Heavy Metals:

When Are They Toxic and When Are They Not?

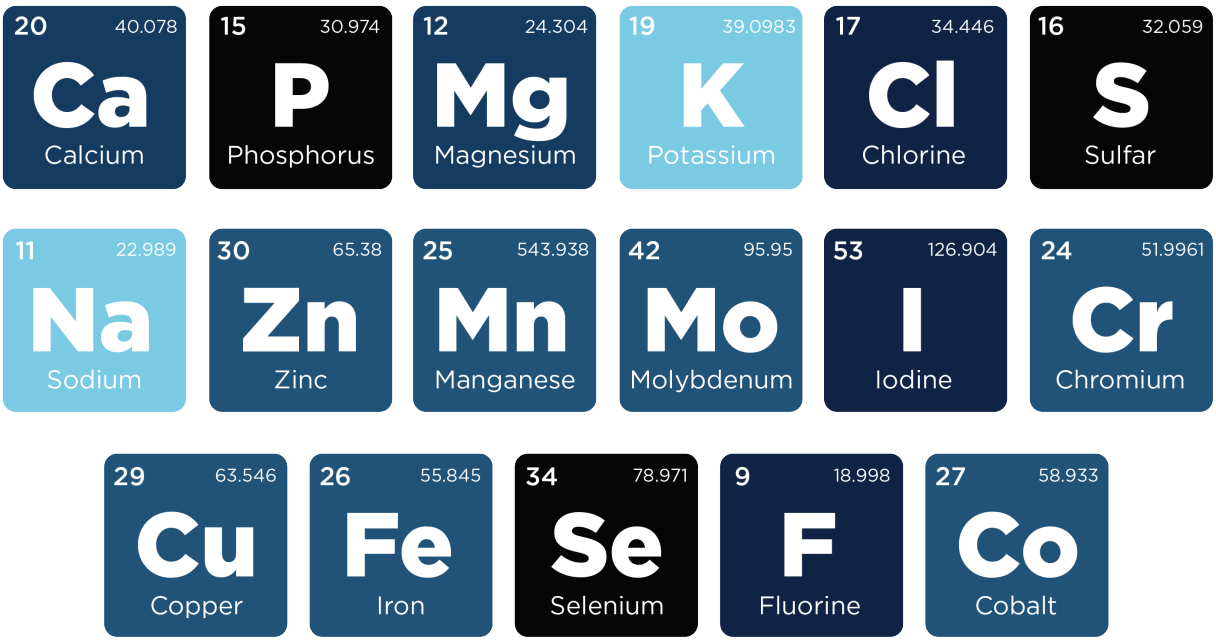
ARE HEAVY METALS ALWAYS TOXIC?

Despite the good it does, sometimes the medical and scientific community gets hung up on an untruth. A big example of this is the popular idea that "heavy metals are always toxic." In actuality, while some heavy metals are harmful, others are essential for our bodies. Indeed, for our health to thrive, we want to consume certain heavy metals in our diet.

WHAT DO ESSENTIAL METALS DO FOR US?

Metals are used to make strong and lasting everyday items, like copper pipes and iron skillets. But they serve different purposes in our bodies. Many metals are needed to activate enzymes, the essential chemical messengers in the body. Metals and minerals have many other vital roles as well. For example: (1)

Metals and Minerals
Essential to a Healthy Body



Calcium

- Activates enzymes throughout the body
- Allows nerves to send messages
- Assists in blood clotting
- Builds teeth and bones
- Helps to regulate blood pressure
- Promotes muscles contraction

Chlorine

- Helps maintain pH levels and osmotic balance
- Works as a primary electrolyte of blood, as well as extracellular and intracellular fluid

Chromium

- Helps cells draw energy from blood sugar
- Helps maintain healthy blood sugar levels

Cobalt

- Works as an essential component of vitamin B12 production

Copper

- Assists with metabolizing fuel
- Cleans up free radicals
- Helps make red blood cells
- Regulates neurotransmitters

Fluorine

- Maintains solid bones

Iodine

- Helps make thyroid hormones
- Protects from radioactive elements
- Supports energy production and metabolism

Iron

- Assists in making hemoglobin (the oxygen-carrying chemical in the body's red blood cells)
- Assists in making myoglobin (a protein in muscle cells)
- Helps produce amino acids, collagen, hormones, and neurotransmitters
- Plays an essential role in activating certain enzymes

Magnesium

- Aids in regulating blood pressure and blood sugar
- Assists in blood clotting when injured
- Builds teeth and bones
- Enables muscles to contract
- Helps enzymes to work
- Helps nerves to send messages

Manganese

- Assists in bone formation
- Helps to metabolize amino acids, cholesterol, and carbohydrates

Molybdenum

- Helps cells draw energy from blood sugar
- Helps maintain healthy blood sugar levels

Potassium

- Assists in muscles contraction
- Helps to maintain a steady heartbeat
- May benefit bones and blood pressure
- Promotes fluid balance in the body

Phosphorous

- Plays essential role in ATP (energy) production
- Supports structure of bones and teeth

Selenium

- Helps the body make antioxidant enzymes that play a role in preventing cell damage
- Helps with thyroid hormone production

Sodium

- Aids in muscles contraction
- Balances fluids in the body
- Helps to send nerve impulses

Sulfur

- Aids in glutathione production
- Assists in producing essential amino acids methionine and cysteine
- Plays essential role in detoxification

Zinc

- Assists in proteins and DNA synthesis
- Helps blood clot
- Promotes wound healing and cell division
- Supports and boosts the immune system

Our bodies don't manufacture these essential minerals. We obtain them from our diet. The minerals and vital metals come from rocks, soil, and water, and they're absorbed by plants as they grow or by animals as they eat the plants.

WHY IS 'HEAVY METALS ARE ALWAYS HARMFUL' A NARROW VIEWPOINT?

Certain untruths catch on and are accepted as known and valid scientific facts. The same has happened in our view of heavy metals and heavy metal toxicity. The widely circulated idea is this: Heavy metals are harmful and toxic. They build up in the body and cause problems.

But we need to understand it's not that simple and straightforward. Just because there is a heavy metal present, it doesn't automatically mean it's toxic and needs removing from the body. On the contrary, some are essential minerals and trace elements that the body needs to survive.

That heavy metals are always harmful is misplaced reasoning — many other factors are involved, including: (1, 2, 3, 4, 5, 6, 7, 8, 9)

- Carbon bonding
- Concentration
- Covalent vs. ionic bonding
- Energetic state
- Loose ion vs. safely bound
- pH
- Plant or microbe remediation
- The metal's purpose and the body's need for it

Indeed, the body's terrain, how the body processes the metal or mineral, and whether the minerals and metals exist as inorganic compounds or organic compounds have a considerable impact on the hazard created by metals in the body.

HOW DO YOU DETERMINE IF HEAVY METALS ARE SAFE OR TOXIC?

Heavy metals can be friends or foes. Determining whether they're harmful or not involves answering these specific questions: (1, 2, 3, 4, 5, 6, 7, 8, 9)

Is it sharing a carbon bond?

A metal ion bound to carbon shares a strong covalent bond, making it harder to separate it into a dangerous free ion.

How much is present?

Whether metals are harmful or not is dependent on the concentration within the body. Even the most toxic metals may not be dangerous at low dosages, and some may even be beneficial.

Is it creating a new bond?

The type of bond present will determine how reactive and potentially toxic a heavy metal can be. When metal ions are bound to other things ionically, they are much easier to break apart, releasing free-form ions that are reactive and dangerous. Conversely, ions bound by covalent bonds are much more resistant to having their bonds broken and allowing loose metal ions to exist.

What energy state is it in?

A metal's oxidation state — whether its ions can give or receive electrons — determines how reactive and energetic it is and whether it can cause harm or not.

Is it a loose ion?

A loose, or free-form, metal ion is insoluble, inorganic, and dangerous, so it must be removed from the body to prevent toxicity issues. Binding to carbons is exceptionally beneficial in addressing these loose metal ions. CellCore's Carbon Technology is a highly effective solution for binding and removing toxic metal ions from the body.

Is it safely bound up?

A heavy metal can be safe if it is bound to something else. For instance, a deadly arsenic atom bound to a methyl group can be passed easily through the urine and even be beneficial in killing candida.

How much is present?

Whether metals are harmful or not is dependent on the concentration within the body. Even the most toxic metals may not be dangerous at low dosages, and some may even be beneficial.

What is the pH?

Metals are more or less reactive, depending on the pH of their environment. Generally, we tend to tolerate metals a bit better if the environment is more acidic.

What has the plant you're consuming done to remediate it?

Plants want to survive, so they have mechanisms to handle metals when exposed to them. They can alter the state of metals or pollutants. They can:

- Degrade them (break them apart)
- Excrete them (excrete them onto leaf surfaces where they are out of the way and doing less harm)
- Transform them (change the oxidation state or convert them into something else)
- Volatilize them (turn them into a gaseous form)

Are my microbes processing it or not?

Microbes within the body can perform microbial remediation, transforming metals through their metabolism and bringing about changes in metal speciation, mobility, and toxicity.

If it exists, is there a purpose for it?

Specific heavy metals and minerals are necessary for proper body function. Dysfunction and illness can result if they are not present in the right amounts.

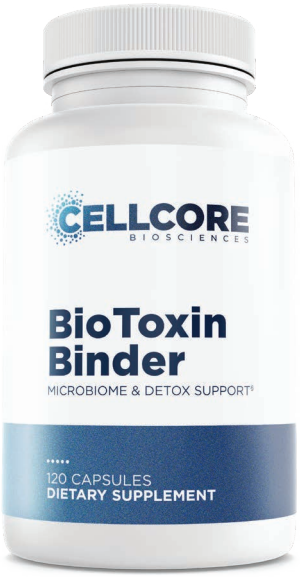
Indeed, a lot of different factors come into play when heavy metals are present in the body. Singling out just the metal — without considering its context, form, source, etc. — gives a distorted view of whether or not the metal will harm the body.

Of course, that doesn't negate the fact that heavy metals can wreak havoc in specific situations. For those, you need to employ a binder that's safe and discriminating, like BioActive Carbon.

HOW DOES CARBON TECHNOLOGY BIND TOXIC HEAVY METALS?

CellCore's Carbon Technology binders may be the most effective binding agents available to address the burden of toxic heavy metals. They are safe and effective because they:

- Are high energy — they have sufficient positive or negative charge to donate to or take electrons as needed from metals
- Are plant-derived and organic
- Bind metals covalently
- Bind metals at multiple sites
- Have a lower pH, with higher potential energy and reactivity
- Surround and engulf metals
- Share covalent bonds with carbons
- Provide nutrients for the body's microbiome



BioToxin Binder

- Supports your body's natural immune function and healthy gut microbiome
- Formulated to bind common, unwanted microbial byproducts, including ammonia, candida, and mold

ViRadChem Binder

- Addresses mild, common immune system and environmental contaminants
- Built to bind radiation, retroviruses, viruses, and toxins from parasite die-off

HM-ET Binder

- Dives deeper to target lingering toxins in tissues and bones
- Specially formatted for heavy metals, pesticides, and other environmental toxins

Besides Carbon Technology binders, CellCore's drainage support products contain Carbon Technology in them. Even if the amount is less than found in the full-strength binder products, they still function in a binding capacity. They promote drainage but can nevertheless aid in binding unwanted substances.

Advanced TUDCA

- A natural water-soluble bile that protects liver cells
- Enhances digestive health and detox efforts

Bowel Mover

- Offers natural, gentle constipation relief
- Provides non-habit-forming, safe, effective digestive support

KL Support

- Promotes healthy kidney and liver function
- Has anti-inflammatory and antibacterial diuretic properties

LymphActiv

- Provides antioxidants and immune-supporting properties
- Supports lymphatic drainage with natural ingredients

Since the heavy metals determination process can be quite confusing, you may end up wondering how to assess your need for essential organic minerals and heavy metals. Fortunately, it can be readily addressed by using CellCore's Carbon Technology. The BioActive Carbon can help to discern what needs to go and what must stay for you.

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