APPENDIX 2

Evidence Profile Tables

Risks posed to consumers with FHS by new/novel types of foods/processes/packaging

No. of studies / participants	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall certainty - GRADE
Knowledge/Opinions on novel foods/processes						
3(n=843)	Grade down: self-reported data	Uncertain: opinion on different novel foods	No grade change	Grade down: small sample sizes	Grade down: Article on opinions of biotechnologically modified food funded by a food biotechnology company	Very low
Impact of thermal Processing on allergenicity of foods						
2(n=49)	Grade down: biases in methodology that might overestimate results	No grade change	Grade down: low generalisability (only done for specific proteins)	No grade change	Unlikely - no grade change	Low
Sensitivity to new/novel Foods						
2(n=1040)	Grade down: participation selection methods	No grade change	Grade down: low generalisabilit	Uncertain: 1 study has small	Unlikely - no grade change	Very Low

	unclear, low representativeness		y (only done for specific proteins/foods)	sample size, the other has large sample size		
Allergenicity of new/novel foods & processes						
4(n=295)	Grade down: limitations in methodology, some articles based on secondary data	Uncertain: articles about different novel foods	No grade change	No grade change	Grade down: Article on novel soy protein preparation funded by and materials provided by meat substitute company	Very low
Novel food process						
2(no sample size)	Grade down: samples only from one supermarket	Uncertain: articles about different novel processes	No grade change	No grade change	No grade change	Moderate

Improving traceability of allergens in food supply chain

No. of studies / participants	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall certainty - GRADE	Overall certainty - WHO
Difference in communication needs							

1(n=45)	Grade down: subjective data	No grade change	No grade change	Grade down: only 1 study	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies. No evidence from RCTs
Beyond Allergy Labelling							
1(n=57)	Grade down: subjective data	No grade change	Grade down: unbalanced sampling	Grade down: only 1 study	Grade down: Study authors also implemented the educational campaign	Very low	Insufficient Evidence – evidence only from a few studies. No evidence from RCTs

Risks posed due to shared production of foods, and how can these be mitigated

No. of studies / participants	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall certainty - GRADE
Cross-contamination during food production						
4(n=972)	Grade down: high risk of bias due to the intrinsic	No grade change	Grade down: generalisability is limited due to	No grade change	Unlikely - no grade change	Very low

	limitations of the analytical method for determining gluten traces in food matrixes, which affects interpretation of results		studies focusing only on certain kitchens in one specific region			
Cross-contamination in food preparation environments (kitchens)						
7(n=c.671)	Grade down: high risk of bias due to limited information on the samples, unclear methods/selection criteria, and trials not conducted in controlled test conditions	No grade change	Grade down: generalisability is limited due to studies focusing only on certain kitchens in one specific region	No grade change	Unlikely - no grade change	Very low
Effective Cleaning Strategies						
3(n=4)	No grade change: but one study has limitations in methodology	No grade change	No grade change: but not all studies were tested on industrial scale	Grade down: 2 of 3 studies had low sample size or did not specify sample size	Unlikely - no grade change	Moderate

Communicating risk, so that consumers with FHs can be confident that the food they are provided is safe

No. of studies / participants	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall certainty - GRADE	Overall certainty - WHO
Factors influencing effectiveness of FBOs' risk information/communication with consumers who have FHS							
3(n=80)	Grade down: high risk of bias as studies rely on self-reported, subjective data	Grade down: inconsistent results. No consensus among what are most important factors	Grade down: focuses on specific groups of people, limited generalisability	Grade down: small sample sizes	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies. No evidence from RCTs
Preferences of consumers/FBOs in communicating risk to consumers with FHS							
4(n=850)	Grade down: high risk of bias as studies rely on self-reported, subjective data	No grade change	No grade change	Grade down: small sample sizes	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies. No evidence

							from RCTs
Recommendations for improving communication of risk by FBOs							
2(n=69)	Grade down: high risk of bias as studies rely on self-reported, subjective data	No grade change	Grade down: focuses on specific groups of people, limited generalisability	Grade down: small sample sizes	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies. No evidence from RCTs

Allergen labelling, including Precautionary Allergen ("may contain") Labels

No. of studies / participants	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall certainty - GRADE	Overall certainty - WHO
Effectiveness of PAL statements							
13(n=14,486)	Grade down: low sample representativeness, recall bias due to	No grade change	Grade down: may not be representativ	No grade change	Unlikely - no grade change	Very low	Possible Evidence – evidence based mainly

	retrospective data collection		e of population				on cross-sectional and case-control studies. No evidence from RCTs
Symbols as an effective way to communicate allergens on food labelling							
7(n=3,624)	Grade down: secondary data, self-reported allergies	No grade change	Grade down: may not be representative of population, some studies equate approval of symbol usage to there being a need for it	Grade down: most have small sample sizes	Unlikely - no grade change	Very low	Possible Evidence – evidence based mainly on cross-sectional studies. No evidence from RCTs
Specific allergens and their effective communication							
3(n=24,743)	Grade down: selection bias	No grade change	Grade down: may not be representative of population, some studies equate approval of symbol usage	No grade change	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies. No evidence from RCTs

			to there being a need for it				
Effective communication of allergen information requires educating the consumer							
4(n=2,080)	Grade down: selection bias, retrospective data (recall bias)	No grade change	Grade down: may not be representative of population, some studies equate approval of symbol usage to there being a need for it	Grade down: most have small sample sizes	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies. No evidence from RCTs
Improving existing allergen labelling practices for more effective communication							
7(n=2,198)	Grade down: self-reported data	Grade down: some inconsistent findings	Grade down: may not be representative of population, some studies equate approval of symbol usage to there being a need for it	Grade down: most have small sample sizes	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies and no cross-sectional/case control studies. No evidence from RCTs

Using ICT's in allergen labelling							
3(n=389)	Grade down: self-reported data	No grade change	Grade down: may not be representative of population, some studies equate approval of symbol usage to there being a need for it	Grade down: most have small sample sizes	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies. No evidence from RCTs

Informing the FSA as to incidents involving FH

No. of studies / participants	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Publication bias**	**Overall certainty - GRADE**	**Overall certainty - WHO**
Reporting systems for allergic reactions							
2(n=339)	Grade down: all participants selected through clinics/charities, all cases only from one database	No grade change	Grade down: 90% participants are females	No grade change	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies. No evidence from RCTs

Impact of co-factors on reaction severity

No. of studies (participants)	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall certainty - GRADE
Association between Exercise and Food Allergies (FDEIA)						
2(n=76)	Grade down: moderate risk of bias	No grade change	No grade change	Grade down: small sample size	Unlikely - no grade change	low
Co-factors which increase severity of reaction						
6(n=11,409)	Grade down: high risk of bias due to allergies not tested using DBPCFC	Grade down: Inconsistent results, with findings differing on important cofactors. However, exercise is stated in two reports (could be related to FDEIA)	Grade down: most studies from one medical centre (not generalisable), different measurements of severity of symptoms	Grade down: small sample size for all studies except one	Unlikely - no grade change	Very low
Genetic and environmental factors on severity of food allergy						

3(n=517)	Grade down: high risk of bias due to allergies not tested using DBPCFC	Grade down: One study found association of DQ gene dosage with severity of CD while another found no association	Grade down: Symptoms severity based on weight loss & diarrhoea, low generalisability	Grade down: small sample sizes	Unlikely - no grade change	Very low
Impact of type of nut on reaction severity						
1(n=141)	Grade down: high risk of bias due to allergies not tested using DBPCFC	No grade change	Grade down: sensitisation as proxy for food allergy	Grade down: 1 study, small sample size		Very low

Impact of socioeconomic factors (including race/ethnicity) on FHs

No. of studies / participants	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall certainty - GRADE	Overall certainty - WHO
Adherence to Gluten-free diet							
4 (n=617)	Grade down: high risk of bias due to adherence to	Grade down: inconsistent results across 3 studies	No grade change	No grade change	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few

	diet being self-reported data						studies, mainly retrospective. No evidence from cross-sectional studies or RCTs
Racial differences in prevalence of food hypersensitivities in children							
8 (n= 40,976)	Grade down: high risk of bias due to food allergies not being measured using food challenges and confounders not taken into account	No grade change: Most results are consistent across studies, except for one which found coeliac disease autoimmunity to be related to western ethnicity	Grade down: Retrospective reviews, sensitisation used as proxy for food allergy in many studies	No grade change	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies, mainly retrospective. No evidence from cross-sectional studies or RCTs
Racial differences in prevalence of food hypersensitivities in adults							
6 (n=1,176,973)	Grade down: high risk of bias due to food allergies not being measured using food challenges and	No grade change: Most results are consistent across studies, except for one which found coeliac	Grade down: Retrospective reviews, sensitisation used as proxy for food	No grade change	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies, mainly retrospective. No

	confounders not taken into account	disease autoimmunity to be related to western ethnicity	allergy in many studies				evidence from RCTs
Socioeconomic differences in prevalence of food hypersensitivities in children							
5(n=20,779)	Grade down: self-reported socioeconomic data and food allergies not being measured using food challenges	No grade change	Grade down: sensitisation used as proxy for food allergy in many studies, uses only one type of metric to determine socioeconomic position	Grade down: wide confidence intervals	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies, mainly retrospective. No evidence from cross-sectional studies or RCTs
Socioeconomic differences in prevalence of food hypersensitivities in adults							
5(n=30,309)	Grade down: self-reported socioeconomic data and food allergies not being measured using food challenges	No grade change: Most results are consistent across studies, except for one which found greater CD symptoms for low	Grade down: sensitisation used as proxy for food allergy in many studies, uses only one type of metric to determine	No grade change	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies, mainly retrospective. No evidence from RCTs

		socioeconomic positions	socioeconomic position				
Impact of socioeconomic differences on affordability/ accessibility/ availability to appropriate foods for those with FHS							
5(n=1,666)	Grade down: high risks of bias as samples are generally small and presence of measurement errors	No grade change	Grade down: budget stores used as proxy for lower socioeconomic status	Grade down: wide variation in costs	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from a few studies, mainly retrospective. No evidence from RCTs
Socioeconomic differences and management of FHS							
1(n=9)	Grade down: self-reported data thus may be subject to different biases	No grade change	Grade down: potential confounders not considered	Grade down: small sample (low power)	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from one study. No evidence from RCTs
Gender and experiences of CD							

1(n=76)	Grade down: self-reported data thus may be subject to different biases. Data is qualitative thus is also subjective	No grade change	Grade down: potential confounders not considered	Grade down: small sample (low power)	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from one study. No evidence from RCTs
Management of FA among adolescents							
1(n=174)	Grade down: self-reported data thus may be subject to different biases. Data is qualitative thus is also subjective	No grade change	Grade down: potential confounders not considered	Grade down: small sample (low power)	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from one study. No evidence from RCTs

Impact of environmental exposures on the risks of developing FHS

No. of studies / participants	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall certainty - GRADE
Caesarean delivery as a risk factor for developing FHS						

3(n=69,304)	Grade down: mainly self-reported data and lack of use of DBPCFC/ oral food challenges to diagnose FA	No grade change	Grade down: Potential confounding	No grade change	Unlikely - no grade change	Very low
Birth season as a risk factor for developing FHS						
5(n=224,228)	Grade down: moderate risk of bias, some studies used secondary data and did not use food challenges	Grade down: Inconsistent results	Grade down: Potential confounding	No grade change	Unlikely - no grade change	Very low
Vitamin D status and intake as risk factors for developing FHS						
6(n=217,893)	Grade down: high risk of bias due to misclassification of vitamin D exposure	No grade change	Grade down: Potential confounding	No grade change	Unlikely - no grade change	Very low
Antibiotics intake as a risk factor for developing FHS						
5(n=20,386)	Grade down: moderate risk of bias due to selection bias	No grade change: Consistent results except one study	Grade down: Potential confounding	No grade change	Unlikely - no grade change	Very low

Postnatal dietary patterns as risk factors for developing FHS						
3(n=11,580)	Grade down: high risk of bias due to self-reported allergies	No grade change	Grade down: Potential confounding	Grade down: only 3 studies on this	Unlikely - no grade change	Very low
Exposure to pollutants as a risk factor for developing FHS						
1(n=88)	Grade down: high risk of bias due to unbalanced groups	No grade change	Grade down: low generalisability	Grade down: only 1 study, also small sample	Unlikely - no grade change	Very low
Alcohol consumption among elderly as a risk factor for developing FHS						
1(n=109)	Grade down: high risk of bias	No grade change	Grade down: Potential confounding, low generalisability	Grade down: only 1 study, also small sample	Unlikely - no grade change	Very low
Intrauterine environment as a risk factor for developing FHS						
1(n=3482)	Grade down: reliance on secondary data	No grade change	No grade change	Grade down: only 1 study	Unlikely - no grade change	Very low
Low birthweight as a risk factor for developing FHS						
1(n=3482)	Grade down: reliance on secondary data	No grade change	No grade change	Grade down: only 1 study	Unlikely - no grade change	Very low
Household factors and risk for developing FHS						

4(n=12,288)	No grade change - although one study relies on secondary data	No grade change	No grade change	No grade change	Unlikely - no grade change	Low
Maternal atopy as a risk factor for developing FHs						
2(n=2968)	No grade change	Grade down: Inconsistent findings	No grade change	Grade down: 2 studies only	Unlikely - no grade change	Very low
Prenatal phthalate exposure as a risk factor for developing FHS						
1(n=147)	Grade down: Selection bias due to unbalanced sampling	No grade change	No grade change	Grade down: 1 study only	Unlikely - no grade change	Very low
Influenza as a risk factor for developing FHS						
1(n=7321)	Grade down: moderate risk of bias	No grade change	Grade down: Indirect outcome measurement	Grade down: only 1 study	Unlikely - no grade change	Very low
Exposure to smoking as a risk factor for developing FHS						
1(n=4089)	Grade down: moderate risk of bias due to measurement of outcomes	No grade change	Grade down: Indirect outcome measurement	Grade down: only 1 study	Unlikely - no grade change	Very low
Maternal age at the time of delivery as a risk factor for developing FHS						

1(n=81,020)	Grade down: selection bias, unclear selection methods of participants	No grade change	No grade change	Grade down: only 1 study	Unlikely - no grade change	Very low
Other (multiple factors)						
3(n=797,478)	Grade down: no clinical studies and 1 study uses self-reported allergies. 2 of 3 studies do not use DBPCFC/oral food challenge	No grade change	No grade change:	No grade change	Unlikely - no grade change	Very low

Current knowledge of FHS amongst the general public

No. of studies / participants)	Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Overall certainty - GRADE	Overall certainty - WHO
FHS knowledge, attitude, and management among consumers with FHS							
9(n=8738)	Grade down: High risk of bias - mainly self-reported data from	No grade change	No grade change	Grade down: Small sample sizes for all	Unlikely - no grade change	Very low	Possible Evidence – evidence based

	surveys/questionnaires			except one study			mainly on cross-sectional studies. No evidence from RCTs.
FHS knowledge, attitude, and training among Food Business Operators							
19(n=3548)	Grade down: High risk of bias - mainly self-reported data from surveys/questionnaires	No grade change	No grade change	Grade down: Small sample sizes for all except one study	Unlikely - no grade change	Very low	Possible Evidence – evidence based mainly on cross-sectional studies. No evidence from RCTs.
FHS knowledge and management among healthcare providers							
6(n=2165)	Grade down: High risk of bias - mainly self-reported data from surveys/questionnaires	No grade change	No grade change	Grade down: Small sample sizes for all	Unlikely - no grade change	Very low	Possible Evidence – evidence based mainly on cross-

				except one study			sectional studies. No evidence from RCTs.
FHS knowledge and preparedness among childcare providers							
2(n=547)	Grade down: High risk of bias - mainly self-reported data from surveys/questionnaires	No grade change	No grade change	Grade down: Small sample sizes for all	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from 2 studies. No evidence from RCTs
FHS knowledge and preparedness among children/parents of children with FHS							
3(n=396)	Grade down: High risk of bias - mainly self-reported data from surveys/questionnaires	No grade change	No grade change	Grade down: Small sample sizes for all	Unlikely - no grade change	Very low	Insufficient Evidence – evidence only from 3 studies, which are suggestive. No evidence from RCTs