



## **How do heavy metals impact brain performance?**

Brain fog, anxiety, memory, ADHD, dementia, Alzheimer's.  
Parkinson's and autism.

All of these rob you of your focus, performance, productivity  
and life, and they are all on the rise.

Toxic heavy metals are present in the air we breathe, the  
food we eat, the products we buy and the water we drink.

We all have metals present in our bodies but the question is,  
how much has your body accumulated and how effective is  
your body at expelling them.

Age, diet, metabolism, genetics, nutrient absorption, lifestyle,  
exercise, vaccine intake, prescriptive medication including  
antibiotics intake and illness all play a factor in how much  
your body and brain has accumulated and how much your  
body can rid itself off.

## **Heavy metal toxicity may damage:**

- Central Nervous system
- Cardio vascular system
- Gastrointestestinal system (80% of immune system)
- Lungs
- Kidneys

- Liver
- Endocrine glands
- Bones
- Mitochondria
- Nutrient absorption

## **Risk factors for exposure:**

**Lead-** Lead based paints (in buildings before 1978), plumbing containing lead, and foods from lead rich soil.

**Effects:** lead can cause headaches, irritability, poor attention and memory loss.

**Mercury** – Shellfish, fish, work place air, Amalgam fillings, dental surgeries and vaccines.

**Effects:** Deposited in the brain, specifically in the hypothalamus, hippocampus and occipital lobe, it also deposits in the thyroid gland, therefore may display as memory loss, Alzheimer's, autism spectrum, lowering of IQ, behavior & sleep disorders, chronic depression and fatigue.

**Mercury is a neuro-toxin, which especially effects children and interferes with development and processes of learning.**

**Cadmium** – Tobacco smoke, grains, legumes, leafy veg, fish, shellfish, household products, solar paneling, batteries.

**Effects:** Dizziness, headaches, fever, chills, respiratory disorders, kidney problems, and irritations.

**Aluminum** – Medication, vaccines, cooking utensils, foil, cosmetics and beauty products, hygiene products, pesticides, soil, water, dyes, processed cheese, baking soda, canned food, canned drinks, carton drinks and foods, perfumes, antacids, shampoo, lotions, soya base and lactose intolerant baby formulas, vegetables.

**Effects:** Aluminum absorbs in brain and fat tissue as well as organs so it can become concentrated not only in the brain but also in the digestive tract. This may cause chronic infections, oxidative stress, mitochondrial dysfunction, brain fog, memory loss, cellular dysfunction, over stimulation of neurons and lower neural transmission, displaying as seizures, allergies, tremors, aggressiveness, respiratory disorders, decrease immune system, hallucinations and irritability to name a few. Aluminum blocks Hypothalamus function, gastro function, serotonin, melatonin causing chronic fatigue, destroying ATP(energy production) and decreases glutathione levels. Aluminum can cause permanent damage and dementia, ringing in the ears and chronic pain.

**Bismuth** – Electrical fuses, fire works, medication, hemorrhoid creams, antibiotics, hair dyes, car paint, paint. Pigments for make up, including lipstick and household products.

**Effects:** Bismuth can cause brain swelling, seizures and Wilson's disease, noise sensitivity and irritability.

**Thulium** – Petroleum and its by products, fuel emissions, fruits and vegetables, coal burning, water, air and soil.

**Effects:** Gastrointestinal irritation, respiratory disorders, lung damage, loss of muscle coordination, fatigue, heart

issues, skin irritations and disorders, eye irritations, effects blood coagulation.

**Tin** – Tin food, foil, cans for fuel, oil, paint.

**Effects:** An overload of tin can cause balance issues, tinnitus, fatigue, ringing in the ears, organ damage, lung disease and stomach cancer

**Vanadium** – Butter, cheese, lobster, skimmed milk, vegetables, soil and grains.

**Effects:** Causes gastrointestinal tract issues such as IBS, Crohn's and colitis, disorders of the respiratory system, interferes with nitric oxide production

<http://www.berkeleywellness.com/self-care/preventive-care/article/why-nitric-oxide-so-important>

Can cause mitochondrial damage, infertility, slows growth, can cause high cholesterol, allergies, continuous eye infections, hypoglycemia and kidney damage.

**Manganese** – Batteries, baby formula, water, Chinese, herbals. Antibiotics, laxatives and some supplements.

**Effects:** Neurological disorders, tremors, aggressiveness, irritability, hallucinations, cognitive dysfunction, respiratory disorders, liver issues.

**Copper** – Iron deficiencies, copper piping, water, birth control pills and coils, seafood, soya, cheese, nuts, beans, seeds, mushrooms, offal, cocoa, fish.

**Effects:** Infertility, kidneys damage.

Most toxic metals will attach to all brain, nerve and fat tissue. There are 3 main ways toxic metals show up in the body: -

- Stools
- Urine
- Hair
- Blood (only if accumulated in high amounts within 48 hours).

So the most effective reading taken will be hair, urine and stool samples.

Children tend to detox quicker than adults because of there fast metabolisms and also have less accumulation of toxins from years of bad lifestyle's etc.

If you have been accumulating for 30-40 years you will not detox in 3 months.

With a good detox strategy within 2 years you should see 80-90% of metals eliminated.

Set realistic expectations, changing life styles, products used, diet, exercise, supplementation, reduction of pharmaceuticals and opting for natural methods, sleep also plays a part.

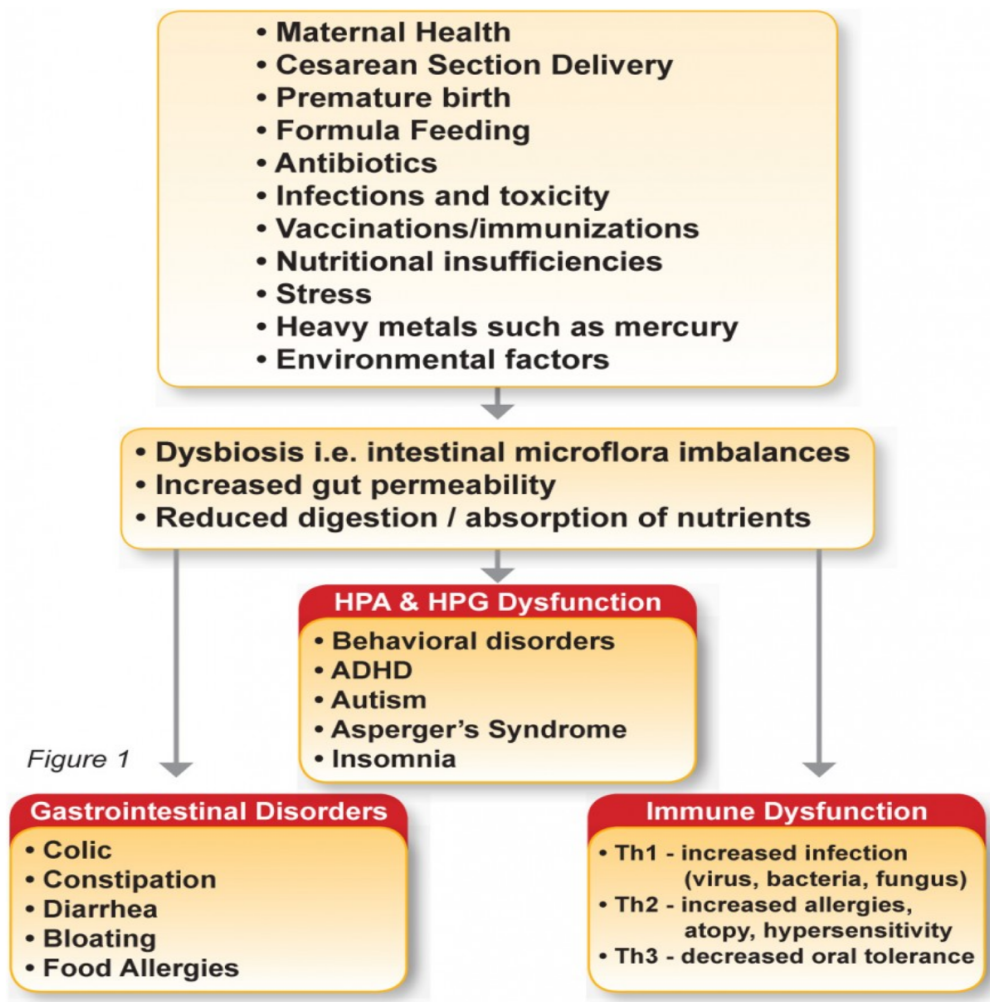
Incorporate detoxing for life and into your daily regime use binders, chelates and minerals to help you detox.

**WITHIN 60 DAYS OF TREATMENT TOXICTY WILL DECREASE, CHILDREN CAN BE FASTER.**

## **Gut- brain relationship**

Brain and intestinal microflora play an important role in modulating gut and brain function and are involved in the modulation of emotions, pain perception, mucosal immune activity and general wellbeing, the reduction of friendly bacteria such as lactobacilli and Bifidobacteria overgrowth of pathogenic bacteria will be stressful to brain/gut interactions especially for infants aged 0-3, producing neurological and immune imbalances and affecting their development. The neurological and immune systems are intertwined beginning in the embryonic stage of life. Disruption of this interaction between microflora and the nervous system may be involved in the progression of acute and chronic gastrointestinal and neurological disease states effecting the EMS, ANS, CNS, GI tract, pituitary and hypothalamus and causing such issues such as Autism, ADHD, ADD, candida, Ecoli, clostridia and salmonella.

## Gut/ Brain/Immune dysfunction and autism



**Fig. 1.** These factors result into at least to types of ASD (autism spectrum disorder) with regard to disease development: abnormal cognitive development evident from birth(classical autism); and in the majority cases developmental regression, usually between 18-36 months of age, following apparent development ( regressive autism).

It is very important to understand the direct relationship between the gut and brain, especially during the 1<sup>st</sup> three stages of life, when both are in a stage of formation. The above factors make the immune system of each child different and unique. Therefore physicians and pediatricians should not treat all children alike.

A detailed evaluation of each child's immune system should be taken into account as well as any hereditary factors and medical history and toxicology of mother before and during pregnancy in regards to antibiotic and prescriptive use. Each child should be based on case by case, hence the standard vaccination schedule cannot and should not be applicable, if the above factors are not evaluated and taken into account properly.

Autism usually appears during the first 3 years of life.

The reason is, and it is well documented, that between the ages of 0-3, the intestinal microflora of a child is not well established yet, the same can be said about the brain and nervous system.

They are in the stage of formation and are fragile.

During this time a lot of vaccinations and/or antibiotics are given and if the immune system of a child is low, the intestinal microflora being fragile is affected negatively.

As a result a toxic condition is produced in the gut that will affect the brain and the nervous system to various extents.

Non breast-fed babies carry even greater risk as they lack many of the enzymes and nutrients together with microflora, which are only present in breast milk.

Together with inferior milk formulas, which contain synthetic vitamins, minerals, gut disrupting chemicals and nutrient inhibitors in the form of animal by-products; and also Factors during birth and labour such as medication administered are all extenuating factors as well as the levels of heavy metal toxicity present in much of the medication.



Which cause gastrointestinal and neurological disorders as we have spoken about in previously.

The more toxicity in the gut the more effect on the brain.

As a result, the majority of children with autism spectrum reveal abnormal gastrointestinal symptoms including food allergies, yeast infections and constipation.

Autism spectrum disorders and other neurological complications may require a long-term protocol including environmental control, dietary supplements and alternative biomedical therapies and Nootropics. Many are sick with gastrointestinal, immunologic and metabolic problems that significantly affect their behavior and their physical and emotional health. Treating the medical problems often lead to improvement in clinical signs and symptoms and, in some cases to recovery.