

## **Supporting evidence for access to gluten free food on prescription**

### **Cost**

Published research shows that gluten free staple foods are 3-4 times more expensive than gluten containing equivalents [1, 2].

An example of the increased cost of gluten free staple foods is gluten free bread, recent figures show that gluten free white bread is still on average 5 times the cost of gluten containing by volume, and has not reduced since 2011 [3].

The National Institute of Health & Care Excellence (NICE) estimated that the cost of gluten free food on prescription was £194.24 per patient per year based on Net ingredient Costs [4]. This represents a low cost treatment for a lifelong autoimmune disease, and by contrast, treatment of long term complications such as osteoporosis or intestinal lymphoma presents a much more significant financial burden for the NHS and a significant burden for patients.

A hip fracture caused by osteoporosis, the most common complication of untreated coeliac disease, costs on average £27,000 per fracture [5] – the equivalent to 138 years of prescribing gluten free staples for an individual. This is significant given that osteopenia and osteoporosis are found in 40% of adult patients at diagnosis of coeliac disease [6].

### **Access and availability**

Availability of gluten free staple foods is not consistent in retail. There is poor availability in budget supermarkets, corner shops and smaller stores [1, 2]. Policy makers must consider the needs of all patients, not just the people who have the economic and physical means to shop in large supermarkets. Access to gluten free food on prescription is especially vital for the most vulnerable such as the elderly or those with limited transport options who may rely on the local pharmacy or their delivery services.

NICE QS134 (Statement 4) highlights under their 'Equality and Diversity considerations' that certain groups will be disproportionately affected by the higher cost and limited availability of gluten free staple foods:

'Gluten free products are more expensive and are usually only available from larger retailers, making access more difficult for people on low incomes or with limited mobility. As coeliac disease can affect more than one member of a family it can also be an additional burden on the family budget.' [7].

## **Nutritional implications of removal of access to gluten free food on prescription**

### **Energy requirements**

Starchy carbohydrates, including gluten containing cereals make up approximately a third of the Eatwell Guide (which shows government recommendations for a balanced diet) and carbohydrate should contribute 50% of total calories, so access to gluten free staple foods can make a significant contribution to being able to achieve a nutritionally balanced diet.

Complete elimination of gluten from the diet can be a challenge in practical terms, requiring removal of staple foods like bread and pasta. Therefore, gluten free substitute, staple foods play a key role in meal planning and adherence to the gluten free diet.

### **Micronutrient requirements**

Cereals and cereal products contribute significant amounts of iron and calcium to the diet. Figures from the National Diet and Nutrition Survey shows that cereals and cereal products contribute 44% of total iron intake and 30% total calcium intake to the diet [8]. The complete removal of cereals therefore has a significant impact on the nutritional composition of the diet.

Policy makers have suggested that a gluten free diet can be maintained by eating naturally gluten free foods. This seriously underestimates the nutritional contribution that cereals and cereal products make. For example, replacing 72g [9] gluten free bread with a portion of rice containing the same amount of calories would reduce the iron content by 96% and the calcium content by 90%. Similarly, replacing gluten free bread with a portion of peeled, boiled potatoes containing the same amount of calories would reduce the iron content by 71% and the calcium content by 93%.

Calcium recommendations for people with coeliac disease are higher (1000mg) than for the general population (700mg) [10] therefore including good sources of calcium in the diet is particularly important for people with coeliac disease.

In addition, iron deficiency anaemia occurs in 30-50% of patients with coeliac disease at diagnosis highlighting the importance of key staples such as bread to meet iron requirements [11].

## References

- [1] Singh, J. and K. Whelan, Limited availability and higher cost of gluten-free foods. *J Hum Nutr Diet*, 2011. 24(5): p. 479-86.
- [2] Burden, M., et al., Cost and availability of gluten-free food in the UK: in store and online. *Postgraduate Medical Journal*, 2015: p. postgradmedj-2015-133395.
- [3] Coeliac UK. What is the truth about cost? 2017; Available from: <https://www.coeliac.org.uk/campaigns-and-research/what-is-the-truth-about-cost/>
- [4] NICE, NG20 Coeliac disease; recognition, assessment and management Appendix G HE Report. 2015.
- [5] NICE, Clinical Guideline CG124: The management of hip fractures in adults. 2011.
- [6] Lucendo, A.J. and A. Garcia-Manzanares, Bone mineral density in adult coeliac disease: an updated review. *Rev Esp Enferm Dig*, 2013. 105(3): p. 154-62.
- [7] NICE, Coeliac disease quality standard ; QS134. 2016.
- [8] Henderson, L.I., K.; Gregory, J.; Bates, C.J.; Prentice, A.; Perks, J.; Swan, G.; Farron, M., National Diet and Nutrition Survey: adults aged 19 - 64 years vitamin and mineral intake and urinary analytes. 2003.
- [9] O'Connor, A., An overview of the role of bread in the UK diet. *Nutrition Bulletin*, 2012. 37(3): p. 193-212.
- [10] Ludvigsson, J.F., et al., Diagnosis and management of adult coeliac disease: guidelines from the British Society of Gastroenterology. *Gut*, 2014. 63(8): p. 1210-28.
- [11] Ludvigsson, J.F., et al., Use of computerized algorithm to identify individuals in need of testing for celiac disease. *J Am Med Inform Assoc*, 2013. 20(e2): p. e306-10.