

# Relationship between the risk factor of LA and rubber products to daily use

Emi Kajiwara, Hidechika Iino, Satoko Ono, Junko Suemitsu, Teruko Honda,  
Teruyo Iwamoto, Hideko Oda, Yoshinobu Asano

Department of Nursing, Faculty of Health and Welfare, Seinan Jo Gakuin University

## Background

We are working for the prevention of latex allergies (LA) in a Japanese undergraduate nursing program. From previous research, we found some nursing students have allergies to rubber products. We discuss the relationship of such allergies to daily use of rubber products, and the risk factor of LA from results of a survey of nursing students.

## Purpose

The purposes is to clarify the relationship of such allergies to everyday rubber products (gloves, rubber bands, headbands, balloons) and risk factor of LA to other allergies, LA-associated foods (e.g., kiwi, banana, celery), experience of operation, medical history of allergies in family, and self-prediction when donning latex gloves.

## Method

We performed a survey of 572 Japanese nursing university students. The data were analyzed by Chi-square test or Fisher's exact test using the statistical software package Stat Flex ver.6.0 for Windows. Ethical approval for this study was obtained from the Ethical Review Committee of Seinan Jo Gakuin University.

## Results

The response rate was 95.5% (N=546) and all response data was complete for analysis. All respondents were female students (average of age  $19.1 \pm 1.5$ ). Of these, 4.9% (27/546) had allergic reactions to rubber products (gloves, rubber bands, headbands, balloons). The prevalence of some allergy were 56.0%. Those with atopic disease and contact dermatitis were 14.5% (79/546) and 14.7% (80/546), respectively. This data showed allergic symptoms to rubber products were related to atopic disease ( $p < 0.001$ ), contact dermatitis ( $p < 0.05$ ), and self-prediction when donning latex gloves ( $p < 0.001$ ) (Table 1).

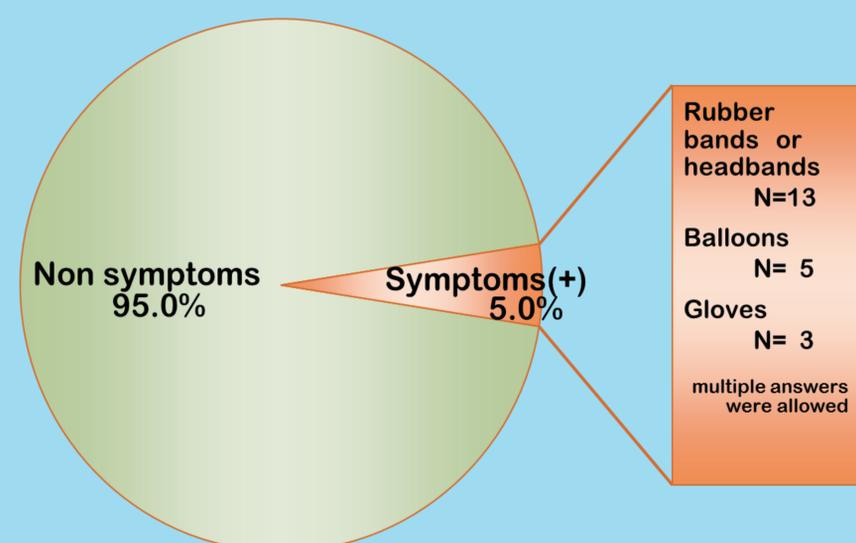


Figure 1. Allergic symptoms to rubber products in daily use

**Table 1. The relationship of such allergies to daily use of rubber products, and history of allergic diseases**  
N=546(%)

	Allergic symptoms to rubber products		P-value
	Yes	No	
<b>Hay fever</b>			
Yes	11(2.0)	147(26.9)	0.1654
No	16(2.9)	372(68.2)	
<b>Atopic dermatitis</b>			
Yes	11(2.0)	68(12.5)	<b>0.0002</b>
No	16(2.9)	451(82.6)	
<b>Bronchial asthma</b>			
Yes	6(1.1)	62(11.4)	0.1305
No	21(3.8)	457(83.7)	
<b>Contact dermatitis</b>			
Yes	8(1.5)	72(13.2)	0.0479
No	19(3.4)	447(81.9)	
<b>Chi-square test</b>			

**Table 2. The relationship of such allergies to daily use of rubber products, and the other risk factor of LA**  
N=546(%)

	Allergic symptoms to rubber products		P-value
	Yes	No	
<b>LA-associated Foods</b>			
Yes	3 (0.6)	45 (8.2)	0.7227
No	24 (4.4)	474 (86.8)	
<b>Experience of operation</b>			
Yes	6 (1.1)	94 (17.2)	0.6095
No	21 (3.9)	425 (77.8)	
<b>Medical history of allergies in family</b>			
Yes	15 (2.8)	190 (34.8)	0.0753
No	12 (2.2)	329 (60.2)	
<b>Self-prediction when donning latex gloves</b>			
Yes	9 (1.7)	28 (5.1)	<b>0.0000</b>
No	18 (3.3)	491 (89.9)	
<b>Chi-square test or Fisher's exact test</b>			

## Conclusion

In the Japanese guidelines, one of the risk groups of LA had atopic dermatitis. A similar result was shown in these findings. This result suggested we should add atopic dermatitis as one criteria for screening LA.

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