



Coeliac Disease

Part of an education programme on coeliac disease and the gluten-free diet developed by
The Dr Schär Institute



Learning Unit 1 *for pharmacy technicians*



Learning Unit 1

Coeliac Disease *for pharmacy technicians*

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Section 1

Foreword

As a pharmacy technician you are no doubt asked by your customers about the foods you sell and dispense in your shop. This will include specialist dietary foods. This learning unit focuses on coeliac disease and the treatment for this disorder, a gluten-free diet. These learning materials have been developed to support you in understanding what coeliac disease is and to equip you to talk confidently about gluten-free foods. Learning Unit 1: Coeliac Disease can help you to meet the General Pharmaceutical Council requirement to undertake Continuing Professional Development (CPD) each year. This learning unit has been accredited by the Royal Pharmaceutical Society (RPS) and it's successful completion can provide you with approximately 3.5 hours of CPD (please note, this is for guidance only).

This learning unit is the first in a series of three and the programme comprises:

Learning Unit 1 - Coeliac disease

Learning Unit 2 - Common health problems in coeliac disease

Learning Unit 3 - Diabetes and weight control in coeliac disease

Remember, more cases of this disease are being recognised and understanding the long term needs of your customers with coeliac disease allows you to develop valuable customer loyalty and gives you an opportunity to provide an optimal service.



How to use this learning unit

This programme of three learning units is for pharmacy technicians but there is also a parallel programme available for pharmacists. Provided by the Dr Schär Institute.

Work your way through this unit and remember your pharmacist is there to give you any support you might need.

Learning Objectives

On completion of this module you will:

- Understand the clinical presentation of coeliac disease and the importance of referring patients with clinical questions to the pharmacist.
- Be aware of the dietary needs of a person with coeliac disease.
- Appreciate the implications of following a gluten-free diet and be aware of the resources available for healthcare professionals and customers with coeliac disease.
- Answer customers questions related to specialist gluten-free foods.

Answers to the activities used in this learning unit are to be found on page 29.



Introduction

The pharmacy is often the first 'port of call' for customers with general bowel problems. For example, frequent diarrhoea may be a complaint where customers ask the pharmacist for a remedy. Did you know that many of the symptoms of undiagnosed coeliac disease, including diarrhoea and bowel problems, are often misdiagnosed as irritable bowel syndrome? Some people with coeliac disease do not have any bowel symptoms, but may have other features of the disease such as anaemia and tiredness. These symptoms can also be put down to other causes and the diagnosis of coeliac disease may be missed. This is why it is important to refer customers to the pharmacist for advice. The pharmacist can discuss the customer's ailment and where appropriate advise them to visit their General Practitioner.

People with coeliac disease are intolerant to gluten, a protein found in wheat, barley and rye. The treatment of this disease involves strict adherence to a gluten-free diet. As you know a range of prescribable gluten-free foods are available to customers with coeliac disease. Once diagnosed the person with coeliac disease needs to organise a regular prescription for gluten-free foods. The diet is for life and most people tend to use the same pharmacy for repeat prescriptions. At the time of diagnosis most customers will need advice about what gluten-free items are available on prescription. In respect of diet, understanding the stages that your customer with coeliac disease may go through can help you to better appreciate their needs:

- Stage 1.** Newly diagnosed, hungry for information.
- Stage 2.** Trialing foods, finding out what they like/dislike.
Trying out recipes*.
- Stage 3.** Conservative consumption – repeat prescription where order doesn't vary much*.

* Pharmacy technicians can inform customers on the range and versatility of gluten-free foods.



Activity 1

a. Some gluten-free foods are available on prescription. Can you think of 5 examples of specialist gluten-free foods.

1

2

3

4

5

b. Consider a standard food product, how could you tell if it is gluten-free?

Now let's find out more about coeliac disease.



Notes



Section 2

Coeliac Disease

History

Derived from the Greek 'Koilikos' coeliac literally means 'suffering of the bowels'. The condition was first documented almost 2000 years ago by a Roman physician Arataeus. This physician saw that children with fatty diarrhoea, weight loss and who passed undigested food in their stools did not benefit from having bread in their diet and bread was described as being a food 'rarely suitable'.



Just fifty years ago the harmful effect of certain cereal foods in coeliac disease was first recognised. During the Second World War Professor Dicke, a Dutch paediatrician, noticed how children with coeliac disease seemed to improve clinically when wheat, rye and oat flours were rationed and almost unavailable. However, once hostilities ceased and food relief reached these children they relapsed and symptoms of the disease returned. In the 1950s Dicke continued his work in this area and showed that it was the protein in wheat, called gluten that was toxic and induced the symptoms of coeliac disease. In addition to wheat, barley and rye are also toxic. Rice, potato and corn (maize) are naturally gluten-free.

Oats contain a type of protein that is similar to gluten. Historically experts were not certain whether oats should be included in a gluten free diet. However, the European Commission (EC) Regulation concerning the composition of labelling of foodstuffs suitable for people intolerant to gluten allows all foods which contain 20 parts per million (ppm) of gluten or less to be labelled as 'gluten free'¹. This includes pure, uncontaminated oat products. Those with coeliac disease should check with their gastroenterologist or dietitian for specific advice on oats. (the subject of oats will be covered later in this unit)

For further information on this please refer to section 3 of this learning unit: [what does following a gluten free diet really mean?](#)

Definition

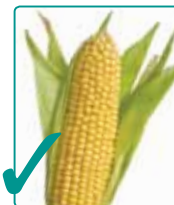
Coeliac disease is a life long condition where damage to the small intestine is triggered by gluten, the protein found in wheat, barley, rye and possibly oats.



Wheat contains gluten



Barley contains gluten



Maize is gluten-free

Symptoms

The early symptoms of coeliac disease are a result of altered bowel habits and reduced food absorption:

- diarrhoea/fatty unflushed stools
- abdominal bloating
- weight loss
- anaemia
- fatigue/shortness of breath
- vitamin and mineral deficiencies

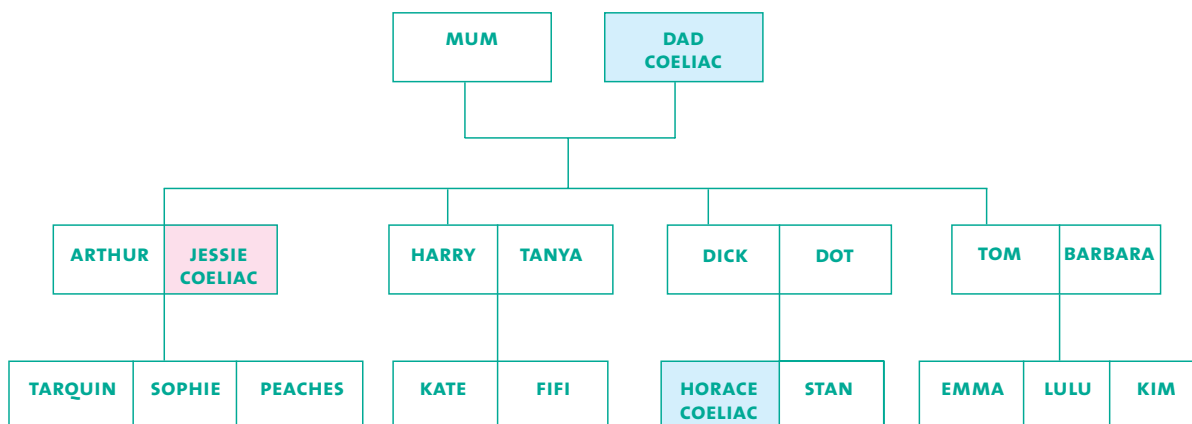
It is now acknowledged that the symptoms listed above are seen much less frequently than the following more vague symptoms. These include:

- vomiting
- recurrent mouth ulcers
- muscle weakness
- bone and joint pain
- infertility

As previously alluded to some people with coeliac disease may have no symptoms and may only be diagnosed as a result of screening. This is called 'silent' coeliac disease. NICE guidelines recommend that screening may be carried out in patients with first degree relatives who have the condition or an associated condition e.g. diabetes².

Coeliac disease is an inherited condition and the chance of developing the disease is 10% in families with a history. This means that if a mother with coeliac disease has ten children, one is likely to also have the disease.

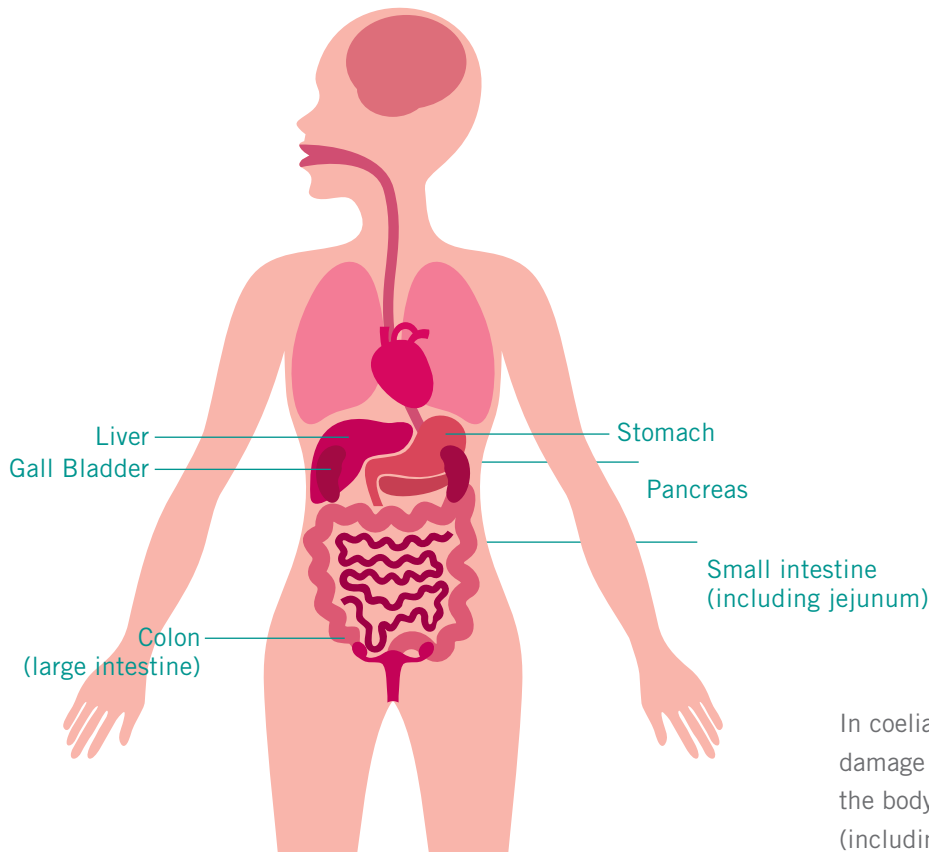
The family tree shown below shows how coeliac disease could be passed down through a family.





What changes are seen in the small intestine?

This diagram of the body shows the main organs involved in the digestion and absorption of food. The small intestine is the main site for absorption of the food we eat and from here the nutrients we need to maintain life are absorbed into the bloodstream.

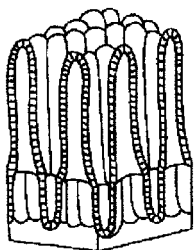


In coeliac disease, eating gluten causes damage to the small intestine resulting in the body not absorbing enough nutrients (including fats, vitamins and minerals).

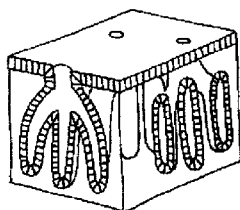
Normally the internal surface of the small intestine is covered in finger like projections called villi, these are shown in the diagram below. Villi serve to increase the absorptive area of the gut. In coeliac disease gluten causes damage to the surface of the small intestine which becomes flat. The reduced capacity to absorb enough nourishment is called malabsorption. The immediate symptoms of malabsorption include diarrhoea and fatty stools. If the malabsorption persists, the effects of inadequate nutrition become apparent. This can include weight loss, from not absorbing all the food eaten or anaemia from malabsorption of iron. The absorption of calcium, an important mineral for the health of the bones, may also be reduced in malabsorption resulting in increased risk of osteoporosis.

Intestinal Villi

Normal



Villi damaged by gluten



Microscopic view of intestinal villi

Normal



Villi damaged by gluten





Activity 2

Having briefly reviewed the aetiology of coeliac disease, can you identify the causes of the presenting symptoms of this disease? Each symptom may have more than one of the following causes: *Malabsorption, Decreased calcium absorption, anaemia.*

Symptom	Causative Factor
Fatigue	<input type="text"/>
Steatorrhea	<input type="text"/>
Weight loss	<input type="text"/>
Risk of osteoporosis	<input type="text"/>
Breathlessness	<input type="text"/>
Muscle wasting	<input type="text"/>
Short stature (children)	<input type="text"/>

Remember, if you require further help ask your pharmacist.

Epidemiology

Whilst the estimated incidence of coeliac disease in the UK is 1 in 100 (1%) of the general population, only about 10-15% of people with the condition are currently diagnosed^{2,3}.

Coeliac disease can present at any age and with a wide range of symptoms, however in the developed world the classical presentation of the malnourished child is now uncommon. In the UK, the average age of diagnosis is now over the age of 40. Diagnosis remains twice as common in woman compared to men, due to greater reporting of symptoms in females⁴.

Activity 3

If there is 1 person with coeliac disease in every 100 of the UK population and your pharmacy covers a population of approximately 15000, how many people with coeliac disease could you be serving in your store?

How does this compare with the number of regular customers with coeliac disease you currently have? Ask the pharmacist if you are unsure how many customers with coeliac disease come to your shop.



Diagnosis

In coeliac disease a preliminary blood test (usually arranged by the GP) will help identify patients who may have the condition. A referral to a gastroenterologist is then needed, where a biopsy of the small intestine is taken. This can be examined to check for damage to the villi characteristic of coeliac disease.

It is important to note that people who think they may have an intolerance for gluten should be encouraged to continue eating gluten-containing foods until they have been tested for coeliac disease. If gluten is excluded from the diet prior to diagnosis this may result in a false negative result.

How much does following a gluten-free diet help?

Once established on a gluten-free diet, the surface of the small intestine begins to improve after about 6 weeks. After a year on a gluten-free diet the small intestine will begin to look more normal, but it is unusual for it to completely return to normal. The body is now able to absorb food and nutrients effectively and many of the symptoms slowly disappear. Initially patients may find their weight increasing (this subject will be dealt with in more depth in Learning Unit 3).

Individuals with coeliac disease have an increased risk of gastrointestinal cancer compared to the general population, however, research has shown that adherence to a gluten free diet over five years returns the risk of the individual (with adult coeliac disease) to that of the general population⁵. If an individual does stray from the diet and eats gluten containing foods, symptoms can return within hours. This fear tends to keep patients on the straight and narrow. Those with silent coeliac disease do not get symptoms and may find it tempting to stray from the diet without the risk of obvious symptoms.

The pharmacy team are ideally placed to offer regular support to such patients through the provision of information and guidance on product choice.

People with coeliac disease are at risk of developing the following complications, particularly if they do not 'stick' to their diet.

Complications

- Osteoporosis (thinning of the bones) - Learning Unit 2
- Anaemia - Learning Unit 2
- Cancer - Learning Unit 2



Case Study - Introduction

Evelyn is a 63 year old lady and a regular customer at her local pharmacy. About 3 months ago she came into the shop and asked to speak to you about a growing problem. Evelyn explained that for the past few weeks her bowels had been loose, the stools she passed were foul smelling (“I do buy my air freshner here”, she commented) and difficult to flush away. Evelyn was a bit worried because she had also lost five pounds in weight but hadn’t been on a diet. You referred Evelyn to the pharmacist as she is keen to get something to help clear up her ‘bowel’ problem. The pharmacist doesn’t think it’s a ‘tummy bug’ and suggests Evelyn visits her GP who takes a blood test. The results of the test indicate that Evelyn probably has coeliac disease. Evelyn is also referred to the local gastroenterology clinic at the hospital, where further tests are carried out and the consultant is able to confirm the diagnosis of coeliac disease.

Evelyn is informed she will have to follow a gluten-free diet for life. Evelyn asks how rare her condition is as she hasn’t heard of it before and not surprisingly she is very anxious.

What would you say to reassure her?



Case Study - Part one

Evelyn reappears in your shop to thank you for referring her to the pharmacist. The dietitian at the hospital advised her on following a glutenfree diet and therefore she presents the pharmacist with her script for gluten-free bread, pasta and flour mix. The pharmacist also asks you to run through what's available to Evelyn. While chatting with you Evelyn tells you about her visit to the dietitian and how she said the weight she'd lost will go back on once she is established on her diet, she looks quite frail. In addition, Evelyn has to increase her intake of calcium as patients with coeliac disease (particularly postmenopausal women) are at risk of osteoporosis.

The dietitian also told Evelyn about Coeliac UK a support organisation, which has over 70,000 members. Evelyn is a 'Silver Surfer' (someone of more mature years who surfs the Internet) and she looks Coeliac UK up on the web (www.coeliac.org.uk) and she couldn't believe how much information there was. If you have access to the internet you can check out this web site yourself, lots of other useful information is available in leaflets available from Coeliac UK and the manufacturers of gluten-free foods e.g. Glutafin (www.glutafin.co.uk).



Notes



Section 3

What does following a gluten-free diet really mean?

Being diagnosed with coeliac disease and advised to follow a special diet for life is a daunting prospect, and it is important that support is available. How would you feel if it was you? Newly diagnosed customers and those who have lived with the condition for a number of years should be encouraged to talk to their GP, gastroenterologist, dietitian and pharmacy team.

Following diagnosis it is important that the individual is advised by a State Registered Dietitian and a diet plan agreed based on an individual's needs.

In order to reduce the risk of developing complications, such as anaemia and osteoporosis, there may be additional needs for other nutrients such as iron and calcium. The dietitian will advise what foods to eat in order to achieve a higher intake. When a person follows a gluten-free diet, many of the foods they avoid provide dietary fibre. Fibre is important for maintaining good bowel function and low intakes have been associated with increased risk of developing bowel cancer. Wholegrains, fruit and vegetables are a main source of fibre and those with coeliac disease need to ensure an adequate intake of fibre from their selection of gluten-free foods e.g. by choosing higher fibre gluten free breads and maintaining a good intake of fruit and vegetables.

Unintentional weight loss, despite having a healthy appetite, is an indicator of undernutrition and is the result of poor absorption. It would be wise to refer customers experiencing unintentional weight loss to the pharmacist since this may be a sign of cancer. Normally weight loss in coeliac disease is temporary and, after following a gluten-free diet, individuals regain the weight they lost. Some patients may not experience any loss of body weight and some may be overweight at diagnosis. It is important that body weight is regularly monitored.

A recent study found that almost half of newly diagnosed coeliac patients were overweight or obese at diagnosis⁶.

This learning unit has broadly discussed coeliac disease and the importance of following a gluten-free diet. There is another medical condition whose treatment necessitates a life-long gluten free diet - dermatitis herpetiformis. This disease causes a patchy itchy blistering skin rash, which usually occurs on the knees, elbows, buttocks and back but can affect any area of skin. Alterations to the small intestine, similar to those seen in coeliac disease, occur in about 80% of cases but the symptoms of this tend to be milder than found in coeliac disease. As dermatitis herpetiformis is also managed by following a gluten-free diet, those with the condition are eligible for prescribed gluten-free foods.

This section will focus on what it means for your customers to follow a gluten-free diet. Perhaps the best way to find this out is to spend a few minutes talking with a customer who follows a gluten-free diet.



Activity 4

If possible we would like you to conduct a short interview with a customer who follows a gluten-free diet. If they are agreeable ask the customer some of these questions.

a. How long have you followed a gluten-free diet?

b. What gluten containing foods do you miss most?

c. What gluten-free items do you regularly order on prescription? (tick boxes)

Bread and rolls	<input type="checkbox"/>	Flour mixes	<input type="checkbox"/>	Cereals	<input type="checkbox"/>	Pastas	<input type="checkbox"/>
Sweet biscuits	<input type="checkbox"/>	Savoury crackers	<input type="checkbox"/>	Pizza bases	<input type="checkbox"/>		

d. Do you buy non-prescribable gluten-free items?

Regularly	<input type="checkbox"/>	Occasionally	<input type="checkbox"/>	Special occasions only	<input type="checkbox"/>	Never	<input type="checkbox"/>
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Now take a moment to think about what **you** have eaten so far today. What would you have to leave out if you followed a gluten-free diet? It would not just include obvious gluten containing foods such as bread, pastry, pasta, biscuits and cakes. You would also need to exclude soups and sauces thickened with flour as well as alcoholic drinks such as beer and lager made with grains that contain gluten. It is difficult to be sure that you are avoiding all gluten in the diet, especially the less obvious sources contained within processed foods. That is why Evelyn (the lady in our case study) finds 'The Gluten-Free Food and Drink Directory' (a booklet produced and regularly updated by CUK containing a list of products that are known to be gluten free and therefore safe to consume), such a valuable resource and it is one that is available to all members of Coeliac UK.



The Table below gives some examples of the foods allowed and those to avoid when complying with a gluten-free diet.

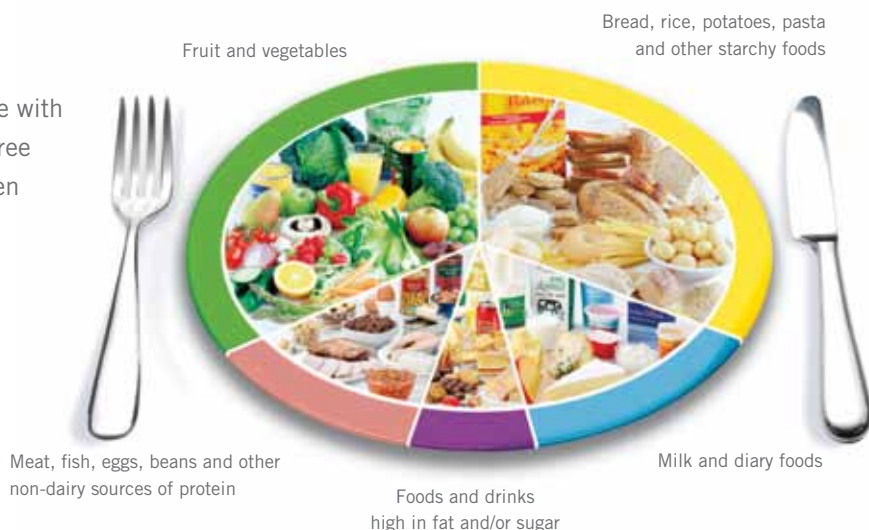
	Foods allowed	Foods to avoid
Cereals and flours	Foods and breakfast cereals made from arrowroot, buckwheat, cornflour or maize flour, potato flour, rice and rice flour, sago, soya and soya flour and tapioca	Products containing wheat, whole-wheat and wheatmeal flours, bran, barley, rye, rye flour and pasta. Some vitamins and medicines contain flour as a filler
Baked foods	Gluten-free biscuits, bread, cakes, flour mix, pasta and crackers (manufactured by specialist food companies)	Foods containing wheat, rye, barley, oats, e.g. bread, pastry, cakes, ice cream wafers and cones
Dairy products and eggs	Milk, cream, most yoghurts, natural plain cheeses, eggs	Artificial cream and low-fat cheese spreads may contain gluten
Fats and oils	Butter, margarine, oil	Suet and some very low-fat spreads may contain gluten
Meat, fish and poultry	All fresh meat, fish and poultry	Savoury pies and puddings, fish/poultry or other meat in breadcrumbs, batter or stuffing. Ready made meat dishes served with sauces/ seasonings/ marinades may contain gluten
Fruit, vegetables, nuts and pulses	All fruit and vegetables that are fresh, cooked, canned, dried or frozen	Vegetables that are canned in a sauce, e.g. creamed mushrooms may contain gluten

Eating for Health with Coeliac Disease

Once established on a gluten-free diet, a person with coeliac disease will be advised to follow healthy eating principles that are recommended for the UK population as a whole - the 'Eatwell' Plate.

Eatwell Plate

The 'Eatwell Plate' applies to people with coeliac disease except that gluten-free alternatives are substituted for gluten containing staples such as bread and pasta.



Source: Department of Health in association with the Welsh Government, the Scottish Government and the Food Standards Agency in Northern Ireland.

Bread, pasta, rice, potatoes and other cereals	This group forms the major source of starchy carbohydrate needed by the body to supply energy. It is important that a selection of food from this group is eaten and where possible high fibre alternatives.
Fruit and vegetables	Five portions a day are recommended to optimise the intake of fibre, vitamins and minerals. A portion may be one piece of fruit e.g. an apple or banana, a small glass of unsweetened fruit juice, or a small bowl of salad.
Milk and dairy foods	Three portions a day of milk and dairy foods (e.g. cheese, yoghurt) will contribute towards an adequate intake of calcium. Low fat dairy foods are useful in weight control and are still good sources of calcium. If a patient with coeliac disease cannot achieve an adequate intake a calcium supplement may be considered.
Meat, fish and alternatives	This group of foods contributes protein, iron and other minerals to the diet. Two or three portions of lean meat, skinless poultry and pulses are recommended per day.
Foods containing fat, foods containing sugar	These foods should be eaten in moderation i.e. chocolate, cream and butter.

Children with coeliac disease will be monitored relatively closely by the doctor and dietitian to ensure appropriate growth and development. Adults with uncomplicated disease may only be required to attend hospital outpatient appointments on an annual basis.



Gluten-free foods

Some years ago the choice of gluten-free foods was limited to bread, flour and plain biscuits. Notice that although most foods are available on prescription, some 'luxury' items are not.

Specialist gluten-free foods are divided into two categories, depending on how they have been produced:

1. Foods produced using wheat, but where all the gluten has been removed to a safe level.
2. Foods produced by substituting ingredients that contain gluten (e.g wheat flour) with gluten free ingredients eg soya/ rice flours.

The gluten-free foods, in category 1 above, are made from gluten-free wheat starch (referred to as Codex Wheat Starch). However, a minority of customers are 'supersensitive' to gluten and may react to these foods. These customers will need to use gluten-free wheat-free foods and follow a gluten and wheat-free diet.

Discuss this section with your pharmacist and spend some time looking at gluten-free and wheat-free foods to become familiar with the difference.

Case Study - Part Two

Evelyn is now quite settled on her gluten-free diet. She has started to put her weight back on and is feeling much better. However, Christmas is approaching. "It just won't be the same without all the lovely Christmas treats – I do like a mince pie" she complains. She asks whether you have any suggestions.

What advice do you give her ?



Oats in a gluten-free diet

The protein found in oats is called avenin, which is similar to gluten. More importantly, the vast majority of oats and oats products on the market are contaminated with wheat, rye and/or barley. Processing, such as milling, makes them unsuitable for people with coeliac disease as this often takes place in factories that also handle gluten-containing cereals. However, research suggests that pure, uncontaminated oats and oat products are not toxic to the majority of adults and children with coeliac disease⁷. Moreover, including pure oats in the gluten-free diet can add variety and increase food choice, oats are also a useful source of soluble fibre.

The British Society of Gastroenterology makes the following recommendations regarding the inclusion of oats⁸:

- It may be helpful to exclude oats in the first six to twelve months of a gluten-free diet. Pure, uncontaminated oats (labelled as gluten free) may then be gradually introduced at a later stage.
- Monitoring patients who have introduced oats in to their diet (by repeating blood tests/biopsies) is recommended, where symptoms appear to be exacerbated.

Patients should always discuss this issue with their gastroenterologist and dietitian before changing their diet.

As the person with coeliac disease becomes more confident about their diet, many are keen to try out new foods and experiment with recipes. Baking cakes, biscuits and breads is popular but it should be remembered that handling and cooking with gluten-free foods is quite different from regular baking. Many manufacturers produce an extensive range of recipes including tips on bread making, cake making and pastry making. The availability of all this product information and support means that people with coeliac disease can essentially eat a 'normal' diet.

For our last activity we return to you recalling what you eat, but this time the activity is a little more formalised. It will allow you to see what changes you would have to make to your diet if you had to follow a gluten-free diet.



Activity 5

Fill in the following food diary for a whole day. Enter the details of everything you eat or drink in the first column. After you have completed the food diary, identify all gluten containing foods or drinks by highlighting them. In the second column enter a gluten-free alternative.

	Food diary	Gluten-free alternative
Breakfast		
Mid-morning		
Lunch		
Mid-afternoon		
Evening meal		
Before bed		

Now we would like you to taste some gluten-free foods.

Please tick the box under the face that best describes how you feel about the taste and texture of each gluten-free food. You can request product samples from the Glutafin Helpline 08009882470 or email: glutenfree@glutafin.co.uk

Product:



Taste

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Texture

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Product:



Taste

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Texture

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Product:



Taste

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Texture

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------



Points to Remember

Customers who have recently been told they have coeliac disease will be hungry for information.

- Patients should be encouraged to speak freely with their doctor, dietitian and pharmacy team who will be able to answer their questions.
- They should be provided with information on the range of gluten-free foods that are available on prescription as well as foods they can buy.
- Patients should find out about other sources of support and information e.g. Coeliac UK, gluten free food manufacturers.

In addition, children and adults have very different nutritional needs. The child will require nutrients to grow and develop, whereas the adult needs to eat well to maintain health.



Notes



Section 4

Frequently asked questions

This learning unit has been developed to allow you to understand the needs of customers with coeliac disease. To help you respond to customers questions we have compiled a list of frequently asked questions and of course the answers. If in any doubt, always refer customers to the pharmacist for advice on symptoms and treatments. Additional space has been left for you to add any other questions you're asked about on gluten-free foods. It can provide a useful *aide memoir*.

Q *Are all medicines gluten-free?*

A Some medicines contain flour as a filler and this should always be checked with the pharmacist. This also applies to over the counter vitamin and mineral supplements.

Q *How many items can I get on each prescription?*

A Minimum monthly gluten-free food prescription guidelines exist indicating appropriate quantities for different age groups (ask your pharmacist for more information). The prescription may alter due to factors like weight loss, illness and pregnancy. It is up to the customer to discuss this with their doctor.

Q *What if I want other items not available on prescription?*

A If they are not already available for sale in the pharmacy, non-prescription items can be ordered at the pharmacy direct from the manufacturers or from a wholesaler. Seasonal items may only be available at certain times of the year.

Q *What is the difference between gluten-free and wheat-free foods?*

A Some gluten-free foods have been made from codex wheat starch from which the gluten has been removed (e.g. Glutafin Gluten Free Select Range). Others are made from naturally gluten-free grains and flours such as rice, potatoes, maize and soya (e.g. Glutafin Gluten Free Range). Both types of foods are suitable for people with coeliac disease, however if you are intolerant to the entire wheat grain or are particularly sensitive, the latter type of foods that are both gluten and wheat free.

Q *I am going on holiday, what arrangements should I make about my diet?*

A Many hotels and airlines offer to cater for special dietary requirements if they are given adequate notice. The customer should check with the tour operator, airline or hotel direct. However, it is often prudent to take some staple gluten-free items in your suitcase, taking a few loaves of gluten-free bread and a packet of biscuits may be a good idea. Some countries may require a note from your doctor to allow such food items to be brought into the country.

Q *Now that I'm feeling better, I would like to be able to eat out again. What advice do you have?*

A Most chefs are aware of the needs of a gluten-free diet. Before booking, ask whether it is possible for the restaurant to provide a gluten-free meal. If in doubt, the customer should stick with plain grilled meats, avoid sauces and follow the same rules as you do at home. Coeliac UK provide useful advice and information on eating out, see also www.glutenfreeonthego.com.



Q *I have been following my gluten-free diet for almost a year and I still have some symptoms, what should I do?*

A It is important that all symptoms are discussed with the pharmacist. **All** sources of gluten need to be removed from the diet for the complete relief of symptoms. This may take up to a year. Some customers are particularly sensitive and if symptoms persist the pharmacist may refer them to their doctor.

Q *Can I replace ordinary flour in a recipe with glutenfree flour?*

A As you may have already noticed, gluten-free flour is textually different and it cannot generally replace standard flour in a recipe. Manufacturers of gluten-free foods have a lot of expertise in baking with gluten-free flour and produce recipes which have been thoroughly tried and tested by home economists. Contact the manufacturers if you need an additional recipe or practical advice.

Q *Where can I get more information or contact other people with coeliac disease?*

A Join Coeliac UK, the patient association for people with coeliac disease for more information and to obtain a copy of the Gluten-Free Food and Drink Directory.

Website: www.coeliac.org.uk



Answers to activities

Activity 1

All gluten-free foods available on prescription are listed in the BNF, MIMS and Chemist and Druggist Price List. As the list is regularly extended, manufacturers can provide an up to date list of their foods available on prescription. A list of Glutafin foods is available on the Glutafin website (www.glutafin.co.uk).

As it is imperative to avoid all sources of gluten in the diet, customers must be confident that a food they are eating is gluten-free. Specialist prescription brands, e.g. Glutafin offer guaranteed gluten free versions of staple food products such as breads, rolls, flour mixes and crackers. DS Gluten Free, Glutafin's sister brand is available in supermarkets and health food stores and offers a range of staple and more 'luxury' gluten free products. From the list of ingredients you may be able to spot if an ordinary food contains any obvious sources of gluten, however not all sources are clearly indicated. If unsure, check in 'The Gluten-Free Food & Drink Directory', which is updated regularly and includes a list of all everyday foods guaranteed to be gluten-free.

Activity 2

Steatorrhoea is a result of the **malabsorption** of fat in the small intestine. General **malabsorption** of food can result in inadequate calorie intake and subsequent **weight loss**. This weight loss will be reflected in a loss of fat and muscle mass. In children long term malabsorption means there is insufficient nourishment available for normal growth and development. Children with coeliac disease may be shorter in stature than their normally nourished counterparts.

A **decrease in the absorption of calcium**, which is absorbed in the small intestine, can lead to the development of **osteoporosis** in later life.

Anaemia, resulting from inadequate absorption of iron, reduces the body's ability to transport oxygen around the body. This can cause the symptoms of **fatigue** and **breathlessness**.

Activity 3

It is unlikely that you are seeing all cases of coeliac disease in your area. Although the incidence of the disease may not be distributed evenly throughout the population, especially as it does run in families, there may be many people who unknowingly have the disease and who are not following any dietary therapy.

Case study - Section 1

It may be comforting for Evelyn to know that 1 in 100 people in the UK have coeliac disease. Explaining that the disease can be controlled by diet and a customer with coeliac disease can continue to lead a full and active life may also provide reassurance. Evelyn should also be made aware of Coeliac UK, which is the association for people with coeliac disease and offers further information and support for customers.



Activity 4

Interview with a customer

If a customer was diagnosed with coeliac disease as an infant they will have probably tried very few, if any, gluten containing foods. If they have followed the diet for a long time, customers sometimes have to stick with the foods they are used to. As the range of gluten-free foods available is continually being expanded these customers should be informed about new additions and encouraged to try them.

For customers diagnosed at a late age many everyday foods may initially be missed. The apparent loss of freedom of choice can be hard to adapt to and for this reason it is helpful to encourage the patient to try a wide variety of gluten free alternatives early on.

Case study - Section 2

Evelyn could make her own gluten-free mince pies using the pastry mix she gets on prescription. There are recipes for mince pies and other seasonal items available from Glutafin.

Activity 5

Food Diary

Are you confident that you identified all the gluten in your diet ?

Hopefully you will have been able to find suitable gluten-free alternatives and your diet will not have been changed too much.

After tasting some of the foods you should have an appreciation and rating of their taste and texture.



References

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8. Ciclitira PJ et al. The Management of Adults with Coeliac Disease. *British Society of Gastroenterology* 2010.



Useful Contacts

Coeliac UK

Coeliac UK, 3rd Floor, Apollo Centre,
Desborough Road, High Wycombe, Bucks HP11 2QW

Coeliac UK Helpline: 0845 305 2060

www.coeliac.org.uk

Dr Schär; our brands and services.

Dr Schär UK is the leading European manufacturer of gluten and wheat free foods. Our brands Glutafin (available on prescription) and DS Gluten Free (available in retail outlets) offers patients a combination of choice, quality and superior taste.

The Dr Schär Institute is a dedicated healthcare professional resource specialising in coeliac disease and gluten sensitivity. Our online and written resources, produced in collaboration with leading experts in the field, provide the latest information and training on the diagnosis and management of gluten related disorders.

Address:

Dr Schär Uk Ltd,
Station Court,
442 Stockport Rd,
Warrington. WA4 2GW.

For medical and scientific support, healthcare professionals may visit:

www.drschaer-institute.com
email: professionals@drschaer.com
Tel: 0800 988 8470

For product information, technical advice, recipes and patient support relating to our prescription products, visit:

www.glutafin.co.uk
email: glutenfree@glutafin.co.uk
Tel: 0800 988 2470

For product information, technical advice, recipes and patient support relating to our retail brand, visit:

www.ds glutenfree.com
email: info@ds glutenfree.co.uk
Tel: 0800 954 1981

My local Dr Schär UK contact is:

Name:

Contact Number



Assessment

An old friend Alex is coming to visit you for the day. You haven't seen Alex for some years and are looking forward to catching up on all the news. However you are a bit anxious about what to do on the catering front as Alex has told you he was recently diagnosed with coeliac disease.

Plan a menu for a picnic lunch and dinner in the evening for Alex and yourself. Alex has said that he will bring some of his gluten-free bread with him which will need to be 'refreshed'. Check out the preparation instructions on some glutenfree bread so that you know what to do.

Please complete the following meal plan in the box below.

MENU
Lunch
Dinner

Please return this completed module by email to professionals@drschaer.com or print and post to the Dr Schar Institute, Dr Schär UK, Units 1-2 Station Court, 442 Stockport Road, Thelwall WA4 2GW

A certificate of completion can then be issued to you.



Notes



Evaluation Form

To enable us to meet your continuing education needs in future resources would you mind taking a few moments to complete this evaluation form. Please place a tick on the line at a point, which most represents your opinion.

For example:

I would rate my own Continuing Professional Development as being

1 Not Important	2	3 Fairly Important	4	5 Very Important
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1. Was this learning unit appropriate to your professional development needs?

1 Not very appropriate	2	3 Appropriate	4	5 Very appropriate
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2. Will what you have learned from this module help you in your clinical practice?

1 Not at all	2	3 Some of it will	4	5 Definitely
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3. How did you enjoy working through this learning module?

1 Did not enjoy	2	3 No strong feeling	4	5 Really enjoyed
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4. Was the support you received in completing this learning module adequate?

1 Insufficient	2	3 Adequate	4	5 Just right
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Now please complete the following and return to the Dr Schär Institute, Dr Schär UK , Units 1-2 Station Court, 442 Stockport Road, Thelwall WA4 2GW

Your name:

Job Title:

Work address:

Telephone Number (Optional):

Email:

Subscribe to healthcare professional newsletter (please tick):

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Thank you.

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