



Guide: Reformulating to meet nutritional targets



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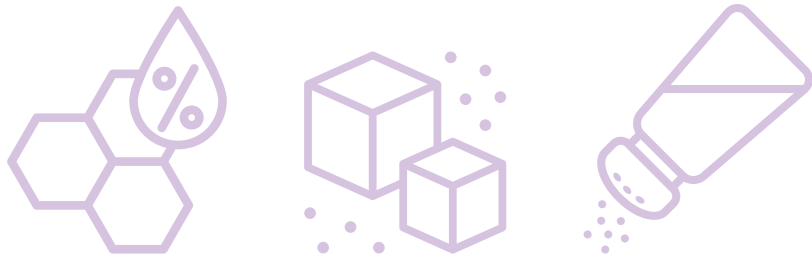
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Introduction

The introduction of front-of-pack nutrition labelling schemes around the world is widely seen as an important tool for educating and encouraging consumers to make healthier choices. But for manufacturers it raises important questions around product reformulation.

This guide is designed to help you understand what needs to be considered and how to approach product reformulation in the context of the UK's HFSS (high fat, sugar and salt) legislation.



Understanding HFSS legislation

The UK HFSS policy aims to restrict the marketing of foods high in fat, sugar and salt. Targeting categories known to make a significant contribution to overall calorie intake, it uses the Department of Health Nutrient Profile Model (NPM) to calculate the status of individual products. Those that fail to achieve the required score are classified 'less healthy' and subject to several restrictions designed to reduce their visibility, particularly among children.

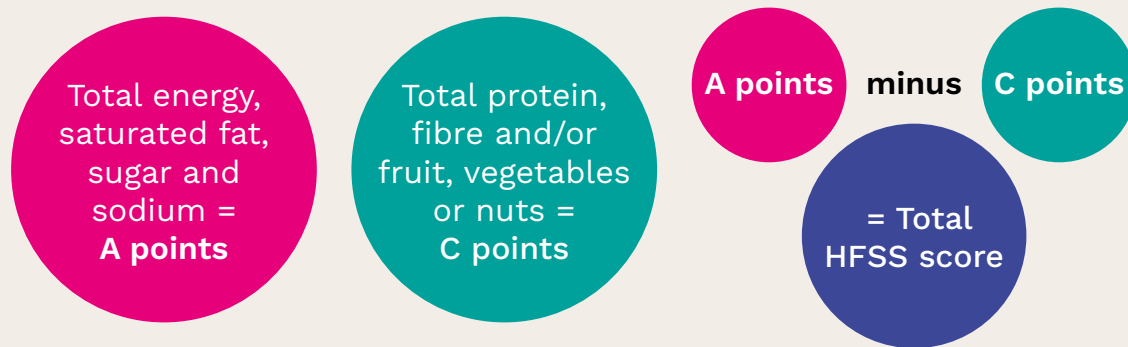
A ban on prime promotional locations (both in-store and online) has been in place since October 2022 and there are two further stages to come. Volume promotions, such as buy-one-get-one-free and two-for-one deals, are expected to be off limits from October 2025, while advertising HFSS products on digital channels and pre-watershed tv will eventually also no longer be permitted – although the implementation date for this final directive is yet to be announced.





Calculating HFSS status

Should you want to reformulate products to take them out of scope of the legislation, building an understanding of what is and isn't possible starts with the Nutrition Profile Model, which is based on the following simple algorithm:



A food product with a score of 4 or more is classed as HFSS, but for beverages the threshold is 1 or more. That said, there is one important proviso. If the A score comes to 11 or more, then the rules dictate that you can't simply add more protein (C points), to reduce the overall score. You have to bring down the saturated fat, salt and sugar content first.

It's also important to note that not all food products are subject to HFSS legislation. The focus is on categories that are highly calorific and processed such as soft drinks, chocolate and confectionery, cakes, morning goods, ice cream, yogurt, breakfast cereals, potato-based snacks, pizza and ready meals, to name a few.

UK NPM 2005/5									
UK NPM 2004/5 Based on 8,950kJ (2,130kcal) diet, 3.75% scoring bands									
'A' points					'C' points				
	Energy kJ (kcal)	Saturated fat (g)	Total sugars (g)	Sodium (mg)	Protein (g)	FVN (%)	Fibre (AOAC) (g)	Fibre (NSP) (g)	
	8,950kJ (2,130kcal)	11% food energy	21% food energy	2,400mg	42g	400g	24g	18g	
0	≤	335	1	4.5	90	1.6	40	0.9	0.7
1	>	335	1	4.5	90	1.6	40	0.9	0.7
2	>	670	2	9	180	3.2	60	1.9	1.4
3	>	1005	3	13.5	270	4.8	-	2.8	2.1
4	>	1340	4	18	360	6.4	-	3.7	2.8
5	>	1675	5	22.5	450	8	80	4.7	3.5
6	>	2010	6	27	540				
7	>	2345	7	31	630				
8	>	2680	8	36	720				
9	>	3015	9	40	810				
10	>	3350	10	45	900				

Reformulation strategy: Pros & Cons

If the final score puts your product in HFSS territory, the NPM framework essentially gives you two focus areas for reformulation. The first is reducing saturated fat, sugar and/or salt (A points) and the second involves increasing fibre and/or fruit, veg or nuts (C points). But each comes with its own set of challenges, which are summarised in the following pages.





Reducing A points by targeting:

SATURATED FATS



- Fats are fundamental for product structure, so although reducing overall content will cut calories it is also highly likely to compromise taste, texture and processibility. You may also need to add emulsifiers to make the fat that remains go further.
- Switching one fat for another with lower sat fat content - such as a solid fat for sunflower oil - may seem a logical move but it won't do anything for calorie content because total fat remains the same. Plus, increased risk of rancidity due to the presence of a higher level of unsaturated fats may also shorten shelf life.
- Using a fat replacer, such as one based on starches or proteins, will most likely reduce calorie content. However, selecting the best option from the vast number of potential ingredients now available, both in terms of product and dosage level, requires a significant amount of screening work. Plus, it won't deliver the same final product, so compromises will need to be made.

SALT



- Lowering salt content by stealth without using additional ingredients can re-educate the palate over time and has been successfully employed in the bread category, for example. But there is always a baseline for consumer acceptance that can't be crossed. Shelf life may also be affected due to the resulting increase in water activity.
- Using low sodium alternatives or salt enhancers will reduce salt content but may bring off-tastes that then need to be masked. Plus, they may not deliver the same level of saltiness.

SUGAR



- Reducing sugar content gradually over time is an option, but this route is only suitable for drinks and high moisture foods where bulk can be replaced with water. In all other cases, a bulking agent will be required to replace key textural attributes. Consumer acceptance and impact on shelf life must also be considered.
- **Replacement with:**
 - **High potency sweeteners:** These ingredients provide an intense sweetness at very low usage levels and add minimal / zero calories. However, they have limited application and are likely to impact the sweet taste profile of products. There are also regulatory considerations to be taken into account.
 - **Polyols:** This highly effective group of bulk sugar replacers provide some calorie reduction but stability, taste profile, degree of hygroscopicity and humectancy, as well as cost all need to be reviewed on a case-by-case basis to determine selection. Products containing more than 10% polyols also need to carry a laxation warning in UK and EU markets.
 - **Soluble fibres:** These label-friendly ingredients help to lower calorie content and are not subject to food additive regulations, but gastro-intestinal tolerance, cost and a lower sweetness profile are all issues that need to be addressed.

Increasing C points by targeting:

PROTEIN



- These high-cost ingredients will impact the bottom line.
- Likely to impact taste and texture, depending on the type used and dosage levels.
- Total A points must be less than 11 before you can bring protein into the overall HFSS calculation.

FIBRE



- The role of soluble fibre in sugar reduction means it can be used for the dual purpose of boosting C points and decreasing A points.
- Product texture is likely to be affected, depending on the type of fibre used. Insoluble fibres can be particularly challenging as they tend to soak up moisture and fat.
- Tolerance can be an issue, with soluble fibres linked to bloating and wind problems.

FRUIT, VEG AND NUTS



- These are all expensive ingredients, so increasing levels will directly impact cost. Taste and texture will also change, which may make this option better suited to line extension projects rather than reformulation.
- Given that a product must contain at least 40% of these ingredients to secure just one C point, this is not the most efficient way to boost HFSS score
- The type of fruit, veg and nuts that can be used is subject to restrictions based on processing methods. Concentrated fruit juice, for example, is strictly off limits due to its high sugar content.





In practice

There is no one-size-fits-all approach to product reformulation. Reducing any or all of the target nutritional elements to achieve non-HFSS status will alter the eating experience, so needs to be carefully managed to ensure a successful outcome.

At the same time, consideration needs to be given to how these formulation changes will impact on-pack labelling and consumer engagement. Sugar and salt are kitchen cupboard ingredients but the alternatives used to deliver a similar taste and functionality may be less familiar, potentially putting your reformulated product at odds with clean label ambitions and natural trends.

Of course, commercial decisions go hand-in-hand with any product development strategy and reformulation is no exception. With ingredient costs highly likely to increase, you need to consider the very real possibility of either an increase in price, decrease in pack size or drop in margin.

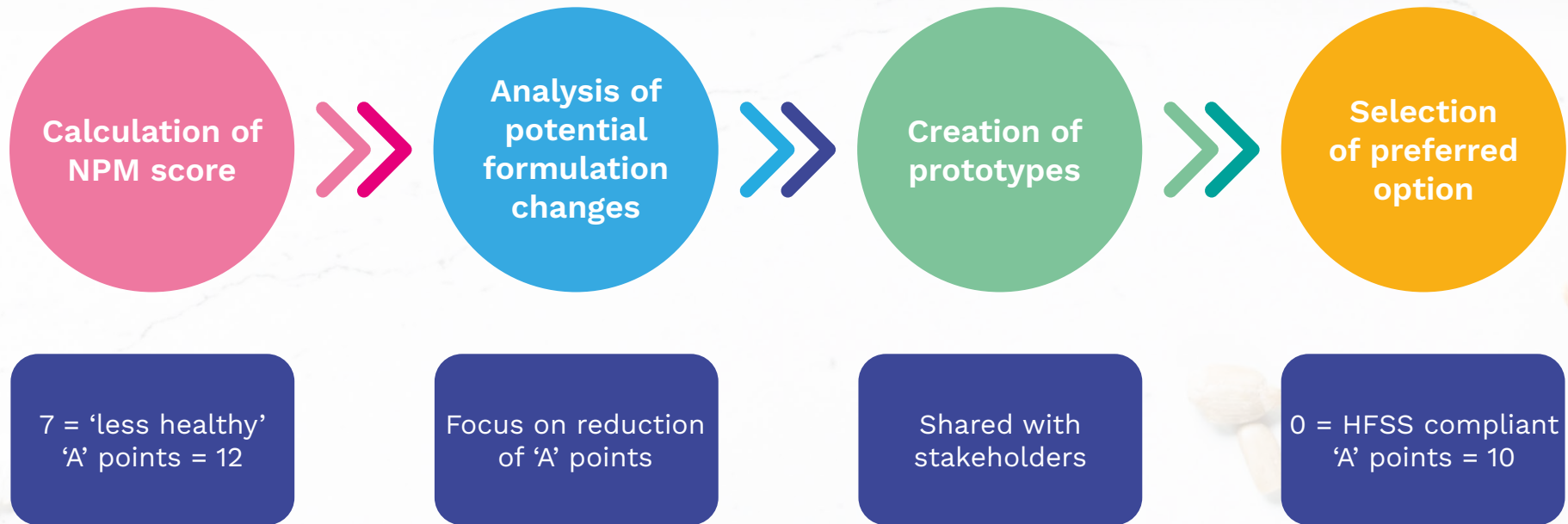
The good news is that a reformulated product that achieves non-HFSS status in the UK will most likely also improve its rating with other nutritional labelling schemes around the world. It may not gain a top 'A' Nutriscore, for example, but would almost certainly move up one or two levels.

Here's how it's done successfully when you work with our multi-disciplinary technical team at RSSL.



Case study

Reformulation of a cereal bar





How RSSL can help

RSSL is a respected expert in the field of product reformulation. Our talented team of food technologists, chefs and scientists ensures every solution is technically viable, commercially strong and enjoyed by consumers. So, whether you want to achieve a specific nutrition label declaration to enhance product appeal or respond to high profile health initiatives and legislative change – we guide you through every stage of the process.

To find out more about our product development and reformulation service, please contact us on: +44 (0)118 918 4076, email foodsales@rssl.com, or visit www.rssl.com



About the author

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A Food Science graduate, with a Masters in Nutritional Medicine and a Fellow of the Institute of Food Science & Technology, Carole has over 30 years' experience in the food industry. Working within RSSL's innovation team, she applies her considerable expertise to ingredient evaluation, product development and reformulation projects across a wide range of categories.



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RSSL is a cutting-edge Contract Research Organisation, pushing the boundaries of science and innovation to help make our world safer, healthier and more sustainable. Our clients trust us to deliver innovative solutions to real-world problems facing the global food and consumer goods industries. From our state-of-the-art facilities in Reading, UK, our multi-disciplinary team of over 350 scientists, professional chefs and regulatory experts work hand in hand with our clients to scope, develop and manufacture products that are not only innovative and relevant to customer needs but also trusted for their safety, quality and sustainability. We offer a diverse range of product development, analytical testing and scientific consultancy services to support the full product life cycle.

Contact us to find out how we can support you on your product reformulation journey.



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