

MELISA®

THE ALLERGY BLOOD TEST

www.melisa.org

HYPERSENSITIVITY (allergy) is a complex phenomenon whose characteristics are still not completely understood. Therefore, laboratory tools for identification of allergens are in great demand. MELISA® is a blood test which has been scientifically and clinically evaluated to objectively diagnose cellular hypersensitivity (type IV allergy).

MELISA® can identify a hypersensitivity reaction which can be triggered by substances such as the preservatives in vaccines or mercury, gold and cadmium used in dental restorations.

People allergic to these substances have been found by the MELISA® test to suffer from local and systemic reactions. Symptoms can range from Chronic Fatigue Syndrome (CFS) or Multiple Sclerosis (MS) to skin diseases such as psoriasis and eczema. In young children allergic to thimerosal in vaccines, there is a risk of a vaccine-triggered immunological attack on the brain which may precipitate autistic disorders.

WHY ARE METALS SO DANGEROUS?

When certain heavy metals (such as nickel or mercury) enter the body, they become ionised and unstable. They seek proteins to bind to. In most cases, this poses no threat to health. But in an allergic patient, the metal poses a risk since the immune system will incorrectly recognise the metal-protein complex as an antigen, or invader, and start to attack it.

In the first instance the white blood cells, or lymphocytes, start to expand and multiply to fight this so-called invader. This, in itself, triggers the body's early-warning system, known as the hypothalamic-pituitary-adrenal (HPA) axis.

In some cases, antibodies to the metal-protein complex may be created. This is deleterious if the metal has bonded to myelin, the fatty substance which insulates brain nerves. If myelin is attacked, the brain's ability to control the body is impaired. Damage to myelin is present in patients suffering from MS but also in children with autistic disorders.

MELISA® objectively measures the proliferation of memory lymphocytes – the hallmark of an immunological reaction. Memory lymphocytes in the blood “remember” the encounter with certain metals or other allergens in the past and this is why they will grow and divide upon the re-exposure to the same metal added into the culture. This reaction can be objectively measured and compared to the reactivity of control cells cultivated in the absence of any metal. Parallel cultures are also incubated with so called mitogen (mitosis=division) to check the general wellbeing of cells.

MELISA® AND AUTISM

The above reaction can happen in adults as well as in children. Children can be sensitized during pregnancy since mercury and other metals may be transferred from the mother to the foetus through the placenta.

Thimerosal, a preservative which is 49.6 per cent ethyl mercury by weight has been used in lotions for varicose veins, eye drops, nose drops often used by pregnant women. Sea food contains organic (methyl) mercury. Dental amalgam is the largest source of inorganic mercury in the body.

Mercury ions pass easily from the circulation into the brain in newborns and babies, since the blood-brain barrier is not fully developed until 6 month of age.

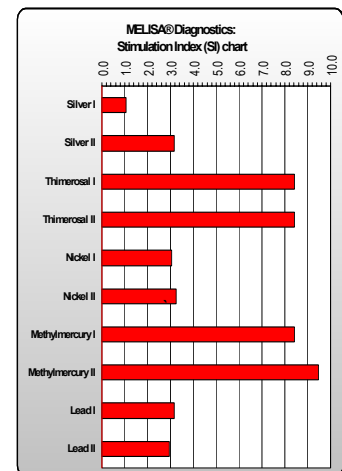
Parents can use MELISA® to see if their children are allergic to thimerosal or other vaccine additives such as aluminium. Children with autistic disorders may often be allergic to nickel and inorganic mercury. In such children, the re-exposure to thimerosal-containing vaccines or to dental amalgam is strongly contraindicated. Luckily, an increasing selection of paediatric vaccines is free from thimerosal, at least in US and Scandinavia. In Sweden and other European countries the use of amalgam in children and in women of child-bearing age is prohibited.

MELISA®: WHAT IT IS NOT

It is important to distinguish between metal allergy and metal toxicity. MELISA® does not measure the levels of metals in a patient's body; it measures whether the patient is allergic to metals. For examples, hair samples may show levels of mercury or other substances which are below the official “safe limit” – but the patient can still be allergic. For allergic babies, there is no such thing as a “safe” limit. Even trace amounts of a substance pose danger if the substance triggers an immunological reaction.

MELISA® RESULTS

The results of a MELISA® test are expressed in a Stimulation Index, accompanied by a graph (right). Normally, each substance is tested in at least two concentrations, to obtain the optimum result. The blood cells are labelled with radioactive isotopes and the radioactive DNA is then counted in a beta counter. In



parallel, cultured cells are concentrated by centrifugation, stained and the number of stimulated cells is counted under the microscope. This so called morphological evaluation contributes to even more accurate results.

MELISA® BACKGROUND

MELISA® was invented by Vera Stejskal, Associated Professor of Immunology at the University of Stockholm and former head of Immunotoxicology at Astra Pharmaceuticals in Södertälje (now Astra Zeneca). She was a key scientist during the toxicology evaluation of Prilosec®, the world's no. 1 stomach ulcer drug. Prof. Stejskal is a founder of MELISA® Medica Foundation in Stockholm, Sweden and runs a diagnostic laboratory MELISA® Diagnostics in Wavre, Belgium.

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