

## **Allergenicity of Latex Gloves with Reference to Latex Protein Sensitive Individuals in a Canadian Population**

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Allergenicity of latex gloves with varying levels of total extractable proteins was studied, by evaluating their allergic responses elicited, if any, in latex sensitive individuals of Canadian origin. Total extractable protein (EP) content of 30 latex medical gloves (powdered and powder-free) was determined by the modified Lowry method, according to both the Rubber Research Institute of Malaysia (RRIM) and the American Society for Testing and Materials (ASTM) protocols. While  $EP_{RRIM}$  values ranged from 865  $\mu\text{g/g}$ , to  $< 10\mu\text{g/g}$ ,  $EP_{ASTM}$  values varied from 870 $\mu\text{g/g}$  to  $<30 \mu\text{g/g}$ . A total of 30 latex allergic volunteers were skin-prick tested with the glove extracts.

Results showed that gloves with high extractable protein contents always tend to elicit positive allergic reactions. On the other hand, much reduced or no allergic responses were associated with gloves having low extractable proteins, regardless of whether the gloves were powdered or powder-free. More than 60% of negative allergic responses were consistently observed at  $EP_{RRIM}$  of about 100 $\mu\text{g/g}$  and lower, and at  $EP_{ASTM}$  of less than 50 $\mu\text{g/g}$ .

The total extractable protein content of latex gloves was found to be significantly correlated to their allergenicity, notwithstanding that the protein measurements were not fully allergen specific. Correlation coefficients “r” of 0.94 for  $EP_{RRIM}$  and 0.88 for  $EP_{ASTM}$ , were obtained. This finding confirms an earlier report that showed close correlation between allergenicity and  $EP_{RRIM}$  in a study based on a Finnish population of different genetic make-up.