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## A comparison of two methodologies for the selection of foods in a total diet study

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Total diet studies (TDS) assess exposure to chemical substances in food, thereby facilitating risk assessments and health monitoring<sup>(1)</sup>. Candidate foods for inclusion in a TDS list should represent a large part of a typical diet to accurately estimate exposure of the population and/or specific population groups. There are currently no harmonised TDS guidelines for the selection of foods, with varying methodologies used worldwide<sup>(2)</sup>. The aim of this study was to compare the influence of two approaches in compiling a TDS food list using data from the adult cohort of the EFSA Comprehensive Database<sup>(3)</sup>. This database was developed from national food consumption surveys across Europe. Potential TDS foods were selected if they satisfied the criteria of either comprising 90% of the weight of each food group (method 1) or comprising 90% of the weight of the total diet plus  $\geq 5\%$  consumer rate (method 2). The number of selected TDS foods and their percentage (%) contributions to the diet are presented for Ireland and France.

Food Groups	Ireland				France			
	Method 1		Method 2		Method 1		Method 2	
	%Contr	<i>n</i>	%Contr	<i>n</i>	%Contr	<i>n</i>	%Contr	<i>n</i>
Grains and grain products	6.6	16	5.3	6	7.9	21	7.1	13
Vegetable & vegetable products	4.7	15	3.4	5	5.2	23	4.2	13
Starchy roots and tubers	7.7	2	8.1	3	2.4	3	2.5	4
Legumes, nuts and oilseeds	0.5	3	0.4	1	1.3	5	1.2	4
Fruits and fruit products	2.8	12	2.0	3	5.0	15	4.7	12
Meat and meat products	5.2	7	5.2	7	4.9	16	4.2	9
Fish and other seafood	0.7	6	0.2	1	1.2	15	0.5	2
Milk and dairy products	9.2	4	9.2	4	7.4	18	6.2	9
Eggs and egg products	0.4	1	0.4	1	0.6	1	0.6	1
Sugar and confectionary	0.9	7	0.7	2	1.0	9	0.6	2
Fats & oils	1.1	4	0.9	2	0.9	5	0.6	2
Fruit and vegetable juices	1.0	3	0.9	1	1.9	5	1.9	5
Non-alcoholic beverages	26.8	5	29.1	9	16.7	7	18.2	11
Alcoholic beverages	11.8	3	12.2	4	4.3	8	4.3	8
Drinking water	10.7	1	10.7	1	30.5	2	32.2	3
Herbs, spices and condiments	0.6	11	0.3	1	0.8	14	0.2	1
Snacks, desserts & other foods	0.4	4	0.2	1	0.8	5	0.5	2
Other	0.9	11	0.5	2	–	–	–	0
Contribution of TDS foods to the diet	92.0	115	89.7	54	92.9	174	89.7	101

%Contr: percentage contribution of TDS foods to dietary intake; *n*: number of TDS foods.

Using 'method 1' the % contribution of TDS foods to the total diet is 92.0 and 92.9%, representing 115 and 174 TDS foods for Ireland and France, respectively. For method 2, a % contribution of 89.7% for both Ireland and France represent 54 and 101 foods, respectively. Although additional 'risk' foods (shellfish etc.) should be added to the list depending on the contaminant of interest, this research shows that reasonably small TDS food lists may strongly represent the overall diet. In terms of budget planning and analytical capacity, these methods may provide cost-saving tools in deriving a TDS food list. Future consortium work will define a food shopping plan and ensure all chemicals of interest are accounted for.

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1. EFSA, FAO and WHO (2011) *EFSA Journal* 9(11), 2450.
2. EFSA, FAO and WHO (2011) *Supporting publications* 2011:206.
3. EFSA Comprehensive European Food Consumption Database (2011) *European Food Safety Authority*.