What Are the Symptoms of Mercury Toxicity?

Mercury, the only metallic element that is a liquid under standard temperature and pressure conditions, is widely utilized in many industries and processes. It has been used as a component of dental amalgam since ancient times and is found in fluorescent tubes and thermometers; it is also released into the environment as a result of industrial processes, such as smelting, mining, and energy production. Some mercury is introduced due to naturally occurring phenomena, such as volcanic eruptions.

This widespread presence of mercury facilitates the possibility of its introduction into the body, where it can cause either chronic or acute poisoning. The simplest ways to avoid mercury exposure in your immediate environment are to remove fluorescent tubes and thermometers (or, at least, to handle them with extreme care to avoid breakage), to avoid consumption of certain types of fish known to harbor high accumulations of mercury in their tissues, and to undergo a process of safe amalgam removal to replace old fillings with a substitute amalgam that eliminates the possibility of mercury toxicity.

Mercury toxicity symptoms are many; mercury poisoning takes a heavy toll on the body, affecting the neurological and central nervous systems, as well as the gastrointestinal, immune, neuromuscular, and cardiovascular systems. Major organs, such as the brain, liver, and kidneys, also suffer as a result of mercury toxicity.

A wide variety of symptoms is attributed to toxicity resulting from mercury amalgam. This list includes but is not limited to:

- Headache, fatigue, loss of concentration, irritability, depression, insomnia, and dizziness
- Diverticulosis, stomach cramps, bloating, loss of appetite, and gastrointestinal disturbances
- Muscle fatigue and tremors, sciatic and chest pains, leg cramps, joint pain, and tachycardia
- Oral health problems, such as bad breath, blisters/sores, tender teeth, and bleeding gums

Multiple studies have reported on both the symptoms associated with mercury toxicity and the likelihood of treatment to mitigate the effects of mercury toxicity. These studies investigated the cases of hundreds of patients who were poisoned by mercury. In most cases, a positive effect (reversal or improvement in symptoms) was later observed in patients who were treated by safe removal of mercury amalgam, suggesting that mercury toxicity had been a likely cause of their symptoms.

Our next article discusses how your systems react to the presence of mercury in the body and the types of health damage that may result from mercury toxicity.

A safe, effective program for removal of mercury amalgam is the first step toward reversing the effects of mercury toxicity in your body. The Center for Systemic Dentistry in Berkeley Heights, New Jersey, is committed to being the state's leading dental practice that focuses on holistic, healing-focused dentistry. Dr. Philip Memoli is ready to help you recover your health so you can begin to lead a life free of mercury toxicity.

The Center for Systemic Dentistry will work with you to determine the best course of treatment to safely remove your existing mercury amalgam. Call us today at (908) 464-9144 or contact us via our online contact form.

Read more about safe amalgam removal at

http://www.holisticdentistrynj.com/our-services/safe-mercury/.

What Does the Research Say About Mercury Toxicity?

Any given person may be more resistant or more susceptible to mercury poisoning, depending on that person's individual biology. Each body possesses three systems to deal with foreign substances: the immune, detoxification, and elimination systems.

The immune system functions to recognize substances and pathogens that are not meant to be in the body. Depending on a person's overall health, the immune system may react in one of several ways. It may neutralize the substance, it may shut down, it may respond with chronic inflammation, or it may overreact. Inflammation can progress into any number of degenerative diseases and conditions. Immune overreaction can result in tissue or organ damage.

Once the foreign organism or toxic substance has been recognized by the immune system, the detoxification system works to prevent it from harming the body. The liver is the main component of the detoxification system, although detoxification processes also occur in other organs, such as the lungs and kidneys, and to a lesser extent in every cell of the body. Detoxification occurs in stages; in the first phase, enzymes prepare toxins for the second phase, in which other enzyme systems attach to the toxins both chemically and electrostatically. Difficult-to-neutralize toxins, such as mercury, may undergo multiple series of similar reactions until they can be safely contained.

The elimination system is the process for removing the contained toxins from the body. Kidneys eliminate simple toxins in urine; more dangerous toxins are excreted through the colon. Certain health afflictions can cause a reversal of the detoxification process, causing the cycle to begin anew, repeatedly, in the elimination system.

Certain substances called xenobiotics, which include heavy metals such as mercury, stress all the systems and are difficult to neutralize and eliminate due to their complexity and high toxicity. Even if toxins like mercury are successfully removed, they can still leave in their wake severe damage, such as inflammation, autoimmune diseases, and cell death.

Diagnosis of mercury toxicity is extremely difficult. The question of mercury presence must first be addressed: what (chemical) form(s) of mercury are present, what tissues or organs are harboring mercury, and what is the extent of the damage caused? Additionally, there are no laboratory tests or biomarkers to indicate which of the systems (identification, detoxification, elimination) has been affected by mercury exposure. Many physicians, frustrated by the difficulty of diagnosing mercury toxicity and the complexity of safe amalgam removal, opt instead for medications to mitigate pain.

Click here to read detailed scientific and clinical information about the biological and chemical processes that occur in the body in the presence of mercury poisoning.

Our next article is a step-by-step guide to the procedures followed by The Center for Systemic Dentistry to ensure for our patients a safe and comprehensive program of amalgam removal.

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Taking Your First Steps Toward Safe, Comprehensive Amalgam Removal

At The Center for Systemic Dentistry, we employ a state-of-the-art protocol for safe removal of mercury amalgam. Our protocol offers maximum health protection, identifying and minimizing the risk of pain or sensitivity.

The first step for a new patient is a comprehensive exam, which includes a complete dental examination, a systemic assessment, and a discussion of health goals. The examination begins with an assessment of the patient's exposure to mercury amalgam and to other metals in existing fillings, crowns, braces, implants and bridges. A structural exam of teeth determines if they are strong or weak, which in turn determines the required strength of the replacement fillings. A pulpal exam gauges whether the nerves are healthy or

suffering from inflammation, infection, or degeneration. The periodontal exam evaluates whether or not gum tissue is healthy and looks for signs of bone loss. A functional examination checks occlusion (bite) and the muscles of the jaw and jaw joint; muscle spasm in this area has a significant stress effect on teeth. Finally, dental radiographs (analog x-rays) are taken, and an acupuncture meridian to tooth association is performed.

The comprehensive exam and the patient's overall health status assist our dentists in determining if the patient is at risk of systemic reaction in the immune, detoxification, or elimination systems.

The next step in the treatment plan is the actual removal of old mercury amalgams and replacement with new, mercury-free amalgam. Our dentists select a restoration type and material for each affected tooth, based on the results of the comprehensive exam. There are four types of restorations:

- *Type I: Direct Restoration.* For a patient with good dental health and a strong tooth, restoration is made in one visit with a direct filling material.
- *Type II: Inlay Restoration.* A tooth that is mostly sound may still require an inlay to restore structural strength.
- *Type III: Onlay Restoration.* A mostly sound tooth with a chewing surface (cusp) that requires restoration.
- *Type IV: Crown Restoration.* For a structurally weak tooth that has loss of one or more cusps.

Other factors influencing the dentist's selection of restoration type include cracked or fractured teeth, degenerated or susceptible nerves, and teeth grinding.

Mercury-free replacement materials are evaluated for strength, wear, resistance, and esthetics, and different materials are used for different types of restorations. Commonly used

materials include composites (made from silica glass and resin), ceramics (three types), and metals (including gold, platinum, palladium). The dentist's exam and evaluation determine the best replacement materials for a given patient and for individual teeth.

Throughout the mercury removal and replacement procedure, patients are protected in multiple ways, including:

- Cooling: Heat from drilling increases the release of mercury vapor; temperature control reduces that.
- Chunking: Minimizing the amount of drilling needed for removal also reduces vapor release.
- High-volume evacuation: Powerful suction to minimize patient exposure to mercury vapor and amalgam particles.
- Rubber dams: Isolates the work area to reduce mercury exposure.
- Cleansing: Thorough cleaning ensures removal of all amalgam particles.
- Pure air: Filtered office air prevents the spread of mercury vapor.

Our dentists keep you informed through every step of your mercury amalgam removal process, including "Dos" and "Don'ts" for the day of treatment, therapeutic scheduling for optimized treatment, nutritional and systemic assessments, a follow-up consultation, and post-treatment therapies as necessary.

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What Are the Facts About Tooth Decay in Children?

Tooth decay, known medically as *dental caries,* happens to every person in every age group. Children, however, are a special focus for the prevention of tooth decay. Outside of very rare instances in medical history, children are the only people who can grow new teeth. When the deciduous teeth (commonly called "baby teeth") are lost during childhood, permanent ("adult") teeth begin to grow in their place. These are the teeth that the growing child will have for the rest of his or her life. It is during this time that the child will learn (or unlearn) the behaviors and environmental factors that contribute to tooth decay—which usually begins as soon as that first permanent tooth starts to erupt. Good nutritional choices and proper dental hygiene practices improve the odds that the child will retain those teeth long into adulthood.

The covering of teeth, called enamel, is the hardest substance in the human body, and enamel in general is one of the strongest mineral substances produced by living things. Once enamel has been compromised and decay begins, it is imperative for a dentist to contain and repair the damage as efficiently as possible; it's equally important for the patient to mitigate the nutritional or environmental factors that contribute to tooth decay.

There are still conflicting views about the actual cause of tooth decay. Currently, the most widely accepted cause is the

acid theory proposed by Dr. Willoughby Miller in 1890. Miller's theory postulates that decay is a local phenomenon, occurring only from factors in mouth—specifically, when bacteria, sugar, and teeth come into contact. Under the acid theory, mouth bacteria consume sugar and excrete acid, which then begins the decay process. This theory has never been conclusively proven; Dr. Miller even admitted that it was too simplistic of an answer to a process as complex as tooth decay. Some studies have demonstrated that soft drinks, fruit, gastroesophageal reflux disease, and certain microorganisms can initiate decay of enamel; other studies assert that, though some of these factors may start the decay process, they cannot break down collagen or demineralize dentin to form cavities. (Dentin is the calcified tissue found under enamel and contains the connective-tissue protein collagen.)

A competing theory about the cause of tooth decay considers it to be a manifestation of systemic disease; in other words, the problem originates elsewhere in the body, with tooth decay merely being a result of a larger, underlying health issue that contributes to insufficient mineralization in dentin (hypomineralization). Proponents of this causal theory stress that:

- Under the acid theory, any exposure to sugar in the mouth would raise susceptibility to decay.
- Decay is a complicated process that exhibits both local and systemic factors; the latter appears to be more important.
- Studies have shown that dentin contains a fluid that nourishes teeth and inhibits decay. Sugar consumption causes this fluid to stop, resulting in great likelihood of decay. Other studies have revealed a hormonal basis of mineralization and decay resistance.
- Some studies indicate that certain systemic factors, such as blood calcium and phosphate levels, affect the susceptibility to decay.

If decay is systemic, then addressing the causal factors (e.g., nutritional, etc.) is as important as good oral hygiene. A systemic assessment by a qualified dentist can determine the balance of dietary and hygiene adjustments, combined with dental care, to ensure that your child's teeth are best suited to avoid hypomineralization and increase resistance to decay.

Our next article examines the patterns and possible causes of childhood tooth decay.

The Center for Systemic Dentistry provides the highest level of care and follow-up to ensure that your child's teeth remain healthy and sound well into adulthood. Located in Berkeley Heights, New Jersey, we are committed to being the state's leading dental practice that focuses on holistic, healing-focused dentistry. Dr. Philip Memoli and his staff are ready to repair the damage caused by childhood tooth decay and ensure that our pediatric patients are committed to maintaining healthy teeth as they grow. Call us today at (908) 464-9144 or contact us via our online contact form.

Read more about pediatric dentistry and child dental wellness at http://www.holisticdentistrynj.com/our-services/pediatric-dentistry/.

Faq Childhood Dental Problems And Pediatric Dentistry

The prevalence of pediatric tooth decay—sometimes, aggressive decay—is rising, even among children who have nutritious diets that are low on sugar. Research points toward systemic

problems, caused by factors such as radiation exposure, hormonal abnormalities, reaction to foreign proteins in foods, and/or improper mineralization (hypomineralization).

Hypomineralization, caused primarily by an insufficient quantity of minerals in the diet, increases a child's susceptibility to tooth decay; other possible contributors to hypomineralization include malabsorption and poor digestion. The systemic theory of decay suggests that nutritional and oral-hygiene factors in decay become relevant only after hypomineralization has begun. Proper mineralization (or the lack thereof) appears to be the key causal factor in decay resistance and decay susceptibility.

There are specific patterns of tooth decay. The age of the patient is sometimes a factor in these patterns.

- *Baby teeth vs. adult teeth.* Baby teeth are formed before birth; their development and health is subject to maternal nutrition (or malnutrition), so it is possible for a child to be predisposed to decay issues before ever eating or drinking. On the other hand, the health of adult teeth, which replace baby teeth during childhood, is dependent entirely upon an individual child's nutrition and metabolism.
- *Anterior (front) vs. posterior (back) tooth patterns.* The anterior teeth generally develop first; problems with these teeth may have begun during a child's first three years. Decay in the posterior teeth may indicate problems acquired after age three. Decay in both types suggest a longer-term problem.
- *Contra-lateral tooth patterns.* Decay in teeth on opposite sides of the mouth may indicate a system problem. Acupuncture shows that certain teeth are linked by the body's meridians. The canine teeth in particular are considered "diagnostic" teeth, as they are linked to the liver meridian; systemic liver problems may present as decay in the canines.

- *Decay clustering.* In this decay pattern, multiple teeth linked to related meridians are affected. These may indicate systemic problems in the correlated organs and body systems.
- *Post-eruption susceptibility.* All teeth (both baby and adult) are subject to decay during the first two years after those teeth erupt. At the time of eruption, teeth undergo another phase of mineralization; during this time, they suffer increased susceptibility to decay.

Breastfeeding a baby may serve to improve jaw growth and development. However, if the mother's milk is insufficiently nutritious (due to health problems or the presence of toxins) or the baby's health prevents efficient metabolism of milk, the child may be placed at a nutritional or systemic disadvantage that could contribute to future susceptibility to decay.

Poor jaw development in children generally is not caused primarily by genetics. Contributing factors to this condition include poor diet, mineral imbalances, interrupted regulation of jaw growth (due to toxins in the environment), and myofunctional problems (disorders in face and mouth muscles). In the first half of the 20th century, Dr. Weston Price, a dentist who traveled the world researching the health of indigenous peoples, discovered that people with properly formed dental jaw growth and a particular balance of nutrients in their diets rarely suffered from tooth decay.

A holistic nutritional dentist can assess your child's jaw regulation and determine if the child is receiving a proper diet conducive to good jawbone and tooth health. Parents, though, can determine myofunctional and jaw development progress simply by looking inside the child's mouth and observing the action of his or her swallowing function and the spacing of the child's teeth. The dentist can classify a child's jaw development according to occlusion (a proper bite) or malocclusion (a "bad" bite).

Teenagers are commonly being diagnosed with gingivitis and bone loss—oral problems that, in past, generally did not appear until a patient was in his or her thirties. As tooth and jaw development becomes complete during the teen years, soft-tissue infections can occur in the gums. During this time, the hormones produced in a teenage body cause the gums to become more sensitive to infection and inflammation. A diet of raw and nutrient-dense foods contribute to beneficial flora (microorganisms) in the mouth, but a poor diet of sugary and processed foods—which modern teens are prone to consume—encourages the growth of harmful flora, which can initiate dental disease. Good oral hygiene, including daily brushing and flossing, is helpful for maintaining "good" flora, but other factors, such as a healthy diet, are equally important for preventing tooth decay.

You can bring your child for his or her first dental examination after all the baby teeth are in and around the time that jaw growth should be starting—generally, this is between three and five years of age. However, a parent should bring the child in before then if a dental or other oral problem is observed.

When you enroll your child in a pediatric wellness program, the child benefits by:

- Getting a lifetime lesson about taking responsibility for his or her health.
- Learning good nutritional habits that contribute to systemic wellness, which greatly contributes to good oral health.
- Getting a head start on preventing dental disease.

Our next article discusses the many benefits of establishing a pediatric wellness program for your child.

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healthy and sound well into adulthood. Located in Berkeley Heights, New Jersey, we are committed to being the state's leading dental practice that focuses on holistic, healing-focused dentistry. Dr. Philip Memoli and his staff are ready to repair the damage caused by childhood tooth decay and ensure that our pediatric patients are committed to maintaining healthy teeth as they grow. Call us today at (908) 464-9144 or contact us via our online contact form.

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What Are the Stages of Dental Disease in Children?

The diagnosis of dental disease in children occurs in five stages. The treatment protocol for your child is determined by the assessed stage of the problem(s).

Stage I examines the underlying causes of a child's dental problems. These may be one or more of five types:

- *Dietary.* Does the child receive the essential nutrition necessary for proper oral health and tooth formation? Dos the child consume a raw-food or vegetarian diet?
- *Biological terrain.* The child is assessed for a proper ratio of serum calcium and phosphorus, as well as osmolarity (sodium chloride level).
- *Immune system.* Has the child's immune system been weakened? Health issues may include immunosuppression, presence of pathogenic organisms, opportunistic

infections (e.g., Lyme disease), and toxic exposure to certain elements, such as lead, mercury, nickel, cadmium, or arsenic.

- *Functional issues.* Health problems in this part of the diagnosis may include maldigsetion, acidosis, malabsorption, leaky gut, and stress on acupuncture meridians.
- *Hormonal issues.* Imbalance or improper levels of certain hormones can affect dentin or the blood calcium level. Suspect sources of hormonal problems are the hypothalamus, the parathyroids, and sex hormones.

Stage II looks for oral susceptibility to dental diseases in teeth, gums (starting in the teen years), and jaw (ages 5 to 14). Examination of teeth looks for enamel disturbances, such as erosion, decalcification, fluorosis, developmental disturbances (which affect the color of adult teeth), and natural bleaching. Assessing gum problems involves reviewing oral hygiene habits, including: brushing (checking the toxicity of the toothpaste used); correct flossing and rinsing techniques, which prevent decay and gum disease; and oil pulling, which can mitigate infectious agents in the mouth. When examining the jaw, the dentist looks for myofunctional and speech problems, mouth breathing, and airway blockage and/or sleep apnea, which may indicate chronic inflammation of tonsils or adenoids.

Stage III looks for the initial indicators of dental disease:

- *Dentin decay.* May be primary (first decay) or secondary (around fillings). Aggressive decay may result from Lyme disease or dysbiosis (microbe imbalance). Decay may also begin due to certain nursing habits in early childhood.
- *Gingivitis.* The dentist checks for gum infection and inflammation. There may be signs of dysbiosis from organisms foreign to the normal mouth flora or from endogenous (normally found in the mouth) flora that have shifted toward opportunistic infection.

- *Misalignment.* Teeth may exhibit crowding, rotation, improper spacing, or a bite that is deep, open, or overbite.

In **Stage IV,** the oral-systemic metastasis stage, dental problems have progressed to a more serious level. The dentist's examination may find indicators of:

- *Pulpal (focal) infections.* These involve abscesses (acute or chronic tooth infections that may become systemic) or fistulas (pus-producing infections that drain into the oral cavity).
- *Periodontal (focal) infections.* The dentist may find evidence of bone loss and pockets in the gum tissue. There may also be pathogenic microorganism (including bacteria, viruses, fungi, and yeast) and endotoxins that can spread to cause systemic problems.
- *Skeletal misalignment.* This may present as development of a class-II overbite or a class-III underbite. Other associated disturbances include a poor facial profile and facial underdevelopment.

At **Stage V,** systemic manifestations of dental disease occur. These may be either lymphatic in nature (including tonsillitis and swollen lymph nodes) or obstetric (becoming a causative factor in women of increased risk of pre-term birth or low birth weight). The heart, lungs, and pancreas are especially susceptible to systemic manifestations of dental disease. Functional problems that result from these systemic infections may include cranial underdevelopment, postural, spinal, and neuromuscular health issues, and temporomandibular joint and cranial-sacral problems.

The Center for Systemic Dentistry works to address pediatric dental problems at the earliest stages, remedying the problem and preventing further dental or systemic damage later in your child's life. Located in Berkeley Heights, New Jersey, we are committed to being the state's leading dental practice that

focuses on holistic, healing-focused dentistry. Dr. Philip Memoli and his staff are ready to repair the damage caused by childhood dental problems and ensure that our pediatric patients are committed to maintaining healthy teeth as they grow. Call us today at (908) 464-9144 or contact us via our online contact form.

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