



## **AOECS and EFAD joint position statement on nutritional value of GF foods**

The only known treatment for coeliac disease at the moment is a permanent and strict gluten-free diet. A gluten-free diet includes naturally gluten free foods and industrially processed foods with a gluten content lower than 20 ppm that are specifically formulated for coeliac disease patients.

Although there is limited choices of food products in the diet of coeliac disease patients compared to the general population, now, unlike years ago, the market for gluten-free products has expanded, allowing greater availability and therefore greater choice of gluten-free products (GFP).

GFP specifically formulated for coeliac disease patients raise some nutritional concerns because of the need to avoid gluten. This protein complex has important visco-elastic properties, responsible for the palatability, the crunchiness and structural integrity of the food. The withdrawal of gluten and the use of only gluten-free raw material as ingredients results in GF food which is less palatable than regular foods. Gluten free bread, for example, has a crumbly texture which stales quickly. Consequently, the manufacturing of GFP requires the addition of some ingredients, such as saturated fats and simple sugars in the final products to mitigate the loss of gluten, while many of these products are low in fibre and high in salt.

As a result, many studies have been made in different countries on nutritional quality of the gluten-free diet, showing conflicting results [1-15]. In particular, some authors have found that gluten-free diet does not guarantee adequate nutritional intake of several micronutrients, especially calcium, iron and vitamin D [16]. On the contrary, some others have demonstrated that most nutritional deficiencies disappear after following strictly a gluten free diet [12,17]. The aforementioned nutritional deficiencies seem to be modulated by several factors such as the length of time that people has lived with the active/undiagnosed disease, the extent of the intestinal mucosal damage and the degree of malabsorption [17] as well as the secondary dietary modifications made by those patients.

Moreover, according to Codex alimentarius for foods for special dietary use for people intolerant to gluten (CODEX STAN 118-1979 rev. 2008), products covered by this standard substituting important basic foods, should supply approximately the same amounts of vitamins and minerals as the original foods they replace. However, some published studies have reported that gluten-free products may be of poorer nutritional quality compared to their gluten-containing counterparts. A reason for these deficiencies may be that wheat flour, besides being a good source of B vitamins, is often fortified with iron, folate and other vitamins. Unlike wheat flour, gluten-free flours, typically made from rice flour, tapioca, or potato starch, are not usually enriched or fortified.

However, recent data support that GFP made from naturally gluten free foods (i.e. buckwheat, chickpea, millet, oats, amaranth, teff, quinoa) are better sources of minerals, than those based on other gluten free raw materials [18]. Nevertheless, as the evaluation of the micronutrient content of foods requires laboratory analysis (as legislation does not always mandate that these are listed in food labels) [12], such analysis still remains to be done in many European countries.

Therefore, with regards to nutritional quality of foods specifically formulated for coeliac disease patients, the AOECS and EFAD acknowledge that although gluten-free foods for coeliacs have gone through important improvements by manufacturers in recent years and can be considered in several countries (for example UK,



Italy) quite comparable to their gluten containing counterparts [12,19], some differences do exist and should be taken into account when planning a varied gluten free diet.

As with gluten containing food, quality of GFP can be still improved, above all as regards salt, energy and saturated fats, and Food Business Operators should still be encouraged to improve nutritional quality of GFP, trying at the same time to contain their prices.

In fact, several studies have documented that the processed GFP cost significantly more than comparable regular items. Patients with coeliac disease not able to pay for higher prices of GFP may reduce their adherence to a gluten-free diet [12, 20, 21]. For this reason, government support for patients to access to GFP as for example free GF staple foods, tax credits, GFP prescriptions, is very important in order to help them comply to the gluten-free diet and avoid dangerous complications.

In any case coeliac patients should be encouraged to increase the consumption of naturally GFP avoiding the prepacked foods as their first option. In particular, a number of naturally gluten free foods, including nutrient dense grains, seeds, pulses, fruit and vegetables, can add to the variety, improve palatability and increase the nutritional quality of the gluten free diet [17]. Moreover, the inclusion of the so called “pseudo-cereals”, such as buckwheat, quinoa and amaranth, in the gluten free diet seems to offer a great variety to those patients, increasing the fibre content of the diet and helping patients to address common problems, such as constipation [22]. Thus, naturally GFP can make the gluten-free diet tastier, more economically sustainable and bring useful nutrients.

As AOECS and EFAD joint position statement, we support information and empowerment of the coeliac consumer/patient, in order to help them to comply to a balanced and healthy gluten-free diet. Patients should always be advised to read the nutritional labels of every commercial product in order to make healthy food choices in their daily life.

## References

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