A randomized, controlled, double-blind study of the effect of wearing coated pH 5.5 latex gloves compared with standard powder-free latex gloves on skin pH, transepidermal water loss and skin irritation.

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Abstract
Hand dermatitis is a common occupational disease. Altered skin pH plays an important role in the development of skin irritation. A glove that maintains tight control over skin pH may reduce hand dermatitis in glove users. The purpose of the study was to characterize the effect of glove wearing on skin pH, investigate the impact of study glove on skin pH compared with standard gloves and determine whether wearing study gloves reduced irritation. 20 healthy volunteers enrolled in a 4-week double-blind comparison of study and control gloves and served as their own controls. Gloves were worn 8 hr per day for 5 days per week. Skin pH and transepidermal water loss were measured during and 2 days after the glove-wearing period. The subject and an observer assessed the skin for irritation. The study glove maintained lower skin pH than the control glove (P < 0.05) and trended towards having less irritation. Observers noted increases in dryness and scale in both hands after 4 weeks but significantly less dryness in the study hand at week 4 (P = 0.006). Glove wearing increased skin pH and dryness. The pH 5.5 glove maintained lower skin pH levels than the control glove and may reduce irritation in long-term glove wearers.

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