

How to Manage Nickel Sensitivity

It is estimated 5-15% of all individuals develop nickel sensitivity. Nickel produces more cases of allergic contact dermatitis than all other metals together. Once sensitized, the sensitization tends to persist lifelong (we are on the verge of reversing this). Currently most conventional doctors consider nickel sensitivity as only a contact allergy, meaning that an eczematous rash can only be caused by directly touching nickel containing substances. However, a subset of individuals especially those with Atopy can have **systemic nickel allergy syndrome**.¹ These individuals develop symptoms when they ingest nickel containing foods. The majority of physicians are still not aware of this important syndrome. These symptoms are most commonly any one or a combination of the following symptoms: asthma, eczema, itchy eyes, runny nose with frequent sinus and ear infections. Some patients also have increased fatigue and aggravation of other existing conditions such as irritable bowel symptoms, migraines, arthritis, and other concomitant inflammatory conditions.

Nickel containing contact substances:

Nickel is virtually everywhere. The metal is found in jewelry, wristwatches, batteries, piercing jewelry, euro coins, eyewear, prosthetic joints, espresso machines, irons, office supplies, paper, tattoo inks, potting soil, door handles, dental braces and dental caps, cigarette smoke, musical instruments, flatware, umbrellas, leather goods, hypodermic needles, hairpins, hair curlers, cooking, mobile phone, and laundry detergent . In the 1930s, garters and knitting needles were common allergy triggers; since the 1970s, jeans buttons, costume jewelry and piercing jewelry have been the main offenders. Occupational nickel allergies also occur in people who work as cleaners or at cash registers.

Systemic Nickel Allergy Syndrome:

Causes of systemic nickel allergy syndrome come from ingesting foods that contain high levels of nickel and/or from continuous exposure to dental braces, dental caps, metal prosthetic joints, rods, or steel clips.

Plants have varying affinity to absorb nickel, some have much more affinity than others. Due to the high variability of nickel in soils there is high variability of nickel content in the same plant grown in different soils so the following list will never be exact.

Certain foods always have high nickel content irrespective of the soil content:

Whole wheat, whole grain, rye, oat, millet, buckwheat, cocoa, chocolate, tea, gelatin, baking powder, soy products, red kidney beans; legumes such as peas, lentils, peanuts, soy beans

¹ [World Allergy Organ J.](#): Luciana Ea Mata Perez et.al. 2015; 8(Suppl 1): A89. Published online 2015 Apr 8. doi: [10.1186/1939-4551-8-S1-A89](https://doi.org/10.1186/1939-4551-8-S1-A89)

and chickpeas; dried fruits, canned foods, beverages (strong coffee, tea both black and green), strong licorice, commercially prepared tomato sauce and certain vitamin supplements can have higher levels of nickel compared to other foods.

General recommendations:

1. Avoid all foods that are routinely high in nickel content such as **tea, coffee, cocoa, chocolate, soy beans, oatmeal, nuts, almonds and fresh and dried legumes**. (Tea and coffee have tannins that may reduce the absorption of nickel so it may be tried in moderation after symptoms abate).
2. Avoid all drinks and vitamin supplements containing nickel (you may need to bring your supplements in to be tested) and canned food. Nickel dissociates from the alloy of the can and thus increases the total nickel content of the canned food.
3. Animal tissues generally contain less nickel in comparison to plant tissues. Meat, poultry and eggs are suitable for low nickel diet. Except for a few varieties of fish that show **high concentration of nickel such as tuna, herring, shellfish, salmon and mackerel**, other fish can be used on a low nickel diet.
4. Nickel content of milk is low; therefore, milk and its products such as butter, cheese, curd and cottage cheese (paneer) can be consumed.
5. Nickel content of cereals is low. Foods prepared from rice (polished), refined wheat or corn (corn flakes, macaroni, etc.,) are allowed.
6. Vegetables such as potatoes, cabbage and cucumber can be used. However, vegetables such as onion and garlic, should be used in moderation.
7. Green leafy vegetables may be taken sparingly due to the possibility of high concentration of nickel. Young leaves are preferred than older leaves as they contain relatively lower concentration of nickel. Mushroom can be used.
8. Among the fruits, one may partake bananas (in moderation), apples (up to 3-4 times a week) and citrus fruits (up to 3-4 times a week).
9. Tea and coffee in weaker concentration, can be taken in moderation (up to 2 cups a day).
10. While cooking, nickel-plated utensils should not be used and should be replaced. **Acidic food should not be cooked in stainless steel pots and pans** as the acids may lead to the dissociation of the nickel from the utensils and it can increase the nickel content of the food. For example, most commercially prepared tomato sauces are from tomatoes (acidic) cooked for long periods in stainless steel pots. (uncooked tomatoes do not have

excess nickel). We recommend sensitive individuals should prepare a large amount of tomato sauces in ceramic pots and freeze them to use when needed. Canned soups also follow the same logic.

11. The initial water flow from the tap in the morning should not be drunk or used for cooking as nickel may be released from the tap during night. Never use hot water from the tap for cooking (hot water sitting in a stainless-steel tank for hours have higher nickel content). Individuals with eczema should limit time spent showering in hot water (less than 10 minutes).
12. Avoid metal water bottle containers.

Other substances/physical states that interfere with nickel absorption from diet

1. Vitamin C, orange juice, tea, coffee (tannins inhibit nickel absorption), milk inhibit nickel absorption in human.
2. Deficiency of iron will promote increased nickel absorption. Statistically women have a much high prevalence of nickel sensitivity and this may be partly because they statistically have higher prevalence of iron deficiency due to loss of iron through menstruation. Women may benefit from iron supplementation.

Additional options:

Calcium EDTA is a safe substance that has powerful ability to remove many heavy metal toxins. It also happens to bind and remove nickel from the body. We have found this as very useful therapy to keep the nickel levels down.

For years, we used intravenous administration (IV) to markedly remove the nickel from the body instead of waiting weeks for the body to excrete the nickel naturally.

Now there is an oral form of EDTA (lipophos-EDTA) which we have found to be just as effective as IV EDTA. In fact, our clinical experience is suggesting that lipophos-EDTA may not only remove the excess nickel but might reduce the overall sensitivity to nickel. In some patients, even short-term use has resulted in patients being able to liberalize their diet. This is not entirely surprising given that a substantial portion of our immune system is located in the lining of our gut. Removing a sensitizing inflammatory metal from the lining of the gut may have even a greater benefit than removing it from the rest of the body through IV administration.

The use of lipophos-EDTA appears to bring the nickel level well below the symptom threshold such that the individual can have a less restrictive diet and eat a greater variety of foods.

Summary: individuals who have sensitivity to nickel appear to have a threshold in which symptoms will appear and escalate. The body accumulates and gradually excretes nickel. Hence one must reduce the rate of intake below the rate of excretion. So, if you can reduce your rate of intake to be less than your rate of excretion, you can remain below the symptom threshold and become symptom free.

Recommendations:

1. Drastically reduce your nickel exposure until your symptoms resolve, then you can gradually experiment and liberalize your foods to see how much you can tolerate.
2. Consider using lipophos-EDTA as needed as per your doctor's recommendations
3. Try ingesting a vitamin C rich food or drink or take a 500mg vitamin C pill when you knowingly eat a meal that might contain increased nickel content. (E.g. add lime spritz to a taco that has refried beans to reduce the absorption of the nickel or add a spritz of lemon/lime in your water with meals)
4. Make sure you are not iron deficient. Ask to be tested by your doctor to find out whether you need to take an iron supplement or increase iron containing foods in your diet.
5. Those with eczema should take only brief showers and use soap sparingly mainly to important areas: axilla, groin, feet etc. and not to arms, thighs, back of knees unless definitely soiled. Soap will remove protective oils and make skin cracked and easily irritated.
6. At the Chung Institute, we also use acupuncture and low dose immunotherapy (LDI) to down regulate the nickel sensitivity. Acupuncture is especially useful for individuals with asthma.