## Food Hypersensitivity

The impact of cost and availability of food suitable for those with food allergies or intolerances.

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## Introduction

The Consumer Council was established in April 1985 as a non-departmental public body (NDPB) under the General Consumer Council (Northern Ireland) Order 1984 (The NI Order). We operate under the Department for the Economy on behalf of the Northern Ireland Executive.

We have statutory duties in relation to energy, postal services, transport, water and sewerage, and food affordability and accessibility. Our core business involves responding to enquiries, investigating complaints, carrying out independent research, educating and empowering consumers, and advising the government on matters relating to consumer affairs.

With regard to food affordability and accessibility, The NI Order gives us powers to research and report on the issues or barriers Northern Ireland consumers encounter when accessing affordable, good, nutritious and enjoyable food, of an appropriate quality and quantity to sustain an acceptable standard of living appropriate for all.

We represent and campaign on behalf of all Northern Ireland citizens, in particular those in vulnerable circumstances, and pay particular regard to consumers:

- who are disabled or have long-term health conditions;
- who are of pensionable age;
- who are on low incomes; and
- who live in rural areas.

At the time of this research being undertaken, the Consumer Price Index (CPI) showed inflation had risen by $9 \%$ in the past year, and the basic spend of Northern Ireland's lowestearning households had risen by $22.7 \%$. Since then, inflation, particularly food inflation, has continued on an upwards trajectory, and food and non-alcoholic beverages rose by 18.4\% in the year to May 2023, down from 19.1\% in April, and from 19.2\% in March, which was the highest annual rate seen for over 45 years.

Now imagine that you or a family member has a food allergy, intolerance, or a medically related special diet (food hypersensitivities), which will affect what you can and can't buy and eat. The Consumer Council were hearing anecdotally how the cost and availability of a specialist diet (involving free-from products), were negatively impacting some consumers, and worse, was putting the health and well-being of consumers or their family member(s) at risk.

Regarding cost, we know from a Safefood report published last year that in Northern Ireland the additional (direct) costs associated with a food allergy for adults were $£ 847$ per year, and for parents of children with food allergies, this rose to $£ 1,208$ per year. For coeliac disease, these costs were $£ 737$ and $£ 1608$ respectively, and for those with a food intolerance, costs were $£ 377$ for adults and $£ 292$ for parents. ${ }^{1}$

To find out more, we commissioned Nl -specific research to determine to what extent consumers who require a special health-related diet are impacted by issues of cost and/or product availability, and to get an indication of the scale of the issue.

We were also keen to establish what proportion of Northern Ireland consumers purchase free-from products, and what drives their purchase choices, i.e., a doctor-diagnosed medical condition, self-reported medical condition, health or lifestyle choice, or environmental concerns; and to learn about their shopping experiences.

[^0]
## Executive Summary

Data on food allergies and intolerances are not routinely collected at a national level and comparing findings from different studies can prove difficult as the definitions of dietary conditions can vary. When we commenced this research, there was no up-to-date or specific data on the prevalence of these conditions in Northern Ireland, and existing UK-wide studies used a Northern Ireland sample which was too small to be truly representative.

This report details the findings of the research carried out by FN Research Ltd on behalf of the Consumer Council, between December 2021 and February 2022. The research was conducted to determine the prevalence of food hypersensitivities in Northern Ireland; consumers' experience of cost and availability of food suitable for their dietary needs, and to discover if any issues had been encountered with availability.

The research comprised of a representative household survey; in-depth interviews with consumers who have food hypersensitivities, and other key stakeholders. In addition, a focus group was conducted with consumers without food hypersensitivities who buy free-from products.

## Key Findings

## Market

The household survey showed the trend for free-from foods is most prevalent among younger people aged $25-34$ (61\%). Across all age groups, $30 \%$ of those who have bought or eaten freefrom products did so because of a food hypersensitivity.

Our research shows that overall, consumers recognise free-from products to be primarily for those with food hypersensitivity, with $61 \%$ agreeing to the statement that "free-from products are for those that have an intolerance or allergy". However, over half of respondents recognised that these items were bought for other reasons also, with $51 \%$ agreeing with the statement "free-from products are a health trend".

The growing popularity of free-from products has divided opinion in terms of its effect on the market. Some consumers expressed concern that the growing trend has driven-up price, however stakeholders suggest it has also led to increased product choice.

## Affordability

The research found that most participants felt the cost of free-from food to be high, and affordability was an issue for some, with $38 \%$ of consumers reporting they had experience of going without an item because it was too expensive. Others had to prioritise their spending and, in some cases, make sacrifices elsewhere to afford the products they needed to manage their hypersensitivity.

## Value

Perceived value for money links to the cost issues above and was discussed in the focus groups and in-depth interviews. Consumers commented on the fact that some products are disproportionately expensive as they come in smaller pack sizes than the 'standard' equivalent, and yet cost the same or more. Smaller pack sizes meant items needed to be bought in bulk or more frequently, which also added to cost. These consumer discussions did not give consideration as to why the items were smaller, or what factors might contribute to the higher cost of free-from products.

## Availability

Issues with availability were widespread with over two-thirds (68\%) of all survey respondents having experienced going without because items were unavailable in store; and a further $22 \%$ noticing product ranges they usually bought were no longer stocked.

Looking specifically at those with hypersensitivity, a quarter (25\%) had encountered a product range becoming unavailable.

## External impacts

We wanted to discover what impact consumers felt the Covid-19 pandemic and EU Exit had had on price and availability of free-from products.

We found consumers purchasing due to food hypersensitivities were worried that where availability was sporadic during the height of the COVID-19 pandemic, product availability issues seemed more sustained as a result of leaving the EU, and concern was raised about specific free-from products remaining unavailable in the longer term.

## Support

Many consumers with hypersensitivities, or parents of children affected, received prescriptions after initial diagnosis for items such as gluten-free bread and baby formula. Research participants mentioned issues with availability and a limited range of products on offer, as well as delays in prescriptions being fulfilled.

When asked what additional support they would like to see in terms of additional support, research participants gave a number of practical recommendations, particularly aimed at supporting those on a low-income. They wanted to see improvements to the existing prescriptions service and suggested extending eligibility to include those with Crohn's disease.

Knowledge was considered a key barrier for some, with more awareness needed about these conditions and their symptoms amongst the wider population, and improved signposting to guidance and help available from services such as the NHS.

It was also felt that improvements could be made by supermarkets in terms of variety of choice, targeted special offers including price matching for similar free-from and 'standard' products; and improvements to store layout, especially consistency of aisle location and shelf edge labelling.

## 1. Methodology

The overarching objective of this research was to determine whether consumers who require a special health-related diet are impacted by issues of cost and/or availability.

The Consumer Council wanted to get an indication of the scale of the issue, i.e., how many Northern Ireland consumers are affected.

The core questions for this research were:

1. How many consumers in Northern Ireland purchase/consume 'free-from' products?
2. Why do consumers eat/purchase 'free-from' products? i.e., intolerance, allergy, lifestyle choice, or environmental concerns?
3. How often do consumers buy free-from products?
4. Are consumers experiencing any barriers to buying 'free-from' products? i.e., cost, availability, choice.
5. In their view, has EU exit or COVID-19 had an impact on the ability of consumers to buy the products they need, and if so, to what extent?
6. How could the situation be improved for those with special dietary requirements in terms of cost or availability?

There were five main stages to this project:

## 1. A literature review

A review of existing information available covering Northern Ireland, UK and further afield.
2. $A$ household survey $(\mathbf{N}=1000)$

A socially economic representative household survey across Northern Ireland with primary food shoppers aged $18+{ }^{2}$

## 3. Online interviews

10 online depth interviews with those buying 'free-from' products due to food allergies/ intolerances or medically diagnosed need. Each interview lasted 40-60 minutes.

[^1]Table 1: Breakdown of consumer depth interviews.

| Depth | Condition |
| :--- | :--- |
| 1 | Intolerance |
| 2 | Intolerance |
| 3 | Coeliac |
| 4 | Coeliac |
| 5 | Coeliac/Diabetes type 1 |
| 6 | Coeliac/Intolerance |
| 7 | Coeliac/Diabetic |
| 8 | Allergy/Intolerance |
| 9 | Allergy |
| 10 | Crohn's |

## 4. Focus Groups

An online focus group was conducted with seven consumers who bought 'free-from' products as a lifestyle choice or to feel healthier.

## 5. In-depth interviews with key stakeholders

Online interviews sought the views of key stakeholders including a support group facilitator, a member of the British Dietetic Association, those workingl in health roles in local government and trusts, and a health food retailer.

## Key Definitions

There are various definitions of what an allergy and food intolerance can mean, and this has often led to difficulty when comparing existing research in this area. For the purposes of this research, we kept our definitions in line with those used by the Food Standards Agency (FSA) in their Food and You survey ${ }^{3}$ as outlined below:

A food allergy is an immune response to a food-based allergen, almost always a protein. Symptoms may be mild (for instance, itching and swelling), but in extreme cases can include anaphylactic shock with potentially fatal consequences. Many food allergies present in early childhood but are outgrown in later childhood. ${ }^{4}$

[^2]A food intolerance is a condition in which an individual has difficulty in digesting certain foods or food components, (e.g., lactose), causing symptoms such as abdominal pain, but which do not involve the immune system. Food intolerances include non-coeliac gluten sensitivity, gluten intolerance, lactose intolerance, cow's milk intolerance and FPIES ${ }^{5}$.

There are other adverse reactions that do not fall into either of the above categories but are included in the term food hypersensitivities. These can include conditions such as Crohn's Disease and Irritable Bowel Syndrome.

Free-from foods. Throughout the report we refer to 'free-from' foods and these are made without one or more specific ingredients, making them suitable for people who have a certain allergy, intolerance or health requirement and may need to avoid certain food components.

Self-reported diagnosis. Data on food allergies and intolerances are not routinely collected at a national level and collating findings from each study can prove difficult because of the variations in measurements and definitions. For example, self-reported versus medical diagnosis can significantly affect how findings can be presented. In 2007, a meta-analysis of food allergies estimated that food allergies affect about 3-4\% of adults in Western countries, but that the prevalence of self-reported food allergies is considerably higher at $\leq 35 \% .^{6}$

Therefore, in our data collection, we consider any diagnosis, self-reported or medical, when surveying and interviewing consumers.

[^3]
## 2. Main Findings

## How many of those have a food hypersensitivity in Northern Ireland?

From data collected in the UK, it is estimated that 1 in 5 consumers have an allergy, food intolerance or have an adverse reaction to consuming certain foods. ${ }^{7}$ Over half (52\%) report avoiding certain food products, $22 \%$ state this is because of an allergy or food intolerance, $26 \%$ avoid certain foods for health reasons and $31 \%$ avoid them for other reasons. ${ }^{8} \mathrm{~A}$ quarter of people who use free-from food products report they have no avoidance of allergens. ${ }^{9}$

Data on food allergies and intolerances are not routinely collected at a national level and comparing findings from different studies can prove difficult as the definitions of dietary conditions can vary. When we commenced this research, there was no up-to-date or specific data on the prevalence of these conditions in Northern Ireland, and existing studies had too small a Northern Ireland sample to be truly representative.

Figure 1: How many have a food hypersensitivity? ${ }^{10}$


- Those who have a food hypersensitivity
- Those who do not have a food hypersensitivity

Base Response: 1000 (weighted 1004)
This survey found that 3 in 10 people in Northern Ireland report having a food intolerance, allergy of medically condition that requires a special diet.

[^4]
## Figure 2: Prevalence of purchasing free-from products.

Q. Do you ever eat free-from food and drink products?


Base Response: 1000 (weighted 1004)
Almost half (48\%) of participants surveyed had eaten free-from food and drink products.
Figure 3: Consumers who have ever eaten free-from products by gender.
Q. Do you ever eat free-from food and drink products?


Base Response: 1000 (weighted 1004)
Women are the most likely to have eaten free-from products (55\%), in comparison to males (48\%).

Figure 4: Consumers who have ever eat free-from products by age.
Q. Do you ever eat free-from food and drink products?


Base Response: 1000 (weighted 1004)
In line with existing trends outlining the popularity of free-from foods among younger age groups, the survey showed the highest percentage of those who have eaten these products are aged $25-34$ (61\%). ${ }^{11}$

Figure 5: Top reasons for buying/eating free-from products.
Q. Which, if any, of the following reasons are why you buy / eat 'free-from' products? (Select all that apply)


Base Response: 566 (weighted 602)

[^5]Half of respondents stated, "Health benefits" as a top reason for buying, in second place was "Lifestyle choice" (41\%) and third was "Food intolerances" (33\%).
"I think we're more health conscious now. People are into what they're putting into their bodies. In general, between the diet and fitness culture, people are cutting out groups of food." - Health Sector Stakeholder
"We do encounter a lot of people who are gluten-free, dairy-free or vegan out of choice." - Key stakeholder

Figure 6: Comparison of free-from products as health trend or for those who have an intolerance of allergy.
Q. Below is a list of statements about 'free-from' foods. Please say whether you agree or disagree with each one.


When consumers were asked to what extent they agree or disagree with the following statements, $51 \%$ agreed or strongly agreed that "free-from products are a health trend" while $61 \%$ agreed or strongly agreed that "free-from products are for those that have an intolerance or allergy". This shows that while the increasing trend for these products is around the perceived health benefits, they are still seen primarily as products for those with an intolerance or allergy.

## Perception of price

Regardless of whether someone needs to buy free-from products for medical or health and lifestyle reasons, most who participated in the research commented on their expensiveness.
"An Ordinary 1 kg bag is 57p [but] for gluten-free it's $£ 1.57$. That's a massive increase." - Consumer with Crohn's

Value for money was also an issue, particularly related to pack sizes.
" $I$ 's hugely expensive, a loaf of bread is $£ 3$ to $£ 4$ and a half the size of a normal one. But I have to, what choice do I have?" - Coeliac consumer
"The actual price doesn't look that bad but it's the amount you are getting is about half." - Coeliac consumer

In terms of what drives cost, we know price is heavily influenced by the ingredients that need to be sourced and the strict conditions needed for their manufacture. However, many research participants felt it was also the growing popularity of free-from products amongst consumers who purchased for the perceived health benefits which was helping to push up prices.

When shown the statement: "free-from products have become expensive because people think it's trendy", $64 \%$ of those surveyed agreed or strongly agreed with this statement. If the price point were to fall however, a further $52 \%$ noted they would become more likely to buy free-from products themselves.

## Affordability

Consumers with a food hypersensitivity talked about how price increases have impacted their grocery spending due to buying 'essential' free-from products that their health, or health of a family member depended upon, including bread, pasta, cereal and milk alternatives, at a higher cost than the standard equivalent.
"Prices have gone up, maybe up by 20p per carton of milk. It's so expensive anyway I just accepted it."- Consumer with a food intolerance
"Everything has gone up. 25-50p on bread in M\&S. Convenience shops have gone up a lot." - Coeliac consumer
"20-50p on bread and biscuits. Its slowly edging up, trying not to let people notice." Coeliac consumer with intolerances

Most had to prioritise and budget to buy free-from foods, whilst others compensated by spending less on standard non-essential items like treats.
"I would meal plan and budget and try to get reduced vegetables to stretch over a few meals." - Coeliac consumer with diabetes
"Probably tightened reins a little bit and prioritising having free-from and gluten-free selection for my daughter." - Coeliac consumer
"I maybe compensate but I have to plan in advance. I have to get it. I don't have a choice." - Consumer with Crohn's
"The amount spent (on daughter) will be more significant and needs to be protected" - Consumer with allergies
'I try to economise on other things like bread to offset the price.' - Consumer with an intolerance

When not able to budget for, or offset the price elsewhere, consumers simply had to go without. Over a third of those who buy free-from products said that had to go without because it was "too expensive"

The impact of this was discussed in interviews with key stakeholders:
"Affordability is a big factor, especially on low income, benefits or out of work. People just want to keep well and diet is something they can control."

- Group Facilitator from Crohn's \& Colitis UK
"You get people who are not managing their condition and affordability definitely comes into it."
- Health Advisory Council (Coeliac UK)


## Labelling

The labelling of free-from products was also an issue raised by some of the research participants. Many noted there are everyday products that are by their very nature 'freefrom' but pointed out that when this is drawn attention to in the labelling, and they felt this was used as justification for charging more. On the plus side, it was acknowledged this could help those with food hypersensitivity to feel confident about products they're buying, and as a result broadens the range of products available.
'If you're taking something out, you're putting something else in. To an extent it's a way of marketing and increasing the price (labelling as 'free from)' - Consumer with an intolerance
'To say it's 'free from' - some products might always have been 'free from' but are now marketed in that way.' - Consumer with an intolerance

## Interventions: NHS Prescriptions

Some research participants who had food hypersensitivity received prescriptions after their initial diagnosis, mainly for gluten-free bread, and baby formula for those with infants affected.

These consumers suggested there is limited choice on prescriptions and mentioned problems with delays or inaccuracies with the prescriptions being fulfilled.
"I can order products through my pharmacists. But I ordered in September and still waiting for them, and you can't rely on what you actually get. It makes a bit of a difference but not much." - Coeliac consumer

Prescription items needed to be ordered in bulk so additional storage or freezer space also presented a problem for some.

Some noted that prescriptions were not available for all medical conditions and others, including those diagnosed with Crohn's Disease, complained about their lack of eligibility.
"Mentally I feel it's a form of discrimination. Why am I having to pay more just because I am ill? Coeliacs get prescriptions but Crohn's don't."- Consumer with Crohn's

More generally, we encountered a lack of awareness amongst some consumers with food hypersensitivity as to what was available on prescription, and whether indeed prescriptions were available at all.
"I need to look into it further even for basics such as gluten-free flour." - Coeliac consumer

The perception amongst stakeholders was that prescriptions were used more as a last resort. They suggested in terms of providing prescriptions, the focus was on trying to get the best value for money by sourcing the most appropriate products.
"Affordability came hand in hand with availability. If people didn't have easy access, they would be forced to buy more expensive options" - Key Stakeholder

There was a feeling that the prescription process was neither ideal or straightforward, and impacted on time and resources within the health care system. In terms of spend, the issuing of prescriptions was estimated to be approximately $£ 2$ million per annum.

It was suggested that a pharmacy-led scheme, like that used in Scotland, where consumers ordered their free-from products direct from the chemist could be more efficient.
"I wouldn't want to clog up GPs and community pharmacies with this. It's a food, so we should find a different way of doing it." - Health Sector Stakeholder
"A GP prescribing food for gluten-free is not the most efficient mechanism." - Key Stakeholder

However, the fact that prescriptions are available at all in Northern Ireland was viewed as a positive as in some parts of England they have been stopped completely.
"Would rather keep it the way it is than stop it altogether. Prescriptions are still the way to go if run in a good way." - Key stakeholder

## Food Insecurity

Food insecurity is sadly becoming an ever-increasing issue which can be seen very clearly in the growing number of referrals to food banks. In comparison to the other UK regions, between April 2021 and March 2022 Northern Ireland saw the largest increase of food parcels distributed (36\%) in comparison to the same period in 2019/20. In Trussell Trust network food banks alone, 61,597 parcels were handed out by the nation's 52 distribution centres in the year to March. ${ }^{12}$

If those with food hypersensitivities were faced with having to access support from a food bank, concern was expressed that the person's special dietary needs might be harder to meet. Free-from items are not usually donated, and awareness of food allergies, intolerances or other medically related special diets are likely to be low amongst food bank staff and volunteers.
"Those who work in food banks or within community groups may not have knowledge of allergies/intolerances to know what items can be provided for certain diets."

- British Dietic Association

However, it was also noted that if a person was facing food insecurity, they may be less concerned about their food intolerance or allergy if it meant being able to access food fullstop.
"If you are living with food poverty you are likely to be living with other poverties, so finding a loaf of bread would probably be the least of your worries if you can't afford to put your heating on. It would become low priority." - British Dietic Association

Although stakeholders noted that many people with food hypersensitivities were not at the point where they relied on food banks, those from lower-income households could be facing financial hardship due to the additional cost of a special diet. This, in their experience, often

[^6]resulted in poor management of the person's health/condition, which in turn could have consequences such as severe illness or malnutrition.
"It limits their choice. Either they will make a decision to eat foods they have an intolerance to which will cause ill health, or they could opt to leave out large parts of their diet."

- British Dietic Association


## Availability

Having access to the foods they need is particularly important for consumers who rely on free-from products to manage their food hypersensitivities.

In the last 12 months, over a third of those who purchased free-from products had to go without an item as it was unavailable.

Figure 7: Consumers going without free-from product by hypersensitivities.
Q. In the last 12 months, have you had to go without 'free-from' products?


Base Response: 566 (weighted 602)

Nearly half of those who have food hypersensitivities had to go without free-from products in the preceding 12 months in comparison to just under a third of those who don't have hypersensitivities.

Figure 8: Top reasons consumers went without free-from products.
Q. Why have you had to go without 'free-from' products? (Select all that apply)


Base Response: 212 (weighted 232)

In general, consumers considered larger supermarkets to have the best range. Some consumers also shopped in certain supermarkets for their own-brand products as they believed they were cheaper. Conversely, local convenience stores were perceived to have limited or no free-from products.
"I know if I go there (Tesco's) I can normally get own label. If I go to Sainsbury's or Co-Op I have to buy the brand as no own label alternative." - Consumer with a food intolerance
"Tesco have a big selection but not always guaranteed you get it, no regular supply. Asda is more reliable." - Coeliac consumer with additional food intolerance

Over 1 in 5 (22\%) who buy or eat free-from products have had to go without because the product ranges were no longer available in-store.
'No gluten-free M\&S party food this year, [but] there was last year.' - Coeliac consumer

Overall, we heard how consumers are often travelling to multiple stores because of inconsistent stock, lack of availability and/or to get the best price.
"With every different shop, there are different things." - Coeliac consumer with diabetes
"At the start, it was a nightmare, I didn't know what was available and where." Consumer with Crohn's

Availability was also an issue for those who do their food shopping online. Often this was not apparent until the shopping was delivered, and products would be missing, which caused inconvenience and anxiety.
"It's quite tricky because you don't know until shop arrives that you're getting what you need or not." - Consumer who has a young child with allergies

## Choice

Another concern for consumers is that the range of products available is not broad enough, and in some cases, participants talked about the choices becoming narrower. In particular, it was felt there was a lack of suitable products suitable for young children and toddlers. A couple of examples given were the breakfast items in the baby section, which in this participant's experience all contained milk, and there were said to be very few options for gluten-free micro baby meals ( 12 months + ).
"Baby section needs work for children who have allergies." - Consumer who has a young child with allergies

In contrast, key stakeholders noted how far the free-from market has come in terms of options available. Stakeholders suggested that over 30 years ago it was very difficult to access gluten-free products, but now there was better availability and more variety, catering for a wider range of needs.
"I think things are better now. There's so much variety." - Key Stakeholder

## Perceptions of EU Exit \& COVID-19 impact on availability

One of the objectives of this research was to look at the external impacts on free-from product availability for those with a food hypersensitivity.

## Figure 9: Perception of leaving the EU versus COVID-19 on the availability of free-from products.

Q. In your opinion, has EU Exit / COVID-19 reduced the availability of the 'free-from' products you tend to purchase?


Most consumers buying specifically due to food hypersensitivities suggested it had become harder to find free-from products they needed during the COVID-19 pandemic, especially at the start. This coincides with supply chain issues that affected product availability more generally.

Consumers noticed shelves were emptier, with limited choice, causing them to shop around more. Some felt this was in part due to other shoppers buying free-from products when the 'standard' equivalent was unavailable i.e., pasta and bread. This could have serious implications for people's health and well-being, and indeed some supermarkets intervened by putting up notices to discourage this.
"Some were buying gluten-free pasta because they couldn't get normal products. He can't eat anything that isn't gluten-free, so it was stopping him from eating. Others could buy other types of products." - Coeliac consumer

Many consumers buying due to food hypersensitivities had also noticed fellow shoppers bulkbuying or stockpiling to a certain extent during the lockdowns.
"You go into the supermarket and nothing's there - and you think, what will I do? (No milk alternatives or normal milk). People were buying products they wouldn't normally and in large quantities." - Consumer with allergies

Some that were buying for health reasons admitted they had also stockpiled certain items to avoid running out. One ordered a huge bag of gluten-free pasta online to last several months.
"Definitely, at the start, any pasta you could get your hands on." - Consumer with a food intolerance
"I did stock-up as I was scared we weren't going to get things, so it wouldn't be a massive panic if I couldn't get it later." - Consumer with Crohn's
"Did panic a bit at the beginning but it was fine, products were still available." -Coeliac consumer

However, not all these consumers saw the need to buy in bulk.
"It's your own mentality, you just take what you need." - Coeliac consumer with diabetes

Two-thirds of the general public perceived that leaving the EU had a major effect on availability, suggesting that availability of free-from products and particular brands had reduced because of it.
"It has completely vanished, apparently, Tesco can't get the product into the country." - Consumer with a food intolerance
"In general, when you see the supermarket shelves, they're not quite the same." Consumer with a food intolerance
"Not as many gluten-free products on the shelves. The shelves are bare." - Coeliac consumer

Overall, consumers found it difficult to separate the impacts of COVID-19 or EU Exit. Consumers with food hypersensitivity were worried that while COVID-19 reduced availability temporarily, the impact that EU Exit has had seemed to be more sustained and they worried that certain products would not come back into stock again in the near future, if at all.
"My concern is potentially mid-long term if supermarkets reduce lines." - Consumer with allergies

Consumers buying because of food hypersensitivities suggested online shopping was also affected with companies increasing delivery charges to Northern Ireland or not delivering at all.

This sentiment was reiterated by a retailer who sells free-from products in-store. From their perspective, EU Exit had a major impact on product supplies. Health food stores now had to source products from the Republic of Ireland, often at a higher cost with limited variety.
"UK companies either don't want to or find it difficult to supply the Northern Ireland market." - Health Food Store

## 3. Consumer Recommendations

Consumers were asked what recommendations they had when it came to the cost and availability of free-from products. These are broken down by the sector most able to take these recommendations forward:

## Government

Affordability was a key issue regarding free-from products and many consumers wondered how less affluent households were coping in the face of price increases. They suggested several improvements they felt would help alleviate cost issues for consumers:

Government-funded subsidies or vouchers. These would operate in a similar way to the Healthy Start Scheme ${ }^{13}$.

Improving existing prescriptions services. It was suggested Northern Ireland look to other parts of the UK for examples of best practice. For example, Scotland where they run a pharmacy-led scheme where patients had a unit allowance per month. Or a chip and pin scheme in England and Wales where patients are given a credit allowance to use in supermarkets, enabling them to get fresher products.

Widening the eligibility of gluten-free prescriptions. It was apparent in our conversations with consumers that not all people with food hypersensitivity receive NHS prescriptions, and some research participants we heard from with Crohn's Disease felt strongly they should be in receipt of NHS prescriptions to help with the cost of free-from food.

## Food retailers

Consumers gave several suggestions which food retailers, particularly supermarkets and larger food retailers could implement to help consumers with affordability and accessibility:

More competitive pricing. Participants would like to see more special offers on free-from items throughout the year and price matching between 'standard' products and similar freefrom products.

Improved supermarket layouts. Some consumers noted that free-from products move around a lot and are not always easy to find. More shelf-edge labelling to highlight free-from products would also help with easier identification.

[^7]Advertising. Consumers would like to see more advertising by supermarkets about which free-from product lines they carry, and what deals are available. It was felt this would help alleviate the amount of shopping around that consumers with food hypersensitivity have to do to access the food items they need.

## Manufacturers

Consumers also made suggestions that manufacturers could act upon to improve choice and the clarity and consistency of labelling:

Improving variety. Consumers that have or are buying for children that have multiple allergies highlighted how difficult it is to find free-from products that meet their needs. For example, one parent shared that most gluten-free chicken nuggets contain dairy.

Consistent labelling. It was also felt mainstream product manufacturers who made 'standard items' could be clearer with their labelling, i.e., dairy-free, or gluten-free. However, consumers felt where this is currently done might be a way of justifying increased cost, so they were clear they would not want this to happen as a consequence.

Standardised labelling. Consumers also spoke about the need to ensure product safety and provide the right information. It appeared from discussions that there remains a good deal of confusion still about labelling, and this is seen also in the literature review which accompanied this research ${ }^{14}$
"M\&S state on the product. They have an orange circle with wheat symbol. That means gluten-free. If not gluten-free, then 'not suitable' in bold blue letters. I have to check labels on everything. If everything had some sort of symbol to say gluten-free that would make a huge difference. On yoghurts etc., I have to check every sauce as so much contains barley." - Coeliac consumer
"I need to pick it up and see if it's dairy-free." - Consumer with a food intolerance
"It says it's plant-based rather than dairy-free. If it was a new product, then it would need to be $100 \%$ clear." - Consumer with a food intolerance

[^8]
## Education \& raising awareness

Knowledge was suggested to be a key barrier, with consumers needing additional help to establish if they have hypersensitivities, and to identify allergens within foods to manage their conditions more effectively. Our research participants suggested:

Awareness raising. More awareness needed to be raised of different intolerances and their symptoms amongst the wider population.
"He suffered for a long time without realising that it was a food intolerance." Coeliac consumer with food intolerances

Guidance and education. It was felt that there could be improved resources which provided a one stop shop for those requiring specific diets, including guidance on what support is available from the government and NHS. This might also include recipes and local product information, similar to the Monash University Low FODMAP ${ }^{15}$ Diet app for example ${ }^{16}$.

Eating outside of the home. Participants also discussed the need for greater support and awareness amongst restaurants and other outside caterers.
"I think the general public including in hospitality don't necessarily know how to look for allergens."

[^9]
## 4. Conclusions

This research was conducted to determine the prevalence of consumers who have an allergy, food intolerance or other medically related special diets (food hypersensitivities) in Northern Ireland, and to learn about their experience of cost and availability of free-from products.

We were also keen to establish how many Northern Ireland consumers purchase free-from food products, what their experiences are, and what drives their purchase choices.

What we found was that nearly half the general population (48\%) have eaten free-from products, with female shoppers and younger people the most likely to have done so. In line with previous UK wide research, we found that almost a third (30\%) of consumers in Northern Ireland has a food hypersensitivity.

In summary, consumers believe that the health trend for free-from products is driving up the cost, and that value for money is also an issue. Our participants felt that more intervention is needed to support those who are financially vulnerable so they can afford the food they need to avoid risking their health and well-being.

Cost is not the only prohibitive factor, and lack of availability has meant that consumers with food hypersensitivities are more likely to have gone without free-from products (47\%) than those who don't have a medically related special diet (28\%).

Many participants had encountered issues with products being unavailable, with some attributing this to the EU Exit or the COVID-19 pandemic, but where the impacts of COVID-19 were felt to have been temporary, the effects of EU Exit on supply were feared to be more sustained.

Whether it is cost, availability or choice that presents barriers for those who buy specialist food items to suit their dietary needs, it is clear how this can have a significant impact on a person's ability to manage their dietary health, and in some cases their mental health and general well-being.

## Appendix 1: Literature Review

## 1. Introduction

There are multiple definitions and information available on free-from foods, some more medically focussed than others. Likewise, there are many definitions for food allergies, food intolerances and related medical conditions which require a specific diet. This review highlights the key information currently available on the free-from food market, including consumer attitudes, potential health impacts if free-from food is not available and the effects of Covid-19 and EU Exit on the free-from food market. It will also address gaps in the existing literature.

## 2. Scope of research review

This literature examined sources from the UK and the US. Please note that terms and words are used in the context of the relevant country (e.g., UK uses 'coeliac', US uses 'celiac'). Plant-based foods, vegan and vegetarian foods are mentioned however, the main focus is on 'free-from' foods and the consumers who need to purchase these foods for allergy/intolerance or related medical conditions; and those who increasingly choose these foods as a lifestyle choice. Where possible research has been used from 2020/2021, however earlier years have been used in certain areas.

## 3. Definitions of key concepts

### 3.1. Free-from food

www.boots.com/nutrition provides a high level, clear definition of what free-from food is and mentions that supermarkets all have a free-from aisle now.
"'Free-from' foods are made without one or more specific ingredients, making them suitable for people who have a certain allergy, intolerance or health requirement and may need to avoid certain food components."
www.allergy-insight.com gives an excellent breakdown per free-from type, listing available products and brands, with relevant website links. It also lists supermarkets with free-from ranges and website links.

### 3.2. Food allergies

The NHS defines three types of food allergy according to symptoms and when they occur:

1. IgE-mediated food allergy - the most common with immediate symptoms and greater risk of anaphylaxis. Caused by immune system producing an antibody (Immunoglobulin E - IgE)
2. IgE-non-mediated food allergy - symptoms take longer to develop and more difficult to diagnose.
3. Mixed IgE and non-IgE-mediated food allergy - symptoms from both types.

Kidshealth.org mentions food sensitivities (within the allergy section) where people can eat a small amount of 'bothersome' food without a problem.

Food allergy (NHS definition) "when the body's immune system reacts unusually to specific foods." Reactions may be mild but can also be very serious, even fatal.

Symptoms:

- Itchy sensation inside mouth, nose or ears
- Raised itchy, red rash
- Swelling of the face around eyes, lips tongue and roof of mouth
- Vomiting

In severe cases, the sufferer can develop Anaphylaxis. This is "a severe and potentially lifethreatening reaction to a trigger such as an allergy." In terms of food - nuts, milk, fish, shellfish, eggs and some fruits can be triggers.

Symptoms develop suddenly and progress rapidly. These include:

- Feeling light-headed/faint
- Breathing difficulties and wheezing
- Fast heartbeat
- Clammy skin
- Confusion and anxiety
- Collapsing or losing consciousness.


## Categories of food allergy

Boots.co.uk explains the most common allergy types:

- Allergy to cow's milk is when the sufferer is allergic to the protein in cow's milk.
- Nut allergy is an allergic reaction to nuts, which happens when the immune system mistakes the protein in the nut(s) as a threat and release chemicals triggering allergy symptoms.

Foodallergy.org is another resource detailing the 9 common food allergens: Milk/Egg/Peanut/Soy/Wheat/Tree Nut/Shellfish/Fish/Sesame

### 3.3. Food intolerances

The NHS define food intolerance as "difficulty digesting certain foods and having an unpleasant, physical reaction to them." Symptoms typically occur a few hours after eating. Food intolerance is not the same as a food allergy. In addition to the usual culprits of dairy products or wheat, food additives and chemicals can also cause intolerances, e.g. caffeine, alcohol, and artificial sweeteners/additives.

## Symptoms:

- Tummy pain, bloating, wind and/or diarrhoea
- Skin rashes and itching

Differences between food intolerance and food allergy:

- Allergy is a reaction from the immune system treating food as a threat. It causes allergy symptoms to develop quickly even after a small amount of food. Related to particular foods and can be life-threatening.
- Intolerance occurs when the immune system is not involved, there are no allergic reactions, and it is never life threatening. Symptoms are gradual and only happen with a substantial amount of food. Can be caused by a wide variety of foods.

However, as nationaleczema.org explains, the line between food allergies and sensitivities (intolerances) blurs for people with inflammatory diseases such as Atopic Dermatitis (Eczema). In this case, the immune system can react in a similar way to an allergic reaction, with symptoms occurring within hours but not leading to anaphylaxis.

Food intolerances can also be described as 'hypersensitivities' a bad or unpleasant physical reaction occurring as a result of consuming a specific food. (Food.gov.uk)

## 4. Medical conditions requiring a specific diet

### 4.1. Key identifiable medical conditions:

- Coeliac disease
- Crohn's disease
- Colitis
- Diabetes

A summary of each of these is useful to help understand the potential health impacts for patients if they are unable to access free-from foods. Boots.co.uk and nhs.uk provide good definitions.

- Coeliac disease (an autoimmune condition) causes damage to the surface of the small bowel and means that nutrients are not all easily absorbed. Coeliacs usually need to remove gluten from their diet and may also need to cut out oats, although gluten-free oats are available.
- Crohn's disease is a type of inflammatory bowel disease (IBD), where parts of the digestive system become inflamed.
- Ulcerative colitis is defined as a long-term condition causing the colon and rectum to become inflamed.

Symptoms for each of the above conditions are very similar and include diarrhoea, stomach pain, fatigue, loss of appetite and weight loss.

- Diabetes Type 1 occurs when the level of glucose (sugar) in the bloodstream becomes too high, due to the body not producing enough insulin (a hormone) to control blood glucose. There is no link with age or weight. It is controlled with daily insulin injections. Symptoms include feeling very thirsty, peeing more than usual, feeling tired and losing weight.
- Diabetes Type $\mathbf{2}$ is also when the glucose level in the blood is too high however it is often linked to being overweight, inactive, or having a family history of type 2 diabetes. Symptoms are the same as for Type 1 diabetes.


### 4.2. Other conditions needing a free-from or specific diet

In addition to the conditions already listed, a common condition is Non-celiac gluten sensitivity (NCGS) known as gluten intolerance (including intolerance to other components of gluten-containing foods e.g., FODMAPS). While sufferers don't experience the same irritation to the small intestine as coeliacs, gluten intolerance can cause physical and mental problems such as fuzzy thinking and depression.

The focus of most of the US websites is very much on Crohn's/Colitis, advocating plantbased and gluten-free foods. The Crohn's \& Colitis Foundation (US) states that a special diet can be helpful for Inflammatory Bowel Disease however stresses that they don't work in all cases and may be restrictive, leading to weight loss and even malnutrition. As such they don't endorse any specific diet however provide the relevant information so sufferers can discuss it with a doctor or dietician. The following are covered:

- Carbohydrate Exclusion Diets (including elimination of soy, lactose and grains)
- Mediterranean Diet (rich in plant-based foods)
- Semi-Vegetarian Diet
- Low-Fibre Diet (avoiding nuts, and whole grains)
- Low-FODMAP Diet


### 4.3. Health impacts if those with special dietary needs are unable to access/afford specific foods

Celiac disease: A strict gluten-free diet usually eliminates symptoms. In addition to eating gluten-free food, sufferers need to avoid cross-contamination during food preparations and avoid contact with items containing gluten. An issue with the availability or affordability of gluten-free products would have serious health consequences for sufferers. Symptoms would flare up; adults could become very unwell and there is a risk of osteoporosis and anaemia. Infants and young children would have abdominal pain, vomiting and may become undernourished.

Crohn's disease \& Ulcerative Colitis: For Crohn's, a high protein, high-calorie diet, with vitamin supplements, is needed to ensure enough nutrients are consumed. With Colitis, sufferers there is no specific diet required. However, with both conditions, eliminating certain food groups (e.g. dairy) while suffering severe symptoms may help. While free-from foods are not essential, there may be an impact for some sufferers if they could not access certain free-from foods.

Diabetes: While diabetics are advised to have planned, regular meals with consistent levels of carbohydrates and to reduce sugar intake (with the use of artificial sweeteners) there is not a specific need for free-from foods unless as mentioned previously they also suffer with coeliac disease. As such, there would be little impact for the majority of diabetes sufferers of availability or accessibility of free-from foods or specific food types.

Food allergies: This group would be impacted most severely if the relevant freefrom products were not available or accessible. Their diet would be restricted and if they consumed the wrong product, allergic symptoms would occur, in severe cases immediately and in the worst case, anaphylaxis which can be fatal.

Food intolerances: Although those with intolerances would not have extremely severe reactions to eating standard food products, they could still be very unwell. Lack of availability of free-from food would have a major impact on day-to-day life.

## 5. Background - the Free-From market

### 5.1. General

The following is a summary taken from a report on the UK Free-from Foods Market from Mintel in 2021. It provides up-to-date information on the market including consumer behaviours, preferences and habits. Their report showed:

- There was growth in the free-from market overall during 2020. Sales growth accelerated to $£ 652$ million, with dairy-free and lactose-free sales at $£ 455$ million.
- Panic buying during the Covid-19 lockdown (with the closure of the food service industry and stock shortages) changed spending habits, with many consumers buying alternative products to their usual items.
- Media focus on global warming has led to a shift towards eco-friendly, sustainable and dairy-free food.
- Free-from manufacturers could use this to their advantage, marketing products from an environmental health and personal health perspective.
- However, the current expensive prices of free-from products could be prohibitive. The report warned brands may need to change their marketing to be perceived as more affordable and to represent value for money, especially for lower-income households.


### 5.2. UK Market Growth

From 2020 there has been a rise in the popularity of free-from food. There was a prelockdown growth of $£ 385.2 \mathrm{~m}$ (Kantar $52 \mathrm{w} / \mathrm{e} 22$ March 2020, The Grocer). Within retail, Aldi (whilst not operating in Northern Ireland) had a $50 \%$ rise in sales of free-from food and drink, with a $5.7 \%$ share of the free-from food market, the largest for any budget retailer. However, Tesco still dominated with $24.3 \%$ of the market. (The Grocer, July 2020)

The number of free-from product ranges has expanded within existing free-from brands. In addition, big brands including Gü and Galaxy have now produced free-from products. The free-from market has also grown due to lifestyle choices. For many consumers, free-from has become part of a healthy living philosophy, with people trying to cut down on gluten, soy and sugar. There has been a growth in veganism and consumers also want to be more environmentally friendly. Free-from new product development has continued to rise, especially within the gluten- and dairy-free categories.

### 5.3. European Market Growth

In Europe, the rise in intolerances and allergies has seen growth in the free-from products market. As with the UK and US, European consumers are more aware of their food, with an
increase in concerns about animal welfare and the environment. Free-from foods have the reputation of being healthier alternatives to animal-based equivalents.

Market analysts predict free-from food is likely to become more widely available and mainstream in the future. Prices are expected to fall as more supermarkets launch their own free-from private labels and food companies reformulate products to be free-from.

### 5.4. Global Market Growth

As with the European market, the global free-from market is expected to expand from 2020 onwards. North America has the largest market share, followed by Europe. North America has a mature free-from market, while South Asia and Oceania markets are expected to grow.

There has been an increase in consumer awareness of celiac disease, gluten intolerance and gluten-free products which is driving market growth. Some consumers also avoid gluten as they view this as being conducive to a healthy lifestyle.

A large proportion of the global free-from food market is GMO-free foods (non-genetically modified). There has also been increased demand for plant-based and organic ingredients, in addition to paleo (lean meat, fish, fruits, vegetables, nuts and seeds with limited dairy, legumes and grains), and vegan diets.

Income and age are the two main factors that have influenced the purchase of free-from foods. There is increased awareness among the millennial population of the availability of free-from foods and this is driving market growth. A rise in health consciousness and increased income and standard of living are also contributors.

There is also an increased demand for 'clean label products' (organic, natural). These products are considered 'free-from' in the US. This is being attributed to social media trends and celebrity endorsements along with the expanding global superfood sector (nutrient-rich food items).

## 6. Shopping/buying experiences

### 6.1. Cost and availability of free-from foods in the UK

## Gluten-free foods

Availability of gluten-free foods has improved in the last 5 years. In 2015 none of the budget supermarkets stocked gluten-free food, or if they did it was at least four times more expensive than regular versions. This impacted on lower socio-economic groups. (pmj.bmj.com). Since 2019 the range of gluten-free product lines in supermarkets has
expanded and budget supermarkets started selling a small gluten-free selection. However, the cost of gluten-free items increased and the average price ratio of gluten-free food to non-gluten-free food rose by almost $1 \%$. Gluten-free breads underperformed in terms of perceived quality and value for money. (researchgate.net)

## General

From October 2020, Asda lowered prices of free-from essentials (62 items) including staples such as pasta, flour, milk alternatives, cereals and breads, both in-store and online. This was aimed at customers who have a dietary requirement and those who buy as a lifestyle choice.

An article in The Mirror in 2016 reported that sales of gluten-free and dairy-free food had soared in British supermarkets. However, when the cost of a basket of traditional goods was compared with the gluten and diary-free alternatives, it cost more than $£ 370$ a year. (PromotionalCodes.org.uk) Product sizes also varied with many free-from products half the size but almost double the price of regular products.

## 7. Consumer attitudes and behaviour (UK)

### 7.1. Free-from product Labelling

There has been consumer confusion over free-from allergen labelling in recent years. Research from Mintel (2019) stated only $37 \%$ agreed it was easy to identify which allergens a product was free-from by its label.

To meet current regulations, allergens should be listed in bold on the ingredients list however many companies also highlight free-from ingredients on the front of the packaging. Messaging on the front of products is not regulated and this can lead to confusion for consumers.

A universal labelling system for allergens on free-from product packaging appealed to 29\% who have bought or used free-from products, and this rose to $39 \%$ for consumers who bought due to an allergy or intolerance. (Mintel 2019) Allergen labelling has been the subject of high-profile media coverage in recent years with a strong demand for a UK-wide labelling system for allergens.
www.food.gov.uk details allergen labelling changes which were introduced from 1 October 2021 - for prepacked for direct sale (PPDS) - also known as Natasha's Law. Examples of where this would apply include prepacked food from bakers, takeaways, cafés, and mobile sellers.

Requirements and regulations for food product labelling in Northern Ireland can be found on nibusinessinfo.co.uk/ (also refers the reader to the FSA and the Food and Drink Federation.)

### 7.3. Impact of COVID-19 (UK)

Long-term sustainability and health trends have been accelerated by the COVID-19 pandemic. These trends are likely to contribute to continued market growth. During the initial period of COVID-19 (2020-2021), food insecurity rose, which resulted in consumers' concerns about the availability and affordability of free-from products. Loss of income added to financial insecurities.

COVID-19 affected food production, processing, distribution, and demand. Health measures required by countries according to WHO to deal with the pandemic had a severe impact on the food industry in terms of workforce and food safety.

The Coeliac UK national charity expressed concerns in January 2021 on the impact of COVID19 on food supply (mainly focusing on gluten-free items). With online food shopping, improvement was needed on substitution policies; if a particular gluten-free item was not available, consumers could either do without or risk that the item was replaced with one unsuitable for a gluten-free diet. There was also a reported reduction in gluten-free sandwiches in the 'food to go sector' within retailers.

Gluten-free food is available on prescription in some areas of the UK (although more limited in England) however many of these prescriptions were withdrawn during the Coronavirus crisis.

### 7.4. Stockpiling during COVID-19 lockdowns

Across the retail food market overall, consumers stockpiled over the first few weeks of lockdown and sales volumes rose overall in the period March - June 2020. A report in The Grocer referred to pre-lockdown panic pushing Brits to the free-from aisle, leaving empty shelves for those who needed those products for health-related reasons. An article in the Independent urged the general public to 'Think before you buy.'

Food allergy charities warned that sufferers of medical intolerances and autoimmune diseases like coeliac disease were struggling to find food during the coronavirus outbreak due to others panic buying and stockpiling. The charities appealed to shoppers to think about those who need 'free-from' products. Supermarkets also warned against panicbuying with many introducing rationing to stop customers buying more than 3 of any item. Coeliac UK and Allergy UK both worked closely with the food industry during these times to ensure the production and supply of 'free-from' food.

## 8. Conclusion

There are multiple definitions of what the free-from category includes and varying opinions and options regarding the groups of consumers who either need to buy these products or choose to buy them. Buying free-from foods as a lifestyle or 'healthy choice' has led to significant market growth both within the UK and globally. However, the evidence of health advantages of eating gluten-free foods unless medically required is often debated.

Overall, there is more US-based research on the subject and more information is available, specifically on gluten-free foods. There is a lack of substantial Northern Ireland-specific data, however, Northern Ireland has been included as a market region along with England and Wales for many of the research reports.

There is little information on the health impacts of not being able to get free-from food, however, for the purposes of this review, these impacts have been deduced from the medical information provided by the NHS website. Regarding consumers' perception of free-from foods, it is interesting that despite an overall increase in sales, shopper satisfaction overall is low. This is most likely due to differences in taste, choice, availability and price of free-from products versus 'standard' products. These factors are forecast to reduce in the future with improved product development and expanding product ranges.

A good level of evidence exists on the impact of COVID-19 on the free-from market, however, there is minimal research on the impact of EU Exit.

Looking to the future, there could be an argument for placing free-from foods alongside the mainstream counterparts, especially since many consumers are choosing these products for health reasons. The category may ultimately need to be redefined since there are so many options, e.g., free-from health, free-from additives/synthetics - perhaps retailers need to consider a broader health-focused aisle rather than a 'free-from' aisle. However, those with special dietary requirements may not agree since there could be a risk of picking up the wrong product. Another issue is the expensive price tag of free-from products. What is clear, is that free-from foods are not a 'fad', they are here to stay.

## 9. References

www.boots.com/nutrition(what are free-from foods?)
https://thegoodnessproject.co.uk/blog/what-are-free-from-foods
https://www.allergy-insight.com/free-from-food/
https://www.nhs.uk/conditions/food-allergy/ (\& food-intolerance)
https://kidshealth.org/en/parents/allergy-intolerance.html
https://nationaleczema.org/eczema-food-allergies/
https://www.foodallergy.org/living-food-allergies/food-allergy-essentials/commonallergens
https://www.food.gov.uk/safety-hygiene/food-allergy-and-intolerance
www.sciencedirect.com
https://www.fdf.org.uk/fdf/resources/publications/guidance/allergen-free-and-vegan-claims-guidance/
https://reports.mintel.com UK Free-from Foods Market Report 2021
https://TheGrocer.co.uk
As sales rocket, what next for free-from food and drink? (The Grocer July 2020)
Aldi sees a 50\% hike in sales of free-from food and drink (The Grocer July 2020)
www.foodmanufacture.co.uk How lifestyle choices are driving free-from growth (August 2018)
www.factmr.com Free-From Foods Market Forecast, Trend, Analysis \& Competition Tracking - Global Market Insights 2020 to 2030
www.marketresearch.com report from Allied Market Research - Global (including UK, Europe and US) Free-From Food Market (2020)
www.imarcgroup.com/Food \& Beverages Free-from Food Market Share, Size, Growth Opportunity and Forecast 2021-2026
www.statistica.com/topics/3285/free-from-foods-in-Europe (2021)
www.fortunebusinessinsights.com/industry-/gluten-free-food-market-100188 -Global research/information on gluten-free food market (US)
www.disabled-world.com Special Diet: Diets for Health Conditions \& Allergies
www.webmd.com Who really needs to go gluten-free?
www.crohnscolitisfoundation.org
www.healthline.com/health/diabetes-and-gluten
Diabetes and Gluten: What You Need to Know

Health Benefits and Adverse Effects of a Gluten-Free Diet in Non-Celiac Disease Patients
https://pmj.bmj.com Cost and availability of gluten-free food in the UK: in-store and online www.researchgate.net Gluten-free products in the UK retail environment. Availability, Pricing, Consumer opinions. (2019)
www.corporate.asda.com/newsroom/2020/10/13 - The new Free-from price tag: Asda lowers prices on free-from products with a $£ 6.17 \mathrm{~m}$ investment
www.mirror.co.uk/money/savemoney (2016)
Your allergy costs you $£ 370$ a year: The Real expense of gluten-free and dairy-free food
www.food.gov.uk/research/food-and-you-2 (Food Standards Agency) (July 2021)
(Biannual survey measuring self-reported consumer knowledge, attitudes and behaviours on food safety and other food issues - England, Wales and Northern Ireland) - /research between 20 November 2020 and 21 January 2021 amongst 5,900 adults/3,955 households)
www.excellence-industries.com/news (US)
Food Retail Trends for 2021: Is Gluten-Free Still on Top?
www.foodnavigator.com - information on consumer free-from trends in Europe Consumer trends to watch for in 2020
www.foodanddrinktechnology.com/news
Consumer confusion over free-from-allergen labelling (2019)
www.nibusinessinfo.co.uk - Starting and running a food business - Food allergies, food intolerances and labelling - Labelling of 'free-from' foods.
www.food.gov.uk The COVID-19 consumer research (July 2021)- Consumer tracker report \& Food in a Pandemic - report March 2021
https://committees.parliament.uk (January 2021) written evidence from Coeliac UK national charity on Covid 19 \& food supply
https://academic.oup.com (Oxford Academic) August 2020 - Impact of COVID-19 on the food supply chain

Bare shelves: free-from category report 2020 (The Grocer)
www.Independent.co.uk Think before you buy': People with food allergies struggle to get food in wake of coronavirus stockpiling (May 2020)
www.food.gov.uk Impact of Brexit - How the FSA has prepared for the UK leaving the EU and the end of the transition (October 2021)

## Appendix 2: General Population Survey Questions

## CCNI Food Intolerances

Good morning/ afternoon/evening. We would like to ask you a few questions about' free-from foods, special dietary requirements, food intolerances and/or allergies. The questionnaire will take no more than a few minutes to complete. No individual responses will be identified, and all responses will be amalgamated to protect anonymity.

Ask All

Q1. Firstly, below is a list of statements about 'free-from' foods. Can you tell me whether you agree or disagree with each one?

|  | Strongly <br> Agree | Slightly <br> agree | neither <br> agree <br> nor <br> disagree | slightly <br> disagree | strongly <br> disagree | Don't <br> know |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| "Free-from products are better for <br> the environment" | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ |
| "Free-from products are a health <br> trend" | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ |
| "Free-from products are for those <br> that have an intolerance or allergy" | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ |
| "Free-from products are better for <br> your health" | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ |
| "Free-from products have become <br> expensive because people think it's <br> trendy" | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ |
| "You can't always trust the <br> environmental claims made by <br> some 'free-from' food products" | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ |
| "Free-from food tastes the same as <br> standard milk/dairy/meat <br> products" | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ |
| "I would be curious to try 'free- <br> from' products" | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ |
| "I would probably buy more 'free- <br> from' products if they were less <br> expensive" | $\mathbf{1}$ | $\mathbf{2}$ | $\mathbf{3}$ | $\mathbf{4}$ | $\mathbf{5}$ | $\mathbf{6}$ |

Q2. Do you ever eat 'free-from' food and drink products? (Single Select)

| Yes | 1 |
| :--- | :--- |
| No | 2 |
| Don't know | 3 |

## Ask all

Q3. Do you buy 'free-from' food and drink products for yourself or someone else?

|  | Yes | No | Don't <br> know |
| :--- | :--- | :--- | :--- |
| For myself | 1 | 2 | 3 |
| Family member | 1 | 2 | 3 |
| Other (please specify) | 1 | 3 | 3 |

Ask all

Q4 Do you ever purchase 'free-from' products as a substitute when your usual product(s) are not available?

| Yes | 1 |
| :--- | :--- |
| No | 2 |
| Don't know | 3 |

## Ask all

Q5. Thinking about your supermarket shop since January 2021 have you experienced any of the following which you believe have been caused by leaving the EU (rather than COVID-19)? (Code for each)

|  | Yes | No | Don't <br> know | Not <br> relevant <br> to me |
| :--- | :---: | :---: | :---: | :---: |
| Certain 'free-from' goods no longer available | 1 | 2 | 3 | 4 |
| An increase in the cost of some 'free-from' goods | 1 | 2 | 3 | 4 |
| Having to make substitutes due to lack of availability of <br> some 'free-from' goods | 1 | 2 | 3 | 4 |


| Having to go to alternative suppliers to get certain <br> 'free-from' goods | 1 | 2 | 3 | 4 |
| :--- | :--- | :--- | :--- | :--- |
| Going without certain 'free-from' goods | 1 | 2 | 3 | 4 |

## If Yes at Q2 and/or yes at any option at Q3

Q6. Which, if any, of the following reasons are why you buy/ eat these 'free-from' products? (Select all that apply)

| Medically diagnosed health condition | 1 |
| :--- | :--- |
| Food intolerances | 2 |
| Food allergies | 3 |
| Environmental concerns | 4 |
| Health benefits | 5 |
| Lifestyle choice | 6 |
| Other please specify | 7 |
| Don't know | 8 |

## If yes at any option at Q3

Q7. Where do you buy the majority of your 'free-from' products from? (Select all that apply)

| Tesco | 1 |
| :--- | :--- |
| Sainsbury | 2 |
| Asda | 3 |
| M \& S | 4 |
| Convenience store e.g., Spar , Centra etc | 5 |
| Online food retailer | 6 |
| Direct from a food producer | 7 |
| Other - please specify | 8 |
| Don't know | 9 |

## If Yes at any option at Q3

Q8. In your opinion, has leaving the EU reduced the availability of the 'free-from 'products you tend to purchase? (Single Select)

| A lot | 1 |
| :--- | :--- |
| A little | 2 |
| No change | 3 |
| Don't know | 4 |

## If Yes at any option at Q3

Q9. In your opinion, has the impact of COVID-19 reduced the availability of these 'free-from' products you tend to purchase? (Single Select)

| A lot | 1 |
| :--- | :--- |
| A little | 2 |
| No change | 3 |
| Don't know | 4 |

If Yes at Q2 and/or yes at any option at Q3
Q10. In the last 12 months, have you had to go without free-from products?

| Yes | 1 |
| :--- | :--- |
| No | 2 |
| Don't know | 3 |

## If yes at Q10

Q11. Why have you had to go without free-from products? (Select all that apply)

| Too expensive | 1 |
| :--- | :--- |
| Not available in store | 2 |
| Not available online | 3 |
| Product range no longer available | 4 |
| Other please specify | 6 |


| Don't know | 7 |
| :--- | :--- |

And finally, which of the following local government district council areas do you live in?

| District |  |
| :--- | :--- |
| Antrim and Newtownabbey | 1 |
| Ards and North Down | 2 |
| Armagh City, Banbridge and Craigavon | 3 |
| Belfast | 4 |
| Causeway Coast and Glens | 5 |
| Derry and Strabane | 6 |
| Fermanagh and Omagh | 7 |
| Lisburn and Castlereagh | 8 |
| Mid and East Antrim | 9 |
| Mid Ulster | 10 |
| Newry, Mourne and Down | 11 |
| Don't know | 12 |

## Classification Questions

Age Record exact age
Age category

| $18-24$ | 1 |
| :--- | :--- |
| $25-34$ | 2 |
| $35-44$ | 3 |
| $45-55$ | 4 |
| $56-65$ | 5 |
| $66-75$ | 6 |
| $76+$ | 7 |

Gender

| Male | 1 |
| :--- | :--- |
| Female | 2 |


| Prefer not to say | 3 |
| :--- | :--- |

## Household status

Are you

| Chief income earner | 1 |
| :--- | :--- |
| Spouse | 2 |
| Other | 3 |

No. in household

| 1 | 1 |
| :--- | :--- |
| $1-4$ | 2 |
| $5+$ | 3 |

Are you mainly or partially responsible for grocery shopping for your household?

| Yes | 1 |
| :--- | :--- |
| No | 2 |
| Don't know |  |

Social class

| A | 1 |
| :--- | :--- |
| B | 2 |
| C1 | 3 |
| C2 | 4 |
| D | 5 |
| E | 6 |

## Postcode

BT (record full postcode)
$\square$

## Appendix 3: Topic Discussion \& Guides

## Background

- How often do you go grocery shopping?
- Who do you buy for?


## General

- What particular products do you think of when you think of food products that are suitable for those with an allergy, food intolerance or a medical condition that requires a special diet? (Introduce the term free-from products as a category after not before this question)
- How often do you buy these products?
- Who do you buy them for - self or others or both?
- Why do you buy them?
- How easy/difficult is it to find it in your local area? Do they have to go out of their way to get them?
- What do you or the person you buy them for think of them in terms of taste?
- Would you consider switching to more of these products?


## Trends/opinions:

- Do you agree or disagree with the following statements, prompt for further explanation for either answer?

```
"Free-from products are better for the environment"
```

"Free-from products are a health trend"
"Free-from products are for those that have an intolerance or allergy"
"Free-from products are better for your health"
"Free-from products have become expensive because people think it's trendy"
"You can't always trust the environmental claims made by some 'free-from' food products"
"Free-from food tastes the same as standard milk/dairy/meat products"
"I would be curious to try 'free-from' products"
"I would probably buy more 'free-from' products if they were less expensive"

## Cost:

- How do you find the cost of these free-from products?
- If they were cheaper, would you be willing to try and/or switch more products?
- If yes - which ones
- Is it a growing trend? - if yes, does this potentially push up the price?


## Availability:

- Do you notice free-from food products when you are doing your food shop? Are there becoming more in the supermarket these days (we want to demonstrate possible awareness of free-from products/aisles)?
- Do you think people are buying free-from as a substitute for ordinary products when they're not available?


## Covid-19:

- Do you think others are stockpiling free-from foods?


## The future of free-from:

Looking forward what are your expectations regarding free-from products?

- Do you think they will get cheaper?
- Do you think there will be more products that become free-from variants?
- Do you think there will be more range within types of products that are free-from?
- Do you it will become more popular to buy free-from foods in the future - why do you think that?
- Who do you think will become attracted to them?
- What do you think about the trend and marketing of free-from foods, do you think it is a good idea, is it done in the right way? Council


[^0]:    ${ }^{1}$ https://www.safefood.net/getattachment/b2195dbb-4c54-420e-9e96-aab5c2a7d400/Economic-Cost-Hypersensitivity-2022-accessible.pdf?lang=en-IE

[^1]:    ${ }^{2}$ As a result of the rounding of figures or the use of questions for which multiple answers could have been given, the sums on charts may not always add to 100 per cent.

[^2]:    ${ }^{3}$ Food and You survey analysis: Consumers with Food Hypersensitivities
    ${ }^{4}$ Savage, J. and Johns, C. (2015). Food allergy: epidemiology and natural history. Immunology and Allergy Clinics of North America, (35), pp.45-59.

[^3]:    ${ }^{5}$ Food protein-induced enterocolitis syndrome (FPIES) is a rare food allergy that affects the gastrointestinal (GI) tract.
    ${ }^{6}$ Rona, R.J. et al (2007). The prevalence of food allergy: a meta-analysis. Journal of Allergy and Clinical Immunology 120: 638-646.

[^4]:    ${ }^{7}$ Research conducted by Department for Environment, Food and Rural Affairs (DEFRA) in 2014 had shown that of the 1,672 respondents, $21 \%$ responded that they have or shop for someone with, a food allergy or intolerance. The Food Standards Agency (FSA) have found in 2019, Wave 5 of their Food and You project had shown that one in six respondents ( $17 \%$ ) reported that they suffered an adverse reaction when they ate certain foods.
    ${ }^{8}$ UK Free-from Foods Market Report 2021 https://store.mintel.com/report/uk-free-from-foods-market-report ${ }^{9} \mathrm{lbid}$.
    ${ }^{10}$ This is from the survey question "Which, if any, of the following reasons are why you buy / eat these 'free from' products?"

[^5]:    ${ }^{11}$ According to Mintel, over half (52\%) of people report an avoidance of some food products in their household, noting the highest level is amongst the under-25s (63\%). Report can be found at: https://store.mintel.com/report/uk-free-from-foods-market-report

[^6]:    ${ }^{12}$ Trussell Trust data briefing on end-of-year statistics relating to use of food banks: April 2021 - March 2022

[^7]:    ${ }^{13}$ The Healthy Start Scheme is subject to eligibility and aimed at supporting a healthy diet through pregnancy up to the age of four. It used to operate by issuing vouchers that could be redeemed in supermarkets and other retailers, but is now a digitalised card that can be used in stores.

[^8]:    ${ }^{14}$ Research (Mintel 2019) stated only $37 \%$ agreed it was easy to identify which allergens a product was 'free-from' by its label.

[^9]:    ${ }^{15}$ The low-FODMAP diet reduces certain kinds of carbohydrates that are hard for people to digest.
    ${ }^{16}$ https://www.monashfodmap.com/ibs-central/i-have-ibs/get-the-app/

