

## Blood Tests for Type IV Hypersensitivity to Metals

Please note that in vitro blood-based tests (LTT / NiLPT / MELISA) are not universally accepted as the standard of care and are therefore not recommended by Allergy Asthma & Immunology Specialists (AAIS) of Alabama and Georgia. The following general information is provided as a courtesy for those who wish to pursue labs that offer “metal hypersensitivity testing” on their own. AAIS does not order these tests.

### Key Centers / Labs

#### 1. National Jewish Health (Denver, Colorado)

- They have a custom Metals Allergy Testing Program (MetALLs) that offers **patch testing** for metals & bone cement.
- They also offer a **blood test for nickel allergy** (the Nickel Lymphocyte Proliferation Test, or NiLPT), which is validated vs. patch testing.
- <https://www.nationaljewish.org/directory/metalls-allergy-program>

#### 2. Orthopedic Analysis Laboratory

- This lab provides a “Metal-LTT” test (lymphocyte transformation test) for metal sensitivity.
- So this is a blood-based immune cell reactivity test.
- This blood test has not been validated or compared to patch testing.
- <https://www.orthopedicanalysis.com/metal-sensitivity>

#### 3. MELISA Lab (“Memory Lymphocyte Immuno-Stimulation Assay”)

- While MELISA is an international test, they have phlebotomy service providers in the U.S. for drawing the blood sample.
- Their assay measures type IV hypersensitivity (delayed immune response) to a panel of metals.
- This blood test has not been validated or compared to patch testing.
- <https://melisa.org/metal-sensitivity/metal-sensitivity-drop>

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### Limitations / Considerations

- The in vitro blood-based tests (LTT / NiLPT / MELISA) are **not universally accepted as standard of care and thus not recommended by Allergy Asthma & Immunology Specialists of East Alabama**. Some of the issues include:

- Sensitivity and specificity are less well established than for patch testing. The predictive value (especially for implants or systemic symptoms) is still uncertain in many cases.
  - These tests may be expensive, often **not covered by insurance**.
  - Logistics: for example, MELISA requires that blood is drawn into specific tubes, handled quickly (lymphocyte viability), etc.
- Patch testing remains the “gold standard” for contact dermatitis / cutaneous reactions to metals. In vitro tests may help in certain contexts (e.g. suspected implant allergy, when patch testing is contraindicated or inconclusive), but many experts treat them as supplementary or investigational.
- <https://www.aaaai.org/allergist-resources/ask-the-expert/answers/2025/vitro>