

HIDDEN SOURCES OF METAL EXPOSURE

Because your patients can't avoid all metals, MELISA® hypersensitivity testing identifies those they should.

Aluminum

ENVIRONMENTAL/OCCUPATIONAL

- Hazardous waste sites
- Construction, manufacturing, explosives, petrochemical and paper industries
- Tobacco smoke

HOUSEHOLD

- Food (coloring agent E173)
- Canned foods
- Canned beverages
- Processed cheese and cakes
- Soy-based infant formulas
- Deodorants/ antiperspirants
- Cosmetics
- Toothpastes
- Pots and pans, cooking utensils
- Astringents
- Aluminum foil
- Water treated with aluminum salts
- Tattoos

MEDICAL

- Antacids
- Buffered aspirins
- Intravenous fluids
- Vaccines
- Implanted titanium medical devices
- Topical acne medications
- Orthodontics

Arsenic Acid

ENVIRONMENTAL/OCCUPATIONAL

- Pesticides
- Herbicides
- Rodenticides
- Fungicides
- Soil and bedrock
- Tobacco smoke
- Production of light-emitting diodes (LEDs)
- Glass and mirror production

HOUSEHOLD

- Beer
- Table salt
- Irrigated crops
- Paints
- Pigments
- Wood preservatives
- Children's toys
- Electronic components
- Storage batteries

MEDICAL

- Calcium supplements from sea shells

Beryllium

ENVIRONMENTAL/OCCUPATIONAL

- Tobacco smoke
- Industrially used in ceramics, metal working, laboratory work, extraction of ore and scrap metal
- Mining

HOUSEHOLD

- Water
- Glass
- Computers
- Sporting goods (golf clubs, bike frames)
- Tattoos

MEDICAL

- Dental crowns, bridges, and plates (i.e. gold alloys)
- X-ray tubes

Cadmium

ENVIRONMENTAL/OCCUPATIONAL

- Tobacco smoke
- Phosphate fertilizers
- Fossil fuel combustion
- Cement production
- Incineration of municipal waste
- By-products from zinc, lead, or copper ore smelting
- Battery manufacturing
- Plastic manufacturing

HOUSEHOLD

- Contaminated vegetables
- Cosmetic pigments (red and yellow)
- Teflon in cooking pans
- Children's toys
- Paints
- NiCad batteries
- Food (shellfish, liver and kidney meats)
- Tattoos

MEDICAL

- Dental restorations
- Amalgams and dental root fillings

Chromium

ENVIRONMENTAL/OCCUPATIONAL

- Tobacco smoke
- Cement
- Electroplating
- Catalytic converter corrosion
- Chemical plants
- Manufacturing of refractory bricks
- Chrome plating
- Welding

HOUSEHOLD

- Paint pigments
- Leather tanning
- Wood treatment
- Jewelry
- Dyes
- Tattoos
- Acidic foods in contact with stainless steel cans
- Eating and cooking utensils
- Wine

MEDICAL

- Metal joint prostheses
- Dental materials
- Orthodontics
- Medical implant devices

Cobalt

ENVIRONMENTAL/OCCUPATIONAL

- Heavy metal industry
- Nuclear facilities, irradiation facilities, nuclear waste storage sites
- Chemistry/crystal sets

HOUSEHOLD

- Hair color
- Batteries
- Drill bits and machine tools
- Magnets
- Tires
- Lipstick
- Tattoos

MEDICAL

- Leg implants
- Radioactive therapy
- Dental restorations
- Implanted medical devices

Copper

ENVIRONMENTAL/OCCUPATIONAL

- Fertilizers
- Pesticides
- Animal feedlots
- Industrial waste
- Food processing waste
- Lakes and rivers treated for algae control
- Soils near smelting plants
- Copper mines
- Tobacco smoke

HOUSEHOLD

- Water from corroded pipes
- Wine
- Septic systems
- Electronic devices
- Coins
- Copper cookware
- Jewelry
- Electrical wiring
- Lipstick
- Eyeshadows
- Hair color
- Shampoo/ conditioner
- Moisturizers
- Tattoos

MEDICAL

- Dental amalgams
- Radiation therapy for cancer
- Orthodontics
- Eyewear

Ethylmercury

ENVIRONMENTAL/OCCUPATIONAL

- Thimerosal
- Lab reagents

HOUSEHOLD

- Disinfectants
- Eye cosmetics
- Tattoos

MEDICAL

- Thimerosal
- Vaccines
- Eye drops
- Nasal sprays
- Antiseptics
- Hemorrhoid ointments

Gold

ENVIRONMENTAL/OCCUPATIONAL

- Electronic manufacturing
- Glassmaking

HOUSEHOLD

- Food (coloring agent E175)
- Jewelry
- Coins
- Computers

MEDICAL

- Dental crowns, bridges, grills
- Radiation therapy for cancer
- Eyewear
- Arthritis treatments

Inorganic Mercury

ENVIRONMENTAL/OCCUPATIONAL

- Coal burning power plants

HOUSEHOLD

- Skin lightening creams
- Disinfectants
- Mercury salts
- Calomel teething powders
- Batteries

MEDICAL

- Medicines or vaccines containing mercury
- Dental amalgams

Lead

ENVIRONMENTAL/OCCUPATIONAL

- Leaded gasoline/car fumes
- Manufacturing of batteries, metal products, paints, ceramic glazes
- Tobacco smoke
- Glass making
- Manufacturing of fireworks
- Ammunition

HOUSEHOLD

- Contaminated vegetables
- Wine
- Paint (often in older homes)
- Making of pottery and stained glass
- Fishing sinkers
- Refinishing furniture
- Jewelry
- Children's toys
- Electrical wiring
- Hair color
- Shampoo/conditioner
- Water from lead pipes
- Tattoos

MEDICAL

- Dental root fillings

Manganese

ENVIRONMENTAL/OCCUPATIONAL

- Added to gasoline in certain parts of the world
- Pesticides
- Fertilizers
- Manufacturing of steel, stainless steel, and other metal alloys

HOUSEHOLD

- Dietary supplements
- Wine
- Batteries
- Ceramics
- Blushes
- Lipsticks
- Eyeshadows
- Eye liners/ mascaras
- Moisturizers

Methylmercury

ENVIRONMENTAL/OCCUPATIONAL

- Soils and grains
- Fungicides

HOUSEHOLD

- Breast milk if mother consumes contaminated foods
- Fish and shellfish

MEDICAL

- Dental amalgams

HIDDEN SOURCES OF METAL EXPOSURE

Because your patients can't avoid all metals, MELISA® hypersensitivity testing identifies those they should.

Molybdenum

ENVIRONMENTAL/OCCUPATIONAL

- Reagents in hospital labs
- Steel manufacturing industry
- Fossil fuels
- Oil refineries
- Lubricating oils

HOUSEHOLD

- Beans, lentils, peas, whole grains, nuts, mineral water, instant coffee, tea infusion
- Dietary supplements
- Wine
- Hair color
- Pigments for ceramics, inks, paints

MEDICAL

- Dentistry
- Implanted stainless steel or cobalt medical devices

Nickel

ENVIRONMENTAL/OCCUPATIONAL

- Tobacco smoke
- Mining, milling, concentrating, smelting, converting or refining
- Manufacturing of batteries

HOUSEHOLD

- Nuts, beans, chocolate, oats
- Wine
- Jewelry
- Buttons/zippers
- Coins
- Clothing embellishments
- Color pigments
- Stainless steel cutlery/appliances
- Razors
- Cookware
- Batteries
- Lipsticks
- Handbags/purses
- Hair color
- Tattoos
- Shampoos/conditioners

MEDICAL

- Eyewear
- Dental restorations
- Prostheses (hip, knee, cochlear, cardiac implants)
- Orthodontics
- Stainless steel medical equipment (X-ray machines)
- Implanted medical devices

Palladium

ENVIRONMENTAL/OCCUPATIONAL

- Car exhaust
- Working in spinning and weaving mills
- Oil refining
- Making polyester
- Photography

HOUSEHOLD

- Water treatment
- Razors and electric shavers
- "White gold" jewelry
- Watches
- Coins

MEDICAL

- Dental crowns, bridges, root pins
- Surgical instruments
- Cancer treatment therapies
- Eyewear

Phenylmercury

ENVIRONMENTAL/OCCUPATIONAL

- Fungicides
- Latex paints
- Caulking materials
- Oil based paints

HOUSEHOLD

- Eye cosmetics
- Toiletries
- Eye drops

MEDICAL

- Older root fillings
- Nasal sprays
- Ophthalmic solutions

Platinum

ENVIRONMENTAL/OCCUPATIONAL

- Catalytic converters
- Tobacco smoke

HOUSEHOLD

- Jewelry
- Magnets
- Water treatment

MEDICAL

- Dental fillings
- Surgical equipment
- Pacemakers

Silver

ENVIRONMENTAL/OCCUPATIONAL

- Processing of ores, steel refining, cement manufacturing, fossil fuel combustion, municipal waste incineration, cloud seeding

HOUSEHOLD

- Fish and shellfish
- Dietary supplements
- Jewelry
- Food coloring
- Water filters
- Clothing embellishments
- Coins
- Electrical wiring

MEDICAL

- Dental fillings
- Eyewear

Thimerosal

HOUSEHOLD

- Nasal solutions
- Eye products
- Ear products
- Tattoos

MEDICAL

- Vaccines
- Ophthalmic drugs
- Antiseptics/anti-fungals

Tin

ENVIRONMENTAL/OCCUPATIONAL

- Hazardous waste sites
- Production and/or use of solder
- Air/soil contamination
- Landfills

HOUSEHOLD

- Canned foods or juices
- Storage containers
- Springs
- Children's toys
- Blushes
- Lipsticks
- Eyeshadows
- Eye liners/ mascaras
- Sunscreens
- Water
- Seafood caught in coastal waters
- Moisturizers

MEDICAL

- Amalgam fillings and gold dental alloys

Titanium

HOUSEHOLD

- Heat exchangers
- Watches
- Jewelry
- Tennis rackets
- Golf clubs
- Tattoos

MEDICAL

- Bone pins
- Hip/joint replacements
- Orthodontics
- Dental implants
- Implanted medical devices
- Eyewear

Titanium Calcium

MEDICAL

- Bone implants

Titanium Dioxide

HOUSEHOLD

- Candy
- Multivitamins
- Dietary supplements
- Toothpastes
- Paints
- Plastic carrier bags
- Jewelry
- Printing inks
- Cosmetics
- Blushes
- Foundation makeup
- Lipsticks
- Eyeshadows
- Eyeliner/mascara
- Moisturizers
- Sunscreens

MEDICAL

- Dental implants, cements, composites, and root fillings
- Medications/supplements

Vanadium

ENVIRONMENTAL/OCCUPATIONAL

- Construction materials
- Rocks, iron ore, petroleum deposits
- Production of plastics, rubbers and ceramics
- Catalytic converters
- Metallurgical plants
- Port cities due to ships burning heavy fuel oil
- Manufacturing of batteries

HOUSEHOLD

- Catalyst, dye and color-fixative

MEDICAL

- Titanium implants
- Dental implant alloys
- UV filtering in glasses

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This is not an all-encompassing list. There are other sources of metal exposure not listed herein.