

PEDIATRIC ENVIRONMENTAL HEALTH

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I. General Concepts

Scope of Pediatric Environmental Medicine

History of Pediatric Environmental Medicine

Environmental Disasters in History

Definition

Epidemiology & Surveillance

Cluster Investigation

Taking An Environmental History

Medical Assessment

Laboratory Analysis

Environmental Testing

Biomarkers of Exposure

Analytical Methods

Patient Management

Antidotes

Research Methods & Design

Biostatistics

Reading the Scientific Literature Critically

International Issues in Pediatric Environmental Health

Climate Change

Equity & Social Disparities

Ethical Issues in Environmental Health

Legal Issues & Public Policy

Global Solutions

International Agencies and Resources

Pregnancy & Lactation

Developmental Toxicology

Reproductive Environmental Health & Toxicology

Placental Transmission of Toxins

Fetotoxicity, Teratogenicity

Embryogenesis

Breast Milk Contaminants

Childhood Environments

Household Hazards

Traffic & Pedestrian Hazards
Playgrounds
Water Pollution
Sewage & Hygiene
Hazardous Waste Sites
 Toxic Waste Dumps
 Hospital Wastes
 Military Munitions & Anti-Personnel Devices
 Brownfields
 Scavenging & Waste Dumps
Child & Adolescent Labor, Occupational Toxic Exposures & Injuries
Marksmanship & Lead Poisoning
Noise Pollution
Agricultural Injuries
Arts & Crafts
High Risk Industries
 Smelters
 Agriculture
 Mining & Quarries
 Refineries
 Nuclear Reactors
 Electrical Generating Facilities
Military Munitions & Antipersonnel Hazards
Sick Building (& Sick School) Syndrome

Complex Childhood Environmental Diseases

Allergies & Atopy
Asthma
Birth Defects
Childhood Cancer
Developmental Disorders
 Autism, Pervasive developmental disorders
 Neurobehavioral Conditions
Selected endocrine disorders
Multiple Chemical Sensitivities
Obesity

Environmental Hazard Reduction

Risk Assessment for Toxic Hazards
Risk Management
Risk Communication
Material Safety Data Sheets & Threshold Levels
Poisoning Prevention
Injury Prevention
The Built Environment
Environmental Litigation & Regulatory Remedies

Community Planning & Resources
Advocacy

Environmental Health Resources

EPA website
TRI database
IARC
OTIS
IRIS database
ATSDR Toxfiles

II. Environmental Toxicology

Heavy Metals

Lead

Mercury

Organics: Methylmercury, Dimethylmercury
Inorganic Mercury & Mercuric Salts
Metallic Mercury

Arsenic

Arsenite
Arsenate
Organic Arsenic Compounds
Arsine Gas

Manganese

Cadmium

Copper

Thallium

Metallic Compounds

Organometals
Metal Oxides

Other Metals

Nickel
Chromium
Beryllium
Zinc
Aluminum
Magnesium
Radium
Uranium

Persistent Organic Compounds

PCBs, PBBs, Furans, Dioxin
Chlorinated dibenzo-p-dioxins
Perfluoro-alkyl Substances (PFAS or Perfluoro Chemicals "PFCs")
Hexachlorocyclohexane

Hexachlorocyclopentadiene
Endocrine Disruptors

Airborne Gases & Toxins

Smoke & Fumes
Ozone
Oxides of Nitrogen & Sulfur
Formaldehyde & Other Aldehydes
Halogen Gases & Ammonia
Phosgene
Acrolein
Hydrogen Sulfide

Indoor Airborne Gases & Toxins

Carbon Dioxide
Carbon Monoxide
Environmental Tobacco Smoke
Dust Mites, Cockroach Antigen, Other Allergens
Indoor Molds & Fungi
Particulates
Asbestos
Formaldehyde

Flame Retardants

TRIS
Phosphate esters
Polybrominated diphenyl ethers (PBDE)

Ionizing & Non-ionizing Radiation

Uranium, Plutonium, & Radio-isotopes
Radon
Lasers
Non-ionizing Electromagnetic Radiation
Ultraviolet Light

Pesticides, Herbicides, & Fumigants

Organochlorine Pesticides
 Chlordane
 Dieldrin
Organophosphate Insecticides
 Methyl parathion
Carbamate Insecticides
DEET
Pentachlorophenol
Pyrethrins
Herbicides

Ethylene Oxide
Fungicides
Biocides
Fumigants
 Phosphine
 Methyl Bromide

Caustic Compounds
Inorganic Acids & Bases
Organic Acids & Bases
Hydrofluoric Acid

Solvents & Organic Chemicals
n-Hexane
Phenol
Methylene Chloride
Phthalates
Carbon Disulfide
Volatile Organic Compounds (VOCs)
 Trichloroethylene, tetrachloroethylene, dichloroethylene
Polycyclic Aromatic Hydrocarbons
 Benzo-a-pyrene (BaP)
Benzene
Toluene, Xylene, Xylol
Gasoline, Other Petroleum Distillates, Hydrocarbons
Ethylene Glycol, Higher Glycols
Toxic Alcohols: Methanol, Ethanol

Biological Agents
Mycotoxins
Fungi
Plants
Legionella
Snakes, Spiders, Stinging or Biting Animals
Foodborne Illness
Herbs, Ethnic Remedies & Dietary Supplements
Natural Fibers, Byssinosis, Baganossis
Manmade Fibers

Chemical & Biological Warfare Agents
Nerve Gases
 Tabun (GA)
 Sarin (GB)
 Soman (GD)
 GF
 VX

Vesicants

Mustard
Lewisite

Lacrimators

CN
CS
Capsacin

Other Gases

Phosgene, Diphosgene
DM (Adamsite)

Biological Agents

Bacteria

Anthrax, Plague, Tularemia, Brucellosis

Rickettsiae

Q Fever

Viruses

Smallpox
Encephalitides, Hemorrhagic Fever

Toxins

Botulinum
Ricin
Pyrogenic Toxins
Trichothecene Mycotoxins

Inorganic Chemicals

Cyanide, Hydrogen Cyanide, Cyanide Salts

Nitriles, Azides

Nitrates, Nitrites

Diisocyanates, Methyl-isocyanate

Asbestos

Fluorine, fluorosis

Chlorine, Bromine

Sodium

Potassium

Phosphorus

Methemoglobin-Forming Chemicals

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MONOGRAPHS

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