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## Nutrient profiling of ready to eat breakfast cereals reveals substantial differences in macronutrient composition despite similar nutrition claim usage

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### Abstract

Under Regulation (EC) No 1924/2006 the usage of nutrition and health claims are permitted, however foods that are high in fat, sugars and salt are advised not to use such claims as foods promoted with these claims may influence consumer food choice. The use of nutrient profiles has been proposed as a means of avoiding the potential of such claims masking the overall nutritional status of a product. Ready to eat breakfast cereals (RTEBC) often display nutrition claims whilst also contributing significantly to total sugar and energy intake. The aim of this study was to profile a variety of RTEBC and compare nutrient composition and claim information between nutrient profile categories.

The Irish National Food Ingredient database (INFID) is a record of brand specific information from food labels collected during the Irish national food surveys. A convenience sub-sample of RTEBC as eaten by Irish children during the National Children's Food Survey 2 (2017/2018) were selected ( $n = 102$ ). Nutrient profile (NP) scores were calculated using the UK Nutrient Profiling Model (FSA). NP scores were calculated based on a set of negative macronutrient indicators (energy, saturated fat, total sugars and sodium) minus positive indicators (protein, fibre, "fruit, vegetables and nuts") present per 100 g. Foods scoring four points or more were classified as "less healthy".

More than half of RTEBC were classed "less healthy" (53%) with a median NP score of 8.0 with "healthy" RTEBC scoring significantly lower at -0.0 ( $p < 0.001$ ). "Healthy" RTEBC had a median sugar content of 13.4g/100 g compared to 24g/100 g in the "less healthy" ( $p < 0.001$ ). "Healthy" RTEBC had a higher fibre content of 8.8g/100 g compared to 5.72g/100 g in the "less healthy" ( $p = 0.001$ ), with 35% of healthy and 28% of less healthy RTEBC making a substantiated "high in fibre" claim. Micronutrient contents of all RTEBC were similar, with only iron significantly higher in "healthy" (13.3mg/100g) compared to "less healthy" (9.5mg/100g) ( $p = 0.02$ ). The prevalence of substantiated micronutrient related claims was the same between "healthy" and "less healthy" RTEBC.

"Healthy" and "less healthy" RTEBC display similar micronutrient profiles, with most of the nutrition claims on both pertaining to the micronutrient and fibre content, potentially overshadowing the macronutrient contribution of the cereals. This analysis shows the ability of nutrient profiling to distinguish products by macronutrient profiles however it identifies the complexity of application with respect to micronutrient content. Further research is required to investigate the contribution of the profiled RTEBC to total nutrient intakes.

### Conflict of Interest

There is no conflict of interest