INTERNATIONAL DIAGNOSTIC SERVICES

TEST MELISA

Evaluation of Type IV - Hypersensitivity to Metals

CALDERÓN
CENTRO DIAGNÓSTICO

WHAT DOES THE MELISA TEST CONSIST OF?

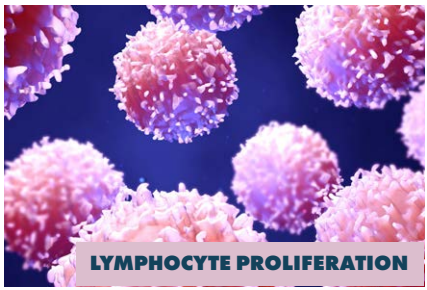
TEST MELISA comes from the acronym:
Memory Lymphocyte Immunostimulation Assay.

TYPE OF SAMPLE → Blood

METHODOLOGY

The technique consists of **a cell culture of lymphocytes in the presence of metals,** which assesses the degree of lymphocyte proliferation through two phases:

- **PHASE I or lymphocyte response** when applying a radioactive tracer to the sample
- **PHASE II or microscopic viewing** for the exact count of the aforementioned proliferation, detection of false positives and confirmation of real activation


LYMPHOCYTE PROLIFERATION

The technique includes successive washes and a sample incubation period.

Type I, II, and III hypersensitivities

Produce lymphocyte activation, (either IgG or IgE), and are therefore measured using traditional antibody counting techniques.

Type IV hypersensitivities

Only produce an increase in lymphocytes numbers, so the methodology used in **the MELISA test is currently the only viable laboratory technique for counting them.**

MELISA® DIAGNOSTICS

MELISA detects the **immune reaction against metals.** It determines reactivity and intensity of reaction to each metal tested.

For a metal to generate toxicity, it must exceed a certain level of intoxication in the organism. Below that level, adverse reactions are not detected.

MELISA TEST **does not assess the degree of toxicity to metals,** but rather immunological hypersensitivity.

When a hypersensitivity process takes place, the sole and minimum contact of that organism with the metal produces an **allergic and pathological reaction. This is the reaction measured by MELISA Test,** thus detecting which metals make the body react, after the first contact.

WARRANTIES – MELISA ORGANIZATION

MELISA **is the only scientifically validated blood test** to diagnose type IV hypersensitivity.

It is carried out under a **license** granted by the **Organization MELISA.**

ONLY 4 LABORATORIES

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Currently, only 4 laboratories authorized by this organization analyze the test (Germany, Switzerland, Israel, and in Spain, **Centro Diagnóstico Calderón)**, which has been analyzing it **since 2014.**

Multiple publications support the efficacy and clinical utility of the test MELISA:
melisa.org/articles

METALS ANALYZED

From a long list, the most frequently analyzed metals are the following:

Aluminum	Tin	Gold	Zirconia
Antimony	Ethylmercury	Palladium	Hydroxyethylene methacrylate*
Arsenic	Phenyl mercury	Silver	Casein
Barium	Gallium	Platinum	Gluten
Beryllium	Indian	Lead	Methyl methacrylate
Bismuth	Iridium	Ruthenium	Benzoylperoxide*
Cadmium	Manganese	Silica	Benzothiazole *
Chrome	Inorganic mercury	Titanium Sulfate	BIS-GMA*
Zirconium	Methylmercury	Tantalum	Camphorquinone*
Cobalt	Molybdenum	Tungsten	Triethylene glycol dimethacrylate*
Copper	Nickel	Calcium titanate	Dibutyl Phthalate*
Titanium dioxide	Niobium	Vanadium	Hydroquinone*

TYPE PANELS

The metals to be analyzed can be included in **standard panels, or in personalized panels** according to the patient's exposure to specific metals, their clinical history and their symptoms.

BASIC PANEL	**AUTISM PANEL**	**TITANIUM IMPLANTS PANEL**
Ni, MeHg, Al, As, TiO2	Al, Mg, Mel-Hg, Ni, Pb, Timerosal	Al, Ni, TiO2, Ti (SO4)2

BASIC AMALGAM PANEL	**COMPLETE AMALGAM PANEL**	**AMALGAM PANEL + ROOT IMPLANTS**
Cu, Hg, Ni, Ag y Sn	Cu, Ga, Au, In, Hg, Ir, Ni, Pd, Pt, Ag	Al, Be, Cd, Cr, Cu, Au, In, Hg, Ir, Metil-Hg, Mo, Ni, Pd, Fenil-Hg, Pt, Ag, Timerosal, Sn, TiO2, Zr

TAILORED PANEL	Selection of specific metals adapted to the patient

RESULTS REPORTS

To contribute to the selection of the appropriate metals for each patient, the test MELISA includes an **extensive questionnaire** for the clinical history of the patient.

The analytical report expresses the **indices obtained for each of the allergens** studied along with **advice** based on the results obtained.

PROCEDURE AND LOGISTICS

Prior to blood extraction, the patient may fill **the clinical history form,** in order to receive advice on the metals to be analyzed.

The patient must not be under treatment with immunosuppressants.

The center will draw **20-40 ml of blood** from the patient and introduce it into the corrispondant citrate tubes.

For reference, the analysis of **10 metals, requires 36 ml of blood,** or 4 large citrate tubes.

The sample must be stored at **room temperature** until its transport, which will be carried out by a company that ensures the correct handling of biological samples.

The sample must be received in Centro Diagnóstico Calderón **WITHIN 48 HOURS,** for the sample to remain stable. It is recommended to make the shipment the same day of the extraction, avoiding the days preceding bank holidays.

The collaborating center **must send the sample** contained in 5 citrate tubes, following the instructions that Centro Diagnóstico Calderón will previously provide for sample collection.

TIMINGS FOR ANALYSIS AND RESULTS

7 WORKING DAYS

from receipt of the sample.

Centro Diagnóstico Calderon will send the results to the partner center **by email**, so that it can forward them to their patients.

WHICH PATIENTS ARE ELIGIBLE FOR THE TEST?

Three types of patients:

- Those with a **genetic predisposition** to develop a type IV hypersensitivity
- Those who are continuously or chronically **exposed to metals**
- Those who **anticipate future exposure** to metals on an ongoing basis

The secondary effects produced by this exposure to metals can produce different pathologies, autoimmunities, or even specific symptoms.

SYMPTOMS AND PATHOLOGIES ASSOCIATED WITH EXPOSURE TO METALS

- **Fatigue of uncertain origin (Chronic Fatigue Syndrome or CFS)**
- **Fibromyalgia**
- **Multiple Chemical Sensitivity (SQM)**
- **Gastrointestinal pathologies of uncertain origin**
- **Contact Dermatitis (eczema)**
- **Psoriasis**
- **Autism**
- **Multiple Sclerosis (MS)**
- **Systemic Lupus Erythematosus**
- **Thyroiditis**
- **Sjogren's Syndrome**
- **Inflammation of the gums and bruxism**

FACTORS INFLUENCING THE ABOVE SYMPTOMS

Residing or working near places that emit metal fumes (airports, factories, industrial plants, mining regions, etc.)

- Residing in areas with high pollution (Cadmium)
- Dental amalgams: Gold, Titanium, Composites, Ceramic on metal, cobalt crown
- Prosthetics or dental implants: Titanium with gold, Titanium alone, Zirconium
- Endodontics & orthodontics
- Orthopedic implants (Nickel, Titanium, Vanadium, Cobalt, Chromium, Bromine, Molybdenum)
- Silicone breast implants
- Labial wires after cosmetic surgery
- Contact lenses
- Eye drops and/or nasal sprays (Thimerosal)
- Tattoos
- Intrauterine IUD
- Flu vaccine & injections for routine allergy tests
- Tobacco
- Diets high in fish, shellfish, and other foods that may contain high amount of Nickel, Mercury and Iron
- Utensils with Aluminum, Nickel, typical of aesthetic and domestic use
- Jewelry or watches (Gold, Silver and/or Nickel)

Exercising professions in these industries:

- Construction
- Mining
- Electricity
- Renewable energy
- Aeronautics
- Painting
- Textile

MELISA identifies which metals the patient's organism tolerates, and which ones it does not, so it is very **useful to perform prior to surgery** or prior to the placement of prostheses and implants.

HIGH SUCCESS RATES

Scientific studies published by MELISA Organization indicate that 80% of patients who have removed their implants, after discovering hypersensitivity thanks to MELISA Test, have achieved improvement in their symptoms.

PROFESSIONAL PROFILE FOR THE MELISA PRESCRIPTION

MELISA test does not require a Medical Prescription, however, it is very useful for medical and professional staff in the following fields:

- General medicine
- Occupational medicine or occupational prevention of risk (industries exposed to metals)
- Allergology
- Traumatology (joint implants)
- Plastic and Aesthetic Surgery (prosthesis)
- Cardiology (pacemaker)
- Dentistry (amalgams)
- Internal Medicine
- Pediatrics
- Dermatology (Tattoos, piercings, cosmetics, jewelry)
- Gynecology (IUDs, postpartum treatments)
- Ophthalmology and optimal (lenses)
- Clinical laboratory

ADVANTAGES OF THE TEST MELISA

The test MELISA is the only **scientifically validated** diagnostic test for the detection of type IV hypersensitivity to metals.

It is **more accurate** than traditional patch tests (clinical studies show that patch tests do not detect values below certain level, generating a large number of false negatives).

Its sampling procedure is **less painful** and it takes **less time** than traditional patch tests.

MELISA® DIAGNOSTICS

It has the **endorsement and supervision of the Melisa Organization,** specialized exclusively in the development of this Test.

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Long experience of Centro Diagnóstico Calderón, performing the test since 2014 and with more than **30 years' experience focusing on hypersensitivity tests.**

ONLY 4 LABORATORIES

Centro Diagnóstico Calderón is one of the only **4 laboratories authorized** to analyze the test worldwide.

1 SAMPLE

50 METALS

It allows to analyze allergies to more than **50 metals with just one sample.**

It is very useful for many different areas of medicine, and a recommended step prior to surgery and **implant placement.**

Great practical application for **improved quality of life**

CONTACT US

FOR MORE INFORMATION ON:

- Collaboration conditions
- Test specific details
- Results reports, documents and specific instructions
- Specific metal lists based on specific environments
- Scientific studies on MELISA
- Scientific studies on metal allergies
- MELISA Organization
- Other Centro Diagnóstico Calderón Tests

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Or through our website: www.labcalderon.com

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