

PEANUT, SOY AND NON-PRIORITY ALLERGY IN CANADA

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INTRODUCTION

Peanut is one of the most common allergens affecting children in the Western world, accounting for ~2% of childhood food allergies

To date, much of the work exploring food allergy has been restricted to common allergens. Much less is known about emerging allergens, or the potential for cross-reactivity between common and emerging allergens.

Studies propose a moderate prevalence of cross-sensitization and potential co-allergy to another legume(s) in peanut allergic individuals, although Canadian data are sparse.

AIM

To describe the distribution of legume allergy, specifically peanut and soy (priority allergens in Canada), and lentil, pea, chickpea, or other unspecific non-priority legumes in Canada, with consideration to age.

METHOD

Study population: caregivers of children (<18 years) in Canada, with parent-reported allergies to at least one of the following: peanut, soy, lentil, pea, chickpea, or unspecific non-priority legumes

Data collection: two different online studies; approved by the University of Manitoba Health Research Ethics Board

- Multidimensional Burden of Allergies in Canadian children and adult Households with at least one child with multiple food allergies (NUANCES; data collected in 2019-March 2020)
- Food Allergy, Racial-ethnic Identity and food insecurity (FARIS; data collected during the COVID-19 pandemic)

Data were described and analyzed using logistic regression, and adjusted for sex, age at diagnosis and total number of food allergies, with statistical significance set at p<0.05

RESULTS

Table 1

- N=115 children from all Canadian provinces who were disproportionately boys (64.6%) and of which 1/3 were aged 6 or under
- Nearly all had peanut allergy (94.8%), with lower prevalences of soy (15.7%) and non-priority legumes (13.0%)
- Most children had an epinephrine autoinjector (95.5%) and had been diagnosed by an allergist (98.0%)

Table 2

- Older children were significantly less likely to have peanut, plus soy or non-priority legume allergy (as compared to children aged 6 or under)
- Differences were attenuated when considering priority vs. priority + non-priority legumes.

Figure 1

- Specific to legume allergies; n=85 children had mono-peanut allergy, n=6 had mono-soy allergy, no children had non-priority legume allergy, n=12 children had peanut+non-priority legume allergy, n=9 had peanut+soy allergy, and n=3 had peanut+soy+non-priority legume allergy

Table E1

- No clear pattern between type of non-priority legume allergy and co-morbid priority legume (i.e. peanut, soy) allergy in non-priority legume-allergic children

Table 2. Logistic regression analyses of priority* vs. non-priority** legume allergies

	n	%	Unadjusted OR	Unadjusted 95%CI	Adjusted*** OR	Adjusted*** 95%CI
Priority vs. priority + non-priority legumes						
0-5 years	67	58.3	Ref		Ref	
6+ years	48	41.7	1.26	0.42; 3.74	0.71	0.17; 3.03
Peanut only vs. peanut + other legume(s)						
0-5 years	62	56.9	Ref		Ref	
6+ years	47	43.1	0.59	0.23; 1.52	0.22****	0.05; 0.94

*Peanut or soy

**Any legume other than peanut or soy

***Adjusted for sex, age at diagnosis and total number of food allergies

****p<0.05

Table 1. Participant Characteristics (N=115)

	n	%
Demographics		
Age group (years; N=104)		
0-2	17	16.3
3-6	18	17.3
7-11	32	30.8
12-14	25	24.0
15-17	12	11.5
Sex (N=113)		
Boys	73	64.6
Girls	40	35.4
Allergy characteristics		
Food allergies*		
Peanut	109	94.8
Soy	18	15.7
Non-priority legumes	15	13.0
Age (years) at diagnosis		
0-2	13	11.3
3+	12	10.4
Allergist-diagnosed (N=98)		
SPT, Blood test	110	95.7
OFC (N=114)	63	55.3
EAI (N=111)	106	95.5

*Not mutually exclusive

Table E1. Distribution of non-priority legume allergies, by type of legume and priority legume allergy (N=15 participants)

Participant	Non-priority legumes				Priority legumes	
	Chickpea	Pea	Lentils	Unspecified	Total	Peanut Soy
1	1	1	1		3	1
2	1	1	1		3	1
3	1	1	1	1	4	1 1
4	1	1			2	1
5	1	1			2	1
6	1				1	1
7	1				1	1
8		1			1	1
9		1			1	1
10		1			1	1
11		1			1	1
12		1			1	1
13		1			1	1 1
14				1	1	1 1
15				1	1	1 1

Abbreviations: EAI Epinephrine autoinjector; OFC Oral food challenge; SPT Skin prick test

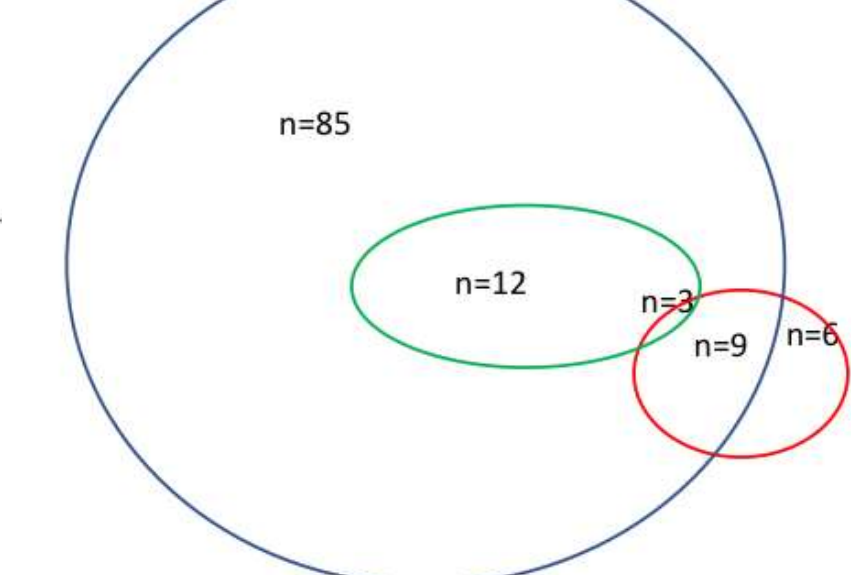


Figure 1. Proportionate Venn diagram of the distribution of peanut (blue), soy (red) and non-priority legumes (green)

CONCLUSION

In Canada, peanut allergy remains the most common legume allergy. However, allergy to peanut + at least one additional legume affects about 20% of peanut allergic children but disproportionately amongst young children.

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