

Test report
XX79990



Test report for
SMITH, JANE

Neg. control
1019

Test date
27 April 2015

Referring clinic

DOB 01 January 1976

Code	Substance	Stimulation Index	Morphology	Evaluation
PWM	Pokeweed	409	+++	Strongly positive
1. Al	Aluminium I	0.6	-	Negative
	Aluminium II	0.7	-	Negative
2. CaTi	Calcium Titanate I	1	-	Negative
	Calcium Titanate II	0.7	-	Negative
3. Cr	Chromium I	1	-	Negative
	Chromium II	1	-	Negative
4. Co	Cobalt I	1	-	Negative
	Cobalt II	0.8	-	Negative
5. Mn	Manganese I	0.8	-	Negative
	Manganese II	2	-	Negative
6. Mo	Molybdenum I	0.7	-	Negative
	Molybdenum II	0.7	-	Negative
7. Ni	Nickel I	20.5	+++	Strongly positive
	Nickel II	20.5	+++	Strongly positive
8. TiO ₂	Titanium dioxide I	0.8	-	Negative
	Titanium dioxide II	0.7	-	Negative
9. TiSO ₄	Titanium sulphate I	1	-	Negative
	Titanium sulphate II	1.1	-	Negative
10. V	Vanadium I	0.5	-	Negative
	Vanadium II	0.7	-	Negative

Evaluation of test results

Strongly positive to: Nickel

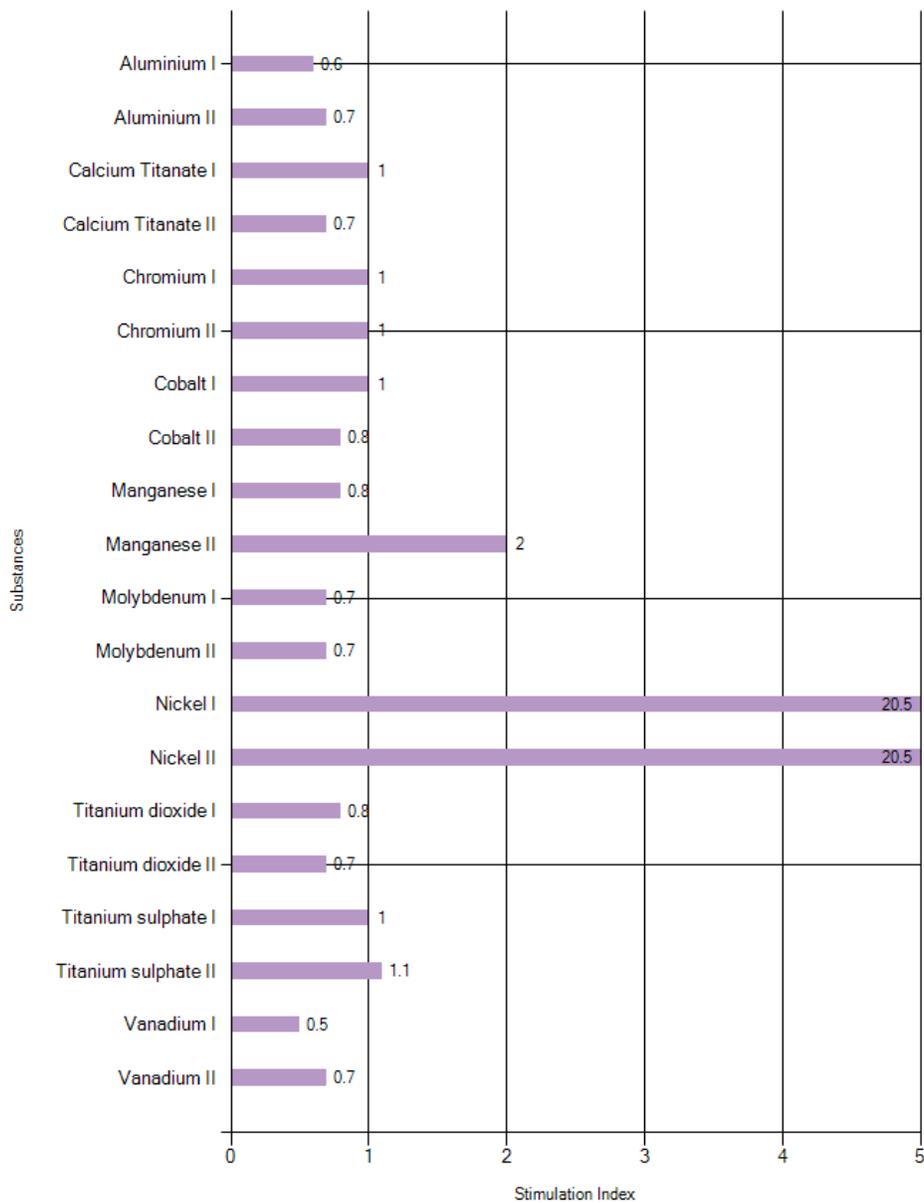
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What is the MELISA® test?

MELISA is an advanced blood test for detecting hypersensitivity to metals and other substances. White blood cells from a blood sample are tested against a range of suspected allergens and the reaction monitored. An allergy is indicated when the white blood cells (called lymphocytes) start to expand and multiply. This process is detected by MELISA by using a radioactive tracer, which counts the lymphocytes before and after exposure to the substance. The level of hypersensitivity is determined by how many lymphocytes were found after each reading. An additional evaluation is done by looking through a microscope at the cells (morphology).

What is the Stimulation Index?

The Stimulation Index shows the degree of allergy, using a scale which varies for each patient. An SI of 3.0, for example, means blood cells multiplied three times, indicating a hypersensitivity reaction. Here is the SI scale used to evaluate your MELISA results:

- Below 0.3** Toxic. This indicates that the number of blood cells actually declined over the five days. This is a rare reaction, whose clinical relevance is unclear.
- Above 2.0** Weakly positive. Signs of a reaction, showing a weak degree of allergy.
- Above 3.0** Positive. A reaction showing allergy to the given substance.
- Above 10.0** Strongly positive. A strong reaction, where blood cells multiply at least 10 times.

Explaining the details on your test report

Negative control
This is a value showing the growth of your cells without addition of an allergen. It is expressed in "cpm" which means "counts per minute".

Positive control
Pokeweed is a substance that all white blood cells react to, used here to make sure the cells are reacting as they should.

Test report
1541-3

Test report number
Every test is given a unique number.

Test report for	Neg. control	Test date	Referring clinic
Smith, Mary <small>DOR 17 July 1963</small>	880	13 February 2012	

Code	Substance	Stimulation Index	Morphology	Evaluation
PWM	Pokeweed	211	>100	Strongly positive
1. Cu	Copper I	0.7	-	Negative
	Copper II	2.1	blasts present	Weakly Positive
2. Hg	Inorganic Mercury I	4.4	many blasts	Positive
	Inorganic Mercury II	10	many blasts	Positive

Substance name & concentration
Substances are tested in at least two concentrations if there are enough blood cells. "Inorganic mercury I" is a higher concentration than Inorganic Mercury II".

Stimulation Index
As explained above.

Morphology
This is an evaluation of the cells carried out with a microscope. Blasts (lymphoblasts) are large cells which are present if the white blood cells are stimulated. A number indicates the how many blasts were present.

Test overview

The results: Strongly positive to Nickel. The section below gives a brief description of the substances the blood was tested against and possible sources of exposure. Please note that MELISA detects the body's reaction to various substances, not the levels found in the body.

1. Aluminium

Negative
Highest SI reading:
0.7

Aluminium is present at low levels in food (coloring agent E173) and drinking water. It is used as an adjuvant in vaccines. It has not been conclusively linked with health defects, although controversy remains over its role in Alzheimer's disease. Exposure can be reduced by switching to aluminium-free deodorants, avoiding water treated with aluminium salts, canned food, processed cheese and cakes (which may contain moderate amounts of aluminium in the processing stage). Aluminium can also be present in soy-based infant formulas, cosmetics and pharmaceuticals such as antacids, buffered aspirin and intravenous fluids.

2. Calcium Titanate

Negative
Highest SI reading:
1

Calcium titanate is another type of titanium salt used for testing of allergy to titanium implants and compounds. In hip replacement surgery, calcium titanate can aid integration of bone implants.

3. Chromium

Negative
Highest SI reading:
1

Chromium is found in cigarettes. The US government Agency for Toxic Substances estimates cigarettes contain a concentration of 0.24 to 14.6 mg per kg. Metal joint prostheses made of chromium alloys are widely used in clinical orthopedics. Chromium is used in paint pigments (red, yellow, orange, and green), chrome plating, leather tanning, and wood treatment. It's also used in jewellery, electroplating, dyes, wood preservation substances, welding, tattooing, dental materials and cement. Environmental exposure is mainly due to nearby chemical plants, or road dust due to catalytic converter erosion.

4. Cobalt

Negative
Highest SI reading:
1

Cobalt is mainly found in the heavy metal industry – especially production of cutting and grinding tools, diamond polishing and dealing with radioactive therapy. The fume and dust of cobalt metal is odourless and black. It can also be found in hair dyes, and leg implants. To those who are hypersensitive, cobalt exposure can induce an asthma-like attack - with wheezing, bronchospasm, and dyspnea. Loosening of cobalt implants has been found to be more frequent in those with cobalt allergy. It has also been linked to bronchial asthma, and contact dermatitis in factory workers.

5. Manganese

Negative
Highest SI reading:
2

Manganese is a naturally occurring white metal. Nutritionists recommend certain limits for a healthy diet – but higher levels can pose danger, especially to those who are hypersensitive. Manganese is used to make batteries, ceramics, fertilisers and dietary supplements. This exposes those who work in relevant factories. It is added to gasoline in certain parts of the world, exposing gas stations workers (such as mechanics) and people experiencing normal car pollution (for example, those at bus stops). Some pesticides contain manganese, posing a risk for those who eat food with traces of the pesticide still present.

6. Molybdenum

Negative
Highest SI reading:

Molybdenum is used in dentistry - but it is of relatively low toxicity, and regarded as one of the safer elements to use as long as the patient is not allergic. Sources of exposure are the steel industry, colour pigments, dental materials (Co-Cr-Mo), fossil fuels, oil refineries and lubricating oil. It is also used in hair colouring agents, such as henna, and traces are also found in foods and wine. Acute toxicity in humans is unlikely because the dose

0.7 required would be exceptionally large.

7. Nickel

Strongly positive
Highest SI reading:
20.5

Nickel triggers more hypersensitive reactions than any other metal – up to 15% of the population suffer from some form of nickel allergy, mostly women. Nickel is exceptionally common: in cigarettes, jewellery, buttons and in coins (including the Euro). It may be found in dental restorations, prostheses (hip, knee, cochlear and cardiac implants), colour pigments, cosmetics, stainless steel cutlery, razors and pots. Even hard cleaning of kitchenware has been shown to release nickel in washing-up water. Nickel can pollute drinking water near factories which use it. Nutritionists have developed low-nickel diets, which cuts out certain foods (eg. nuts, beans, pulses, chocolate, oats).

8. Titanium dioxide

Negative
Highest SI reading:
0.8

Titanium dioxide is used as a whitening agent in cosmetics and toothpastes, in sunscreen agents, paint, plastic carrier bags, jewellery and implants such as Brånemark (for teeth). It can also be used for colour in some dental cements, composites and root fillings. It is also in some candy such as Skittles and M&Ms under the code E171.

9. Titanium sulphate

Negative
Highest SI reading:
1.1

Titanium sulphate is a different form of titanium, and it is possible to be allergic to titanium sulphate but not titanium dioxide and vice versa.

10. Vanadium

Negative
Highest SI reading:
0.7

Vanadium is found in titanium implants. A common dental implant alloy is made of 90% titanium, 6% aluminium and 4% vanadium. Vanadium is mixed with other metals to make very strong and durable alloys which are used in construction materials (mostly steel), tools, springs and jet engines. Vanadium pentoxide (V₂O₅) is used as a catalyst, dye and colour-fixer.

Testing performed at

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