibit or prevent the proliferation of NEOPLASMS.

**Tree locations:**

Antineoplastic Agents D27.505.954.248.384

### Apelin

A 77 amino acid secreted endogenous ligand for the angiotensin II receptor-like 1 protein (APELIN RECEPTOR) that is proteolytically cleaved into four smaller peptides: Apelin-36, Apelin-31, Apelin-28, and Apelin-13. It inhibits entry of HIV into cells that express both APJ and CD4 ANTIGEN and is highly expressed in breast milk, where it may modulate the neonatal immune response.

**Tree locations:**

Intercellular Signaling Peptides and Proteins D12.644.276.150  
D23.529.134

### Apelin Receptors

G-protein coupled receptors for APELIN that function in a broad range of physiologic processes including blood pressure regulation and heart contractility. They also have an essential role in early embryo development for GASTRULATION and heart morphogenesis, and can also function as a CD4 co-receptor for HIV-1.

**Tree locations:**

Receptors, G-Protein-Coupled D12.776.543.750.695.006

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### **Apolipoprotein L1**

An ApoL protein highly expressed by the liver. It has anti-trypanosomal activity through its ability to permeabilize TRYPANOSOMA membranes. Mutations in the APO1 gene are associated with type 4 FOCAL SEGMENTAL GLOMERULOSCLEROSIS .

**Tree locations:**

Apolipoproteins L D10.532.091.750.500  
D12.776.070.400.750.500  
D12.776.521.120.750.500

### **Apolipoproteins L**

A family of apolipoproteins occurring in humans that are structurally similar to B-CELL LEUKEMIA 2 FAMILY PROTEINS. In addition to their roles in cholesterol and lipid transport, they are expressed by MYELOID CELLS and ENDOTHELIAL CELLS during INFLAMMATION and may function to promote CELL DEATH.

**Tree locations:**

Apolipoproteins D10.532.091.750  
D12.776.070.400.750  
D12.776.521.120.750

### **Apolipoproteins M**

Apolipoproteins and lipocalins that occur in HIGH-DENSITY LIPOPROTEINS. They bind or transport lipids in the blood including sphingosine-1-phosphate, MYRISTIC ACID; STEARIC ACIDS; and ALL-TRANS RETINOIC ACID.

**Tree locations:**

Apolipoproteins D10.532.091.100  
D12.776.070.400.100  
D12.776.521.120.100  
Lipocalins D12.776.157.469.025

### **Aruba**

Island in the Caribbean Sea, north of Venezuela. In 1986 it became a separate, autonomous member of the Kingdom of the Netherlands.

**Tree locations:**

Atlantic Islands Z01.639.040.109  
Caribbean Region Z01.107.084.113

### **ATP Binding Cassette Subfamily B Member 11**

An ATP-binding cassette, sub-family B protein (P-glycoproteins) that functions in the ATP-dependent secretion of BILE SALTS into the BILE CANALICULI of HEPATOCYTES. Mutations in the ABCB11 gene are associated with progressive familial intrahepatic cholestasis 2 (see CHOLESTASIS, INTRAHEPATIC).

**Tree locations:**

ATP Binding Cassette Transporter, Sub-Family B D12.776.157.530.100.652.438  
D12.776.157.530.450.074.500.500.875.438  
D12.776.395.550.020.610.534  
D12.776.543.550.192.610.534  
D12.776.543.585.100.610.438  
D12.776.543.585.450.074.500.500.875.438

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### ATP Binding Cassette Transporter, Sub-Family A

A large, highly conserved, subfamily of ATP binding cassette transporters structurally characterized by a membrane-spanning domain composed of six ALPHA-HELICES, a large extracellular loop, nucleotide-binding domain, and a conserved cytoplasmic 80 amino acid sequence. In humans, it includes ABCA1(ATP BINDING CASSETTE TRANSPORTER 1) through ABCA10, as well as ABCA12 and ABCA13.

**Tree locations:**

ATP-Binding Cassette Transporters D12.776.157.530.100.190  
D12.776.395.550.020.381  
D12.776.543.550.192.381  
D12.776.543.585.100.190

### ATP Binding Cassette Transporter, Sub-Family A, Member 4

An ATP binding cassette sub-family A transporter that translocates 11-cis and all-trans isomers of N-retinylidene-phosphatidylethanolamine (RETINOIDS) from the extracellular surface to the cytoplasmic membrane surface of RETINAL ROD CELLS and RETINAL CONE CELLS. Mutations in the ABCA4 gene are associated with Stargardt Disease 1, a hereditary juvenile form of MACULAR DEGENERATION.

**Tree locations:**

ATP Binding Cassette Transporter, Sub-Family A D12.776.157.530.100.190.750  
D12.776.395.550.020.381.750  
D12.776.543.550.192.381.750  
D12.776.543.585.100.190.750

### ATP Binding Cassette Transporter, Sub-Family D

A sub-family of ATP-binding cassette transporters that localize to the membranes of PEROXISOMES; ENDOPLASMIC RETICULUM; and LYSOSOMES. Members contain a transmembrane domain in their N-terminal half and generally function as homodimers in the transport of LIPIDS; BILE ACIDS; and VITAMIN B12. Mutations in some ABCD transporter genes are associated with PEROXISOMAL DISORDERS.

**Tree locations:**

ATP-Binding Cassette Transporters D12.776.157.530.100.209  
D12.776.395.550.020.419  
D12.776.543.550.192.419  
D12.776.543.585.100.209

### ATP Binding Cassette Transporter, Sub-Family D, Member 1

An ATP-Binding Cassette Transporter that functions in the import of long chain (13-21 carbons) and very long chain fatty acids (> 22 carbons), or their acyl-CoA-derivatives, into PEROXISOMES. Mutations in the ABCD1 gene are associated with the X-linked form of ADRENOLEUKODYSTROPHY.

**Tree locations:**

ATP Binding Cassette Transporter, Sub-Family D D12.776.157.530.100.209.500  
D12.776.395.550.020.419.500  
D12.776.543.550.192.419.500  
D12.776.543.585.100.209.500

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### ATPases Associated with Diverse Cellular Activities

A large highly-conserved family of ATPases with diverse functions in cells that are characterized by the presence of a P-LOOP and a ring shape. They couple the energy generated by ATP hydrolysis to remodeling or mechanical translocation of their target molecules.

**Tree locations:**

AAA Proteins D08.811.277.040.013.500  
D12.776.157.025.750  
Adenosine Triphosphatases D08.811.277.040.025.024

### Aversive Agents

Chemicals added to pharmacologic preparations, poisonous household goods, and other chemicals to discourage their abuse or consumption.

**Tree locations:**

Abuse-Deterrent Formulations D27.505.696.034.500  
D27.505.696.663.850.007.500  
D27.505.954.427.005.500  
Molecular Mechanisms of Pharmacological Action D27.505.519.241  
Pharmaceutic Aids D26.650.179  
D27.720.744.179

### B-Cell CLL-Lymphoma 10 Protein

A signal transducing adaptor protein that contains an N-terminal CARD DOMAIN and functions in the ADAPTIVE IMMUNE RESPONSE. It promotes PRO-CASPASE-9 maturation and APOPTOSIS, activation of NF-KAPPA B, and is a substrate for MALT1 PARACASPASE.

**Tree locations:**

CARD Signaling Adaptor Proteins D12.644.360.024.131.140  
D12.644.360.075.358.140  
D12.776.157.057.006.140  
D12.776.476.024.139.140  
D12.776.476.075.358.140

### Baculoviral IAP Repeat-Containing 3 Protein

A regulator of APOPTOSIS that functions as an E3 ubiquitin protein ligase. It contains three baculoviral IAP repeats in its N-terminal half, a CARD DOMAIN, and a RING finger domain at its C-terminus. It is highly expressed in fetal lung and kidney, and adult lymphoid tissues such as spleen, thymus, and peripheral blood lymphocytes. It functions in INFLAMMATION signaling, the INNATE IMMUNE RESPONSE, cell growth and proliferation, and metastasis of tumor cells.

**Tree locations:**

Inhibitor of Apoptosis Proteins D08.811.464.938.750.210.250  
D12.644.360.075.437.250  
D12.776.476.075.437.250

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### Bedridden Persons

Persons unable or unwilling, or otherwise incapacitated and not able to leave the bed due to physical or mental conditions.

**Tree locations:**

Persons M01.079

### Bestrophins

A protein family characterized by a highly conserved N-terminus and four to six transmembrane helices; they function as bicarbonate permeable, calcium-activated chloride channels. Bestrophin-1 (BEST-1) and bestrophin-2 are highly expressed in human RETINAL PIGMENT EPITHELIUM cells and mutations in the BEST-1 gene are associated with VITELLIFORM MACULAR DYSTROPHY, TYPE 2.

**Tree locations:**

Chloride Channels D12.776.157.530.400.175.063

D12.776.543.550.450.175.063

D12.776.543.585.400.175.063

Eye Proteins D12.776.306.228

### Betacoronavirus

A genus of the family CORONAVIRIDAE which causes respiratory or gastrointestinal disease in a variety of mostly mammals. Human betacoronaviruses include HUMAN ENTERIC CORONAVIRUS; HUMAN CORONAVIRUS OC43; MERS VIRUS; and SARS VIRUS. Members have either core transcription regulatory sequences of 5'-CUAAAC-3' or 5'-CUAAAC-3' and mostly have no ORF downstream to the N protein gene.

**AN: infection: coordinate IM with CORONAVIRUS INFECTIONS (IM)**

**Tree locations:**

Coronavirus B04.820.504.540.150.113

### Betacoronavirus 1

The type species of BETACORONAVIRUS genus causing gastroenteritis respiratory diseases in mammals. Previously separate species HUMAN CORONAVIRUS OC43; BOVINE CORONAVIRUS; Human enteric coronavirus; Equine coronavirus; and Porcine hemagglutinating encephalomyelitis virus merged into this species on the basis of similar genome nucleotide sequence and genome organization.

**AN: infection: coordinate IM with CORONAVIRUS INFECTIONS (IM)**

**Tree locations:**

Betacoronavirus B04.820.504.540.150.113.500

### Biological Coevolution

The process of reciprocal evolutionary change occurring between pairs of species or among groups of species as they interact.

**Tree locations:**

Biological Evolution G05.045.125

G16.075.125

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### Biological Variation, Individual

Differences in measurable biological values, characteristics, or traits, within one individual under different conditions for the individual such as fasting, season of the year, age, or state of wellness.

**Tree locations:**

Biological Phenomena G16.115

### Biological Variation, Population

Differences in measurable biological values, characteristics, or traits, among individuals of a population or between population groups.

**Tree locations:**

Biological Phenomena G16.117

### Body Contouring

Plastic surgery to shape many areas of the body simultaneously. This may include LIPECTOMY or RHYTIDOPLASTY or both.

**Tree locations:**

Cosmetic Techniques E02.218.064  
Reconstructive Surgical Procedures E04.680.127

### Body Packing

Concealing of drugs within the gastrointestinal tract or other body orifice for purposes of DRUG SMUGGLING or to avoid detection by law enforcement. Contraband other than drugs is also sometimes smuggled this way.

**Tree locations:**

Crime I01.198.240.142  
I01.880.735.191.026

### Bone Marrow Stromal Antigen 2

A GPI-linked membrane glycoprotein and antiviral factor that functions as a homodimer. It is induced by INTERFERON-GAMMA and blocks the release of enveloped mammalian viruses by directly tethering nascent VIRAL PARTICLES to the membranes of infected cells.

**Tree locations:**

GPI-Linked Proteins D12.776.395.550.448.150  
D12.776.543.484.500.150  
D12.776.543.550.418.150

### Bronchial Thermoplasty

Thermal destruction of the excess bronchial SMOOTH MUSCLE tissue with heat delivered through a catheter assembly attached to a BRONCHOSCOPE. It is often used to control BRONCHIAL HYPERREACTIVITY in severe ASTHMA for better AIRWAY MANAGEMENT.

**Tree locations:**

Catheter Ablation E04.014.085.500

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### **Burkholderiales**

An order of gram-negative bacteria of the class BETAPROTEOBACTERIA which include highly pathogenic species such as BURKHOLDERIA; BORDETELLA; and RALSTONIA.

**Tree locations:**

Betaproteobacteria B03.660.075.090

### **c-Mer Tyrosine Kinase**

A receptor tyrosine kinase that transduces signals from EXTRACELLULAR MATRIX to the CYTOPLASM by binding ligands such as GALECTIN 3. It regulates many physiologic processes that include cell survival, migration, differentiation, and PHAGOCYTOSIS of apoptotic cells and ROD PHOTORECEPTORS in the RETINAL PIGMENT EPITHELIUM. Mutations in the MERTK gene are associated with type 38 RETINITIS PIGMENTOSA; it also plays a critical role as an inhibitor of TOLL-LIKE RECEPTORS signaling.

**Tree locations:**

Proto-Oncogene Proteins D12.776.624.664.700.037

Receptor Protein-Tyrosine Kinases D08.811.913.696.620.682.725.400.003

D12.776.543.750.630.003

### **C9orf72 Protein**

A widely-expressed protein of approximately 400 to 500 amino acids. Its N-terminal region (DENN domain) interacts with RAB GTP-BINDING PROTEINS and may regulate AUTOPHAGY, as well as PROTEIN TRANSPORT to ENDOSOMES. Expansion of the GGGGCC hexanucleotide repeat in the first intron of the C9orf72 gene is associated with FRONTOTEMPORAL DEMENTIA with AMYOTROPHIC LATERAL SCLEROSIS (FTDALS1).

**Tree locations:**

Proteins D12.776.141

### **Campylobacteraceae**

A large and diverse group in the order CAMPYLOBACTERALES, individual species of which grow in aerobic and anaerobic conditions as free-living, commensal, or pathogenic forms.

**Tree locations:**

Campylobacterales B03.660.150.235.250

### **Campylobacterales**

Gram negative microaerophilic bacteria of the phylum PROTEOBACTERIA, class EPSILONPROTEOBACTERIA.

**Tree locations:**

Epsilonproteobacteria B03.660.150.235

### **Cancer Survivors**

Persons who have experienced prolonged survival with or the following neoplastic disease and the impact of the disease on the individual, family members, and significant others.

**Tree locations:**

Survivors M01.860.350

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **Candida parapsilosis**

A species of MITOSPORIC FUNGI and opportunistic pathogen associated with its ability to form BIOFILMS in catheters and parenteral nutrition IV lines. *C. parapsilosis* complex includes closely related species *C. orthopsilosis*; and *C. metapsilosis*.

**AN: infection: coordinate IM with CANDIDIASIS (IM) or its indentions (IM)**

**Tree locations:**

Candida B01.300.107.795.095.600  
B01.300.381.147.600  
B01.300.930.176.600

### **Canola Oil**

Oil derived from the seeds of any of several varieties of the BRASSICACEAE family of plants.

**Tree locations:**

Plant Oils D10.627.700.066  
D20.215.784.750.066

### **Carbapenem-Resistant Enterobacteriaceae**

Strains of Enterobacteriaceae that are resistant to CARBAPENEMS, primarily due to the acquisition of carbapenemase (BETA-LACTAMASE) genes.

**AN: infection: coordinate IM with ENTEROBACTERIACAE INFECTIONS (IM)**

**Tree locations:**

Enterobacteriaceae B03.440.450.425.189  
B03.660.250.150.097

### **Carbonyl Reductase (NADPH)**

NADPH-dependent reductase that catalyzes the reduction of many carbonyl compounds including QUINONES; PROSTAGLANDINS; and XENOBIOTICS.

**Tree locations:**

NAD (+) and NADP (+) Dependent Alcohol Oxidoreductases D08.811.682.047.820.289

### **Cardiac Conduction System Disease**

Diseases characterized by pathological irregularities in the HEART CONDUCTION SYSTEM. They may be associated with other heart diseases and syndromes (e.g., BRUGADA SYNDROME; NEUROMUSCULAR DISEASE, HEART BLOCKS), isolated or may result from injuries. You can have a conduction disorder without having an arrhythmia, but some arrhythmias arise from conduction disorders. OMIM: 601144.

**Tree locations:**

Heart Diseases C14.280.123

### **Caribbean Netherlands**

A group Caribbean islands including Bonaire, Sint Eustatius, and Saba.

**Tree locations:**

Atlantic Islands Z01.639.040.619  
Caribbean Region Z01.107.084.169

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Caryophyllales

Diverse and ecologically specialized dicotyledonous flowering plants that include trees, annuals, shrubs, lianas, mangroves, stem or leaf succulents, and insectivores; acting as important food sources in many cases.

**Tree locations:**

Caryophyllanae B01.650.940.800.575.912.250.198.500

### Caryophyllanae

Superorder of dicot plants in the class MAGNOLIOPSIDA.

**Tree locations:**

Magnoliopsida B01.650.940.800.575.912.250.198

### CCCTC-Binding Factor

A repressor protein with poly(ADP)-ribose binding activity that binds CHROMATIN and DNA; its structure consisting of 11 CYS2-HIS2 ZINC FINGERS allows it to recognize many different DNA target sites. It functions as a repressor by binding to INSULATOR ELEMENTS and preventing interaction between promoters and nearby enhancers and silencers. It plays a critical role in EPIGENETIC PROCESSES, including GENOMIC IMPRINTING.

**Tree locations:**

Chromosomal Proteins, Non-Histone D12.776.660.235.050  
D12.776.664.235.050  
DNA-Binding Proteins D12.776.260.120  
Poly-ADP-Ribose Binding Proteins D12.776.157.687.157  
D12.776.660.720.157  
Repressor Proteins D12.776.930.780.563

### CD52 Antigen

A small GPI-linked glycoprotein expressed on the surface of normal and malignant B-CELLS; T-CELLS; MONOCYTES; MACROPHAGES; NK CELLS; and GRANULOCYTES. It is expressed densely and without modulation in many malignant T-cell neoplasms and therefore a target for antibody therapies (e.g., ALEMTUZUMAB).

**Tree locations:**

Antigens, Differentiation D23.101.100.943  
Antigens, Neoplasm D23.050.285.022  
GPI-Linked Proteins D12.776.395.550.448.190  
D12.776.543.484.500.190  
D12.776.543.550.418.190

### Celastrales

A taxonomic order of plants within the class MAGNOLIOPSIDA, which includes the staff vine.

**Tree locations:**

Rosanae B01.650.940.800.575.912.250.859.500

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Cell Adhesion Molecule-1

A cell adhesion molecule that contains extracellular immunoglobulin V and C2 domains. It mediates homophilic and heterophilic cell-cell adhesion independently of calcium, and acts as a tumor suppressor in NON-SMALL-CELL LUNG CANCER (NSCLC) cells. Its interaction with NATURAL KILLER CELLS is important for their cytotoxicity and its expression by MAST CELLS plays a role in their interaction with neurons; it may also function in synapse assembly, nerve growth and differentiation.

**Tree locations:**

Cell Adhesion Molecules D12.776.395.550.200.115  
D12.776.543.550.200.128  
D23.050.301.350.115

### Cell Phone Use

Utilization of wireless phones for communication.

**Tree locations:**

Communication F01.145.209.186  
Social Behavior F01.145.813.537

### Cell-Free Nucleic Acids

Nucleic acids (DNA or RNA) found circulating in SERUM; PLASMA; or other BODY FLUIDS.

**Tree locations:**

Nucleic Acids D13.444.154

### Centromere Protein A

A 17 kDa, centromeric, poly(ADP)-ribose binding protein that is structurally similar to HISTONE H3 and localizes to NUCLEOSOMES within the CENTROMERE; specifically within the region that binds KINETOCHORES, where it replaces histone H3. It plays a critical role in recruiting kinetochore proteins and progression through MITOSIS, chromosome segregation, and CYTOKINESIS. It also binds sera from patients with some scleroderma-like AUTOIMMUNE DISEASES.

**Tree locations:**

Autoantigens D23.050.422.031  
Chromosomal Proteins, Non-Histone D12.776.660.235.100  
D12.776.664.235.100  
DNA-Binding Proteins D12.776.260.123  
Poly-ADP-Ribose Binding Proteins D12.776.157.687.173  
D12.776.660.720.173

### Cerebral Intraventricular Hemorrhage

Bleeding within the CEREBRAL VENTRICLES. It is associated with intraventricular trauma, aneurysm, vascular malformations, hypertension and in VERY LOW BIRTH WEIGHT infants.

**Tree locations:**

Cerebral Hemorrhage C10.228.140.300.535.200.600  
C14.907.253.573.200.600  
C23.550.414.913.100.600

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Channelrhodopsins

A subfamily of rhodopsin proteins that function as light-gated ion channels in GREEN ALGAE.

**Tree locations:**

Ion Channels D12.776.157.530.400.163  
D12.776.543.550.450.163  
D12.776.543.585.400.163  
Photoreceptors, Plant D12.776.765.593.250

### Charles Bonnet Syndrome

Repetitive visual hallucinations experienced mostly by elderly with diminished visual acuity or visual field loss, with awareness of the fictional nature of their hallucinations. It is not associated with delusions and other sensory hallucinations.

**Tree locations:**

Hallucinations C10.597.606.762.300.500  
C23.888.592.604.764.300.500  
F01.700.750.300.500

### Chemokine CCL18

A CC-type chemokine highly expressed in the lungs, lymph nodes, placenta, and bone marrow; it is also expressed by DENDRITIC CELLS in the GERMINAL CENTER, and peripheral blood MACROPHAGES. It functions as a chemotactic factor that specifically attracts LYMPHOCYTES, especially B-Cells, into lymph node follicles, and naive T-cells towards dendritic cells and activated T-cells. It does not attract MONOCYTES or GRANULOCYTES.

**Tree locations:**

Chemokines, CC D12.644.276.374.200.110.100  
D12.776.467.374.200.110.100  
D23.125.300.110.100  
D23.469.200.110.100  
D23.529.374.200.110.100  
Macrophage Inflammatory Proteins D12.644.276.374.200.600.075  
D12.776.467.374.200.600.075  
D23.125.300.600.250  
D23.469.200.600.075  
D23.529.374.200.600.075

### Chemokine CCL26

A C-C chemokine expressed by all tissues that functions as a chemoattractant for EOSINOPHILS and BASOPHILS. It binds to the CCR3 RECEPTOR.

**Tree locations:**

Chemokines, CC D12.644.276.374.200.110.125  
D12.776.467.374.200.110.125  
D23.125.300.110.125  
D23.469.200.110.125  
D23.529.374.200.110.125

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Chemokine CXCL16

A CXCR6 receptor-binding chemokine that functions as a scavenger receptor for oxidized low density lipoprotein (OxLDL) when expressed by MACROPHAGES. Its secreted, or cytokine form induces a strong chemotactic response for MONOCYTES when it is expressed by DENDRITIC CELLS.

**Tree locations:**

Chemokines, CXC D12.644.276.374.200.120.075  
D12.776.467.374.200.120.075  
D23.125.300.120.075  
D23.469.200.120.075  
D23.529.374.200.120.075  
Scavenger Receptors, Class E D12.776.503.280.718.500  
D12.776.543.750.705.940.734.500  
D12.776.543.750.710.450.625.500.500  
D12.776.543.750.710.450.750.734.500

### Child, Adopted

Individual who becomes a child of a family by means of legal action.

**Tree locations:**

Persons M01.100

### Child, Foster

Individual who is unable to live safely with his or her family, usually due to abuse or neglect in the family home. In most instances the placement is or is intended to be non-permanent and is placed with another family.

**Tree locations:**

Persons M01.107

### Chromadorea

A class of invertebrate freshwater roundworms of the phylum NEMATODA. Most members are parasites with well-adapted body surfaces and sophisticated esophageal glands and pharynx.

**Tree locations:**

Nematoda B01.050.500.500.294.400

### Cigar Smoking

The SMOKING of CIGARS.

**Tree locations:**

Tobacco Smoking F01.145.958.875.500

### Cigarette Smoking

The SMOKING of CIGARETTES.

**Tree locations:**

Tobacco Smoking F01.145.958.875.750

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **Circulating MicroRNA**

MicroRNAs found in cell-free BODY FLUIDS such as SERUM; PLASMA; SALIVA; OR URINE.

**Tree locations:**

Cell-Free Nucleic Acids D13.444.154.250  
MicroRNAs D13.150.650.319.500  
D13.444.735.150.319.500  
D13.444.735.790.552.500.500

### **Circulating Tumor DNA**

DNA released from tumor cells that is found circulating in PLASMA; SERUM; or other BODY FLUIDS.

**Tree locations:**

Cell-Free Nucleic Acids D13.444.154.500  
DNA, Neoplasm D13.444.308.425.500

### **Citrullination**

Conversion of ARGININE residues in proteins into CITRULLINE residues by PEPTIDYLARGININE DEIMINASES.

**Tree locations:**

Protein Processing, Post-Translational G02.111.660.871.790.600.300  
G02.111.691.600.300  
G03.734.871.790.600.300  
G05.308.670.600.300

### **Clinical Deterioration**

A critical disease progression, often measured by a set of clinical parameters, which activates HOSPITAL RAPID RESPONSE TEAM.

**Tree locations:**

Disease Progression C23.550.291.656.350

### **Clostridiaceae**

A non-sulfate spore-forming anaerobic family of Gram-positive bacteria, of the class clostridia.

**Tree locations:**

Clostridiales B03.353.625.375

### **Cocaine Smoking**

SMOKING of COCAINE.

**Tree locations:**

Smoking, Non-Tobacco Products F01.145.805.250.250

## New MeSH Headings for 2018

*Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations*

### **Coconut Oil**

Oil derived from fruits of the coconut plant, *COCOS NUCIFERA*.

***Tree locations:***

Plant Oils D10.627.700.186

### **Communicable Diseases, Imported**

Infectious diseases originating in one geographically delineated ecosystem that are carried (by travel or immigration) to another geographically delineated ecosystem by an infected individual, animal, or disease vector.

***Tree locations:***

Communicable Diseases C01.539.221.625

### **Composting**

A process of waste disposal involving the conversion of green waste (i.e. leaves, organic matter, food waste, manure) into soil-enhancing matter.

***Tree locations:***

Refuse Disposal N06.850.780.200.800.800.700.500  
N06.850.860.510.900.600.200

### **Connexin 30**

A gap junction beta subunit that forms heteromeric hemichannels when paired with alpha subunits such as connexin-40 or *CONNEXIN 43*. Mutations in the connexin 30 gene (*GJ6B*) are associated with *CLOUSTON'S SYNDROME* and some hereditary forms of deafness.

***Tree locations:***

Connexins D12.776.543.585.250.150

### **Conservation of Water Resources**

Preservation and or management of *WATER RESOURCES* especially under conditions of scarce supply.

***Tree locations:***

Conservation of Natural Resources J01.256.837  
N06.230.080.800

### **Consumer Health Informatics**

The field devoted in Informatics from multiple consumer or patient views.

***Tree locations:***

Informatics L01.313.187

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Contraceptive Effectiveness

The rate of success or failure of a method of CONTRACEPTION; CONTRACEPTIVE AGENTS; or CONTRACEPTIVE DEVICES.

**Tree locations:**

Contraception E02.875.194.573

### Contraindications

A condition or factor associated with a recipient that makes the use of a drug, procedure, or physical agent improper or inadvisable. Contraindications may be absolute (life threatening) or relative (higher risk of complications in which benefits may outweigh risks).

**AN: general or unspecified; CONTRAINDICATIONS, DRUG and CONTRAINDICATIONS, PROCEDURE are also available; note entry term CONTRAINDICATIONS, PHYSICAL AGENT: coordinate with specific physical agent /adv eff or /ther use**

**Tree locations:**

Therapeutics E02.208

### Contraindications, Drug

A condition or factor associated with a recipient that makes the use of a specific drug improper or inadvisable.

**AN: coordinate with specific drug with /adv eff or /ther use**

**Tree locations:**

Contraindications E02.208.200

### Contraindications, Procedure

A condition or factor associated with a recipient that makes the use of a procedure improper or inadvisable.

**AN: coordinate with specific procedure /adv eff**

**Tree locations:**

Contraindications E02.208.600

### COP9 Signalosome Complex

A multiprotein complex that functions as a peptide hydrolase, or isopeptidase to cleave NEDD8 PROTEIN from the CULLIN and UBIQUITIN-PROTEIN LIGASES, controlling the activity of the ligases. It is highly conserved in eukaryotes and typically consists of 8 subunits (CSN 1-8 proteins). The COP9 signalosome was originally identified in plants, where it controls gene transcription in response to light.

**Tree locations:**

Multiprotein Complexes D05.500.139

Ubiquitin-Specific Proteases D08.811.037.750.250

D08.811.277.656.300.887.375

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Copper-transporting ATPases

P-type ATPases which transport copper ions across membranes in prokaryotic and eukaryotic cells. They possess a conserved CYSTEINE-HISTIDINE-SERINE (CPx) amino acid motif within their transmembrane helices that functions in cation translocation and catalytic activation, and an N-terminal copper-binding CxxC motif that regulates enzyme activity. They play essential roles in intracellular copper homeostasis through regulating the uptake, efflux and storage of copper ions, and in cuproprotein biosynthesis.

**Tree locations:**

Cation Transport Proteins D12.776.157.530.450.250.656  
D12.776.543.585.450.250.656  
P-type ATPases D08.811.277.040.025.314.500  
D12.776.157.530.813.500  
D12.776.543.585.813.500

### Coral Snakes

Elapid snakes indigenous to the Southern United States, Central, and South America. They are generally less than 1 meter in length and have a brightly-colored ringed pattern.

**Tree locations:**

Elapidae B01.050.150.900.833.672.125.875.588

### Crotalinae

A subfamily of snakes commonly known as pit vipers, crotaline snakes, or pit adders in the family VIPERIDAE. They are distinguished by a deep pit called a fossa or loreal, which functions as a heat-sensing organ located between the eye and nostril on either side of the head.

**AN: venom = CROTALID VENOMS**

**Tree locations:**

Viperidae B01.050.150.900.833.672.125.937.240

### Cryobiology

The study of biological materials or systems subjected to temperatures below their normal range.

**AN: use for the discipline only**

**Tree locations:**

Biology H01.158.273.195

### Culicomorpha

Insects of the order DIPTERA, suborder NEMATOCERA. They include mosquitoes, gnats, black flies, and true flies.

**Tree locations:**

Nematocera B01.050.500.131.617.720.500.500.750.712.500

### Curacao

Constituent country within the Kingdom of the Netherlands. Full autonomy in internal affairs was granted in 2010. It is an island located in the Caribbean Sea - north of Venezuela. (from CIA World Factbook)

**Tree locations:**

Caribbean Region Z01.107.084.225

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **CX3C Chemokine Receptor 1**

Receptor for CHEMOKINE CX3CL1 expressed by lymphocytes, neurons, and GLIAL CELLS. Its interaction with CX3CL1 mediates CELL ADHESION and CELL MIGRATION. It also functions as a co-receptor with the CD4 ANTIGEN for HIV-1 in vitro.

**Tree locations:**

Receptors, CXCR D12.776.543.750.695.160.500.150  
D12.776.543.750.705.852.125.500.150  
Receptors, HIV D12.776.543.750.830.700.315

### **Cytokine TWEAK**

A proteolytically-cleaved membrane glycoprotein and member of the TNF superfamily that is highly expressed in a variety of tissues including heart, pancreas, brain, and peripheral blood lymphocytes. The secreted extracellular form is a weak inducer of APOPTOSIS for some cell types and a ligand for the FN14 RECEPTOR. It mediates activation of NF-KAPPA-B and promotes ANGIOGENESIS and proliferation of ENDOTHELIAL CELLS, as well as expression of cytokines involved in INFLAMMATION.

**Tree locations:**

Tumor Necrosis Factors D12.644.276.374.750.155  
D12.776.467.374.750.155  
D23.529.374.750.155

### **Data Warehousing**

A system for storing electronic data derived from various sources.

**Tree locations:**

Information Storage and Retrieval L01.313.500.750.280.300  
L01.470.688

### **DCC Receptor**

A receptor for NETRIN-1 that contains four membrane distal (N-terminal) Ig-like C2 domains and six membrane proximal (C-terminal) fibronectin type III domains. It is expressed primarily in the nerve axons and differentiated intestinal cells and is required for AXON GUIDANCE, mediating axon attraction of neuronal GROWTH CONES; however, it may also trigger axon repulsion through association with the UNC5 netrin-1 receptor. DCC also induces APOPTOSIS when it is unbound from netrin-1. Deletions of the DCC gene are observed in tumor metastases and the protein is not expressed in undifferentiated COLORECTAL CARCINOMA cells.

**Tree locations:**

Apoptosis Regulatory Proteins D12.644.360.075.413  
D12.776.476.075.413  
Netrin Receptors D12.776.543.750.003.500  
Tumor Suppressor Proteins D12.776.624.776.021

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Deleted in Azoospermia 1 Protein

An RNA recognition motif protein that is essential for SPERMATOGENESIS. It promotes entry of male GERM CELLS to MEIOSIS, possibly by regulating the translation of mRNAs. DAZ1 occurs within a cluster of similar genes on the Y CHROMOSOME that is prone to genetic deletions and duplications. Deletions in these genes, including DAZ1, are associated with AZOOSPERMIA and OLIGOSPERMIA.

**Tree locations:**

RNA Recognition Motif Proteins D12.776.157.725.813.375  
D12.776.664.962.813.375

### Demethylation

Removal of one or more methyl groups from a chemical compound.

**Tree locations:**

Dealkylation G02.111.188.500  
G02.607.141.500  
G03.219.500

### Dendroaspis

A genus of highly venomous elapid snake indigenous to sub-Saharan Africa.

**Tree locations:**

Elapidae B01.050.150.900.833.672.125.875.419

### Desulfovibrionaceae

A family of obligately anaerobic Gram-negative bacteria of the class Deltaproteobacteria, order Desulfovibrionales. Majority are sulfate-reducing.

**Tree locations:**

Deltaproteobacteria B03.660.125.138

### Deubiquitinating Enzyme CYLD

A deubiquitinase and tumor-suppressor protein that specifically cleaves LYSINE-63-linked polyubiquitin chains and also has endodeubiquitinase activity. It functions to regulate NF-KAPPA B and WNT SIGNALING PATHWAY activity, contributing to cell survival, proliferation, and differentiation. Mutations in the CYLD gene are associated with cases of FAMILIAL CYLINDROMATOSIS.

**Tree locations:**

Deubiquitinating Enzymes D08.811.037.375  
Tumor Suppressor Proteins D12.776.624.776.482

### Diapause

A period of arrested growth or development in animals that is triggered by external conditions, such as length of day, extreme temperatures, or reduced food availability. It can occur at the embryonic, larval, pupal, or adult stage, depending on the species.

**Tree locations:**

Life Cycle Stages G07.345.500.550.500.250

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Diet, High-Protein

A diet that includes foods with a high protein content.

**Tree locations:**

Diet G07.203.650.240.269  
Diet Therapy E02.642.249.268

### Diet, High-Protein Low-Carbohydrate

A diet that consists mainly of foods with a high content of protein and limited amounts of CARBOHYDRATES.

**Tree locations:**

Diet, Carbohydrate-Restricted E02.642.249.245.250  
G07.203.650.240.245.250  
Diet, High-Protein E02.642.249.268.500  
G07.203.650.240.269.500

### Dietary Approaches To Stop Hypertension

Dietary recommendations that promote reduction in or prevention of high blood pressure. Recommendations include increasing intake of fruits and vegetables, and high-fiber, low-fat foods and reducing the intake of DIETARY SODIUM and high fat foods.

**Tree locations:**

Diet G07.203.650.240.325  
Diet Therapy E02.642.249.475

### Dietary Exposure

The exposure to potentially harmful factors such as trace heavy metals, chemicals, radiation, or toxins due to FOOD CONTAMINATION including DRINKING WATER contamination.

**Tree locations:**

Environmental Exposure N06.850.460.350.040

### Dietary Sugars

MONOSACCHARIDES and DISACCHARIDES present in food, such as those present in fruits and vegetables and milk products, or those added to food such as DIETARY SUCROSE (table sugar) or HIGH FRUCTOSE CORN SYRUP.

**AN: /adv eff: coordinate with disease /etiolo, not /chem ind; /ther use: coordinate with specific disease /diet ther**

**Tree locations:**

Dietary Carbohydrates D09.301.831  
G07.203.300.362.831  
J02.500.362.831  
Sugars D09.947.500

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Dipsacales

An order of dicotyledonous flowering plants which includes six families. It is best known for its ornamental plants such as LONICERA (honeysuckle), VIBURNUM (arrowwood and guelder rose), and SCABIOSA (scabious, or pincushion flower).

**Tree locations:**

Magnoliopsida B01.650.940.800.575.912.250.328

### Discs Large Homolog 1 Protein

A signaling adaptor protein that contains three PDZ DOMAINS; an SH3 DOMAIN; and a GUANYLATE KINASE-like C-terminal region. It has an essential role in animal development and recruits ion channels, receptors, and signaling molecules to discrete plasma membrane regions of polarized cells in the HEART ATRIA MYOCARDIUM. It functions in the assembly of ADHERENS JUNCTIONS and regulation of CELL PROLIFERATION; synaptogenesis, LYMPHOCYTE ACTIVATION; and controls expression of KV4 POTASSIUM CHANNELS to regulate excitability of CARDIAC MYOCYTES.

**Tree locations:**

Adaptor Proteins, Signal Transducing D12.644.360.024.287  
D12.776.157.057.023  
D12.776.476.024.325  
Guanylate Kinases D08.811.913.696.650.450.500  
Membrane Proteins D12.776.543.213

### Disks Large Homolog 4 Protein

A neuronal protein consisting of three PDZ DOMAINS, an SH3 DOMAIN, and a C-terminal guanylate kinase-like region (see MAGUK PROTEINS). It localizes to the POST-SYNAPTIC DENSITY and associates with the cytoplasmic tail of NMDA RECEPTORS and SHAKER POTASSIUM CHANNELS, playing a critical role in NMDA receptor-mediated SYNAPTIC PLASTICITY.

**Tree locations:**

Guanylate Kinases D08.811.913.696.650.450.750  
Intracellular Signaling Peptides and Proteins D12.644.360.265  
D12.776.476.265  
Membrane Proteins D12.776.543.219  
Nerve Tissue Proteins D12.776.631.224

### Diverticular Diseases

Diseases of the DIVERTICULUM often due to infection and/or inflammation (DIVERTICULITIS).

**Tree locations:**

Gastroenteritis C06.405.205.282  
Intraabdominal Infections C01.539.463.199

# New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

## DNA (Cytosine-5-)-Methyltransferase 1

A DNA (cytosine-5-)-methyltransferase that contains a central CxxC type zinc finger motif. It binds poly(ADP)-ribose and its expression is regulated by POLY (ADP-RIBOSE) POLYMERASE-1. DNMT1 methylates CpG residues, with a preference for hemimethylated DNA, and associates with DNA replication sites in S PHASE to maintain the methylation pattern in the newly synthesized strand, which is essential for EPIGENETIC PROCESSES. It also associates with CHROMATIN during G2 PHASE and MITOSIS to maintain DNA methylation independently of replication. It is responsible for maintaining methylation patterns established in development; mutations in the DNMT1 gene are associated with HEREDITARY SENSORY NEUROPATHY TYPE 1 class E.

### Tree locations:

DNA (Cytosine-5-)-Methyltransferases D08.811.913.555.500.350.100.500.500  
Poly-ADP-Ribose Binding Proteins D12.776.157.687.313  
D12.776.660.720.313

## DNA Demethylation

Removal of methyl groups from DNA by enzymes (such as DIOXYGENASES and N-DEMETHYLASES) or by chemical reagents.

### Tree locations:

Demethylation G02.111.188.500.500  
G02.607.141.500.500  
G03.219.500.500

## DNA Polymerase gamma

A DNA-directed DNA polymerase that functions in the replication of MITOCHONDRIAL DNA. Mutations in the gene that encodes this enzyme (POLG) are associated with some forms of OPHTHALMOPLEGIA, CHRONIC EXTERNAL PROGRESSIVE.

### Tree locations:

DNA-Directed DNA Polymerase D08.811.913.696.445.308.300.169  
Mitochondrial Proteins D12.776.575.280

## Drug Misuse

Use of a drug for a purpose not consistent with legal or medical guidelines.

### Tree locations:

Drug Therapy E02.319.306

## Dual Oxidases

NADPH oxidases that contain two additional EF HAND MOTIFS and an N-terminal PEROXIDASE domain. They are expressed by THYROCYTES and EPITHELIAL CELLS of the kidney, liver, trachea, lung, and glandular tissues such as the testis, pancreas, and prostate. They are critical for the activity of THYROID PEROXIDASE and play a role in the production of thyroid hormones; they may also have antimicrobial activity through the generation of REACTIVE OXYGEN SPECIES.

### Tree locations:

NADPH Oxidases D08.811.682.608.575.500  
D12.776.331.894.500  
D12.776.543.653.500

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Dysbindin

A dystrophin-associated protein and component of the Biogenesis of Lysosomal Organelles Complex-1 (BLOC-1 complex) which is essential for the formation of LYSOSOME - derived organelles such as platelet dense granules and MELANOSOMES. DTNBP1 is expressed primarily in the brain and neurons, where it functions with ADAPTOR PROTEIN COMPLEX 3 to transport membrane proteins to NEURITES and nerve terminals. It also regulates the release of neurotransmitters, transport of synaptic vesicles, and localization of DOPAMINE D2 RECEPTORS. Mutations in the DTNBP1 gene are associated with Type 7 HERMANSKY-PUDLAK SYNDROME and SCHIZOPHRENIA.

#### Tree locations:

Dystrophin-Associated Proteins D12.776.210.500.410.250  
D12.776.220.362.125  
D12.776.543.268.250  
Nerve Tissue Proteins D12.776.631.262  
Vesicular Transport Proteins D12.776.543.990.447

### Dysferlin

A membrane protein that contains multiple C2 DOMAINS. It is highly expressed in skeletal muscle and functions as a calcium ion sensor in SYNAPTIC VESICLE-PLASMA MEMBRANE fusion, as well as in SARCOLEMMA repair following mechanical stress. Mutations in the dysferlin (DYSF) gene are associated with several hereditary MUSCULAR DYSTROPHIES.

#### Tree locations:

Membrane Proteins D12.776.543.225  
Muscle Proteins D12.776.210.500.248

### Early Goal-Directed Therapy

Critical care treatment using intensive monitoring and aggressive management of perioperative hemodynamics in high risk patients,

#### Tree locations:

Critical Care E02.760.190.203

### Egypt, Ancient

A civilization of ancient Northeastern Africa, concentrated along the lower reaches of the Nile River in the area of Egypt. It was active from 3100 B.C. until its conquest by Alexander the Great in 332 B.C.

#### Tree locations:

Ancient Lands Z01.586.035.325

### Elongin

A heterotrimeric protein complex composed of 110 kDa elongin A, 18 kDa elongin B, and 15 kDa elongin C subunits. It functions as a positive regulator of RNA POLYMERASE II, increasing its rate of transcriptional elongation by suppressing transient pausing along the DNA template. Elongin A is the transcriptionally active component; elongins B and C enhance its activity.

#### Tree locations:

DNA-Binding Proteins D12.776.260.197  
Transcription Factors D12.776.930.215

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Endothelial Protein C Receptor

A glycosylated transmembrane receptor for PROTEIN C that is highly expressed by endothelial cells on the surface of large blood vessels in the heart and lungs. It facilitates protein C activation by the THROMBIN and THROMBOMODULIN complex in blood coagulation.

**Tree locations:**

Membrane Glycoproteins D12.776.395.550.294  
D12.776.543.550.294  
Receptors, Cell Surface D12.776.543.750.045

### Environmental Biomarkers

A factor associated with the well-being of living organisms that is used as a measure of environmental change and or influence. For example, aldehyde dehydrogenase expression in earthworm tissue is used as an indication of heavy metal pollution in soils. Distinguish from BIOMARKERS.

**Tree locations:**

Biological Phenomena G16.505  
Biomarkers D23.101.258  
Environmental Monitoring N06.850.460.350.080.250

### Epileptic Syndromes

EPILEPTIC SEIZURES that are of similar type and age of onset and have other similar features (e.g., clinical course, EEG findings, genetic association and neuropathology).

**Tree locations:**

Epilepsy C10.228.140.490.493

### Equivalence Trial (*Pub Type*)

Trial that aims to show a new treatment is no better and no worse than the standard treatment.

**AN: this heading is used as a Publication Type; for original report of the conduct or results of a specific equivalence trial; a different heading EQUIVALENCE TRIALS AS TOPIC is used for general design, methodology, economics, etc. of equivalence trials**

**Tree locations:**

Randomized Controlled Trial V03.175.250.500.500.125

### Equivalence Trials as Topic

Works about trials that aim to show a new treatment is no better and no worse than the standard treatment.

**Tree locations:**

Randomized Controlled Trials as Topic E05.318.760.250.500.365.500.125  
N05.715.360.775.088.500.387.500.250  
N06.850.520.450.250.250.365.500.250

## New MeSH Headings for 2018

*Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations*

### Essential Hypertension

Hypertension that occurs without known cause, or preexisting renal disease. Associated polymorphisms for a number of genes have been identified, including AGT, GNB3, and ECE1. OMIM: 145500

**Tree locations:**

Hypertension C14.907.489.165

### Eutheria

Mammals which nourish their young in utero by means of a complex placenta, and give birth to their young alive. They include PRIMATES; CARNIVORA, WHALES; RUMINANTS; BATS; and RODENTS.

**Tree locations:**

Mammals B01.050.150.900.649.313

### Expression of Concern (*Pub Type*)

A notification about the integrity of a published article that is typically written by an editor and should be labelled prominently in the item title. It is the responsibility of the editor to initiate appropriate investigative procedures, discover the outcome of the investigation, and notify readers of that outcome in a subsequent published item. The outcome may require the publication of a retraction notice.

**Tree locations:**

Publication Components V01.405

### Extracorporeal Shockwave Therapy

A nonsurgical treatment that uses either HIGH-ENERGY SHOCK WAVES or low energy ACOUSTIC WAVES to treat various musculoskeletal conditions (e.g., PLANTAR FASCIITIS; TENNIS ELBOW). A probe placed on the skin conducts the shock waves thereby delivering a mechanical force to the body's tissues.

**Tree locations:**

Physical Therapy Modalities E02.779.488  
E02.831.535.488  
Ultrasonic Therapy E02.565.280.945.200

### F-Box-WD Repeat-Containing Protein 7

A component of SCF(FBW7) UBIQUITIN LIGASE that contains an F-box motif and multiple WD REPEATS. It recognizes and binds phosphorylated signals in several proteins involved in CELL PROLIFERATION and targets them to the SCF complex for UBIQUITINATION. Targets include CYCLIN E; PROTO-ONCOGENE PROTEINS C-JUN; PROTO-ONCOGENE PROTEINS C-MYC; and JNK MITOGEN-ACTIVATED PROTEIN KINASES.

**Tree locations:**

Cell Cycle Proteins D12.776.167.242  
F-Box Proteins D12.776.157.169.750  
SKP Cullin F-Box Protein Ligases D08.811.464.938.750.750.750

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Fagales

Order of dicotyledonous flowering plants in the superorder ROSANAE, and class MAGNOLIOPSIDA. They include birch, beech, bayberry, and walnut species.

**Tree locations:**

Rosanae B01.650.940.800.575.912.250.859.750

### Faith-Based Organizations

Organizations such as (1) congregations; (2) national networks, which include national denominations, their social service arms (for example, Catholic Charities, Lutheran Social Services), and networks of related organizations (such as YMCA and YWCA); and (3) freestanding religious organizations, which are incorporated separately from congregations and national networks. <http://www.huduser.gov/portal/publications/faithbased.pdf>

**Tree locations:**

Organizations N03.540.297

### Fanconi Anemia Complementation Group N Protein

A Fanconi anemia complementation group protein that contains an N-terminal DNA-binding region and seven, C-terminal, WD REPEATS. It is an essential factor in HOMOLOGOUS RECOMBINATION DNA REPAIR through its interactions with BRCA2 PROTEIN; RAD51 RECOMBINASE; and BRCA1 PROTEIN. It functions as a molecular scaffold to localize and stabilize these proteins at homologous recombination sites. Mutations in the PALB2 gene are associated with FANCONI ANEMIA complementation group N; type 3 PANCREATIC NEOPLASMS; and susceptibility to BREAST CANCER.

**Tree locations:**

Fanconi Anemia Complementation Group Proteins D12.776.313.953  
Nuclear Proteins D12.776.660.323  
Tumor Suppressor Proteins D12.776.624.776.051

### Fascism

Political movement which combines nationalism with demands for political and social renewal. Characteristics include militaristic nationalism, belief in a natural social hierarchy and the rule of elites, and the desire to create a "people's community", in which individual interests would be subordinated to the good of the nation. (From [www.britannica.com/topic/fascism](http://www.britannica.com/topic/fascism))

**Tree locations:**

Political Systems I01.696.480

### Fatty Acid Binding Protein 3

A small cytosolic fatty-acid binding protein that forms a lipid-binding beta-barrel structure and is expressed by CARDIOMYOCYTES and at lower levels in brain tissue. It is released into plasma immediately following cardiac injury and may therefore serve as a useful biomarker for the early detection of MYOCARDIAL INFARCTION.

**Tree locations:**

Fatty Acid-Binding Proteins D12.776.157.170.125

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Feliformia

A suborder of cat-like mammals in the order CARNIVORA. Examples include HYENAS; MONGOOSES; CIVETS; and related species. They are distinguishable from dog-like carnivores.

**Tree locations:**

Carnivora B01.050.150.900.649.313.750.377

### FERM Domains

Widely occurring protein domains that function to link signaling and CYTOSKELETAL PROTEINS to the PLASMA MEMBRANE. They occur mostly at the N-terminal region of proteins that contain them.

**Tree locations:**

Protein Interaction Domains and Motifs G02.111.570.820.709.275.750.500.422

### Fermented Foods

Foods and beverages that are prepared by using microorganisms to convert their components into various FERMENTATION end products. Some pickled foods are considered fermented foods as their pickling results from the microbial production of LACTIC ACID.

**Tree locations:**

Diet, Food, and Nutrition G07.203.200

Food and Beverages J02.350

### Food Addiction

A cluster of chemical dependencies to specific foods or food in general in which there develops a physical craving for these foods.

**Tree locations:**

Behavior, Addictive F01.145.527.100.120.500

Feeding and Eating Disorders F03.400.813

### Food Ingredients

Substances included in prepared foods and beverages.

**Tree locations:**

Food G07.203.300.514

J02.500.514

Specialty Uses of Chemicals D27.720.372

### Food Intolerance

Digestive system disorder where a particular food irritates the digestive tract or cannot be properly digested (i.e., due to a lack of a digestive enzyme). It differs from FOOD HYPERSENSITIVITY which is an immune system disorder, usually due to specific proteins in food. <http://my.clevelandclinic.org/health/articles/problem-foods-is-it-an-allergy-or-intolerance>.

**Tree locations:**

Signs and Symptoms, Digestive C23.888.821.387

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Forkhead Box Protein L2

A forkhead box transcription factor that is expressed in the developing eyelid and during very early development of the gonad, prior to sex determination. It is essential for development of the ovary and inhibits SOX9 TRANSCRIPTION FACTOR to prevent differentiation to testes. It also induces APOPTOSIS in ovarian cells. Mutations in the FOXL2 gene are associated with BLEPHAROPHIMOSIS; Ptosis, and Epicanthus inversus (BPES with ovarian failure).

**Tree locations:**

Forkhead Transcription Factors D12.776.260.950.249.032  
D12.776.930.977.249.032

### Frailty

A state of increased vulnerability to stressors, following declines in function and reserves across multiple physiologic systems, characterized by MUSCLE WEAKNESS; FATIGUE; slowed motor performance; low physical activity; and unintentional weight loss.

**AN: coordinate with FRAIL ELDERLY if pertinent**

**Tree locations:**

Pathologic Processes C23.550.359

### Funeral Homes

Facilities for the preparation of the dead for burial or cremation, for the viewing of the body, and for funeral services.

**Tree locations:**

Non-Medical Public and Private Facilities J03.240

### Gain of Function Mutation

A mutation that results in an increase in a gene's activity or in acquiring a new molecular function or a new pattern of gene expression.

**Tree locations:**

Mutation G05.365.590.288

### Gammacoronavirus

A genus of the family CORONAVIRIDAE that causes respiratory or gastrointestinal disease in avian species (or birds). The type species, AVIAN CORONAVIRUS, includes the previously separate species TURKEY CORONAVIRUS; and INFECTIOUS BRONCHITIS VIRUS.

**AN: infection: coordinate IM with CORONAVIRUS INFECTIONS (IM)**

**Tree locations:**

Coronavirus B04.820.504.540.150.400

### Gender-Based Violence

Violence based on gender on gender that results in, or is likely to result in, physical, sexual or mental harm or suffering, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life. (From [www.who.int/topics/gender\\_based\\_violence/en/](http://www.who.int/topics/gender_based_violence/en/))

**Tree locations:**

Violence I01.198.240.856.463

## New MeSH Headings for 2018

*Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations*

### **Gene Drive Technology**

The techniques involved in creating and inserting synthetic selfish genetic elements called gene drives. Gene drives carry a "payload gene" and are designed to increase in frequency in the population over time, eventually to all members of the population.

***Tree locations:***

Directed Molecular Evolution E05.393.420.175.500

### **Graphic Novels as Topic**

Works about book-length narratives told using a combination of words and sequential art, often presented in comic book style.

***Tree locations:***

Books, Illustrated L01.178.682.192.289.500

### **Greece, Ancient**

A civilization extant from about 1200 BC. to the death of Alexander the Great, in 323 B.C. It extended from the Greek city states to North Africa and eastward to the Indus River.

***Tree locations:***

Ancient Lands Z01.586.035.519

### **Greenhouse Gases**

Gaseous elements, chemicals that are in the atmosphere that may contribute to GREENHOUSE EFFECT.

***Tree locations:***

Air Pollutants D27.888.284.101.696

Gases D01.362.311

### **Guanylyl Cyclase C Agonists**

Compunds that bind to and activate GUANYLYL CYCLASE-C RECEPTORS.

***Tree locations:***

Enzyme Activators D27.505.519.374.400

Gastrointestinal Agents D27.505.954.483.590

### **Health Information Interoperability**

Automatic and seamless exchange or cross-talk of HEALTH INFORMATION across HEALTH INFORMATION SYSTEMS.

***Tree locations:***

Information Storage and Retrieval L01.313.500.750.280.555

L01.470.813

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Health Risk Behaviors

Pattern of behavior which predisposes certain individuals to increased risk for contracting disease or sustaining personal injury. These behaviors may cluster into a risky lifestyle.

**AN: coordinate with specific type of behavior (e.g. DRIVING UNDER THE INFLUENCE)**

**Tree locations:**

Health Behavior F01.145.488.250

### Healthy Aging

The development and maintenance of optimal physical, mental, spiritual, and social well-being and function with advancing age.

**Tree locations:**

Healthy Lifestyle F01.829.458.205.250

### Heat Shock Transcription Factors

Heat and cold stress-inducible, transcription factors that bind to inverted 5'-NGAAN-3' pentamer DNA sequences and are regulated by poly(ADP) ribosylation. They play essential roles as transcriptional activators of the HEAT-SHOCK RESPONSE by inducing expression of large classes of MOLECULAR CHAPERONES and heat-shock proteins. They also function in DNA REPAIR; transcriptional reactivation of latent HIV-1; and pre-mRNA processing and nuclear export of HSP70 HEAT-SHOCK PROTEINS during heat stress.

**Tree locations:**

DNA-Binding Proteins D12.776.260.260

Poly-ADP-Ribose Binding Proteins D12.776.157.687.450

D12.776.660.720.462

Transcription Factors D12.776.930.317

### Heavy Metal Poisoning

Poisoning that results from chronic or acute ingestion, injection, inhalation, or skin absorption of HEAVY METALS. Acute and chronic exposures can cause ANEMIA; KIDNEY and LIVER damage; PULMONARY EDEMA; MEMORY LOSS and behavioral changes; bone deformities in children; and MISCARRIAGE or PREMATURE LABOR in pregnant women.

**Tree locations:**

Poisoning C25.723.522

### Helicobacteraceae

A family of Gram-negative bacteria of the order CAMPYLOBACTERALES that have a helical shape, and occur in the mammalian digestive track.

**Tree locations:**

Campylobacterales B03.660.150.235.500

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Heller Myotomy

Surgical incision of the lower esophageal sphincter near the CARDIA often used to treat ESOPHAGEAL ACHALASIA.

**Tree locations:**

Digestive System Surgical Procedures E04.210.511  
Sphincterotomy E04.515.750.250

### Hemachatus

A genus of elapid snake indigenous to Southern Africa. It is closely related to the cobras (Naja) and is capable of spitting its venom.

**Tree locations:**

Elapidae B01.050.150.900.833.672.125.875.516

### Hemodynamic Monitoring

Continuous measurement of the movement and forces of blood in the CARDIOVASCULAR SYSTEM.

**Tree locations:**

Diagnostic Techniques, Cardiovascular E01.370.370.428  
Monitoring, Physiologic E01.370.520.365

### Heterogeneous Nuclear Ribonucleoprotein A1

A heterogeneous ribonucleoprotein that contains an RNA-BINDING MOTIF and has poly(ADP)ribose-binding capability. It functions in the packaging of pre-mRNA into hnRNP particles for export to the cytoplasm and may play a role in RNA SPLICING site selection.

**Tree locations:**

Heterogeneous-Nuclear Ribonucleoprotein Group A-B D12.776.157.725.813.750.100.500  
D12.776.260.735.500.500  
D12.776.660.235.700.500.500  
D12.776.664.962.813.750.100.500  
Poly-ADP-Ribose Binding Proteins D12.776.157.687.462

### High-Temperature Requirement A Serine Peptidase 1

A secreted serine protease that contains a Kazal domain-like region and a C-terminal PDZ domain. It has a broad range of targets that include EXTRACELLULAR MATRIX PROTEINS; PROTEOGLYCANS; and INSULIN-LIKE GROWTH FACTOR BINDING PROTEINS. Mutations in the HTRA1 gene are associated with AGE-RELATED MACULAR DEGENERATION 7 and Cerebral Autosomal Recessive Arteriopathy with Subcortical Infarcts and Leukoencephalopathy (CARASIL).

**Tree locations:**

Serine Endopeptidases D08.811.277.656.300.760.420  
D08.811.277.656.959.350.420

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### High-Temperature Requirement A Serine Peptidase 2

A serine peptidase that contains a C-terminal PDZ domain. It localizes to the mitochondrial membrane and intermembrane space, translocating to the cytoplasm following APOPTOSIS stimuli, such as UV irradiation; it promotes cell death by binding to and inhibiting INHIBITOR OF APOPTOSIS PROTEINS, resulting in an increase in activity of CASPASES. Mutations in the HTRA2 gene are associated with Type 13 PARKINSON DISEASE.

**Tree locations:**

Apoptosis Regulatory Proteins	D12.644.360.075.429
	D12.776.476.075.429
Mitochondrial Proteins	D12.776.575.656
Parkinson Disease Associated Proteins	D12.776.637.625
Serine Endopeptidases	D08.811.277.656.300.760.431
	D08.811.277.656.959.350.431

### Histone Deacetylase 6

A class II histone deacetylase that removes acetyl groups from N-terminal LYSINES of HISTONE H2A; HISTONE H2B; HISTONE H3; and HISTONE H4. It plays a critical role in EPIGENETIC REPRESSION and regulation of GENETIC TRANSCRIPTION, as well as CELL MOTILITY through deacetylation of TUBULIN. It also targets misfolded proteins for clearance by AUTOPHAGY when MOLECULAR CHAPERONE-mediated folding is overwhelmed.

**Tree locations:**

Histone Deacetylases	D08.811.277.087.520.350
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### Holometabola

A superorder of insects within the NEOPTERA that go through metamorphosis from egg to larva, pupa, and adult stages. Orders of MOSQUITOES; BEES; BUTTERFLIES; and FLEAS belong to this group.

**Tree locations:**

Neoptera	B01.050.500.131.617.720.500.500
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### Human Genetics

The scientific study of inherited human variation.

**AN: use for the discipline only; note that Medical Genetics is available for the subfield of human genetics dealing with genetic or hereditary disorders**

**Tree locations:**

Genetics	H01.158.273.343.385
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### Hyaluronan Synthases

Membrane-associated glucuronosyltransferases that catalyze the reaction of UDP-N-acetyl-D-glucosamine and UDP-D-glucuronate to produce HYALURONAN. HYALURONAN SYNTHASE 2 (HAS2) is essential for embryogenesis and its expression by tumor cells is associated with metastasis.

**Tree locations:**

Glucuronosyltransferase	D08.811.913.400.450.480.500
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## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Hydrophiidae

A subfamily of marine elapid snakes comprising about 50 species with flattened oar-like tails used as sculls. They are found mostly in the coastal waters of south Asia and Australia. The largest reach a length of almost 9 feet but most species are only about a third as long. They are all venomous. (Goin, Goin, and Zug, Introduction to Herpetology, 3d ed, pp331-3; Moore: Poisonous Snakes of the World, 1980, p159)

**Tree locations:**

Elapidae B01.050.150.900.833.672.125.875.564

### Hypoadrenocorticism, Familial

Hereditary forms of Addison disease that may exhibit autosomal recessive or X-linked inheritance. They are characterized by severe neurological symptoms, APNEA; and death in infancy. OMIM: 240200

**Tree locations:**

Addison Disease C19.053.500.263.500

### Immune Privilege

Phenomenon which occurs in certain tissue sites and organs (e.g., the ANTERIOR CHAMBER and CORNEA of the eye, brain PARENCHYMAL TISSUE and fetus) to tolerate a known antigen, thereby suppressing the inflammatory immune response. Foreign tissue grafts survive for prolonged periods when placed within such immune privileged sites and organs.

**Tree locations:**

Immune Tolerance G12.535.425.460

### Immune Reconstitution

Regeneration of normal immune function after immune depleting procedures or infections (e.g., HEMATOPOIETIC STEM CELL TRANSPLANTATION). Delayed and incomplete reconstitution of the ADAPTIVE IMMUNE system in particular involving T-CELLS is associated with increase or relapse of infection.

**Tree locations:**

Immune System Phenomena G12.432

### Immunoglobulin Light-chain Amyloidosis

A nonproliferative disorder of the PLASMA CELL characterized by excessive production and misfolding of IMMUNOGLOBULIN LIGHT CHAINS that form insoluble amyloid fibrils (see AMYLOID DEPOSITS) in various tissues. Clinical features include LIVER FAILURE; MULTIPLE MYELOMA; NEPHROTIC SYNDROME; RESTRICTIVE CARDIOMYOPATHY, and neuropathies.

**Tree locations:**

Amyloidosis C18.452.845.500.550  
Lymphoproliferative Disorders C20.683.515.507  
Neoplasms, Plasma Cell C04.557.595.250  
Paraproteinemias C20.683.780.565

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Immunoturbidimetry

Immunochemical analysis which measures specific target antigen bound to antibody complex. Antibodies in assay form insoluble light scattering immune-aggregates which cause changes in the measured turbidity proportional to the concentration of the antigen.

**Tree locations:**

Immunoassay E05.478.566.510  
E05.601.470.510  
Nephelometry and Turbidimetry E05.196.712.650.500

### Incivility

Low-intensity deviant behavior with ambiguous intent to harm the target, in violation of norms for mutual respect.

**Tree locations:**

Social Behavior F01.145.813.301  
Social Problems I01.880.735.461

### Indochina

Area in Southeastern Asia that comprises CAMBODIA, LAOS, and VIETNAM.

**Tree locations:**

Asia, Southeastern Z01.252.145.232

### Information Technology

Interconnected system that is used in the automatic acquisition, storage, manipulation, movement, control, display, interchange, transmission, routing or reception of data or information, including computers, ancillary equipment, system software, support services, and related resources. (NAL Agricultural Thesaurus)

**Tree locations:**

Information Science L01.479

### Inhibitor of Growth Protein 1

A nuclear protein and tumor suppressor that contains a C-terminal PHD ZINC FINGER. It is expressed in different isoforms in various tissues and interacts with TUMOR SUPPRESSOR PROTEIN P53 to negatively regulate cell growth. Reduced expression and chromosomal rearrangements of the ING1 gene are associated with different cancers including HEAD AND NECK NEOPLASMS.

**Tree locations:**

Intracellular Signaling Peptides and Proteins D12.644.360.368  
D12.776.476.383  
Nuclear Proteins D12.776.660.494  
Tumor Suppressor Proteins D12.776.624.776.503

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Injection Site Reaction

Adverse reactions that occur initially at the site of injection or infusion. Milder type is confined to a local allergic flare reaction. A more severe reaction is caused by extravasation of VESICANTS from the blood vessel at the site of injection and can cause damage to the surrounding tissue. In tumor flare reaction symptoms involve well beyond the injection site such as an increase in the tumor size and tumor markers levels, bone pain, and HYPERCALCEMIA.

**Tree locations:**

Drug-Related Side Effects and Adverse Reactions C25.100.781  
Extravasation of Diagnostic and Therapeutic Materials C23.550.340.500

### Integrative Oncology

These evidence-based therapies to reduce symptoms associated with treatment of cancer.

**Tree locations:**

Complementary Therapies E02.190.463

### Interatrial Block

Impaired or delayed impulse conduction between the right and left HEART ATRIA. Advanced interatrial blocks are often associated with arrhythmias (e.g., ATRIAL FLUTTER; and ATRIAL FIBRILLATION), direct conduction block via the Bachmann's bundle and concomitant left atrial enlargement. Syndrome of advanced interatrial block associated with SUPRAVENTRICULAR TACHYCARDIA is referred to as Bayes syndrome.

**Tree locations:**

Heart Block C14.280.067.558.430  
C14.280.123.500.430  
C23.550.073.425.270

### Intercellular Adhesion Molecule-3

A membrane glycoprotein and cell adhesion molecule expressed by LEUKOCYTES that contains multiple Ig-like domains. It is a ligand for LFA-1 (integrin alphaLbeta2) and integrin alpha-D/beta-2. Its interaction with LFA-1 may play a role in the PHAGOCYTOSIS of NEUTROPHILS by MACROPHAGES following APOPTOSIS.

**Tree locations:**

Cell Adhesion Molecules D12.776.395.550.200.494  
D12.776.543.550.200.494  
D23.050.301.350.494

### Interdisciplinary Placement

Teaching strategy of shared learning based cross-discipline experiences and placements.

**Tree locations:**

Education I02.578

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Interdisciplinary Research

Research combining mastery in distinct fields or disciplines that apply and exchange tools, concepts, ideas, data methods, or results around a common project.

**Tree locations:**

Research H01.770.644.287

### Intraepithelial Lymphocytes

T Lymphocytes with limited diversity of receptors (e.g., ALPHA E INTEGRINS) in the epidermis of the skin and the mucosal linings. They recognize common microbes via T-CELL RECEPTORS and PATHOGEN-ASSOCIATED MOLECULAR PATTERN MOLECULES and function as effector cells for INNATE IMMUNITY. Activation of intraepithelial lymphocytes is a marker for various gastrointestinal diseases (e.g., CELIAC DISEASE; HAIRY CELL LEUKEMIA; and ENTEROPATHY-ASSOCIATED T-CELL LYMPHOMA).

**Tree locations:**

T-Lymphocyte Subsets A11.118.637.555.567.550.500.050  
A11.118.637.555.567.569.500.050  
A15.145.229.637.555.567.550.500.050  
A15.145.229.637.555.567.569.500.050  
A15.382.490.555.567.550.500.050  
A15.382.490.555.567.569.500.050

### Involuntary Fertility Control

Behavior that interferes with a woman's autonomous reproductive decision-making.

**Tree locations:**

Involuntary Treatment I01.880.604.528.250

### Involuntary Treatment

Procedures, surgery, or other treatment without consent of person or persons receiving treatment.

**Tree locations:**

Social Control, Formal I01.880.604.528

### Involuntary Treatment, Psychiatric

Treatment of persons with MENTAL DISORDERS without the persons' consent.

**Tree locations:**

Involuntary Treatment I01.880.604.528.500

### Ion Mobility Spectrometry

Techniques for separation and identification of ionized molecules based on their drift through a gas phase after being accelerated by an electric field. Their mobilities will be effected by their shape, size, and charge.

**Tree locations:**

Spectrum Analysis E05.196.867.427

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **Ipilimumab**

An anti-CTLA-4 ANTIGEN monoclonal antibody initially indicated for the treatment of certain types of metastatic MELANOMA. Its mode of actions may include blocking of CTLA-4 mediated inhibition of CYTOTOXIC T LYMPHOCYTES, allowing for more efficient destruction of target tumor cells.

#### **Tree locations:**

Antibodies, Monoclonal, Humanized D12.776.124.486.485.114.224.060.798  
D12.776.124.790.651.114.224.060.798  
D12.776.377.715.548.114.224.200.798

### **Janus Kinase Inhibitors**

Agents that inhibit JANUS KINASES.

#### **Tree locations:**

Protein Kinase Inhibitors D27.505.519.389.755.500

### **Katanin**

An AAA ATPase consisting of the 60 kDa ATPase subunit (p60 subunit A1) which severs MICROTUBULES, and an 80 kDa accessory protein (p80 subunit B1), which targets the enzyme to the CENTROSOME. It releases microtubules from the mitotic SPINDLE POLES to allow depolymerization and poleward motion of chromosomes. It is also a regulator of microtubule dynamics in NEURONAL OUTGROWTH.

#### **Tree locations:**

ATPases Associated with Diverse Cellular Activities D08.811.277.040.013.500.250  
D08.811.277.040.025.024.250  
D12.776.157.025.750.250  
Microtubule-Associated Proteins D12.776.220.600.450.325  
D12.776.631.560.338

### **Kazal Motifs**

Highly conserved protein domains characteristic of SERINE PROTEASE INHIBITORS, KAZAL TYPE. They generally occur as tandem repeats, with each domain consisting of approximately 60 amino acids that form a large extended amino acid chain, two short ALPHA-HELICES, and a three-stranded anti-parallel BETA-SHEET. Kazal-like domains also occur in the extracellular portions of AGRIN.

#### **Tree locations:**

Amino Acid Motifs G02.111.570.820.709.275.500.490

### **Keratotomy**

Surgical excision of a part of the CORNEA.

#### **Tree locations:**

Surgical Procedures, Operative E04.378

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **Kounis Syndrome**

A disorder of cardiac function secondary to hypersensitivity reactions. It is characterized by coexistence of acute coronary syndromes and cardiac MAST CELL and PLATELET ACTIVATION. It may be induced by exposure to drugs (e.g., antibiotics, anesthetics, contrast media), food, and environmental triggers (e.g., insect bites and stings, poison ivy).

**Tree locations:**

Hypersensitivity C20.543.560  
Myocardial Ischemia C14.280.647.375  
C14.907.585.375

### **KRIT1 Protein**

A microtubule-associated protein consisting of four ANKYRIN REPEATS and a C-terminal FERM DOMAIN. It links the CYTOSKELETON to CELL JUNCTIONS via integrin cytoplasmic domain-associated protein-1 and plays an important role in regulating cell proliferation and integrity of endothelial cell junctions. It is also involved in REACTIVE OXYGEN SPECIES metabolism. Mutations in the KRIT1 gene are associated with type I CEREBRAL CAVERNOUS MALFORMATIONS.

**Tree locations:**

Microtubule-Associated Proteins D12.776.220.600.450.458  
D12.776.631.560.465  
Proto-Oncogene Proteins D12.776.624.664.700.119

### **Kruppel-Like Factor 6**

A Kruppel-like transcription factor that contains three C-terminal CYS<sub>2</sub>-HIS<sub>2</sub> ZINC FINGERS and binds to GC RICH SEQUENCE (GC box) in upstream gene promoters. It functions as a transcriptional activator, tumor suppressor, and may regulate growth and development of B-cells.

**Tree locations:**

Kruppel-Like Transcription Factors D12.776.260.522.563  
D12.776.930.375.563  
Proto-Oncogene Proteins D12.776.624.664.700.120  
Trans-Activators D12.776.260.755.050

### **Lateral Internal Sphincterotomy**

Surgical incision of the INTERNAL ANAL SPHINCTER typically in the treatment of FISSURE IN ANO; chronic ANAL FISSURE and FECAL INCONTINENCE.

**Tree locations:**

Digestive System Surgical Procedures E04.210.638  
Sphincterotomy E04.515.750.375

### **Laticauda**

A genus of semi-aquatic elapid snake that inhabits coastal waters of the tropical Indian and Western Pacific Oceans.

**Tree locations:**

Elapidae B01.050.150.900.833.672.125.875.576

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **Laurales**

Order of flowering plants in the superorder Magnolianae. Common examples are bay laurel, AVOCADO; sassafras and CINNAMON.

**Tree locations:**

Magnoliopsida B01.650.940.800.575.912.250.595

### **Lepisma**

A small nocturnal wingless insect with tapering physical outline.

**Tree locations:**

Insecta B01.050.500.131.617.576

### **Leukocyte Immunoglobulin-like Receptor B1**

A receptor for HISTOCOMPATIBILITY ANTIGENS CLASS I that also functions as a receptor for the UL18 protein, an MHC class I homolog expressed by human CYTOMEGALOVIRUS. It consists of four Ig-like C2 domains and is expressed primarily by B-cells and MONOCYTES, as well as DENDRITIC CELLS; its interaction with MHC1 functions to down-regulate the immune response.

**Tree locations:**

Receptors, Immunologic D12.776.543.750.705.023

### **Lilianaes**

A superorder of flowering plants (Angiosperms) which includes monocotyledonous plants.

**Tree locations:**

Magnoliopsida B01.650.940.800.575.912.250.618

### **Liquid Biopsy**

Obtaining material for pathological examination and analysis, from bodily fluids. Material retrieved includes CELL-FREE NUCLEIC ACIDS; CELL-DERIVED MICROPARTICLES; EXOSOMES; CIRCULATING NEOPLASM CELLS; and other circulating cells and CELLULAR STRUCTURES.

**AN: usually NIM with specific organ /pathol + disease /diag or /pathol**

**Tree locations:**

Biopsy E01.370.225.500.384.100.396  
E01.370.225.998.054.396  
E05.200.500.384.100.396  
E05.200.998.054.396  
E05.242.384.100.396

### **Long-Acting Reversible Contraception**

Prevention of CONCEPTION by devices, chemical substances or agents with contraceptive activity in females which last for years and can be removed.

**Tree locations:**

Contraception E02.875.194.589

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Loss of Function Mutation

A mutation that causes a decrease in or elimination of a gene product's activity.

**Tree locations:**

Mutation G05.365.590.538

### Lysine Acetyltransferase 5

A catalytic subunit of the NuA4 histone acetyltransferase complex that functions in transcriptional activation of genes by acetylation of nucleosomal HISTONES H4 and H2A, altering nucleosome-DNA interactions and interaction of the modified histones with other activating transcription factors. It may control gene expression changes associated with oncogene and proto-oncogene mediated growth induction, tumor suppressor mediated growth arrest; CELL AGING; APOPTOSIS; and DNA REPAIR. It is polyubiquitinated and degraded during HIV-1 infection through its interaction with the viral TAT PROTEIN.

**Tree locations:**

Histone Acetyltransferases D08.811.913.050.134.415.500.062

### Manual Lymphatic Drainage

The application of massage to control EDEMA and improve circulation by manually moving excess lymph out of a tissue.

**Tree locations:**

Drainage E02.309.416

Massage E02.190.599.750.750.500

E02.779.867.880.750.500

E02.831.535.867.880.750.500

### Marijuana Use

Medicinal or recreational utilization of MARIJUANA.

**Tree locations:**

Behavior F01.145.610

Substance-Related Disorders F03.900.643

### Mass Drug Administration

Administration of a medication to at-risk individuals in a population without individual diagnosis. It is often used in order to treat, control, and/or prevent spread of often endemic DISEASE OUTBREAKS such as NEGLECTED DISEASES in high disease burden areas.

**Tree locations:**

Chemoprevention E02.319.162.575

Communicable Disease Control N06.850.780.200.600

Disease Eradication N06.850.275.500

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **Mastoidectomy**

Surgical removal of the diseased cells from the MASTOID PROCESS. It often involves simultaneous resection and/or repair of the MIDDLE EAR and EAR DRUM in MIDDLE EAR CHOLESTEATOMAS and MASTOIDITIS.

**Tree locations:**

Otologic Surgical Procedures E04.580.450.375

### **Materials Science**

An interdisciplinary study of the microstructure and composition of various materials such as metals, semiconductors, ceramics, and polymers, in relation to their macromolecular physical and chemical properties. Materials science enables the custom creation of new materials with specific properties and uses.

**Tree locations:**

Natural Science Disciplines H01.413  
Technology J01.897.461

### **MDS1 and EVI1 Complex Locus Protein**

A DNA binding protein, transcriptional regulator, and proto-oncogene protein that contains 10 CYS2-HIS2 ZINC FINGERS. It functions as a positive or negative regulator of expression for target genes involved in organism development.

**Tree locations:**

DNA-Binding Proteins D12.776.260.534  
Proto-Oncogene Proteins D12.776.624.664.700.129  
Transcription Factors D12.776.930.419

### **Mechanistic Target of Rapamycin Complex 1**

An evolutionarily conserved multiprotein complex that functions as a cellular energy sensor and regulator of protein synthesis for cell growth and proliferation. It consists of TOR SERINE-THREONINE KINASES; REGULATORY-ASSOCIATED PROTEIN OF MTOR (RAPTOR); MLST8 PROTEIN; and AKT1 substrate 1 protein. The activity of the complex is regulated by SIROLIMUS; INSULIN; GROWTH FACTORS; PHOSPHATIDIC ACIDS; some amino acids or amino acid derivatives, and OXIDATIVE STRESS.

**Tree locations:**

Multiprotein Complexes D05.500.337  
TOR Serine-Threonine Kinases D08.811.913.696.620.682.700.931.500  
D12.776.476.925.500

### **Mechanistic Target of Rapamycin Complex 2**

A multiprotein complex consisting of MTOR KINASE; MLST8 PROTEIN; rapamycin-insensitive companion of mTOR protein (RICTOR PROTEIN); and PRR5 (proline-rich protein 5). Like MTORC1, it also regulates cell growth and proliferation in response to growth factors but may not be as sensitive to nutrient availability and is insensitive to SIROLIMUS. In contrast to MTORC1, it can regulate the ACTIN CYTOSKELETON through RHO GTPASES to promote the formation of STRESS FIBERS. The mTORC2 complex also plays a critical role in AKT1 PROTEIN KINASE phosphorylation and activation.

**Tree locations:**

Multiprotein Complexes D05.500.356  
TOR Serine-Threonine Kinases D08.811.913.696.620.682.700.931.750  
D12.776.476.925.750

## New MeSH Headings for 2018

*Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations*

### **Meconium Ileus**

Intestinal obstruction caused by congealed MECONIUM in the distal ILEUM and CECUM. It presents shortly after birth as a failure to pass meconium and frequently occurs in infants with CYSTIC FIBROSIS.

**Tree locations:**

Intestinal Obstruction C06.405.469.531.788

### **Median Arcuate Ligament Syndrome**

Compression of the CELIAC ARTERY by the median arcuate ligament, a fibrous band of the DIAPHRAGM, causing abdominal pain after eating and weight loss. OMIM: 116870

**Tree locations:**

Arterial Occlusive Diseases C14.907.137.527  
Digestive System Abnormalities C06.198.929  
Vascular Malformations C14.240.850.922  
C16.131.240.850.898

### **Memory and Learning Tests**

Tests designed to evaluate general and specific areas of behaviors and abilities associated with memory and/or learning.

**Tree locations:**

Neuropsychological Tests F04.711.513.401

### **Meniscectomy**

Surgical incision of a torn MENISCUS.

**Tree locations:**

Orthopedic Procedures E04.555.490

### **Mental Health Recovery**

Recovery from mental disorders and/or substance abuse. The process of change in which individuals improve their MENTAL HEALTH and wellness, live a self-directed life, and work to achieve their full potential.

**Tree locations:**

Rehabilitation N02.421.784.444

### **Mental Status and Dementia Tests**

Tests designed to assess various aspects of neurocognitive function and/or dementia.

**Tree locations:**

Neuropsychological Tests F04.711.513.603

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Metal-Organic Frameworks

Supramolecular networks that consist of ordered arrangements of organic electron donor linkers (usually ditopic or polytopic organic carboxylates) and metal cations. They can have an extremely high surface area and adjustable pore size that allows for the insertion of other molecules capable of various functions such as catalysis, capture of carbon dioxide, and drug delivery.

**Tree locations:**

Organometallic Compounds D02.691.638  
Polymers D05.750.215

### Metallocenes

Organometallic compounds that generally consist of two cyclopentadiene ANIONS joined in their centers by a metallic cation such as NICKEL; IRON; or TITANIUM.

**Tree locations:**

Organometallic Compounds D02.691.657

### Mice, Knockout, ApoE

Strains of mice that contain genetic disruptions (knockout) of APOLIPOPROTEINS E genes. They are used as models for ATHEROSCLEROSIS research.

**AN: NIM with no qualifiers when experimental animal**

**Tree locations:**

Mice, Knockout B01.050.050.136.500.500.500  
B01.050.150.900.649.313.992.635.505.500.550.455.500  
B01.050.150.900.649.313.992.635.505.500.800.500.512

### Microorganisms, Genetically-Modified

Microorganisms whose GENOME has been altered by GENETIC ENGINEERING.

**AN: coordinate with specific microorganism /genet**

**Tree locations:**

Organisms, Genetically Modified B05.620.368

### Microvascular Rarefaction

The reduction in density of the MICROVASCULATURE.

**Tree locations:**

Pathological Conditions, Anatomical C23.300.818

### Models, Spatial Interaction

Estimates of the flow of people, material or information between locations in geographic space.

**Tree locations:**

Models, Statistical E05.599.835.893

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### MRE11 Homologue Protein

A component of the MRN complex along with Rad50 and Nibrin. Together, these perform a critical function in the repair of DOUBLE-STRANDED DNA BREAKS; RECOMBINATIONAL DNA REPAIR; maintenance of TELOMERE integrity and MEIOSIS. MRE11, which contains a poly(ADP)-ribose binding motif and associates with PARP1, possesses single-strand endonuclease activity and double-strand-specific 3'-5' exonuclease activity. Mutations in the MRE11 gene are associated with ATAXIA-TELANGIECTASIA-like disorder 1.

#### Tree locations:

DNA-Binding Proteins	D12.776.260.539
Endodeoxyribonucleases	D08.811.277.352.335.350.650
	D08.811.277.352.355.325.600
Exodeoxyribonucleases	D08.811.277.352.335.375.813
	D08.811.277.352.365.290.250
Poly-ADP-Ribose Binding Proteins	D12.776.157.687.495
	D12.776.660.720.495

### MTOR Associated Protein, LST8 Homolog

An adaptor protein, consisting of seven WD REPEATS along its length, that functions as a component of the MECHANISTIC TARGET OF RAPAMYCIN COMPLEX 1 and MTORC2 COMPLEX. It interacts directly with MTOR to enhance its kinase activity and stabilizes the MTOR-RPTOR PROTEIN interaction in nutrient-poor conditions, favoring RPTOR inhibition of MTOR activity.

#### Tree locations:

Adaptor Proteins, Signal Transducing	D12.644.360.024.310
	D12.776.157.057.073
	D12.776.476.024.389
Mechanistic Target of Rapamycin Complex 1	D05.500.337.250
	D08.811.913.696.620.682.700.931.500.250
	D12.776.476.925.500.250

### Mucosa-Associated Lymphoid Tissue Lymphoma Translocation 1 Protein

A caspase-like cysteine endopeptidase that also exhibits ubiquitin ligase activity. It contains an N-terminal DEATH DOMAIN, two IMMUNOGLOBULIN-LIKE DOMAINS, and localizes to the perinuclear region of MONOCYTES, where it functions in activation of NF-KAPPA B; it also binds to and activates TRAF6. Chromosomal translocations involving the MALT1 and BIRC2 genes are associated with MALT LYMPHOMA, and mutations in the MALT1 gene are associated with Type 12 IMMUNODEFICIENCY SYNDROMES.

#### Tree locations:

Caspases	D08.811.277.656.262.500.126.775
	D08.811.277.656.300.200.126.775
Ubiquitin-Protein Ligases	D08.811.464.938.750.233

### Multifocal Intraocular Lenses

Artificially implanted lenses that direct light toward distant and near focal points allowing clear vision for a range of distances.

#### Tree locations:

Lenses, Intraocular	E07.632.500.460.250
	E07.695.460.500

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Multimorbidity

The complex interactions of several co-existing diseases.

**Tree locations:**

Comorbidity N05.715.350.225.500  
N06.850.490.687.500

### Multitasking Behavior

Simultaneous task performance, or switching between tasks in a concentrated period of time.

**Tree locations:**

Behavior F01.145.666

### MutS Homolog 3 Protein

A MutS homolog protein and component of post-replicative DNA MISMATCH REPAIR. It forms a heterodimer with MUTS HOMOLOG 2 PROTEIN (MSH2) and recognizes large insertion-deletion loops up to 13 nucleotides in length. This directs downstream events such as strand discrimination, excision, and resynthesis.

**Tree locations:**

MutS Proteins D12.776.260.556.875

### MutS Proteins

DNA repair proteins that include the bacterial MutS DNA mismatch-binding protein and its eukaryotic homologs that function in DNA MISMATCH REPAIR and recombination of DNA during MEIOSIS. MutS has a conserved mismatch recognition domain characterized by GxFxE, or similar AMINO ACID MOTIFS that also occur in eukaryotic homologs such as MSH1, MSH6, and MSH8. All MutS proteins also contain a highly-conserved ATP-binding domain and most have weak ATPase activity.

**Tree locations:**

Adenosine Triphosphatases D08.811.277.040.025.292  
DNA Repair Enzymes D08.811.074.844  
DNA-Binding Proteins D12.776.260.556

### Mycobacterium abscessus

A rapidly growing non-tuberculous environmental mycobacterium causing OPPORTUNISTIC INFECTION that infects the skin and subcutaneous tissues. It is associated with HEALTH CARE ASSOCIATED INFECTION and causes serious lung infections in persons with various chronic lung diseases.

**AN: infection: coordinate IM with MYCOBACTERIUM INFECTIONS, NONTUBERCULOUS (IM)**

**Tree locations:**

Nontuberculous Mycobacteria B03.510.024.049.525.500.720.050  
B03.510.460.400.410.552.552.720.050

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Myeloid Ecotropic Viral Integration Site 1 Protein

A TALE-type homeodomain protein and transcription factor that functions as a regulator of PAX6 PROTEIN expression and as an activator of PLATELET FACTOR 4 gene expression. It is essential for hematopoiesis, differentiation of MEGAKARYOCYTES, and vascular patterning. It may also have a role in the induction of myeloid leukemias.

**Tree locations:**

Homeodomain Proteins D12.776.260.400.483  
Transcription Factors D12.776.930.462

### MYND Domains

Zinc finger domains (named for myeloid, Nery and DEAF-1) that occur in a variety of eukaryotic proteins, including RUNT-RELATED TRANSCRIPTION FACTOR 1. They are characterized by a cluster of cysteine and histidine residues with conserved spacing that forms the zinc-binding motif and have beta-beta-alpha (see BETA-SHEET and ALPHA-HELIX) topology, similar to LIM domains (see LIM DOMAIN PROTEINS) and RING FINGER DOMAINS. MYND domains function as protein interaction motifs and have affinity for PROLINE-RICH PROTEIN DOMAINS.

**Tree locations:**

Protein Interaction Domains and Motifs G02.111.570.820.709.275.750.500.474  
Zinc Fingers G02.111.570.820.709.275.500.985.375

### Myotomy

Surgical incision of the muscle.

**Tree locations:**

Surgical Procedures, Operative E04.515

### Myristoylated Alanine-Rich C Kinase Substrate

A membrane and ACTIN CYTOSKELETON associated, N-terminal myristoylated protein that binds CALMODULIN and is a prominent substrate for PROTEIN KINASE C. Both phosphorylation and poly(ADP)-ribosylation inhibit its F-ACTIN crosslinking activity; phosphorylation also causes MARCKS to relocate from the membrane to cytoplasm.

**Tree locations:**

Calmodulin-Binding Proteins D12.776.157.142.375  
Intracellular Signaling Peptides and Proteins D12.644.360.537  
D12.776.476.539  
Membrane Proteins D12.776.543.637  
Microfilament Proteins D05.750.078.730.556  
D12.776.220.525.556  
Poly-ADP-Ribose Binding Proteins D12.776.157.687.496  
D12.776.660.720.496

# New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

## **NADPH Oxidase 1**

An NADPH oxidase that functions as a voltage-gated proton channel expressed by PHAGOCYTES, especially in the colon. It regulates intracellular pH, generates SUPEROXIDES upon activation by PHAGOCYTOSIS, and may play a role in INNATE IMMUNITY.

**Tree locations:**

NADPH Oxidases D08.811.682.608.575.750  
D12.776.331.894.750  
D12.776.543.653.750

## **NADPH Oxidase 2**

An NADPH oxidase that is expressed by PHAGOCYTES where it transfers electrons across the plasma membrane from cytosolic NADPH to molecular oxygen on the exterior. It regulates proton (H<sup>+</sup>) flux into resting phagocytes to control intracellular pH. Mutations in the CYBB gene are associated with X-LINKED CHRONIC GRANULOMATOUS DISEASE.

**Tree locations:**

NADPH Oxidases D08.811.682.608.575.875  
D12.776.331.894.875  
D12.776.543.653.875

## **NADPH Oxidase 4**

An NADPH oxidase that is strongly expressed in the kidney. It forms a complex with CYBA-P22PHOX and produces intracellular SUPEROXIDES that may regulate cellular signaling in APOPTOSIS; BONE RESORPTION; and NF-KAPPA B activation.

**Tree locations:**

NADPH Oxidases D08.811.682.608.575.937  
D12.776.331.894.937  
D12.776.543.653.937

## **NADPH Oxidase 5**

An NADPH oxidase that contains four EF HANDS and is expressed primarily by SPERMATOCYTES and LYMPHOCYTES, as well as by endothelial cells. It functions as a calcium-dependent proton channel to generate SUPEROXIDES that regulate cell growth, APOPTOSIS; and PHYSIOLOGIC ANGIOGENESIS.

**Tree locations:**

NADPH Oxidases D08.811.682.608.575.968  
D12.776.331.894.968  
D12.776.543.653.968

## **Naja**

A genus of elapid snakes, also known as cobras, that are indigenous to Africa, Central and Southern Asia, and adjacent islands such as Taiwan and the Philippines.

**Tree locations:**

Elapidae B01.050.150.900.833.672.125.875.612

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **Naja haje**

A species of cobra (Naja) that is indigenous primarily to Northern Africa.

**Tree locations:**

Naja B01.050.150.900.833.672.125.875.612.250

### **Naja naja**

Species of cobra (Naja) indigenous to the Indian Subcontinent, Southern Asia, and adjacent islands.

**Tree locations:**

Naja B01.050.150.900.833.672.125.875.612.500

### **Narrative Medicine**

NARRATION as a tool to collect and interpret information on a patient's experience of illness

**Tree locations:**

Narration F01.145.209.459.500

Patient-Centered Care N04.590.233.727.407.250

Quality of Health Care N05.715.520

### **Nectins**

A family of calcium-independent cell adhesion molecules of the immunoglobulin superfamily. They are expressed by most cell types and mediate both homotypic and heterotypic cell-cell adhesion. Nectins function in a variety of morphogenetic and developmental processes that include organogenesis of the eye, ear, tooth, and cerebral cortex; they also play roles in viral infection and cell proliferation.

**Tree locations:**

Cell Adhesion Molecules D12.776.395.550.200.123

D12.776.543.550.200.130

D23.050.301.350.123

### **Nedd4 Ubiquitin Protein Ligases**

E3 ubiquitin ligases that consist of four WW DOMAINS. They accept UBIQUITIN from E2 UBIQUITIN-CONJUGATING ENZYME as a thioester via their C-terminal HECT domains and transfer it specifically to the 6<sup>3</sup>rd LYSINE residue (Lys-63) of target proteins. NEDD4 targets include many proteins and receptors with important functions for cell growth and homeostasis such as VEGFR-2; FGFR1 TYROSINE KINASE; and ERBB-4 RECEPTOR. They play a critical role in the internalization of these receptors, their degradation by LYSOSOMES, and also function as part of the ESCRT complex in VIRUS RELEASE.

**Tree locations:**

Endosomal Sorting Complexes Required for Transport D05.500.199.500

D12.776.543.990.493.500

Ubiquitin-Protein Ligases D08.811.464.938.750.257

## New MeSH Headings for 2018

*Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations*

### **NEDD8 Protein**

A ubiquitin-like protein that functions in CELL CYCLE regulation and embryogenesis. It is attached covalently to its substrates following activation by the UBIQUITIN-ACTIVATING ENZYME E1-UBA3 enzyme complex. NEDD8 attaches to CULLINS, activating their E3 UBIQUITIN LIGASE activity, to promote polyubiquitination and degradation of CYCLINS and regulatory proteins

**Tree locations:**

Ubiquitins D12.776.947.218

### **Nematocera**

A suborder of insects which belong to the order DIPTERA. They include mosca, mosquito, gnats, black flies, true flies and long-horned flies.

**Tree locations:**

Diptera B01.050.500.131.617.720.500.500.750.712

### **Neonicotinoids**

A class of insecticides that are structurally similar to NICOTINE and have physiologically similar effects as agonists of NICOTINIC ACETYLCHOLINE RECEPTORS, but are less toxic to vertebrates. They are widely used in agriculture.

**Tree locations:**

Heterocyclic Compounds, 1-Ring D03.383.464

### **Neoptera**

Modern insects belonging to the subclass PTERYGOTA, Many have the ability to fold their wings with exceptions being butterflies, moths, and a few others within the group.

**Tree locations:**

Pterygota B01.050.500.131.617.720.500

### **Nephrolithotomy, Percutaneous**

Surgical removal of large KIDNEY CALCULI by means of a percutaneous nephroscope which is passed into the KIDNEY PELVIS through a track created in the patient's back.

**Tree locations:**

Laparoscopy E04.502.250.520.790  
Urologic Surgical Procedures E04.950.774.638

### **Nephrotomy**

Surgical incision into any part of the kidney.

**AN: note entry terms PYELOTOMY and PYELOSTOMY: coordinate with KIDNEY PELVIS /surg**

**Tree locations:**

Urologic Surgical Procedures E04.950.774.739

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **Nephroureterectomy**

Surgical removal of a kidney and adjoining ureter.

**Tree locations:**

Nephrectomy E04.950.774.435.500

### **Netrin Receptors**

Cell surface receptors that bind NETRINS. They typically contain both IMMUNOGLOBULIN DOMAINS and FIBRONECTIN TYPE III DOMAINS and function to mediate CELL MIGRATION and AXON GUIDANCE.

**Tree locations:**

Receptors, Cell Surface D12.776.543.750.003

### **Netrin-1**

A netrin that binds the DCC RECEPTOR or UNC5 receptors, resulting respectively in axon attraction or repulsion. Its interaction with these receptors also prevents APOPTOSIS; it may function as a tumor suppressor protein.

**Tree locations:**

Netrins D12.644.276.860.494.500  
D12.776.467.860.494.500  
D12.776.631.600.494.500  
D12.776.860.300.731.500  
D23.125.842.500  
D23.529.850.494.500

### **Netrins**

A family of extracellular proteins that are related structurally to LAMININ. They function as CHEMOTACTIC FACTORS for CELL MIGRATION and AXON GUIDANCE, acting as chemoattractants for some cell types, and as chemorepellents for others.

**Tree locations:**

Chemotactic Factors D23.125.842  
Extracellular Matrix Proteins D12.776.860.300.731  
Nerve Growth Factors D12.644.276.860.494  
D12.776.467.860.494  
D12.776.631.600.494  
D23.529.850.494

### **Neuroticism**

Personality trait related to tendency to respond to threat, frustration or a loss with negative emotions (e.g., ANGER; ANXIETY; FRUSTRATION; embarrassment and sadness).

**Tree locations:**

Personality F01.752.723

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Nicotine Chewing Gum

Chewing gum which contains NICOTINE.

**Tree locations:**

Chewing Gum D05.750.078.739.249.500  
D09.698.700.249.500  
G07.203.300.140.200.500  
J02.500.140.200.500  
Tobacco Products J01.637.767.844.250

### Night Eating Syndrome

Little or no appetite for breakfast due to eating more food after dinner than during the meal and eating more than half of daily food intake after dinner hour.

**AN: coordinate with SLEEP-WAKE DISORDERS if pertinent**

**Tree locations:**

Feeding and Eating Disorders F03.400.844

### Nitrosative Stress

A metabolic excess of REACTIVE NITROGEN SPECIES, including NITRIC OXIDE and PEROXYNITRITE, that leads to damaging effects of oxidation and nitration.

**Tree locations:**

Oxidative Stress G03.673.345  
G07.775.750.500

### Non-Point Source Pollution

Water pollution from a variety of diffuse sources carried over or through the ground and into water sources such as LAKES; RIVERS; WETLANDS; coastal waters; and GROUNDWATER. Such diffuse sources include roadways and parking lots (GASOLINE; HEAVY METALS; and motor oil), lawns or agricultural land (excess FERTILIZERS, livestock excrement, and PESTICIDES), landfill seepage, and construction sites (chemicals and trash used in construction processes).

**Tree locations:**

Water Pollution N06.850.460.790.205

### Noncommunicable Diseases

Diseases of long duration and generally slow progression. The four main types of noncommunicable diseases are CARDIOVASCULAR DISEASES (e.g., heart attacks and stroke), CANCER, chronic respiratory diseases (e.g., CHRONIC OBSTRUCTIVE PULMONARY DISEASE and ASTHMA) and DIABETES MELLITUS.

**Tree locations:**

Chronic Disease C23.550.291.500.750

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Nonlinear Optical Microscopy

Microscopic imaging techniques that utilize nonlinear responses of light-matter interactions which occur with high-intensity illumination, such as from LASERS, and specialized light signal detection instrumentation to produce images without the need for dyes or fluorescent labels.

**Tree locations:**

Microscopy E01.370.350.515.717  
E05.595.717

### Nut and Peanut Hypersensitivity

Allergic reaction to tree nuts and peanuts, including other LEGUMES, that is triggered by the immune system. It includes co-sensitization to other food (e.g., sesame seed).

**Tree locations:**

Food Hypersensitivity C20.543.480.370.572

### Obesity Management

An integrated professional approach to screening, evaluation, control, and reduction of abnormal WEIGHT GAIN.

**Tree locations:**

Disease Management N04.590.607.250  
Therapeutics E02.570  
Weight Reduction Programs N02.421.726.407.579.650.500

### Occupational Stress

Adverse psychological and behavioral reactions caused by the pressures and demands of employers or clients or other factors, such as the physical environment of the workplace, WORKPLACE VIOLENCE; or WORKPLACE BULLYING.

**Tree locations:**

Occupational Diseases C24.580  
Stress, Psychological F01.145.126.990.734  
F02.830.900.666

### Oligodendrocyte Precursor Cells

Neuroglial cells that first appear during mid-embryogenesis in the central nervous system of mammals and give rise to OLIGODENDROCYTES. Mitotically-active populations remain through late adulthood and are capable of regenerating MYELIN lost to disease or injury.

**Tree locations:**

Neural Stem Cells A11.872.653.500  
Neuroglia A08.637.550  
A11.650.550

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **Oligodendrocyte Transcription Factor 2**

A basic helix-loop-helix transcription factor that is required for differentiation of OLIGODENDROCYTES and motor neurons in the spinal cord, and development of somatic motor neurons in the hindbrain.

**Tree locations:**

Basic Helix-Loop-Helix Transcription Factors D12.776.260.103.798  
D12.776.930.125.782  
Nerve Tissue Proteins D12.776.631.654

### **Oncogene Addiction**

The dependence of tumor cells on a single oncogenic pathway or protein for their continued proliferation and survival.

**Tree locations:**

Neoplastic Processes C04.697.850  
C23.550.727.850

### **One Health**

An integrative effort of multiple disciplines working collaboratively and locally, nationally, and globally in all aspects of health care for humans, animals, and the environment.

**Tree locations:**

Health N01.400.530

### **Ophiophagus hannah**

The longest of all venomous snakes and largest Elapid. It is not a member of the Naja genus, although its hood resembles the hood of Naja species. Its bite can deliver large quantities of neurotoxic and cardiotoxic venom, consisting primarily of ALPHA-NEUROTOXINS. King cobras are indigenous to forests of India and Southeast Asia.

**Tree locations:**

Elapidae B01.050.150.900.833.672.125.875.806

### **Opium Dependence**

Strong physiological and emotional dependence on OPIUM.

**Tree locations:**

Opioid-Related Disorders C25.775.675.800  
F03.900.675.800

### **Organ Motion**

Movement of internal organs due to physiological processes.

**Tree locations:**

Movement G07.568.750  
G11.427.410.849

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Organic Cation Transporter 2

Organic cation transporter consisting of twelve transmembrane domains and expressed primarily in the kidney. It transports a wide range of metabolites, drugs, and neurotransmitters from the blood to the KIDNEY TUBULES, including DOPAMINE; SEROTONIN; CHOLINE; and CISPLATIN.

**Tree locations:**

Organic Cation Transport Proteins D12.776.157.530.450.250.812.625  
D12.776.157.530.937.612.625  
D12.776.543.585.450.250.812.625  
D12.776.543.585.937.701.625

### Organism Hydration Status

Quantitative measure of water or fluids contained in the body of a living organism.

**Tree locations:**

Physiological Phenomena G07.670

### P-type ATPases

A highly conserved family of ATPases that facilitate the transport of lipids and cations across the plasma membrane. Structurally, they are elongated ALPHA-HELICES constituting five functionally distinct domains: three cytoplasmic domains A, N, and P which contain the catalytic sites, and two transmembrane domains. The N domain phosphorylates the P-domain at an invariant ASPARTATE residue, which, in turn, is dephosphorylated by the A domain. The phosphorylation and dephosphorylation cycles drive conformational changes in the protein between two states (E1 and E2), which allow the substrate to access the other side of the membrane.

**Tree locations:**

Adenosine Triphosphatases D08.811.277.040.025.314  
Membrane Transport Proteins D12.776.157.530.813  
D12.776.543.585.813

### Pain, Procedural

Pain associated with examination, treatment or procedures.

**Tree locations:**

Pain C23.888.592.612.860

### Palaeoptera

Infraclass of ancient winged insects belonging to the subclass PTERYGOTA.

**Tree locations:**

Pterygota B01.050.500.131.617.720.750

### Palm Oil

Nutritive oil extracted from the fleshy mesocarp of the fruit of the African palm tree, *Elaeis guineensis*.

**Tree locations:**

Plant Oils D10.627.700.798  
D20.215.784.750.728

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Pancreatitis-Associated Proteins

C-type lectins that restrict growth of bacteria in the intestinal epithelia and have bactericidal activity against gram-positive and gram-negative bacteria. They also regulate proliferation and differentiation of KERATINOCYTES following injury. Human pancreatitis-associated protein-1 (Reg3a) is overexpressed by pancreatic ACINAR CELLS in patients with CHRONIC PANCREATITIS. It is also highly expressed by pancreatic, bladder, and gastrointestinal cancer cells and may serve as a diagnostic biomarker.

**Tree locations:**

Antigens, Neoplasm D23.050.285.733  
Biomarkers, Tumor D23.101.140.780  
Lectins, C-Type D12.776.503.280.578

### Patient Generated Health Data

Health-related data created, recorded, or gathered by patients, family members, or caregivers, to help address a health concern. Distinct from data generated in clinical settings and through encounters with providers.

**Tree locations:**

Health Records, Personal E05.318.308.940.968.249.625

### Patient Health Questionnaire

A self-administered version of the Primary Care Evaluation of Mental Disorders (PRIME-MD), a diagnostic tool containing modules on multiple mental health disorders including anxiety, alcohol, eating, and somatoform modules. The Patient Health Questionnaire (PHQ-9) is designed specifically for mood/depression scoring each of the 9 DSM-IV criteria based on the mood module from the original PRIME-MD. The Generalized Anxiety Disorder scale (GAD-7) scores 7 common anxiety symptoms.

**AN: restrict to evaluation of mental health status**

**Tree locations:**

Psychological Tests F04.711.580  
Surveys and Questionnaires E05.318.308.980.493  
N05.715.360.300.800.485  
N06.850.520.308.980.485

### Peanut Oil

Oil derived from PEANUTS.

**Tree locations:**

Plant Oils D10.627.700.809

### Peptide Transporter 1

A proton-coupled symporter that transports OLIGOPEPTIDES and DIPEPTIDES. It localizes to the brush-border membrane of the INTESTINAL EPITHELIUM and plays a critical role in the assimilation of dietary proteins.

**Tree locations:**

Solute Carrier Proteins D12.776.157.530.937.613  
D12.776.543.585.937.702  
Symporters D12.776.157.530.450.625.202  
D12.776.543.585.450.625.202

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Periphyton

A complex mixture of organisms (algae, cyanobacteria, heterotrophic microbes, detritus, etc.) clinging on the surfaces of plants and other objects projecting from the bottom sediments of aquatic ecosystems.

**Tree locations:**

Aquatic Organisms B05.080.250  
Microbiota G06.591.937  
G16.500.275.157.049.100.500.937  
N06.230.124.049.100.500.875

### Peroxins

Proteins that are essential for the assembly of PEROXISOMES. They recognize and transport cytoplasmic proteins that contain PEROXISOMAL TARGETING SIGNALS (PTS) to the peroxisome. Mutations in peroxin (PEX) genes are associated with several PEROXISOMAL DISORDERS.

**Tree locations:**

Carrier Proteins D12.776.157.635

### Peroxisomal Biogenesis Factor 2

A multi-pass transmembrane protein that contains a C-terminal RING finger domain. It localizes to the PEROXISOME membrane and is essential for peroxisome biogenesis. Mutations in the PEX2 gene are associated with ZELLWEGER SYNDROME and INFANTILE REFSUM DISEASE.

**Tree locations:**

Membrane Proteins D12.776.543.689  
Peroxins D12.776.157.635.500

### Peroxisomal Targeting Signal 2 Receptor

A cytoplasmic receptor and peroxin that contains a series of WD40 REPEATS and binds to PEROXISOME TARGETING SIGNAL 2. It is essential for protein import into PEROXISOMES; mutations in the human PEX7 gene are associated with PEROXISOMAL DISORDERS such as Type 1 CHONDRODYSPLASIA PUNCTATA, RHIZOMELIC.

**Tree locations:**

Peroxins D12.776.157.635.625

### Peroxisomal Targeting Signals

Protein sorting signals that target proteins to PEROXISOMES.

**Tree locations:**

Protein Sorting Signals D12.644.770.805  
G02.111.570.060.670.805

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **Peroxisome-Targeting Signal 1 Receptor**

A cytoplasmic receptor and peroxin that contains a series of TETRACOTIPEPTIDE REPEATS and binds to PEROXISOME TARGETING SIGNAL 1 (SKL-type). It is essential for protein import into PEROXISOMES; mutations in the PEX5 gene are associated with PEROXISOMAL DISORDERS such as ZELLWEGER SYNDROME.

**Tree locations:**

Peroxisins D12.776.157.635.750

### **PHD Zinc Fingers**

Zinc finger domains of approximately 50 to 80 amino acids in length that are characterized by a conserved Cysteine(3)-Histidine-Cysteine(4) amino acid motif which coordinates binding of two zinc ions. They are similar structurally to RING FINGER DOMAINS, with a globular fold topology of two BETA-SHEETS and an ALPHA-HELIX. PHD fingers occur in many proteins that function in chromatin-mediated gene expression and EPIGENETICS such as POLYCOMB-GROUP PROTEINS.

**Tree locations:**

Zinc Fingers G02.111.570.820.709.275.500.985.438

### **Pictorial Works as Topic**

Works that discuss pictures but not technical drawings.

**Tree locations:**

Art K01.093.701

### **Pipe Smoking**

SMOKING by use of a narrow conveying tube which feeds from an open cavity where smoked product is loaded and burned.

**Tree locations:**

Smoking F01.145.805.063

### **Platelet-Rich Fibrin**

A fibrin matrix derived from platelet-rich plasma that contains high concentration of BLOOD PLATELETS; LEUKOCYTES; CYTOKINES; and GROWTH FACTORS. It is used in a variety of clinical and TISSUE ENGINEERING applications.

**Tree locations:**

Platelet-Rich Plasma A12.207.152.693.600.500  
A12.207.270.695.600.500  
A15.145.693.600.500

### **Political Activism**

Active involvement in the political process including promoting, impeding or raising awareness of a certain issue or set of issues.

**Tree locations:**

Politics I01.738.708

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **Poly ADP Ribosylation**

Post-translational modification of proteins with POLY ADENOSINE DIPHOSPHATE RIBOSE.

**Tree locations:**

ADP-Ribosylation G02.111.660.871.790.600.200.500  
G02.111.691.600.200.500  
G03.734.871.790.600.200.500  
G05.308.670.600.200.500

### **Poly-ADP-Ribose Binding Motif**

A protein motif 22 to 26 amino acids in length that binds POLY(ADP RIBOSE) polymers through non-covalent interactions. It is characterized by basic and hydrophobic residues that frequently include ALANINE; VALINE; ISOLEUCINE; or LEUCINE and flank LYSINE and ARGININE amino acids.

**Tree locations:**

Amino Acid Motifs G02.111.570.820.709.275.500.695

### **Poly-ADP-Ribose Binding Proteins**

Proteins that contain POLY-ADP RIBOSE BINDING MOTIFS. They include HISTONES and other proteins that function in DNA REPAIR, replication, gene transcription, and APOPTOSIS.

**Tree locations:**

Carrier Proteins D12.776.157.687  
Nuclear Proteins D12.776.660.720

### **Popular Culture**

Choices and ways of doing things that predominate or are fashionable among ordinary people in a society during a point in time.

**Tree locations:**

Culture I01.076.201.450.715  
I01.880.853.100.628

### **Population Health**

The health outcomes of a group of individuals, including the distribution of such outcomes within the group. These populations are often geographic regions, such as nations or communities, but they can also be other groups. (From Am J Public Health. 2003 March; 93(3): 380–383)

**Tree locations:**

Health N01.400.548

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Positive Regulatory Domain I-Binding Factor 1

A transcriptional repressor protein that contains an N-terminal PR-SET domain, four C-terminal CYS2-HIS2 ZINC FINGERS, and binds the PRDI element in the INTERFERON-BETA gene. It has methyltransferase activity and mediates gene transcription in tissue-specific innate and adaptive immune lymphocyte T-CELLS, repressing expression of proteins that promote exit of these tissue-specific T-cell populations from non-lymphoid organs.

**Tree locations:**

Protein Methyltransferases D08.811.913.555.500.800.700  
Repressor Proteins D12.776.260.703.650  
D12.776.930.780.904

### PR-SET Domains

Highly conserved protein domains of approximately 130 to 140 amino acids. The SET domain was first identified in the Drosophila proteins (S)u(var)3-9, (E)nhancer-of-zeste and (T)rithorax and occurs in other proteins with a variety of functions, including histone-lysine N-methyltransferases. Structurally, it consists of BETA-SHEETS interspersed among loops and turns that result in an "L" shape. The most conserved motifs are a stretch at the C-terminal that contains a strictly conserved tyrosine residue and an adjacent loop that the C-terminal segment passes through to form a "knot". These motifs and especially the tyrosine residue are essential for S-ADENOSYLMETHIONINE binding and catalysis. The PR domain has high homology to the catalytic region of the SET domain and occurs at the N-terminal of PRDM proteins such as PRDM1 PROTEIN.

**Tree locations:**

Protein Domains G02.111.570.820.709.275.750.477

### Pre-Analytical Phase

Laboratory processes prior to specimen analysis. These processes include study design, compliance of the subjects investigated, compliance in adherence to protocols, choice of specimens utilized and sample collection.

**Tree locations:**

Clinical Laboratory Techniques E01.370.225.955

### Pre-B-Cell Leukemia Transcription Factor 1

A TALE-type homeodomain protein and transcription factor that binds the DNA sequence 5'-ATCAATCAA-3'. It forms a heterodimer with MEIS1 TRANSCRIPTION FACTOR and functions as a transcriptional activator of HOMEODOMAIN PROTEIN NKX-2.5 and ELONGIN A, and as a transcriptional repressor of CDKN2B PROTEIN, in the regulation of developmental and morphogenetic processes such as spleen and limb development. Chromosome translocations involving the PBX1 and TCF3 genes occur in cases of pre-B-cell ACUTE LYMPHOID LEUKEMIA.

**Tree locations:**

Homeodomain Proteins D12.776.260.400.836  
Proto-Oncogene Proteins D12.776.624.664.700.163  
Transcription Factors D12.776.930.712

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Preliminary Data

First-released version of study results in a series of data collection efforts used for the purpose of generating further interest in and or funding of a research study.

**Tree locations:**

Data Collection E05.318.308.763  
N05.715.360.300.638  
N06.850.520.308.763

### Prescription Drug Monitoring Programs

Programs, usually run by state governments, that require pharmacists to collect and distribute data on the prescription and dispensation of CONTROLLED SUBSTANCES. They are intended to prevent the abuse of such substances by the patient, or their transfer to recreational users and drug dealers.

**Tree locations:**

Drug Information Services N02.421.668.320.600  
Product Surveillance, Postmarketing E05.337.800.800

### Procrastination

The deferment of actions or tasks to a later time, or to infinity.

**Tree locations:**

Defense Mechanisms F01.393.661  
Mental Processes F02.463.617

### Prolotherapy

Treatment of MUSCULOSKELETAL PAIN by injecting a substance into a joint space, ligament, or tendon to promote the growth of new tissue.

**Tree locations:**

Complementary Therapies E02.190.777

### Promyelocytic Leukemia Zinc Finger Protein

A Kruppel-type transcription factor consisting of an N-terminal BTB DOMAIN and nine CYS<sup>2</sup>-HIS<sup>2</sup> ZINC FINGERS. It localizes to the nucleus and regulates cell cycle progression and gene expression for tissue development and homeostasis; it may also function as an epigenetic regulator through its interactions with HISTONE DEACETYLASE. Genetic rearrangements involving the ZBTB16 gene are associated with ACUTE PROMYELOCYTIC LEUKEMIA.

**Tree locations:**

Kruppel-Like Transcription Factors D12.776.260.522.625  
D12.776.930.375.625

### Proof of Concept Study

An empirical investigation which pertains to the development of prototypes or models that demonstrate the feasibility of novel concepts, ideas, principles, schema or their practical application.

**Tree locations:**

Research H01.770.644.578

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Protein Kinase C-theta

A calcium-independent, phospholipid- and diacylglycerol-dependent, protein kinase C subtype that contains an N-terminal C2 DOMAIN and two diacylglycerol-binding ZINC FINGERS. It is expressed primarily by T-LYMPHOCYTES and localizes to IMMUNOLOGICAL SYNAPSES where it regulates downstream signaling for the activation, proliferation, and survival of mature T-cells. It plays a critical role in allergic, autoimmune, and alloimmune responses of TH2 CELLS and TH17 CELLS.

**Tree locations:**

Protein Kinase C D08.811.913.696.620.682.700.725.075

### Protein-Arginine Deiminases

A family of ENZYMES that, in the presence of calcium ion, converts ARGININE to CITRULLINE in proteins.

**Tree locations:**

Hydrolases D08.811.277.721

### Proteostasis

Regulation of the concentration, folding, interactions, and cellular localization of each of the proteins that comprise the PROTEOME.

**Tree locations:**

Biochemical Phenomena G02.111.730  
Metabolism G03.816

### Psycho-Oncology

A specialty which deals with the interrelationship of physical, psychological, social, behavioral, and ethical aspects of cancer. Psycho-oncology examines the behavioral and psychosocial factors that may influence the course of the disease, cancer risk, prevention, and detection.

**Tree locations:**

Medical Oncology H02.403.429.515.250  
Psychology, Medical F04.096.628.808.500  
H02.720.500

### Pterygota

A subclass of winged insects belonging to the class Insecta.

**Tree locations:**

Insecta B01.050.500.131.617.720

### Pyloromyotomy

Surgical incision of the PYLORUS used to treat pyloric stenoses (e.g. INFANTILE HYPERTROPHIC PYLORIC STENOSIS).

**Tree locations:**

Endoscopy, Gastrointestinal E04.210.240.250.760  
Gastrectomy E04.210.419.500  
Myotomy E04.515.375

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Quasispecies

Variations among a population of a given species due to errors in replication of the genome that result in a distribution of non-identical members.

**Tree locations:**

Genetic Variation G05.365.897

### rab27 GTP-Binding Proteins

GTP-binding proteins associated with membranes, MELANOSOMES; LYSOSOMES; and late ENDOSOMES. They play a role in the release of cytotoxic SECRETORY GRANULES from lymphocytes and are required for granule maturation, as well as granule docking and priming at IMMUNOLOGICAL SYNAPSES.

**Tree locations:**

rab GTP-Binding Proteins D08.811.277.040.330.300.400.400.075  
D12.644.360.525.400.075  
D12.776.157.325.515.400.075  
D12.776.476.525.400.075

### Rapamycin-Insensitive Companion of mTOR Protein

An adaptor protein subunit of MTORC2 COMPLEX. It functions as a structural component and is phosphorylated by RIBOSOMAL PROTEIN S6 KINASES, integrating signals for cell growth and proliferation, especially during embryonic development.

**Tree locations:**

Adaptor Proteins, Signal Transducing D12.644.360.024.323  
D12.776.157.057.156  
D12.776.476.024.411  
Mechanistic Target of Rapamycin Complex 2 D05.500.356.500  
D08.811.913.696.620.682.700.931.750.500  
D12.776.476.925.750.500

### Ras Homolog Enriched in Brain Protein

A GTP-binding protein with low intrinsic GTPase activity that activates MTORC1 protein kinase activity.

**Tree locations:**

Monomeric GTP-Binding Proteins D08.811.277.040.330.300.400.488  
D12.644.360.525.488  
D12.776.157.325.515.488  
D12.776.476.525.488  
Neuropeptides D12.776.631.650.665

### Receptor, Notch4

A notch receptor and proto-oncogene protein characterized by a large extracellular domain that consists of 29 EPIDERMAL GROWTH FACTOR - like repeat sequences (EGF repeats) and five ANKYRIN REPEATS. It functions as a receptor for SERRATE-JAGGED PROTEINS and Delta1 (DLK1) protein to control cell fate determination.

**Tree locations:**

Proto-Oncogene Proteins D12.776.624.664.700.815  
Receptors, Notch D12.776.543.750.725.937  
D12.776.930.770.937

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Receptors for Activated C Kinase

Receptors for PROTEIN KINASE C that consist of seven WD40 REPEATS. They function in a wide variety of cellular and physiologic processes including the assembly of signaling complexes, protein translation, cell growth and proliferation, APOPTOSIS, and MUSCARINIC RECEPTOR transport. RACK1 depends on protein kinase C activity to translocate from the perinuclear region to the cell periphery and associates with the plasma membrane through interactions with KERATIN-1 and INTEGRIN BETA-1.

**Tree locations:**

Receptors, Cytoplasmic and Nuclear D12.776.826.313

### Receptors, CXCR6

CXCR receptors that are specific for CHEMOKINE CXCL16. They are expressed by lymphoid tissues, activated T-cells, and also function as co-receptors for SIMIAN IMMUNODEFICIENCY VIRUSES; HIV-2; and HIV-1 infection of MACROPHAGES.

**Tree locations:**

Receptors, CXCR D12.776.543.750.695.160.500.625  
D12.776.543.750.705.852.125.500.625  
Receptors, Virus D12.776.543.750.830.475

### Receptors, Enterotoxin

Guanylate cyclase-coupled receptors that bind bacterial ENTEROTOXINS, as well as the endogenous peptides guanylin and uroguanylin. Ligand binding stimulates production of CYCLIC GMP by EPITHELIAL CELLS of the intestinal lumen, altering barrier permeability and mucus secretion. Mutations in the gene (GUCY2C) encoding this receptor are associated with some cases of hereditary diarrhea (Diarrhea 6) and MECONIUM ILEUS.

**Tree locations:**

Receptors, Guanylate Cyclase-Coupled D08.811.520.650.600.500.250  
D12.776.543.750.700.250  
Receptors, Peptide D12.776.543.750.750.025

### Receptors, Histamine H4

G-Protein-coupled histamine receptors that are expressed primarily in BONE MARROW as well as in peripheral tissues and organs. They are expressed by immune cells that include EOSINOPHILS; T-CELLS; DENDRITIC CELLS; and MAST CELLS.

**Tree locations:**

Receptors, G-Protein-Coupled D12.776.543.750.695.358  
Receptors, Histamine D12.776.543.750.670.450.750  
D12.776.543.750.720.480.750

### Receptors, Kisspeptin-1

G protein coupled receptors for the C-terminally amidated peptide of KISSPEPTIN-1. KISS1R plays an essential role in sexual development during puberty through its regulation of GONADOTROPIN-released hormones.

**Tree locations:**

Receptors, G-Protein-Coupled D12.776.543.750.695.022  
Receptors, Peptide D12.776.543.750.750.013

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Recidivism

Repeated problem behavior.

**Tree locations:**

Crime I01.198.240.679

### Refugee Camps

Areas of shelter and protection for people who leave their own country or habitual residence to escape danger, persecution, or disaster.

**Tree locations:**

Housing J03.340.825

### Regulatory-Associated Protein of mTOR

An adaptor protein component of the MECHANISTIC TARGET OF RAPAMYCIN COMPLEX 1 that forms stoichiometric complexes with TOR KINASES, which it negatively regulates. It functions as a positive regulator of RIBOSOMAL PROTEIN S6 KINASES.

**Tree locations:**

Adaptor Proteins, Signal Transducing D12.644.360.024.324

D12.776.157.057.157

D12.776.476.024.419

Mechanistic Target of Rapamycin Complex 1 D05.500.337.500

D08.811.913.696.620.682.700.931.500.500

D12.776.476.925.500.500

### Remyelination

The reforming of the MYELIN SHEATH around AXONS following loss due to injury or DEMYELINATING DISEASES.

**Tree locations:**

Nerve Regeneration G11.561.585.250

G16.762.611.250

### Resonance Frequency Analysis

A non-invasive assessment of the stability of tissue-embedded prosthetic devices such as dental implants.

**Tree locations:**

Diagnostic Techniques and Procedures E01.370.502

Prosthodontics H02.163.876.708.500

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **rhoC GTP-Binding Protein**

A rho GTP-binding protein that is prenylated (see PROTEIN PRENYLATION) at its C-terminus and cycles between the cytoplasm and plasma membrane, linking receptor signaling pathways with assembly of FOCAL ADHESIONS; STRESS FIBERS; and contractile ring formation during CYTOKINESIS. It is overexpressed in proliferating and metastatic tumor cells.

**Tree locations:**

rho GTP-Binding Proteins D08.811.277.040.330.300.400.700.650  
D12.644.360.525.700.650  
D12.776.157.325.515.700.650  
D12.776.476.525.700.650

### **Rice Bran Oil**

OIL extracted from the hard outer brown layer of rice bran after the husk has been removed.

**Tree locations:**

Plant Oils D10.627.700.819  
D20.215.784.750.784

### **Risk Evaluation and Mitigation**

Strategies required by the US Food and Drug Administration (FDA) Amendments Act of 2007 when a question exists as to whether the benefits of a drug outweigh its risks. These constitute a safety plan with several potential components, including a medication guide, a communication plan, elements to ensure safe use and an implementation system to help guide the prescribers, pharmacists and patients.

**Tree locations:**

Risk Assessment N06.850.505.715.750  
Risk Management N04.452.871.758

### **Rosanae**

A suborder of flowering plants of the class MAGNOLIOPSIDA which comprises two major groups, Eurosids I and II.

**Tree locations:**

Magnoliopsida B01.650.940.800.575.912.250.859

### **Rumination, Cognitive**

Obsessive thinking about an idea, situation, or choice.

**Tree locations:**

Cognition F02.463.188.878

### **Rumination, Digestive**

Regurgitation and re-chewing of previously swallowed food in RUMINANTS.

**Tree locations:**

Digestion G10.261.190.400

## New MeSH Headings for 2018

*Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations*

### **RUNX1 Translocation Partner 1 Protein**

A transcriptional co-repressor that contains a MYND-type zinc finger (MYND DOMAIN) at its C-terminal and functions as a homo-oligomer. It associates with DNA-binding transcription factors, other repressor proteins, and HISTONE ACETYLTRANSFERASES to repress expression of genes involved in cell growth and differentiation such as MATRIX METALLOPROTEINASE 7 and TCF12. A CHROMOSOMAL TRANSLOCATION involving the RUNX1T1 and CORE BINDING FACTOR ALPHA 2 SUBUNIT (RUNX1) genes frequently occurs in cells of leukemia patients; the resulting fusion protein (AML1-ETO or RUNX1-RUNX1T1) plays a critical role in leukemogenesis.

**Tree locations:**

Co-Repressor Proteins D12.776.930.780.625.575

Proto-Oncogene Proteins D12.776.624.664.700.936

### **S100 Calcium Binding Protein A6**

An S100 calcium binding protein that contains two EF HAND MOTIFS and plays a role as a calcium sensor and modulator for many cellular processes such as CELL CYCLE progression; CELL MOTILITY and reorganization of the ACTIN CYTOSKELETON. Its expression is induced by growth factors and it is overexpressed in patients with ACUTE MYELOID LEUKEMIA.

**Tree locations:**

Cell Cycle Proteins D12.776.167.481

S100 Proteins D12.776.157.125.750.532

### **S100 Calcium Binding Protein A7**

An S100 calcium binding protein that contains two EF HAND MOTIFS and also binds zinc. It is secreted via a non-classical secretory pathway and expressed by KERATINOCYTES and epithelial cells of the tongue. It has antimicrobial and immunomodulatory activities and is highly expressed in the skin of patients with PSORIASIS, as well as in bladder and skin epithelial carcinomas.

**Tree locations:**

S100 Proteins D12.776.157.125.750.563

### **Salpingo-oophorectomy**

Combined surgical resection of the fallopian tube and the ovary.

**Tree locations:**

Ovariectomy E04.270.282.685.500

E04.950.165.685.500

E04.950.300.680.500

Salpingectomy E04.950.300.715.500

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### **SAM Domain and HD Domain-Containing Protein 1**

A host restriction triphosphorylhydrolase and dNTPase that contains an N-terminal STERILE ALPHA MOTIF and central, conserved ASPARTATE and HISTIDINE (HD) domain. It acts on single-stranded RNA, yielding deoxynucleosides and triphosphate, and functions in anti-viral defense through its dNTPase activity, reducing cellular dNTP levels below what is required for retroviral reverse transcription in DENDRITIC CELLS and MYELOID CELLS. It also has RIBONUCLEASE activity which blocks early replication of retroviruses such as HIV-1. Mutations in the SAMHD1 gene are associated with type 5 Aicardi-Goutieres syndrome (AGS5) and type 2 chilblain LUPUS (CHBL2).

**Tree locations:**

Acid Anhydride Hydrolases D08.811.277.040.725  
Ribonucleases D08.811.277.352.700.843

### **Sao Tome and Principe**

Islands in the Gulf of Guinea, just north of the Equator, and west of Gabon.

**Tree locations:**

Africa, Central Z01.058.290.100.690  
Atlantic Islands Z01.639.040.847

### **SAP90-PSD95 Associated Proteins**

Proteins expressed at SYNAPSES throughout the brain where they interact with different scaffolding proteins, cytoskeletal proteins, and signaling factors to assemble functional multiprotein complexes.

**Tree locations:**

Intracellular Signaling Peptides and Proteins D12.644.360.700  
D12.776.476.700  
Nerve Tissue Proteins D12.776.631.703

### **Scholarly Communication**

System through which research and other scholarly writings are created, evaluated for quality, disseminated to the scholarly community, and preserved for future use. It includes both formal means of communication, such as publication in peer-reviewed journals, and informal channels, such as electronic listservs. (from Association of College & Research Libraries, "Principles and Strategies for the Reform of Scholarly Communication 1," 2003)

**Tree locations:**

Communication L01.143.865  
Social Networking L01.143.910.500

### **Science in Literature**

Literary works whose subject matter is science or about the profession of science and related areas.

**Tree locations:**

Literature K01.517.864

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Science in the Arts

Depiction of scientific issues or themes via the arts including visual, oral, or written forms of expression.

**AN: coordinate IM with scientific aspect (IM) + specific art heading (IM)**

**Tree locations:**

Art K01.093.796

### Scientific Experimental Error

Deviation or aberration in the practical implementation of standard empirical procedures, distinct from MEDICAL ERRORS and SCIENTIFIC MISCONDUCT.

**AN: for intentional falsification of scientific data, use SCIENTIFIC MISCONDUCT**

**Tree locations:**

Data Accuracy E05.318.780.725.250.500

N05.715.360.300.202.500

### Second Harmonic Generation Microscopy

A microscopic imaging technique that takes advantage of the process of harmonic generation that occurs when photons interact to generate new photons of a different wavelength. In second harmonic generation, two photons of the same wavelength and frequency, such as from a LASER, interact inside a medium and are converted to a photon of twice the frequency and half of the wavelength of the two incident photons. The light signals captured are used to produce images that are dependent on the unique optical properties of the material.

**Tree locations:**

Nonlinear Optical Microscopy E01.370.350.515.717.500

E05.595.717.500

### Self-Directed Learning as Topic

Process in which individuals take the initiative, in diagnosing their learning needs, formulating learning goals, identifying resources for learning, choosing and implementing learning strategies and evaluating learning outcomes (Knowles, 1975)

**Tree locations:**

Learning F02.463.425.818

Teaching I02.903.771

### Self-Management

Individual's ability to manage the symptoms, treatment, physical and psychosocial consequences and lifestyle changes inherent in living with a chronic condition. Efficacious self-management encompasses ability to monitor one's condition and to effect the cognitive, behavioral, and emotional responses necessary to maintain a satisfactory quality of life.

**Tree locations:**

Rehabilitation N02.421.784.760

## New MeSH Headings for 2018

*Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations*

### **Semantic Web**

A framework for development and promotion of common data formats and exchange protocols linked in a way that can be read directly by computers. Semantic Web is a platform for sharing and reusing data across application, enterprise, and community boundaries, by linking concepts rather than just documents.

***Tree locations:***

Computing Methodologies L01.224.740

### **Serine Peptidase Inhibitor Kazal-Type 5**

A secreted serine peptidase inhibitor that consists of 15 KAZAL MOTIFS and inhibits KALLIKREINS KLK5, KLK7, and KLK14 as well as TRYPSIN. It plays important roles in protecting MUCOSA against infection and inflammation, and in maintaining the integrity of the skin. Mutations in the SPINK5 gene are associated with NETHERTON SYNDROME.

***Tree locations:***

Serine Peptidase Inhibitors, Kazal Type D12.644.822.750.250  
D12.776.645.688.250

### **Serine Peptidase Inhibitors, Kazal Type**

A family of serine peptidase inhibitors that occur in animals, some single-cell eukaryotes, and higher plants. They contain variable numbers of KAZAL MOTIFS and inhibit SERINE ENDOPEPTIDASES such as ACROSIN and TRYPSIN.

***Tree locations:***

Proteinase Inhibitory Proteins, Secretory D12.644.822.750  
D12.776.645.688  
Serine Proteinase Inhibitors D27.505.519.389.745.800.562

### **Serum Albumin, Human**

Serum albumin from humans. It is an essential carrier of both endogenous substances, such as fatty acids and BILIRUBIN, and of XENOBITOICS in the blood.

***Tree locations:***

Serum Albumin D12.776.034.841.603  
D12.776.124.727.906

### **Sexual Health**

A state of physical, emotional, mental and social well-being in relation to SEXUALITY, according to the World Health Organization.

***Tree locations:***

Health N01.400.663

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Shift Work Schedule

Job schedule in which working hours deviate from the standard hours (e.g., evening shift, night shift or rotating shift).

**Tree locations:**

Personnel Staffing and Scheduling I03.946.225.250  
N04.452.677.650.250

### Short Chain Dehydrogenase-Reductases

A large family of oxidoreductases that are predominantly NAD- or NADP-dependent and 250 to 350 amino acids in length. They generally consist of two PROTEIN DOMAINS: A catalytic N-terminal domain that binds the substrate, and a C-terminal coenzyme-binding domain.

**Tree locations:**

NAD (+) and NADP (+) Dependent Alcohol Oxidoreductases D08.811.682.047.820.900

### Short Stature Homeobox Protein

A homeodomain protein that is highly expressed in the nuclei of skeletal muscle, bone marrow, and osteogenic cells and has critical roles in growth and development. Its gene resides within PSEUDOAUTOSOMAL REGION 1 of X and Y chromosomes and mutations are associated with several growth disorders including LERI-WEIL SYNDROME; LANGER MESOMELIC DYSPLASIA; and SHORT STATURE, IDIOPATHIC, X-LINKED.

**Tree locations:**

Homeodomain Proteins D12.776.260.400.859

### Sida Plant

A genus of flowering plants in the family of mallows (MALVACEAE). Their common name is fanpetals.

**Tree locations:**

Malvaceae B01.650.940.800.575.912.250.700.777

### Sint Maarten

Dutch part of the island of Saint Martin in the Caribbean Sea; Sint Maarten lies east of the US Virgin Islands.

**Tree locations:**

Caribbean Region Z01.107.084.450

### Sleep Latency

The time it takes to reach REM SLEEP. It is typically measured by POLYSOMNOGRAPHY or EEG as a part of various sleep pattern tests (e.g., multiple sleep latency test).

**Tree locations:**

Sleep F02.830.855.765  
G11.561.803.377

## New MeSH Headings for 2018

*Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations*

### **Smokers**

Persons with a history or habit of SMOKING.

***Tree locations:***

Persons M01.808

### **Smoking Devices**

Gadgets, utensils, apparatuses or instruments used for SMOKING.

***Tree locations:***

Manufactured Materials J01.637.767

### **Smoking Pipes**

Devices used for SMOKING which convey SMOKE directly into the mouth.

***Tree locations:***

Smoking Devices J01.637.767.750

### **Smoking Prevention**

Efforts directed at preventing SMOKING of TOBACCO and non-tobacco products.

***Tree locations:***

Health Education I02.233.332.812  
N02.421.726.407.840

### **Smoking Reduction**

A decrease in the incidence and frequency of SMOKING. Smoking reduction differs from SMOKING CESSATION in that the smoker continues to smoke albeit at a lesser frequency without quitting.

***Tree locations:***

Health Behavior F01.145.488.738  
Smoking F01.145.805.157

### **Smoking Water Pipes**

Pipes for smoking tobacco, cannabis, and other substances, in which smoke is drawn through water. Do not confuse with SMOKING PIPES.

***Tree locations:***

Smoking Pipes J01.637.767.750.500

### **Smoking, Non-Tobacco Products**

SMOKING of non-TOBACCO (or NICOTINE-containing) substances.

***Tree locations:***

Smoking F01.145.805.250

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Smoldering Multiple Myeloma

An asymptomatic and slow-growing PLASMA CELL dyscrasia characterized by presence of MYELOMA PROTEINS and clonal bone marrow plasma cells without end-organ damage (e.g., renal impairment). It is distinguished from MONOCLONAL GAMMOPATHY OF UNDETERMINED SIGNIFICANCE by a much higher risk of progression to symptomatic MULTIPLE MYELOMA.

**Tree locations:**

Hypergammaglobulinemia C15.378.147.542.820  
C20.683.460.820  
Paraproteinemias C15.378.147.780.838  
C20.683.780.838  
Precancerous Conditions C04.834.794

### Sodium-Hydrogen Exchanger 1

A sodium-hydrogen antiporter expressed by many cell types, especially on the basolateral surfaces of EPITHELIAL CELLS. It functions through an inward sodium ion chemical gradient to eliminate acids (protons) generated by metabolism and regulate intracellular pH. It is highly sensitive to AMILORIDE.

**Tree locations:**

Sodium-Hydrogen Exchangers D12.776.157.530.450.162.775.500  
D12.776.157.530.937.703.500  
D12.776.543.550.190.775.500  
D12.776.543.585.450.162.775.500  
D12.776.543.585.937.828.500

### Sodium-Hydrogen Exchanger 3

A sodium-hydrogen antiporter expressed primarily by EPITHELIAL CELLS in the kidneys, it localizes to the apical membrane of the PROXIMAL KIDNEY TUBULE, where it functions in sodium and water reabsorption and possibly calcium homeostasis. It also is expressed in heart, brain, and lung tissues and is resistant to AMILORIDE inhibition.

**Tree locations:**

Sodium-Hydrogen Exchangers D12.776.157.530.450.162.775.750  
D12.776.157.530.937.703.750  
D12.776.543.550.190.775.750  
D12.776.543.585.450.162.775.750  
D12.776.543.585.937.828.750

### Solitary Kidney

Either a single or a single functioning kidney due to NEPHRECTOMY, birth defects or other kidney diseases.

**Tree locations:**

Pathological Conditions, Anatomical C23.300.925  
Urogenital Abnormalities C12.706.846  
C13.351.875.846

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Solute Carrier Family 22 Member 5

A high-affinity, ATP-binding, co-transporter for CARNITINE that is highly expressed in kidney, skeletal muscle, heart, and placental tissues. It transports one sodium ion with one carnitine molecule. It has a lower affinity for other organic cations and transports them independently of sodium. Mutations in the SLC22A5 gene are associated with systemic carnitine deficiency.

**Tree locations:**

Organic Cation Transport Proteins D12.776.157.530.450.250.812.750  
D12.776.157.530.937.612.750  
D12.776.543.585.450.250.812.750  
D12.776.543.585.937.701.750

### Solute Carrier Organic Anion Transporter Family Member 1B3

A sodium-independent organic anion transporter that functions in the uptake of various drugs and endogenous compounds including ESTRADIOL; TAUROCHOLATE; LEUKOTRIENE C<sub>4</sub>; and METHOTREXATE. It also functions in clearing BILE ACIDS and organic anions from the liver. Mutations in the SLCO1B3 gene are associated with Rotor Type HYPERBILIRUBINEMIA.

**Tree locations:**

Organic Anion Transporters, Sodium-Independent D12.776.157.530.450.074.500.781.875  
D12.776.543.585.450.074.500.875.875  
Solute Carrier Proteins D12.776.157.530.937.905  
D12.776.543.585.937.950

### Sp7 Transcription Factor

An Sp transcription factor that contains three CYS<sub>2</sub>-HIS<sub>2</sub> ZINC FINGERS. It binds to GC RICH SEQUENCES and performs an essential function in regulating gene expression for differentiation of OSTEOBLASTS. Mutations in the SP7 gene are associated with type 12 OSTEOGENESIS IMPERFECTA.

**Tree locations:**

Sp Transcription Factors D12.776.260.522.750.937  
D12.776.930.375.750.937

### Spastin

An AAA ATPase that binds and severs MICROTUBULES. It specifically recognizes and cuts polyglutamylated microtubules with short polyglutamate tails to promote reorganization of cellular microtubule arrays and the release of microtubules from the CENTROSOME following nucleation. It is critical for the biogenesis and maintenance of complex microtubule arrays in AXONS; SPINDLE APPARATUS; and CILIA. Mutations in the spastin gene (SPAST) are associated with type 4 of HEREDITARY SPASTIC PARAPLEGIA.

**Tree locations:**

ATPases Associated with Diverse Cellular Activities D08.811.277.040.013.500.500  
D08.811.277.040.025.024.500  
D12.776.157.025.750.500  
Microtubule-Associated Proteins D12.776.220.600.450.465  
D12.776.631.560.480

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Sphincterotomy

Surgical incision of a sphincter.

**Tree locations:**

Myotomy E04.515.750

### Spotted Fever Group Rickettsiosis

A group of arthropod-borne diseases caused by spotted fever bio-group members of RICKETTTSIA. They are characterized by fever, headache, and petechial (spotted) rash.

**AN: coordinate IM with Rickettsia species if pertinent, but note specifics**

**Tree locations:**

Rickettsia Infections C01.252.400.780.790.750

Tick-Borne Diseases C01.252.400.825.887

### Stakeholder Participation

A process between an entity and those groups or individuals potentially or actually impacted by the actions of that entity over a range of activities and approaches.

**Tree locations:**

Human Activities I03.743

Politics I01.738.805

### Staphylococcus capitis

A COAGULASE-negative species of STAPHYLOCOCCUS found on the skin and MUCOUS MEMBRANE of warm-blooded animals. Similar to STAPHYLOCOCCUS EPIDERMIDIS and STAPHYLOCOCCUS HAEMOLYTICUS, it is a nosocomial pathogen in NICU settings. Subspecies include generally antibiotic susceptible and BIOFILM negative capitis and antibiotic resistant and biofilm positive urealyticus isolates.

**AN: infection: coordinate IM with STAPHYLOCOCCAL INFECTIONS (IM)**

**Tree locations:**

Staphylococcus B03.300.390.400.800.750.222

B03.353.500.750.750.222

B03.510.100.750.750.222

B03.510.400.790.750.222

### Stereolithography

A 3D printing technology where a computer-controlled moving laser beam is used to build up the required structure, layer by layer, from liquid POLYMERS that harden on contact with laser light (photopolymerization).

**Tree locations:**

Printing, Three-Dimensional J01.897.564.500

L01.224.108.150.500.500

L01.296.110.150.500.500

## New MeSH Headings for 2018

*Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations*

### **Strobilurins**

Benzene or pyrimidine derivatives of methacrylic acid that block the Qo site of CYTOCHROME B. They are widely used as agricultural fungicides.

**Tree locations:**

Methacrylates D02.241.081.069.600.575

### **Sublimation, Chemical**

The process of solids transforming into a gaseous state or vice versa, without passing through a liquid state.

**Tree locations:**

Phase Transition G01.645.563  
G02.734.700

### **Substance Abuse, Oral**

Abuse, overuse, or misuse of a substance by ingestion.

**Tree locations:**

Substance-Related Disorders C25.775.814  
F03.900.809

### **Sugars**

Short chain carbohydrate molecules that have hydroxyl groups attached to each carbon atom unit with the exception of one carbon that has a doubly-bond aldehyde or ketone oxygen. Cyclical sugar molecules are formed when the aldehyde or ketone groups respectively form a hemiacetal or hemiketal bond with one of the hydroxyl carbons. The three dimensional structure of the sugar molecule occurs in a vast array of biological and synthetic classes of specialized compounds including AMINO SUGARS; CARBASUGARS; DEOXY SUGARS; SUGAR ACIDS; SUGAR ALCOHOLS; and SUGAR PHOSPHATES.

**Tree locations:**

Carbohydrates D09.947

### **Sunflower Oil**

Oil derived from the seeds of SUNFLOWER plant, Helianthus.

**Tree locations:**

Plant Oils D20.215.784.750.910

### **Suprachiasmatic Nucleus Neurons**

Neurons of the SUPRACHIASMATIC NUCLEUS.

**Tree locations:**

Neurons A08.675.947  
A11.671.947  
Suprachiasmatic Nucleus A08.186.211.464.497.342.625.500  
A08.186.211.730.317.357.342.625.500

## New MeSH Headings for 2018

*Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations*

### **Survivorship**

Functional, psychosocial, emotional and spiritual domains and needs of patients and families following life-threatening disease or events.

**Tree locations:**

Emotional Adjustment F01.058.144.500

### **Sustainable Growth**

Achievement of an economic system that can continue to grow for the foreseeable future.

**Tree locations:**

Technology, Industry, and Agriculture J01.839

### **Symbolic Interactionism**

Theoretical approach to social processes with a fundamental concern with power phenomena. There is a focus on the analysis of culture, the influence of Foucault, and the development of feminist perspectives.

**Tree locations:**

Social Theory F02.970.500

Symbolism K01.752.798.750

### **Synovectomy**

Surgical removal of the SYNOVIAL MEMBRANE.

**Tree locations:**

Orthopedic Procedures E04.555.640

### **T-Cell Acute Lymphocytic Leukemia Protein 1**

A basic helix-loop-helix transcription factor that plays a critical role in HEMATOPOIESIS and as a positive regulator in the differentiation of ERYTHROID CELLS. Chromosome translocations involving the TAL-1 gene are associated with T-CELL ACUTE LYMPHOCYTIC LEUKEMIA.

**Tree locations:**

Basic Helix-Loop-Helix Transcription Factors D12.776.260.103.829

D12.776.930.125.829

Proto-Oncogene Proteins D12.776.624.664.700.960

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### T-Cell Intracellular Antigen-1

An RNA-binding protein characterized by three RNA RECOGNITION MOTIFS. It binds to AU RICH ELEMENTS in the 3'-untranslated regions of mRNA and regulates alternative pre-RNA splicing and mRNA translation; it may also function in APOPTOSIS. Mutations in the TIA-1 gene are associated with WELANDER DISTAL MYOPATHY.

**Tree locations:**

Poly(A)-Binding Proteins	D12.776.157.725.452.750
	D12.776.664.962.452.750
RNA Recognition Motif Proteins	D12.776.157.725.813.937
	D12.776.664.962.813.937
RNA Splicing Factors	D12.776.157.725.829.875
	D12.776.664.962.829.875

### T-Lymphoma Invasion and Metastasis-inducing Protein 1

A Rho guanine nucleotide exchange factor that consists of two pleckstrin homology domains flanking central Ras-binding, Dbl-homology (DH) and PDZ domains. It stimulates GTP-GDP exchange of rho-like GTPases such as RAC1 PROTEIN; CDC42 PROTEIN; and RHOA PROTEIN, and functions to link extracellular signals to remodeling of the CYTOSKELETON for CELL ADHESION and CELL MOVEMENT.

**Tree locations:**

Guanine Nucleotide Exchange Factors	D12.644.360.325.300.850
	D12.776.476.325.300.850

### Tetratricopeptide Repeat

A structural motif present in a variety of proteins that mediates protein-protein interactions and assembly of multiprotein complexes. It consists of 3 to 16 tandem repeats of 34 amino acids, mostly of small and large hydrophobic residues, that form ALPHA-HELIX pairs.

**Tree locations:**

Amino Acid Motifs	G02.111.570.820.709.275.500.920
Protein Interaction Domains and Motifs	G02.111.570.820.709.275.750.500.829
Repetitive Sequences, Amino Acid	G02.111.570.060.720.394
	G02.111.570.820.709.275.875.394

### Therapeutic Index

An indicator of the benefits and risks of treatment.

**Tree locations:**

Treatment Outcome	E01.789.800.665
	N04.761.559.590.800.713

### Therapeutic Index, Drug

The ratio of the dose that produces toxicity to the dose that produces a clinically desired or effective response.

**Tree locations:**

Therapeutic Index	E01.789.800.665.500
	N04.761.559.590.800.713.500

## New MeSH Headings for 2018

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### THP-1 Cells

A human leukemia monocytic cell line derived from a patient with LEUKEMIA, MONOCYTIC, ACUTE. It is used as a model to study the function of MONOCYTES and MACROPHAGES, their signaling pathways, nutrient and drug transport.

**AN: almost always NIM with no subheadings; check HUMAN; do not routinely add LEUKEMIA, MONOCYTIC, ACUTE**

**Tree locations:**

Cell Line, Tumor A11.251.210.190.815  
A11.251.860.180.815

### Thyroid Nuclear Factor 1

A homeobox protein and transcription factor that localizes to the cell nucleus where it activates expression of thyroid specific genes such as THYROGLOBULIN and the THYROTROPIN RECEPTOR. It is critical for maintaining thyroid tissue in a differentiated state and also plays a role in lung development. Mutations in the NKX2-1 gene are associated with CHOREA, BENIGN HEREDITARY.

**Tree locations:**

Homeodomain Proteins D12.776.260.400.871  
Nuclear Proteins D12.776.660.823  
Transcription Factors D12.776.930.888

### Tobacco Smoking

The process of SMOKING specific to TOBACCO.

**Tree locations:**

Tobacco Use F01.145.958.875

### Tobacco, Waterpipe

Flavored tobacco whose vapor or smoke is passed through a water basin before inhalation.

**Tree locations:**

Tobacco Products J01.637.767.844.750

### Toxin-Antitoxin Systems

Mechanisms that allow bacteria and archaea to rapidly adapt to changing environmental conditions via a toxin, produced during adverse conditions, that inhibits a specific vital process, and a partner antitoxin that blocks the effects of the toxin, under normal growth conditions.

**Tree locations:**

Microbiological Phenomena G06.773

## New MeSH Headings for 2018

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### Transactinide Series Elements

A series of radioactive elements with atomic numbers greater than 103. Current members include Rutherfordium, atomic number 104, to and including Ununoctium, atomic number 118. All members are synthetic with short half-lives.

**Tree locations:**

Elements, Radioactive D01.268.271.935  
D01.496.749.305.935

### Transcription Factor 4

A basic helix-loop-helix leucine zipper transcription factor that functions in neuronal CELL DIFFERENTIATION. It dimerizes with other bHLH transcription factors and activates transcription through binding to E-BOX ELEMENTS containing 5'-ACANNTGT-3' or 5'-CCANNTGG-3' sequences. Mutations in the TCF-4 gene are associated with Pitt-Hopkins Syndrome, a severe developmental disorder.

**Tree locations:**

Basic Helix-Loop-Helix Leucine Zipper Transcription Factors D12.776.260.108.092.937  
D12.776.930.125.500.937

### Transfusion-Related Acute Lung Injury

A rare but serious transfusion-related reaction in which fluid builds up in the lungs unrelated to excessively high infusion rate and/or volume (TRANSFUSION-ASSOCIATED CIRCULATORY OVERLOAD). Signs of Transfusion-Related Acute Lung Injury include pulmonary secretions; hypotension; fever; DYSPNEA; TACHYPNEA; TACHYCARDIA; and CYANOSIS.

**Tree locations:**

Acute Lung Injury C08.381.520.500.500  
Transfusion Reaction C15.378.962.500  
C20.920.500

### Transplantation, Haploidentical

Transplantation between individuals who share a partial haplotype match.

**Tree locations:**

Transplantation, Homologous E04.936.864.350

### Travel-Related Illness

Health problems associated with TRAVEL.

**Tree locations:**

Signs and Symptoms C23.888.914  
Travel I03.883.855

## New MeSH Headings for 2018

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### Treatment Adherence and Compliance

Extent to which the patient follows prescribed treatment such as keeping APPOINTMENTS AND SCHEDULES and MEDICATION ADHERENCE for desired therapeutic outcome. It implies active responsibility shared by patient and health care providers.

**Tree locations:**

Attitude to Health F01.100.150.750  
N05.300.150.800  
Health Behavior F01.145.488.887

### Triggering Receptor Expressed on Myeloid Cells-1

An approximately 230 amino acid membrane glycoprotein characterized by an IMMUNOGLOBULIN V-SET DOMAIN in its N-terminal half. It is expressed by MONOCYTES and NEUTROPHILS in response to INFLAMMATION related to bacterial and fungal infections. It triggers the release of pro-inflammatory CHEMOKINES; CYTOKINES, and expression of cell activation markers and is a critical regulator of SEPTIC SHOCK.

**Tree locations:**

Membrane Glycoproteins D12.776.395.550.919  
D12.776.543.550.919  
Receptors, Immunologic D12.776.543.750.705.985

### Triose Sugar Alcohols

Sugar alcohol molecules that contain three carbons.

**Tree locations:**

Sugar Alcohols D02.033.800.875  
D09.853.875

### Tripartite Motif-Containing Protein 28

A tripartite motif protein consisting of an N-terminal RING finger, two B-box type ZINC FINGERS, and C-terminal PHD domain. It functions as a transcriptional repressor by associating with Kruppel-association box domain (KRAB domain) transcription factors and has E3-SUMO-ligase activity towards itself and also sumoylates INTERFERON REGULATORY FACTOR-7 to reduce its activity as a transcriptional activator. It can also function as a ubiquitin protein ligase towards TUMOR SUPPRESSOR PROTEIN P53.

**Tree locations:**

Repressor Proteins D12.776.260.703.675  
D12.776.930.780.911  
Tripartite Motif Proteins D12.776.934.875  
Ubiquitin-Protein Ligases D08.811.464.938.750.782

## New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

### Trisomy 13 Syndrome

A chromosome disorder associated with TRISOMY of all or part of CHROMOSOME 13. Clinical manifestations include CONGENITAL HEART DEFECTS (e.g., PATENT DUCTUS ARTERIOSUS), facial malformations (e.g., CLEFT LIP; CLEFT PALATE; COLOBOMA; MICROPHthalmIA); HYPOTONIA, digit malformations (e.g., POLYDACTYLY or SYNDACTYLY), and SEIZURES and severe INTELLECTUAL DISABILITY associated with NERVOUS SYSTEM MALFORMATIONS.

#### Tree locations:

Abnormalities, Multiple	C16.131.077.919
Chromosome Disorders	C16.131.260.923
	C16.320.180.923
Heart Defects, Congenital	C14.240.400.970
	C14.280.400.970
	C16.131.240.400.965
Intellectual Disability	C10.597.606.643.835

### Trisomy 18 Syndrome

A chromosome disorder associated with TRISOMY of all or part of CHROMOSOME 18. Clinical manifestations include INTRAUTERINE GROWTH RETARDATION; CLEFT PALATE; CONGENITAL HEART DEFECTS; MICROCEPHALY; MICROGNATHIA and clenched fists with overlapping fingers. Most affected fetuses do not survive to birth. Those who survive through their first year often have severe INTELLECTUAL DISABILITY.

#### Tree locations:

Abnormalities, Multiple	C16.131.077.929
Chromosome Disorders	C16.131.260.932
	C16.320.180.932
Heart Defects, Congenital	C14.240.400.975
	C14.280.400.975
	C16.131.240.400.968

### TRPA1 Cation Channel

A highly conserved, non-selective TRP cation channel that contains 14-17 ANKYRIN REPEATS. It functions in cold sensation and NOCICEPTION of endogenous inflammatory factors and volatile irritants. TRPA1 is also activated by CANNABINOIDS and may play a role in sound perception by hair cells of the inner ear.

#### Tree locations:

Transient Receptor Potential Channels	D12.776.157.530.400.901.250
	D12.776.543.585.400.901.250

### TRPC6 Cation Channel

A non-selective, calcium permeant TRPC cation channel that contains four ANKYRIN REPEATS and is activated by DIACYLGLYCEROL independently of PROTEIN KINASE C. It is expressed in placenta, lung, spleen, ovary and the small intestine, as well as by PODOCYTES in the kidney glomerulus. Mutations in the TRPC6 gene are associated with FOCAL SEGMENTAL GLOMERULOSCLEROSIS type 2.

#### Tree locations:

Calcium Channels	D12.776.157.530.400.150.850
	D12.776.543.550.450.150.900
	D12.776.543.585.400.150.850
TRPC Cation Channels	D12.776.157.530.400.901.500.500
	D12.776.543.585.400.901.500.500

# New MeSH Headings for 2018

Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations

## Tubular Sweat Gland Adenomas

Various tubular forms of benign tumors of the SWEAT GLAND with glandular differentiation. Common types include syringocystadenoma papilliferum of the head and neck; erosive adenomatosis of the nipple and hidradenoma papilliferum of the vulva area. Hidradenoma papilliferum may be derived from mammary-like glands of the vulva whereas erosive adenomatosis is of mammary gland origin.

**AN: coordinate IM with SWEAT GLAND NEOPLASMS (IM)**

**Tree locations:**

Adenoma, Sweat Gland C04.557.470.035.175.900  
C04.557.470.550.175.900

## TWEAK Receptor

A receptor for TWEAK cytokine that is highly expressed by cells in the heart, placenta, and kidney. It plays a role in ANGIOGENESIS and the proliferation of endothelial cells; it may also modulate cellular adhesion to the extracellular matrix.

**Tree locations:**

Receptors, Tumor Necrosis Factor D12.776.543.750.705.852.760.974

## Ubiquitin-Specific Peptidase 7

A ubiquitinyl hydrolase that deubiquitinates several proteins with critical roles in DNA REPAIR, cell growth, and survival, including TUMOR SUPPRESSOR PROTEIN P53; MDM-2 PROTEIN; and PTEN PHOSPHOHYDROLASE. It also stabilizes herpesvirus 1 trans-acting transcriptional protein VMW110 during HSV-1 infection, contributing to its function as a TRANS-ACTIVATOR.

**Tree locations:**

Ubiquitin Thiolesterase D08.811.037.500.500  
D08.811.277.352.897.850.500  
Ubiquitin-Specific Proteases D08.811.037.750.750  
D08.811.277.656.300.887.875

## Undifferentiated Connective Tissue Diseases

Diseases that exhibit signs and symptoms suggestive of a connective tissue disease that do not fulfill clinical or diagnostic criteria for any one defined disease but overlap with criteria of multiple such diseases. Commonly overlapping diseases include systemic autoimmune connective tissue diseases such as RHEUMATOID ARTHRITIS; SYSTEMIC LUPUS ERYTHEMATOSUS; and SYSTEMIC SCLEROSIS.

**Tree locations:**

Autoimmune Diseases C20.111.904  
Connective Tissue Diseases C17.300.849

## Vaccination Coverage

Rate of VACCINATION as defined by GEOGRAPHY and or DEMOGRAPHY.

**Tree locations:**

Preventive Health Services N02.421.726.930  
Vaccination N02.421.726.758.310.890.750

## New MeSH Headings for 2018

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### Valosin Containing Protein

A highly-conserved AAA ATPase that functions in the biogenesis of the transitional ENDOPLASMIC RETICULUM and fragmentation and reassembly of the GOLGI APPARATUS during MITOSIS. It also functions in a complex with UFD1L and NPLOC4 proteins to export misfolded ubiquitinated proteins from the endoplasmic reticulum and outer mitochondrial membrane to the cytoplasm for degradation by the PROTEASOME and also plays a role in AUTOPHAGY of ubiquitinated proteins. It occurs in neuronal INCLUSION BODIES from patients with AMYOTROPHIC LATERAL SCLEROSIS and LEWY BODIES from PARKINSON DISEASE patients.

#### Tree locations:

ATPases Associated with Diverse Cellular Activities D08.811.277.040.013.500.750  
D08.811.277.040.025.024.750  
D12.776.157.025.750.750  
Cell Cycle Proteins D12.776.167.800

### Varicella Zoster Virus Infection

Infection caused by HUMAN HERPES VIRUS 3 (e.g, CHICKENPOX and HERPES ZOSTER).

**AN: CHICKENPOX; HERPES ZOSTER; and ENCEPHALITIS, HERPES ZOSTER are also available**

#### Tree locations:

Herpesviridae Infections C02.256.466.930

### Vascular Ring

Congenital vascular malformation in which the AORTA arch and its branches encircle the TRACHEA and ESOPHAGUS. Signs and symptoms include DYSPNEA; RESPIRATORY SOUNDS, especially with eating, DYSPHAGIA, persistent cough, and GASTROESOPHAGEAL REFLUX or may be asymptomatic. Two most common types are double aortic arch and right aortic arch. It may be associated with other anomalies (e.g., DIGEORGE SYNDROME).

#### Tree locations:

Aortic Arch Syndromes C14.907.109.239.825  
Vascular Malformations C14.240.850.992  
C16.131.240.850.984

### Vasopeptidase Inhibitors

A class of cardiovascular drugs indicated for hypertension and congestive heart failure that simultaneously inhibit both NEUTRAL ENDOPEPTIDASE and ANGIOTENSIN CONVERTING ENZYME. They increase the availability of NATRIURETIC PEPTIDES and BRADYKININ and inhibit production of ANGIOTENSIN II.

#### Tree locations:

Angiotensin-Converting Enzyme Inhibitors D27.505.519.389.745.085.500

### Virtual Reality

Using computer technology to create and maintain an environment and project a user's physical presence in that environment allowing the user to interact with it.

#### Tree locations:

Computer Simulation L01.224.160.875  
Data Display L01.296.555

## New MeSH Headings for 2018

*Listed in alphabetical order with Heading, Scope Note, Annotation (AN), and Tree Locations*

### **Vulvectomy**

Surgical resection of the VULVA.

**Tree locations:**

Gynecologic Surgical Procedures E04.950.300.970

### **Water Pipe Smoking**

A process by which SMOKE produced from burning substance is mixed with flavor-altering substances and drawn through water or other liquid into the mouth.

**Tree locations:**

Pipe Smoking F01.145.805.063.500

### **Water Sports**

Activities or games performed in a body of water.

**Tree locations:**

Sports I03.450.642.845.945

### **Wearable Electronic Devices**

Electronic implements worn on the body as an implant or as an accessory. Examples include wearable diagnostic devices, wearable ACTIVITY TRACKERS, wearable INFUSION PUMPS, wearable computing devices, SENSORY AIDS, and electronic pest repellents.

**Tree locations:**

Electrical Equipment and Supplies E07.305.906

### **Wechsler Memory Scale**

A neuropsychological test designed to assess different memory functions. It may incorporate an optional cognitive exam (Brief Cognitive Status Exam) that helps to assess memory related cognitive function.

**Tree locations:**

Memory and Learning Tests F04.711.513.401.500  
Wechsler Scales F04.711.141.493.822.500

### **Whole Exome Sequencing**

Techniques to determine the complete complement of sequences of all EXONS of an organism or individual.

**Tree locations:**

Whole Genome Sequencing E05.393.760.700.825.500

### **Whole Genome Sequencing**

Techniques to determine the entire sequence of the GENOME of an organism or individual.

**Tree locations:**

Sequence Analysis, DNA E05.393.760.700.825

## New MeSH Headings for 2018

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### Wildfires

Fires that occur outdoors in the natural environment caused by natural forces or human activity.

**AN: coordinate with DISASTERS if pertinent; specify geographic location**

**Tree locations:**

Fires N06.230.216.875  
Geological Phenomena G01.311.988

### Wisconsin Card Sorting Test

A neuropsychological test designed to assess EXECUTIVE FUNCTION typically assigned to the FRONTAL LOBE (e.g., abstract thinking, and strategic planning). The subjects are asked to sort numbered response cards according to different principles and to alter their approach during testing.

**Tree locations:**

Neuropsychological Tests F04.711.513.919

### WNK Lysine-Deficient Protein Kinase 1

A serine-threonine kinase which plays an important role in the regulation of electrolyte homeostasis, cell signaling, survival, and proliferation. It functions as an activator and inhibitor of sodium-coupled chloride co-transporters and as an inhibitor of potassium-coupled chloride co-transporters. Mutations in the WNK1 gene are associated with type 2C PSEUDOHYPOALDOSTERONISM and type 2A HEREDITARY SENSORY AND AUTONOMIC NEUROPATHIES.

**Tree locations:**

Intracellular Signaling Peptides and Proteins D12.644.360.975  
D12.776.476.944  
Minor Histocompatibility Antigens D23.050.301.500.600.962  
D23.050.705.552.600.925  
Protein-Serine-Threonine Kinases D08.811.913.696.620.682.700.982

### Work Engagement

Extent to which members of a workplace perceive their emotional commitment to and involvement in the organization and its goals.

**Tree locations:**

Personnel Management N04.452.677.896  
Work I03.946.562

### WW Domain-Containing Oxidoreductase

A short chain oxidoreductase that contains two N-terminal WW DOMAINS and functions as a tumor suppressor and in APOPTOSIS. It is also required for bone development.

**Tree locations:**

Short Chain Dehydrogenase-Reductases D08.811.682.047.820.900.500  
Tumor Suppressor Proteins D12.776.624.776.980

## New MeSH Headings for 2018

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### WW Domains

An approximately 40 amino acid protein domain that occurs in a variety of unrelated proteins and may be repeated up to four times in some proteins. It is characterized by two TRYPTOHAN residues (WW) about 20 amino acids apart and folds into a stable triple-stranded BETA-SHEET. It binds PROLINE-RICH PROTEIN DOMAINS and PHOSPHOSERINE or PHOSPHOTHREONINE-containing protein domains that occur in many signal transducing and cytoskeletal proteins, such as DYSTROPHIN.

**Tree locations:**

Protein Interaction Domains and Motifs G02.111.570.820.709.275.750.500.937

### X-linked Nuclear Protein

ATP-dependent DNA helicase that contains two N-terminal ZINC FINGERS and C-terminal ATP-binding and helicase domains. It functions in the regulation of gene transcription and CHROMATIN REMODELING. ATRX undergoes cell-cycle dependent phosphorylation, which causes it to translocate from the NUCLEAR MATRIX to CHROMATIN; thus, it may change its role from gene regulation during INTERPHASE to ensuring proper chromosome segregation at MITOSIS. Mutations in the ATRX gene are associated with cases of X-LINKED MENTAL RETARDATION co-morbid with ALPHA-THALASSEMIA (ATRX syndrome).

**Tree locations:**

DNA Helicases D08.811.399.340.375

### X-ray Repair Cross Complementing Protein 1

A poly(ADP)-ribose-binding protein that functions in the rejoining of DNA single-strand breaks that arise following treatment with alkylating agents or ionizing radiation. It interacts with DNA LIGASE III and POLY ADP RIBOSE POLYMERASE in BASE EXCISION REPAIR, and may also function in DNA processing and chromosome recombination in GERM CELLS.

**Tree locations:**

DNA-Binding Proteins D12.776.260.963  
Poly-ADP-Ribose Binding Proteins D12.776.157.687.813  
D12.776.660.720.813

### Zinc Finger E-box Binding Homeobox 2

A transcription factor that consists of 8 CYS<sup>2</sup>-HIS<sup>2</sup> ZINC FINGERS flanking a central HOMEBOX. It binds to the 5'-CACCT-3' DNA sequence located within E-BOX ELEMENTS of many genes essential for embryonic growth and development and regulates their activity; it represses transcription of the E-CADHERIN gene. Mutations in the ZEB2 gene are associated with MOWAT-WILSON SYNDROME.

**Tree locations:**

Homeodomain Proteins D12.776.260.400.883  
Repressor Proteins D12.776.260.703.700  
D12.776.930.780.918

## New MeSH Headings for 2018

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### Zinc Finger Nucleases

Genetically engineered nucleases that cleave DNA at a defined distance from specific DNA sequences recognized by ZINC FINGER DNA-BINDING DOMAINS. They are composed of a DNA cleaving domain adapted from DNA endonucleases fused to a zinc finger DNA-binding domain.

**Tree locations:**

Endodeoxyribonucleases D08.811.277.352.335.350.925  
D08.811.277.352.355.325.850  
Recombinant Fusion Proteins D12.776.828.300.990

### Zinc Finger Protein Gli2

A transcriptional activator that contains five adjacent CYS2-HIS2 ZINC FINGERS. It functions in the hedgehog signaling pathway and is required for normal embryonic development. Mutations in the GLI2 gene are associated with type 9 HOLOPROSENCEPHALY and type 2 PALLISTER-HALL SYNDROME.

**Tree locations:**

Trans-Activators D12.776.260.755.925  
D12.776.930.900.850

### Zinc Finger Protein Gli3

A zinc finger transcription factor that contains five CYS2-HIS2 ZINC FINGERS and binds to the GLI consensus sequence 5'-GGGTGGTC-3'. The full-length protein functions as a transcriptional activator whereas the truncated C-terminal form functions as a transcriptional repressor of the Sonic Hedgehog (Shh) signaling pathway; a balance between these two forms is critical for limb and digit development. GLI3 also plays a critical role in the differentiation and proliferation of CHONDROCYTES.

**Tree locations:**

Kruppel-Like Transcription Factors D12.776.260.522.875  
D12.776.930.375.875  
Repressor Proteins D12.776.260.703.900  
D12.776.930.780.972

### Zinc Transporter 8

A zinc efflux transporter highly expressed by ISLET CELLS of the pancreas. It functions in the accumulation of zinc in intracellular vesicles and may be involved in INSULIN maturation and storage processes. Variations in the SLC30A8 gene are associated with susceptibility to DIABETES MELLITUS, TYPE 2.

**Tree locations:**

Cation Transport Proteins D12.776.157.530.450.250.940  
D12.776.543.585.450.250.945  
Solute Carrier Proteins D12.776.157.530.937.952  
D12.776.543.585.937.975