Table 1 Characteristics of the study population in May 2013

Items		Total	FA exposure group (Second-year students)	FA nonexposure group (First-year students)	p-value
Age (years) ; mean ± SD			22.9±4.1	21.2±3.9	0.001**
Sex; n (%)	Male	178 (75.1)	96 (78.0)	82 (71.9)	0.296
	Female	59 (24.9)	27 (22.0)	32 (28.1)	
Allergic history of some allergen; n (%)	Yes	84 (35.4)	38(30.9)	46 (40.4)	0.137
	No	153 (64.6)	85 (69.1)	67 (59.8)	
Categories of allergy; n (%)	Hay fever	41 (17.3)	19 (15.4)	22 (19.3)	1.000
	Allergic rhinitis	32 (13.5)	11 (8.9)	21 (18.4)	0.115
	Atopic dermatitis	14 (5.9)	5 (4.1)	9 (7.9)	0.558
	Alimentary allergy	10 (4.2)	7 (5.7)	3 (2.6)	0.173
	Bronchial asthma	8 (3.4)	3 (2.4)	5 (4.4)	0.721
	Allergic conjunctivitis	6 (2.5)	5 (4.1)	1 (0.9)	0.088
	Hives	5 (2.1)	2 (1.6)	3 (2.6)	1.000
	Other	8 (3.4)	6 (4.9)	2 (1.8)	0.133

*P <0.05; **P <0.01.

Table 2 Odds ratios of subjective symptoms in FA exposure group compared with FA nonexposure group in each survey period

Subjective symptoms[a]	before the course		during the course		6 months after the course	
	Odds ratio[b] (95%CI)	p-value	Odds ratio[b] (95%CI)	p-value	Odds ratio[b] (95%CI)	p-value
Eye soreness	0.38 (0.16-0.88)	0.024*	2.35 (1.30-4.27)	0.005**	0.84 (0.41-1.73)	0.637
Eyestrain	0.70 (0.40-1.23)	0.216	1.82 (1.07-3.14)	0.029*	0.37 (0.22-0.65)	0.001**
Itchy eye	0.90 (0.53-1.55)	0.713	0.75 (0.43-1.31)	0.318	0.45 (0.26-0.80)	0.006**
Dry eye	0.77 (0.45-1.34)	0.360	1.11 (0.63-1.96)	0.712	0.58 (0.33-1.03)	0.064
Tearing	0.98 (0.47-2.06)	0.955	2.62 (1.36-5.04)	0.004**	1.44 (0.70-2.96)	0.317
Itching of nose	0.72 (0.41-1.28)	0.268	1.76 (1.01-3.06)	0.047*	0.42 (0.24-0.75)	0.003**
Nasal obstruction	0.85 (0.49-1.48)	0.563	0.78 (0.44-1.36)	0.378	0.49 (0.28-0.86)	0.012*
Runny nose	0.78 (0.45-1.35)	0.378	0.82 (0.47-1.44)	0.490	0.59 (0.35-1.01)	0.056
Sore throat	0.66 (0.34-1.28)	0.222	1.45 (0.82-2.55)	0.202	0.52 (0.27-1.01)	0.055
Dry throat	0.78 (0.43-1.42)	0.418	0.87 (0.49-1.57)	0.648	0.53 (0.30-0.94)	0.029*
Phlegm	0.72 (0.38-1.38)	0.319	0.70 (0.39-1.27)	0.238	0.72 (0.36-1.44)	0.354
Headache	0.65 (0.35-1.22)	0.176	0.93 (0.51-1.70)	0.806	0.50 (0.26-0.96)	0.036*
Fatigability	1.49 (0.81-2.74)	0.195	2.42 (1.38-4.26)	0.002**	0.98 (0.56-1.72)	0.955
Listlessness	1.27 (0.67-2.39)	0.459	2.09 (1.19-3.66)	0.010**	0.94 (0.53-1.66)	0.834
Diarrhea	0.79 (0.40-1.56)	0.492	0.89 (0.44-1.79)	0.735	0.87 (0.47-1.60)	0.648
Abdominal pains	0.53 (0.27-1.07)	0.076	0.84 (0.39-1.81)	0.647	1.04 (0.55-1.98)	0.908

*$P < 0.05$; **$P < 0.01$.

[a] The dependent variable was the presence or absence of each subjective symptom; independent variables were exposure to FA (grade), allergy, sex, and age.

[b] We defined the odds ratios of each subjective symptom in the FA nonexposure group as 1.

Table 3 Effect of allergy and sex (being female) on subjective symptoms using logistic regression analysis during a gross anatomy course

Subjective symptoms[a]	allergy		sex	
	Odds ratio[b] (95%CI)	p-value	Odds ratio[b] (95%CI)	p-value
Eye soreness	1.37(0.76-2.48)	0.299	1.65(0.86-3.18)	0.134
Eyestrain	0.74(0.43-1.30)	0.294	1.98(1.06-3.68)	0.031*
Itchy eye	1.94(1.11-3.39)	0.021*	2.42(1.29-4.53)	0.006**
Dry eye	1.31(0.74-2.32)	0.359	2.43(1.30-4.53)	0.005**
Tearing	1.47(0.77-2.78)	0.242	1.70(0.84-3.42)	0.141
Itching of nose	2.78(1.58-4.90)	0.000**	1.29(0.69-2.42)	0.431
Nasal obstruction	2.30(1.31-4.06)	0.004*	0.92(0.48-1.76)	0.810
Runny nose	2.85(1.62-5.03)	0.000**	0.67(0.35-1.29)	0.230
Sore throat	1.44(0.81-2.56)	0.209	1.35(0.71-2.56)	0.357
Dry throat	1.38(0.77-2.49)	0.282	1.89(0.99-3.59)	0.054
Phlegm	1.57(0.87-2.86)	0.138	0.86(0.43-1.72)	0.673
Headache	0.64(0.34-1.23)	0.179	1.83(0.94-3.56)	0.076
Fatigability	1.29(0.73-2.28)	0.379	2.06(1.10-3.88)	0.024*
Listlessness	1.33(0.78-2.42)	0.271	0.94(0.49-1.78)	0.836
Diarrhea	1.83(0.91-3.66)	0.089	0.57(0.24-1.35)	0.201
Abdominal pains	1.49(0.69-3.20)	0.306	0.42(0.15-1.16)	0.094

*P <0.05; **P <0.01.

[a] The dependent variable was the presence or absence of each subjective symptom; independent variables were exposure to FA (grade), allergy, sex, and age.

[b] We defined the odds ratios of each subjective symptom in the FA nonexposure group as 1.