

motion of macromolecules and progress in biomedical engineering make possible imaging and assessment of superficial perfusion in arbitrary units with an instrument used in current study, the laser Doppler perfusion imager PIM 1.0 (LDPI). This study uses *in vitro* experiments with simulated patch tests to investigate various factors that may affect LDPI readings of patch tests with the goal of providing LDPI set-up models for readings of patch tests on humans. Based on LDPI and visual readings of normal skin, irritant and allergic patch tests, an instrument set-up is suggested for reading patch tests when non-pigmented test substances are tested on white skin. Other aims are to study if there may be inter-individual differences in perfusion of identical patch tests and some factors that may affect superficial perfusion or its assessment, to compare assessments of reactions made with the LDPI and visually, and to study the effect of various patch-test techniques on test results of five allergens.

Apart from readings of simulated tests, more than 40,000 readings were performed on 71 subjects. Transparent patches and application devices made possible assessment of patches during their application. Measurements of perfusion over time made possible charting and comparison of variable perfusion profiles among subjects tested with identical tests.

The application device and vehicles may affect perfusion of patch tests while perfusion assessment may be affected by skin pigmentation and movements during readings.

There was generally good agreement between LDPI and visual assessments of highest reactivity of reactions except for two of the allergens, one of which was neomycin sulfate where reactions developed that were not morphologically classifiable as allergic reactions with the assessment scale used. There were indications that some of those reactions may be positive. Early phase of reactions was in some cases detected earlier with the LDPI than visually, and the LDPI tended to detect the highest reactivity of reactions earlier with two allergens.

While a positive dose-response relationship was generally found for most allergens, the relationship between application times and response varied considerably by allergens. Time of highest reactivity of reactions was generally unaffected by dose or appli-

cation time except for a single allergen, regardless of reading methods.

The LDPI allowed decreased dose of two allergens without affecting sensitivity. Transparent foils allowed reduced allergen dose for perfusion readings without affecting test sensitivity of the test populations.

Reactivity at edges of negative corticosteroid patch tests may indicate later elicitation of a positive test.

There is evidence that a suggested set-up of the LDPI for reading of tests when non-pigmented test substances are used on white skin may be inappropriate with pigmented substances.

Fræðigreinar íslenskra lækna í erlendum tímaritum

Getið er fræðigreina. Sendið heiti greinar, nöfn höfunda og birtingarstað til Læknablaðsins. Miðað er við greinar sem birst hafa á yfirstandandi og síðasta ári. Til glöggvunar verður íslenskra höfunda getið með fornafni þótt þess sé ekki getið við birtingu.

• **Trausti Valdimarsson, Toss G, Löfman O, Ström M.** *Three years' follow-up of bone density in adult coeliac disease: significance of secondary hyperparathyroidism.* Scand J Gastroenterol 2000; 35: 3274-80.