

METAL ALLERGY

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Ampath is currently the only private laboratory in South Africa that offers testing for metal hypersensitivity. Testing is performed at our Cellular Immunology Laboratory.

What is the test for metal allergy called?

The test is called the lymphocyte proliferation test (LPT) and metals to be tested should be specified as per the list below. A metal allergy request form is also available and can be requested from your local Ampath representative.

Metal and Metal Alloy Test List

Aluminium	Iron Lanthanum	Ruthenium
Arsenic	Lead	Silver
Barium	Manganese	Stainless steel alloy traces
Beryllium	Mercury	Thimerosal
Cadmium	Mercury (ethyl)	Tin
Chromium	Mercury (inorganic)	Titanium alloy traces
Cobalt	Mercury (methyl)	Titanium IV dioxide
Cobalt-chrome alloy traces	Mercury (phenyl)	Titanium IV oxysulfate
Copper	Molybdenum	Vanadium
Gallium	Nickel	Zinc
Gold	Palladium	Zirconium
Indium	Platinum	

Why is this test clinically relevant?

The incidence of metal hypersensitivity is increasing due to chronic low-level environmental exposure and a rise in the number of surgeries, particularly joint replacement surgeries, being performed. The diagnosis of metal hypersensitivity before surgery may improve patient management by preventing adverse reactions and the need for surgical revisions. The diagnosis of metal hypersensitivity after surgery is important as it may mimic infection.

Who should get tested?

Patients identified for metal device implants as part of orthopaedic, dental, gynaecology or cardiology procedures. This is especially important in patients with:

- A history of other metal allergies e.g. nickel-containing jewellery.
- A history of previous adverse reactions following insertion of a medical device e.g. joint replacement devices, dental implants or fillings, pacemakers and cardiac stents.

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Patients with signs suggestive of a metal allergy after a surgical procedure:

- Cutaneous: oedema, erythema, urticaria, vasculitis, induration, bullous eruptions and treatment-resistant dermatitis.
- Regional: delayed wound healing, muscle necrosis, arthralgia, osteolysis, chronic pain and prosthetic device loosening with implant failure.

Are there any special instructions for sampling?

Allergic reactions to metals are classified as type IV (delayed) hypersensitivity reactions. These reactions are caused by the activation and proliferation of memory T-lymphocytes. To ensure mononuclear cell stability, blood samples cannot be sent via other laboratories and should be collected directly at an Ampath depot. Controlled sampling optimises sample integrity for valid results. To prevent false negative results, samples should be processed within 24 hours and all immunosuppressant drugs discontinued at least two weeks prior to testing.

What do the results mean?

The patient's background stimulation (without the addition of a metal allergen) and the stimulation after the addition of a metal allergen are measured. The lymphocyte proliferation assay is expressed as a stimulation index and a value of ≥ 4 is considered positive.

FAST FACTS



SAMPLE REQUIREMENTS

- 4-8 citrate tubes (depending on the number of tests required).
- Samples must be drawn Sundays to Thursdays.
- Samples must be kept at room temperature and remain uncentrifuged.



TURNAROUND TIME

Testing will start within 24 hours of collection, however results interpretation can take up to 10 days.



QUERIES?

Contact the Ampath Cellular Immunology Laboratory on **012 678 0530**.