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Children of Asian ethnicity in Australia have higher risk of food allergy and early onset eczema than those in Singapore

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Table S1 Definitions of exposure variables used in analysis from HealthNuts and GUSTO studies

Variable	Australia HealthNuts	Singapore GUSTO
Childcare attendance	Attendance at day care, childcare or family care (small group childcare in the home of a carer) during first year of life.	Attendance at day care or childcare in the first year of life.
Age at first childcare attendance	Age in months at which child started to attend any type of childcare. Categorical variable was set up with following categories: “no childcare”, “childcare before 6 months”, “childcare after 6 months”.	Age in months at which child began attending any type of day care/childcare. Categorical variable was set up with following categories: “no childcare”, “childcare before 6 months”, “childcare after 6 months”.
Antibiotics use	Categorical variable with an affirmative response to the question “Has your child ever had antibiotics” at 12 months.	Defined as a positive response to the question “Has your child ever had antibiotics?” at any time-point up to 12 months.
Mode of Delivery	Categorical variable defined as either “vaginal” or “caesarean section” delivery.	Categorical variable defined as either “vaginal” or “caesarean section” delivery.
Gestational age at delivery	Categorical variable with the following categories: <37 weeks (pre-term), ≥ 37 weeks.	Categorical variable with the following categories: <37 weeks (pre-term), ≥ 37 weeks.
Birthweight	A continuous variable with child’s birth weight in grams.	
Maternal Education	Highest education or vocational qualification completed by child’s mother. A categorical variable consisting of “pre-tertiary”, “tertiary” and others was created. Mothers who completed Year 12 and below were grouped as having completed “pre-tertiary” education. University degree and postgraduate university degree were categorised as “tertiary” and other responses including trade apprenticeship and	Highest education or vocational qualification completed by child’s mother. A categorical variable consisting of “pre-tertiary”, “tertiary” and others was created. Mothers who completed GCE or ITE (Institute of Technical Education) education only were grouped as having completed “pre-tertiary” education. University degree and postgraduate university degree holders were categorised as “tertiary” and other

Variable	Australia HealthNuts	Singapore GUSTO
	technical diploma/certificate were categorised as “others”.	responses including trade apprenticeship and technical diploma/certificate were categorised as “others”.
Any Siblings	Categorical variable with an affirmative response to the question “Does your 12 month old have other brothers or sisters?”	Categorical variable defined as other children born to the mother, living in the same household.
Cat Ownership	Presence of a cat at home at the time of completing the questionnaire when the child was 1 year of age.	A positive response to the question “Do you have a cat at home?” at 6 or 12 months questionnaire.
Dog Ownership	Presence of a dog at home at the time of completing the questionnaire when the child was 1 year of age.	A positive response to the question “Do you have a dog at home?” at 6 or 12 months questionnaire.
Paternal, maternal and sibling’s history of atopy	History of asthma, allergic rhinitis or eczema in the mother, father, or sibling as reported by the parent.	Self-reported diagnosis of asthma, allergic rhinitis or eczema in the mother, father, or sibling?
Maternal smoking	An affirmative response to the question “Did the mother smoke in pregnancy?”	An affirmative response to the question “Did you smoke during pregnancy?” in the maternal questionnaire.
Household exposure to tobacco smoke	Household exposure to tobacco smoke was defined by any smoking inside or outside the home. A categorical variable was created based on responses to the question “does anyone smoke inside the home?” or “does anyone smoke outside the home?”	A categorical variable was created based on responses to the question “anyone in the house smokes?” or “does anyone smoke outside the home?”
Infant’s atopic eczema		

Variable	Australia HealthNuts	Singapore GUSTO
Eczema	<p>Eczema diagnosis was based on an affirmative response to the question “Has your child ever been diagnosed with eczema?”</p> <p>In conjunction with responses to the question “Age when eczema was first diagnosed”, a categorical variable with the following categories were created “no eczema”, “eczema before 6 months” and “eczema after 6 months”.</p>	<p>Parental-reported doctor's diagnosis of eczema at any time point up until 18 months.</p> <p>A categorical variable was also created with the following categories: “No eczema, Eczema before 6 months” and “Eczema after 6 months”.</p>
Eczema + steroids use by 12 months	<p>Mothers indicated use of medication, specifically topical steroids to treat itchy rash other than nappy rash. A variable with the following categories was created “no eczema”, “eczema with topical steroids” and “eczema with no topical steroids”.</p>	<p>Similar to that coded for HealthNuts study, children classified as “no eczema” if indicated so at 3 months, 6 months AND 12 months questionnaire time point. The rest were classified as “eczema with topical steroids” or “eczema with no topical steroids” accordingly if they have marked so at either 3 months, 6 months OR 12 months questionnaire data. Where there is conflicting data among the time points, classified as the “more severe phenotype”.</p>
Infant’s diet		
Age at introduction of solids	<p>Age at which solid foods were first introduced into the infant’s diet. A categorical variable was created with classification as follows: age at introduction of solids classified as ≤ 6 months and >6 months.</p>	<p>Age at which solid foods were first introduced into the infant’s diet. A categorical variable was created with classification as follows: age at introduction of solids classified as ≤ 6 months and >6 months.</p>
Age at introduction of egg	<p>Age at which egg (soft boiled, scrambled or hard boiled) or any foods containing egg (e.g meringue,</p>	<p>Age at which whole egg was first introduced into the child’s diet.</p>

Variable	Australia HealthNuts	Singapore GUSTO
	cakes, biscuits) were first introduced into the infant’s diet. Categories were set up as follows: ≤ 10 months, > 10 months and not yet given by 12 months. We chose this grouping given that our previous work showed that those introducing egg after 10 months had an increased risk of egg allergy (57).	
Age at introduction of peanut	Age at which peanut butter was first introduced into the infant’s diet. Categories were ≤ 10 months, 10-12 months, “not yet given”. Those who were introducing peanut after 12 months were classified as “not yet given”.	Age at which peanut was first introduced into the child’s diet.
Duration of breastfeeding	Age in months when breastfeeding was reported to have ceased. A categorical variable with the following categories was set up <6 months, 6-11 months, ≥ 12 months.	Age in months when breastfeeding was reported to have ceased completely. See below questions. A categorical variable with the following categories was set up <6 months, 6-11 months, ≥ 12 months.
Type of milk feeding in first 6 months of life	<p>A categorical variable with the following categories were created: “Fully formula fed”, “Mixed feeding” and “Fully breastfed” (up to 6 months of age).</p> <p>This variable was created based on responses from the following questions “age started breastfeeding”, “age breastfeeding stopped”, “still breastfed”, “age infant formula bottle feeding started”, “age infant formula bottle feeding stopped”.</p>	<p>A categorical variable with the following categories were created: “Fully formula fed”, “Mixed feeding” and “Fully breastfed” (up to 6 months of age).</p> <p>This variable was created based on responses to questions such as “Please indicate your baby’s type of feed in the last 3 months”, “Are you still breastfeeding?”, “If no, how old was your baby when he/she last had a breastfeed? Age stopped (months)”, “What proportion of milk your baby is receiving is breastmilk?” at each time-point.</p>

Variable	Australia HealthNuts	Singapore GUSTO
Maternal diet during pregnancy		
Egg consumption	Mother reporting consumption of “eggs” during pregnancy. Separate questions were not asked for whole eggs and foods containing eggs.	<p>YES if intake of egg consumption reported in the 24-hr recall or 3-day food diaries. This is regardless of frequency or amount consumed.</p> <p>NO if no consumption of egg reported in the 24-hr recall or 3-day food diaries.</p>
Peanut consumption	Mother reporting consumption of “peanuts” during pregnancy including roasted, peanut butter and cakes.	<p>YES if intake of peanut and peanut butter consumption reported in the 24-hr recall or 3-day food diaries. This is regardless of frequency or amount consumed.</p> <p>NO if no consumption of peanut and peanut butter reported in the 24-hr recall or 3-day food diaries.</p>
Nuts consumption	Mother reporting consumption of “any other nuts” during pregnancy including cashews and walnuts. Mothers were instructed to specify the type of nuts consumed.	<p>YES if intake of tree nuts including hazelnut spread consumption reported in the 24-hr recall or 3-day food diaries. This is regardless of frequency or amount consumed.</p> <p>NO if no consumption of tree nuts including hazelnut spread reported in the 24-hr recall or 3-day food diaries.</p>
Shellfish consumption	Mother reporting consumption of “shellfish” during pregnancy.	<p>YES if intake of any shellfish (clam, mussel, oyster) or crustaceans (prawn, crab, crayfish) consumption reported in the 24-hr recall or 3-day food diaries. This is regardless of frequency or amount consumed.</p> <p>NO if no consumption of any shellfish (clam, mussel, oyster) or crustaceans (prawn, crab,</p>

Variable	Australia HealthNuts	Singapore GUSTO
Soy consumption	Mother reporting consumption of “soy or soy products” during pregnancy.	<p data-bbox="1391 252 1962 322">crayfish) reported in the 24-hr recall or 3-day food diaries.</p> <p data-bbox="1391 344 1962 488">YES if intake of soya bean and products consumption reported in the 24-hr recall or 3-day food diaries. This is regardless of frequency or amount consumed.</p> <p data-bbox="1391 507 1962 612">NO if no consumption of soya bean and products reported in the 24-hr recall or 3-day food diaries.</p>

Table S2 Timing of peanut and egg introduction to infant's diet in Australia and Singapore, stratified by eczema status

	No Eczema			Eczema		
	Australia N (%)	Singapore N (%)	P-value*	Australia N (%)	Singapore N (%)	P-value*
Age of egg introduction						
≤10 months	142 (86.6)	257 (39.1)		87 (78.4)	31 (23.1)	
10-12 months	19 (11.6)	113 (17.2)	<0.001	16 (14.4)	24 (17.9)	<0.001
Not yet given	3 (1.8)	288 (43.8)	<0.001	8 (7.2)	79 (59)	<0.001
Age of peanut introduction						
≤10 months	29 (18.4)	67 (11)		9 (8.7)	11 (8.7)	
10-12 months	9 (5.7)	143 (23.4)	<0.001	6 (5.8)	30 (23.8)	0.022
Not yet given	120 (76)	401 (65.6)	0.131	88 (85.4)	85 (67.5)	0.619

*For variables with more than 2 categories, P-values shown are pairwise P-values obtained from comparison of the relevant category against reference category.

Table S3 Timing of peanut and egg introduction to infant's diet and eczema status in Australia and Singapore

	Australia			Singapore		
	No eczema N (%)	Eczema N (%)	P-value*	No eczema N (%)	Eczema N (%)	P-value*
Age of peanut introduction						
≤10mth	29 (18.4)	9 (8.7)		67 (11)	11 (8.7)	
10-12mths	9 (5.7)	6 (5.8)	0.235	143 (23.4)	30 (23.8)	0.521
Not yet given	120 (76)	88 (85.4)	0.031	401 (65.6)	85 (67.5)	0.460
Age of egg introduction						
≤10mth	142 (86.6)	87 (78.4)		257 (39.1)	31 (23.1)	
10-12mths	19 (11.6)	16 (14.4)	0.383	113 (17.2)	24 (17.9)	0.053
Not yet given	3 (1.8)	8 (7.2)	0.021	288 (43.8)	79 (59)	<0.001

*For variables with more than 2 categories, P-values shown are pairwise P-values obtained from comparison of the relevant category against reference category.

Table S4 Eczema adjusted model for the risk factors of food allergy in Australia and Singapore.

Model 1 [†]	Australia (n=246)		Singapore (n=611)		P interaction
	aOR (95% CI)	P-value	aOR (95% CI)	P-value	
Eczema and steroids use					
No eczema	1	-	1	-	
Eczema + steroids	5.83 (2.54-13.37)	<0.001	6.40 (0.83-49.2)	0.074	0.671
Eczema + no steroids	3.73 (0.87-15.93)	0.075	11.19 (1.43-87.57)	0.021	0.222

aOR – adjusted odds ratio

[†]adjusted for maternal history of atopy, child's sex and pet ownership.