COELIAC DISEASE IN CHILDREN

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INTRODUCTION

Coeliac disease is an autoimmune disease (a disease where the body's immune system attacks its own cells). Coeliac disease is triggered by gluten, a protein found in wheat, rye and barley, and it causes inflammation in the gut, which stops the gut absorbing food properly.

There is a similar protein found in oats, and some people with coeliac disease are also sensitive to this. Coeliac disease affects about one in a hundred people, and runs in families. It seems to be more common in people with type I diabetes. It can develop at any age.

What are the Symptoms?

Symptoms in babies will first show up when babies are weaned off milk and onto solid foods. The main symptom is diarrhoea. Stools may also be pale and fatty, and smell bad, caused by the body not absorbing fat properly. Children might not gain weight and seem wasted and thin, or gain weight very slowly, and may not grow properly. Children with coeliac disease may go through puberty later than other children.

Children with coeliac disease may feel tired and weak because they are anaemic, caused by not absorbing enough iron, vitamin B12 or folate from food. They may also seem irritable and unhappy.

> Children with coeliac disease may also have sickness, bloating, wind, indigestion and abdominal pain, and may get mouth ulcers and dermatitis on their elbows and knees. Different children get different symptoms, and some may get very few symptoms at all.

How is Coeliac Disease Diagnosed?

The doctor will take a blood sample and send it to the laboratory to check for antibodies to gluten. If necessary, doctors may take a biopsy (a small sample of the gut).

Treating Coeliac Disease

There are no drugs to cure coeliac disease, but it can be treated by following a gluten free diet, avoiding wheat, rye and barley. Some children will also need to avoid oats.
There are gluten free forms of just about all common wheat-containing foods, such as biscuits, cakes, pasta, cereals, bread and crackers. There are also gluten free flours to use in cooking. Some gluten free foods are available on prescription.

Be aware of foods that don't obviously contain gluten, such as stock cubes, crisps, sauces, ice cream, sausages, tinned foods and vegetable oil. Even some medicines can contain gluten. Rice andmaize do not contain gluten.

Changing to a gluten free diet should have a dramatic effect, with the damaged gut healing after three to six months. However, coeliac disease is life-long – unlike some allergies, children do not grow out of coeliac disease.

It is important to explain coeliac disease not only to the child who has it, but also to the rest of the family, as some children can cope with lapses in the diet, but others find that even a small amount of gluten can make them unwell. However, parents and carers should work to help the child not to feel 'odd' or 'different'.

Preventing Coeliac Disease

It may be possible to prevent coeliac disease by breastfeeding, and by avoiding feeding babies foods containing gluten before they are four to six months old. Everyone is talking about child obesity – every day there are news reports about the obesity epidemic. A survey in the UK suggested that 25% boys and 33% of girls aged between two and 19 years were overweight or obese.

Why Are Children Getting Fatter?

It's complicated! Different people blame different things – genetics, viruses, mother's weight before and during pregnancy, the increase in availability (and the drop in price) of fast food and sweetened fizzy drinks, the size of portions, the loss of playing fields, the fear of letting children play outside, the rise in computer games and Internet social networking, the increase in alcohol consumption in children, peer pressure against exercise (especially in girls), the lack of breastfeeding (breastfed babies are less likely to become obese children) and the increase in obesityin adults, so a lack of role models in healthy eating. It probably is a bit of everything.

Why Does It Matter?

It is a serious issue – obesity in childhood can have major impacts on health as children. Obese children are more likely to develop type II diabetes and high blood pressure, and have high cholesterol. Obesity can also affect breathing – asthma might become worse, and obese children can develop sleep apnoea, where they snore heavily stop breathing briefly during the night – this can make them more tired during the day. They can also develop serious problems with their liver, gallbladder or pancreas. There are also the psychological aspects – obese children may have poor self-image and be bullied. Obese children have a risk of becoming obese adults, and all these health problems may continue, along with an increase in risk of cancer and osteoarthritis, potentially leading to disability and a shortened lifespan.

Overweight, Obese or Healthy?

Parents and doctors can use the body mass index (BMI), a figure calculated from height and weight, to show whether a child's weight is underweight or healthy, or whether they are overweightor obese. However, because a child's BMI is also dependent on their age (and is often referred to asBMI-for-age), it's not quite as simple as working it out for an adult. The BMI needs to be calculated and then compared with percentile lines on a chart, but there are calculators and charts on the Internet to help out the calculations.

An underweight child is counted as one whose weight is below the fifth percentile line (this means their weight is in the bottom 5% of children). A child with a healthy weight has a BMI between the fifth percentile and the 84th percentile. An overweight child's BMI is from the 85th to the 95th percentile, and an obese child's BMI is on the 95th percentile or above (the child is heavier than 95% of children).

What Can Parents Do?

Children learn a lot from just watching their parents, and a parent's healthy diet and lifestyle can have a major influence on his or her child. Parents can encourage healthy eating by improving the diet of the whole family, and can also encourage children to be more active, for example walking orcycling to school or the shops with them rather than going by car. Children's needs for calories change as they grow. The Estimated Average Requirements (EARs) are based on the requirements (and the activity levels) of the UK population, and give an idea of calorie requirements at different ages.

Needs for calories can also change according to time of year, how active the child is, what size the child is, whether they are a boy or a girl, whether they are going through a growth spurt, and whether they are ill or well. The EAR for girls is generally lower because they have a smaller frame.

Children need a healthy and varied diet to help them grow, which includes protein, carbohydrates and fats, as well as plenty of fruit and vegetables. The numbers of calories given are approximate, and calorie needs do depend on a number of things, but taking in too many calories can lead to obesity (see 'Is Your Child Obese?')

Babies

Babies from birth to six months should, as far as possible, exclusively be fed breast milk. The EAR for boys is 545-690 kcal (calories) per day, and for girls, 515-645 kcal per day, the figures rising as the babies grow and become more active as they approach their first half year. From seven to 12 months, the EAR for boys is 825 to 920 kcal per day, and for girls 765 to 865 kcal per day.

Toddlers

Toddlers are considerably more active than babies are, as they learn to walk and their play becomesmore active. They can also have fast growth spurts. The EAR for boys aged one to three years is around 1230 kcal per day, and for girls around 1165 kcal per day. Children of this age should havefull fat milk, and not have a diet that is too high in fiber or low in fat, as this may not include enough calories or nutrients (see 'Can a Child Eat Too Healthily?').

Pre-school children

Pre-school children can be very active, and are learning, growing and developing fast. The EAR forboys aged four to six years is 1715 kcal per day, and for girls 1545 per day.

School-age children

Once children have started school, they may be taking part in regular games and PE sessions, as well as playing in the playground. They are still growing as well, and for some children, their bodies may be changing as they begin to approach puberty, though other children may not go through puberty until their teens. The EAR for boys aged seven to 10 years is 1970 kcal per day, and for girls, 1740 kcal per day.

Teenagers

Teenagers may need more calories than adults of the same size because they are still growing. Teenagers who are very active, for example those who play sport regularly, or who walk or cycle long distances to school, will need even more.

The EAR for boys aged 11 to 14 years is 2220 kcal per day, and for girls, 1845 kcal per day. The EAR for boys aged 15 to 18 years is 2755 kcal per day, and for girls, 2110 kcal per day. After the age of 18, the EAR for adults is 2550 kcal per day for men, and 1910-1940 kcal per day for women.

In the 1980s, there were concerns about 'muesli-belt malnutrition', with children eating too healthy a diet. Though in this case the concerns were overstated, it is still something that parents and carers should think about. Children have different nutritional needs to adults, and cannot just eat a smaller version of an adult's healthy diet.

Low-Fat Diets

Because children are still growing, and are generally more active than adults are, they need to eat more fat as part of a healthy diet. Fat supplies energy, and provides essential fatty acids and fat-soluble vitamins that the body needs, as well as being a building block for the nervous system and the brain. Babies and toddlers can have up to 40% of their calories as fat, and children and teenagers up to 35%.

However, this does not mean that children should have free access to sweets, cakes, crisps and chocolate (though these are fine as an occasional treat). They should instead get their fat from full fat milk (children under five should not have skimmed milk, and children under two should not have semi-skimmed milk), meat, oily fish, eggs and cheese, as well as from nuts, seeds and avocados.Like adults, children shouldn't get too much fat from saturated fat (cream, butter, lard,suet) or trans fats (vegetable fats that have been changed chemically to be solid at room temperature, and are used in processed foods such as cakes, pastry and biscuits).

High-Fibre Diets

Because children have small stomachs, they need a series of small meals and snacks throughout the day, made up of food with a relatively high concentration of calories and nutrients. Though they need a certain amount of fibre to help their digestive systems, too much fibre, such as too much brown rice or wholemeal pasta, and foods with added bran, makes the food too filling, reducing the number of available calories. Too much fiber can stop the absorption of important vitamins and minerals.

Though having five a day is very important, too many fruit and vegetables can also make food too filling and too low in calories.

Making sure that children drink enough is also important, but remember that water and other drinksare filling, and can stop children eating enough.

Low Sugar and Low Salt Diets

Though children do need proportionally more calories for their size than adults, keeping an eye on the refined sugar in their diets is a good idea, including avoiding too many sweets, biscuits and cakes (though they are great as occasional treats), having diluted fruit juice or smoothies rather than sweetened fizzy drinks and squashes, reducing added sugar on cereals (and avoiding pre-sweetenedcereals), and cutting down on jams and marmalades, or replacing them with low-sugar, high-fruit versions, or fruit spreads made from concentrated fruit juice.

Salt is in many processed foods, including cereals and bread, and too much is bad for a child's health – try looking for lower salt versions of breakfast cereals (these are often lower in sugar too), cutting down on crisps and salted nuts other than as a treat, and avoiding adding salt to food in cooking.

Eating well in pregnancy (and even before) is very important as it provides the nutrients and energy that the growing baby needs. It's not just eating for two, though, it's choosing the right foods as well, and eating a well-balanced and varied diet.

Eating When Planning a Pregnancy

The chances of conceiving are much better when women are in their healthy weight range. Being overweight (body mass index [BMI] of over 25) can affect ovulation (egg production), because it increases women's hormone levels, as these hormones are made from fats. It can also increase the risk of complications like pre-eclampsia and diabetes during pregnancy. Being overweight can reduce sperm production in men.

Being underweight (BMI of under 18) can reduce hormone levels, stopping periods and ovulation, and there is a possibility of having a low-weight or premature baby.

Have a varied diet, including protein, such as beans, peas and lentils (pulses) and lean meat and fish, including two portions of oily fish a week; carbohydrates, such as brown rice, pasta and potatoes; and plenty of fruit and vegetables. Good levels of calcium (from dairy foods, leafy green vegetables, and nuts and seeds) and iron (from leafy green vegetables, red meat, pulses, dried fruit, bread and fortified breakfast cereals) are also important. Folic acid is vital from before conception until the 12th week of pregnancy), as it protects against damage to the baby's spinal cord (known as 'neural tube defects') like spina bifida – either take a supplement containing 400 mcg of folic acid, or eat plenty of leafy green vegetables and brown rice. Don't have too much vitamin A, which can affect the developing baby – so avoid liver, or things made with liver, such as pâté, and don't take vitamin supplements containing vitamin A or fish liver oils.

Don't eat shark, swordfish and marlin, and don't eat too much tuna, as these can contain levels of mercury that are fine for adults but harmful for a developing baby's nervous system.

Eating When Pregnant

Follow the same advice as eating when trying to get pregnant – there are a few extra suggestions as well.

Get plenty of vitamin D, either from careful exposure to the sun (don't burn) or from a supplement – but fresh air and gentle exercise outside is important during pregnancy anyway.

There are a number of things that it might be best to avoid:

- soft cheese (Camembert, Brie, soft goat's cheese and others that have a similar rind, and softblue cheeses) and pâté can contain Listeria, a bacteria that can harm the unborn baby (but hard cheeses like Cheddar, and feta, ricotta, mascarpone, cream cheese, mozzarella, cottage cheese and cheese spreads are fine)
- raw and partly cooked eggs – these can contain the bacteria Salmonella (just make sure thateggs are well cooked, and steer clear of home-made mayonnaise)
- raw and partly cooked meat, as this can be a source of food poisoning bacteria and viruses
- undercooked ready meals
- raw shellfish, as this can be a source of food poisoning bacteria (but cooked shellfish is fine)
- liver and vitamin A (as discussed above)
- certain kinds of fish (as discussed above).

Finally, avoid alcohol or limit it to one or two units, once or twice a week, and cut down on caffeine, as too high levels may be linked to babies with low birth weights.

Above all, enjoy the food and enjoy the pregnancy,

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