

The utility of linking National Food Ingredient Databases to National Food Consumption surveys: a pilot study on fibre and sugar

S.Kelly¹, A. Moore-Heslin², M. Yang², M. Buffini², L. Kehoe³, J. Kearney⁴, J. Walton⁵, A. Flynn³, B. McNulty², A.P. Nugent^{1,2}. ¹Queens University Belfast, ²University College Dublin, ³ University College Cork, ⁴ Technical University Dublin ⁵ Cork Institute of Technology.

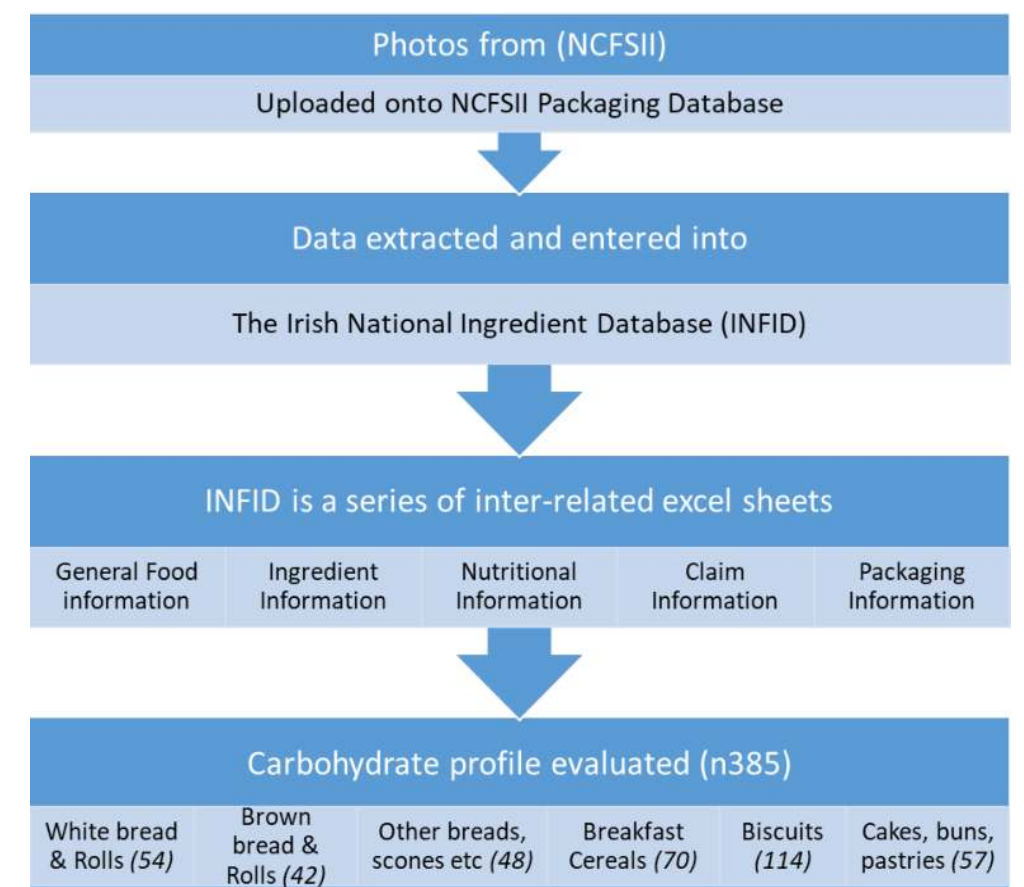
Background

Dietary recommendations encourage increased fibre and reduced sugar consumption. As National Food Consumption Surveys provide comprehensive information of all foods consumed by representative population samples, they provide an opportunity to review nutritional profile of food products consumed. The Irish national food surveys as completed by the Irish Universities Nutrition Alliance (IUNA) capture brand level dietary data with all details as gathered on pack entered into a discrete but inter-linked database, the Irish National Food Ingredient Database (INFID).

Aim

The aim of this study was to profile the carbohydrate quality of a convenience sub-sample of packaged foods as eaten by Irish children during the National Children's Food Survey II (2017/2018) as entered into INFID.

Methods



Results

Breads had the lowest (per 100g) median energy, fat, saturated fat and sugar composition but the highest protein and salt contents. Ready to eat breakfast cereals (RTEBC) had the greatest median content of carbohydrate (71.8g/100g), fibre (7.1g/100g) and a number of micronutrients.

Table 1. Comparison of median fibre and sugar contents per 100g product as per Reg. (EC 1924/1006) (fibre) and UK guidance (Sugar)

Profile of fibre content per 100g product*									
Group	≤ 2.9g			3.0-5.9g			≥6.0g		
	%	Med	IQR	%	Med	IQR	%	Med	IQR
All	44	2.2	1.2	33	3.6	1.3	23	7.4	2.6
White breads	53	2.5	0.5	43	3.6	0.8	4	8.3	-
Brown Breads	0	-	-	31	4.2	1.7	69	6.9	1.3
Other breads	28	2.5	0.9	40	3.6	1.3	11	7.0	2.6
RTEBC	19	2.3	1.2	25	4.8	2.5	57	9.4	4.2
Biscuits	50	2.3	1.1	40	3.4	1.1	9	7.8	1.6
Cakes Buns etc	81	1.4	1.5	17	3.2	0.4	2	7.5	-

* As per Regulation (EC) 1924/2006

Profile of sugar content per 100g product*									
Group	≤ 4.9			5.0-22.49g			≥22.5g**		
	%	Med	IQR	%	Med	IQR	%	Med	IQR
All	37	2.7	1.7	28	14	10.2	35	31.2	7.7
White breads	91	3.2	1.1	9	5.5	0.5	0	-	-
Brown Breads	98	3.0	1.2	2	6.7	-	0	-	-
Other breads	52	2.5	1.0	42	7.2	2.8	6	29.5	-
RTEBC	13	1.2	3.6	51	14	8.6	36	28	4.3
Biscuits	17	1.0	1.4	19	16	10.1	62	32.2	6.6
Cakes Buns etc	0	-	-	39	17	6.2	61	33	14.5

* As per UK Government guidance. ** or >27g/ portion if portion > 250g

Based on fibre content, 210 products were eligible to make a fibre claim as per Regulation (EC) 1924/2006, however, only 78 products did so. 46 products claimed 'high fibre' (>6g/100g) and 32 products claimed to be a 'source' (>3g/100g). Fibre claims were present on: RTEBC (24 claims); brown breads and rolls (24 claims); biscuits (14 claims); white breads (10 claims); and 'other breads' (6 claims).

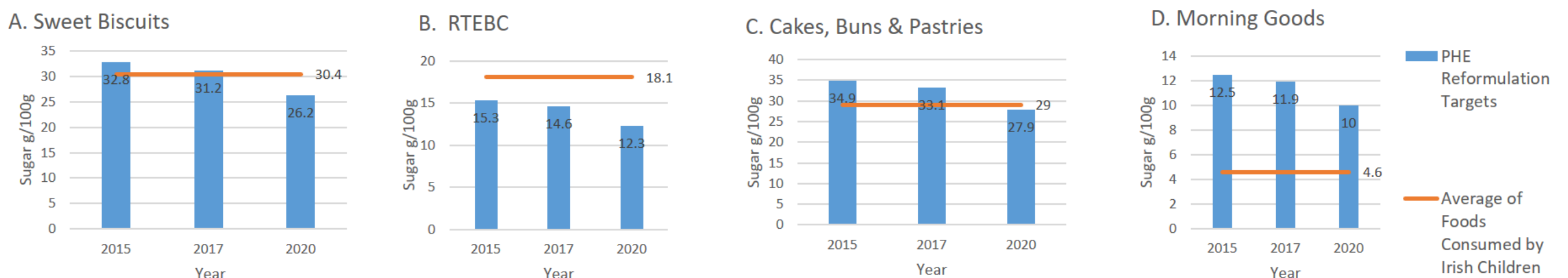


Figure 1. Comparison of relevant foods against UK Public Health England targets for sugar reduction (PHE, 2017)

Conclusion

This small pilot study suggests that for the food groups examined, there is a range of options on sale with respect to sugar and fibre content. Challenges may exist for further reformulation. Linking brands with actual intake will allow for clearer view of impact.

References

Regulation (EC) 1924/2006
PHE (2017) Sugar reduction: Achieving the 20%; A technical report outlining progress to date, guidelines for industry, 2015 baseline levels in key foods and next steps.