

## **Asthma, respiratory allergy and cough**

### **Content of asthmagen natural rubber latex allergenes in commercial disposable gloves**

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#### **Background**

The use of natural rubber latex (NRL) gloves in many occupations may lead to latex sensitization, allergic asthma and skin reactions. Due to their good barrier properties, wearing comfort, and environmental safety NRL gloves are still in use, particularly in the healthcare setting but also in the food industry, by hairdressers, cleaners etc. In order to reduce the exposure of health care workers to latex allergens, the European norm EN 455-3 limits the total protein content of NRL gloves for medical use to 30µg/g glove's material. There is no regulation for the use of NRL gloves in other settings and industrial sectors, thus the wide range of powdered and non-powdered NRL gloves commercially available may contain high levels of asthmagen latex allergens.

#### **Objective**

The aim of our study was to assess the protein and NRL allergen contents in commercial gloves by different measuring methods.

#### **Methods**

We extracted NRL from 20 NRL gloves as described in the standard D 5712-95. NRL content was measured with the modified Lowry assay (total protein content), the CAP-Inhibition-assay, the Beezhold-Assay, and an innovative assay with IgY-antibodies extracted from eggs of NRL-immunized hens. The results were compared.

#### **Results**

The maximal acceptable protein content was exceeded in 8/20 NRL gloves (range 215-1304 µg/g). In these gloves the immunological tests detected congruently also high levels of NRL allergen.

#### **Conclusions**

A high percentage of commercially available NRL gloves exceed the acceptable protein content stated in EN 455-3 and show high levels of NRL allergen. Their use stills represent a risk for occupational NRL allergy, particularly allergic asthma.