of genuine sensitization to peanut, hazelnut and soy due to widespread cross-reactivity between major birch allergen Bet v 1 and Bet v 1 homologs Ara h 8, Cor a 1.04 and Gly m 4.

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Evaluation of IgE test results in clinical practice

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Background: Serum immunoglobulin E (IgE) measurement is an important *in vitro* method in the diagnosis of allergy. Accuracy proven specific IgE tests with high repeatability are used as an alternative to *in vivo* tests.
Method: We retrospectively evaluated the IgE results of patients admitted with allergic symptoms. Total IgE (T.IgE) and specific IgE (SpeIgE) levels of patients followed in our clinic between 2012 and 2015 were measured with fluoroimmunenzymatic method.
Results: Of 7717 total test results, 1217 were T.IgE, and 6500 were SpeIgE, out of which 20.3% were panel of inhalative allergens. Among 56 different SpeIgE used, 37 were single, 19 were mix allergens (aeroallerjens, occupational, food, and drug). Majority of the tests were performed using single allergens (70%). *D. pteronyssinus* SpeIgE (d1) was the most common test with 586 (9%) followed by grass pollen SpeIgE (g5, g12) (8.5%), and *D. farinae* SpeIgE (d2) (6.8%). The number of tests measured did not differ between years, whileas most of the tests were performed between the months of April and June. The highest positivity rate (Class $\geq$ 1) was found with grass pollens (77%), of which >60% were grass mix (gx1, gx3, gx4), and ~35% were tree and weed pollen analyses (tx5, wx3). The panel of inhalation allergens was found to be positive 54.6%, likewise the rate with cat/cochroach and venom positivity were around 50%. Regarding food tests, egg white SpeIgE has the highest positivity rate with 53.3%, followed by cow's milk and nuts as low as ~16%. Only one third of the house dust mite (d1, d2) SpeIgE measurements were positive.
Conclusion: As inhalation panel has little value, it may not be tested if not really indicated. In conclusion, the results of a 3-year- retrospective analysis showed that evaluating patients with allergic symptoms with a limited number of carefully selected SpeIgE allergen(s) groups will be more cost-effective.

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Thermography imaging as an objective technique for evaluation of allergic skin tests

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Background: Skin prick and a patch tests are a widespread methods of various types of allergic reactions' diagnostics worldwide. However, there is a number of problems with interpreting of testing results and one of them is subjectivity.

The main method of the analysis of results of dermal tests is measurement of diameter of a papule of reaction that is bound to incorrect interpreting of the size, an error of measurement and other problems.
Method: Measurements were performed with routine skin prick tests and patch tests for 25 patients each. Ten allergens and two controls (one only negative for patch testing) were examined. An infrared camera was used. Two trained allergists were used to interpret results visually independently to one another. The skin reactions were evaluated by wheal and erythema size at 20 min for skin prick and 72 h for skin patch tests. All tests resuld were classified according to usual classification as negative, doubtful, weak (+), strong (++) and very strong (++).
Results: By the analysis of results comparison between the visual and thermographic measurement of wheals after prik-tests we found high correlation coefficient of determination ($r = 0.9$), however the difference between the sizes of a papule in average was 1.5 mm. Ten tests were interpreted visually as negative and thermographically as doubtful.

By the analysis of results comparison between the visual and thermographic measurement of patch-tests we found the coefficient of determination ranged from 0.725 to 0.952 (average correlation). However, in the analysis of results coincidence of the visual analysis by allergists and a thermographic picture made only 70% of cases of the carried-out tests. Absolute matching of clinical and thermal image results was observed only for the negative ones.
Conclusion: Medical infrared thermography can be used to minimize subjective errors during skin allergic tests, mainly in cases of positive anamnesis data and negative/doubtful, weak (+) and irritant results of previous tests.

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Highly efficient colorimetric allergy detection based on hierarchically-structured nanozymes

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Background: Nanozymes, nanomaterials with enzyme-like characteristics, have recently attracted a significant attention due to their potentials to overcome the intrinsic limitations of natural enzymes, such as low stability in harsh conditions (temperature and pH) and relatively high costs for preparation, purification, and storage.
Method: In this study, we report a highly efficient colorimetric allergy detection system by employing hierarchically-structured platinum nanoparticles (H-Pt NPs) as peroxidase mimetics. H-Pt NPs were conjugated to an antibody for detecting immunoglobulin E (IgE) analytes, which are the representative markers to diagnose allergy, and successfully integrated into the conventionally used allergy diagnostics.
Results and conclusion: Using this strategy, total and specific IgE were detected in a 10 min time period at room temperature with high specificity and sensitivity. The high catalytic activity and stability could allow the H-Pt NPs to replace conventional peroxidase-based immunoassay systems as part of new, rapid, robust, and convenient assay systems which can be widely utilized for the identification of clinically important target molecules.

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Performance evaluation of a multiple allergen simultaneous tests

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Background: *In vitro* serum multiple allergen simultaneous tests (MAST) have been routinely used for clinical diagnosis of allergic diseases. We evaluated the performance of a newly introduced MAST panel for the detection of 64 allergen specific IgE and compared with other MAST, a test already on the market.
Method: Eighty samples, 40 for inhalant strip and 40 for food strip were tested. An Atopy panel of the new test was also compared. Results of higher than class 2 were considered positive and discrepancy was defined as more than 2 class difference or