

Celiac disease: symptoms, causes and effects



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INTRODUCTION TO CELIAC DISEASE (definition, overview);

Celiac disease or celiac sprue is a common disease that occurs in people digestive system. The people with this condition have adverse reaction to food containing gluten. Gluten is a type of protein that commonly can be found in three types of cereals such as wheat, rye and barley. It also can be found in food such as bread, pasta and biscuit. In the case of celiac disease, the immune system of the body treated one of substances that make gluten, gliadin, as a threat to the body and negatively react to it. The immune system produces antibodies to fight the supposed to be harmful substance. This antibodies cause surface the intestine become inflamed, disrupting the ability of the body to absorb the nutrient from the food lead to malnourished condition to people with the celiac disease. If this condition happened to infant or toddler, it will make them failed to thrive, in term of the weight and height. In older, the malnourished condition can lead to late blooming.

In United States, 1 in every 100 to 200 people has this condition[1], while in UK it affects 1 in every 100 people[2]. The number might be higher because some milder cases may go undiagnosed or misdiagnosed and treated as other disease. The disease may affect to all people at any age. Women with celiac disease are two to three times higher than men[3]from all the cases that were reported. The symptoms have high probability to develop during early childhood - between 8-12 months old and usually it takes several months before correct diagnosis is made or in later adulthood - between ages of 40 to 60 years[4].

Due to adverse reaction to gluten, people with this condition should avoid gluten in their diet.

Cause

There is no exact science what conditions that can develop the celiac disease. The two condition that probably cause this is the genetic and environment. The risk is approximately 10% with family history[5], compared with 1% person with no close relative that has this condition. In identical twin, the risk can go up to 85% if the other twin has this condition.[6]

Other factor that can cause celiac disease is the environmental factor. Having previous infection in the digestive system or wrong diet when someone was a children play part in developing celiac disease. Introduce gluten to the diet of less than three months old baby can increase the risk of developing celiac disease. Experts agree that parents have to wait until their baby is six months old or older to introduce gluten to the baby diet. When the baby is introduced to gluten, there is also high chance that they still develop celiac disease if they are not breastfeed.

Some number of health conditions can also increase the risk to develop celiac disease such as ulcerative colitis - inflammation of colon cause by some digestive condition-, type-1 diabetes and neurological disorders such as epilepsy.[7]

Symptom

Although celiac disease is hard to be recognized, there are several symptoms that may lead to celiac disease diagnosis. When a person eat food containing gluten, several conditions can be happened:

1. Indigestion
2. Occasional change in bowel habit such as diarrhea or constipation
3. Bloating and flatulence
4. Anemia, a condition where someone lack iron in blood and cause tiredness, breathlessness and an irregular heartbeat
5. Abdominal pain
6. Loss of appetite
7. Weight loss
8. Feeling tired all the time - as result of malnutrition
9. Children not growing to expected rate.
10. Tingling and numb in the hands and feet
11. Vomiting, usually happen on children
12. Hair loss, usually happen on adult

Note that the symptoms are often intermittent, start and stop interchangeably and sometimes appear unrelated to the diet and digestive symptoms.

The symptom in mild case celiac disease sometimes unnoticeable, and is detected during testing for another disease. It is suggested that, although it is a mild condition, complication can still occur.

The symptoms for severe celiac disease is the same as the regular symptom, except in more severe level such as stomach cram, muscle spasm, diarrhea

which often happen at night and swelling in the hand, feet, arms and legs caused by buildup of fluid or edema. The stools (feces) can also contain high levels of fat, which can make them greasy, foul smelling and frothy. They also can make it hard to flush the toilet.

IMPORTANCE OF READING ABOUT CELIAC DISEASE;

The symptoms of celiac disease sometimes are not apparent. The cause of the disease for children can be harmful and cause long-term damage. If the disease is untreated, it can lead to malnourished because the body cannot digest the food in the right way. The body will feel tired and lack of energy. Malnutrition in children will lead to failure to grow at expected rate, in term of height and weight and for older children; it can lead to delayed puberty.

Because of the long term and damaging effect of celiac disease, proper knowledge of this condition should become a common awareness. An untreated or undiagnosed celiac disease in a person that still eats gluten can cause more serious effect. Eating a tiny amount of gluten can trigger the symptoms of celiac disease and increase the possibility to develop complications such as osteoporosis, malnutrition, lactose intolerance and even cancer.

Osteoporosis

Osteoporosis is a condition where the bones become weak and brittle. The bones need mineral and vitamin to make it keep strong. Because of the digestive condition of a person with celiac disease, the damaged intestines prevent it to absorb nutrient from the food that needed to be given to the

bones. Osteoporosis usually has no symptoms, until someone had an accidental fall or something similar and end up breaking a weakened bones. Osteoporosis can be treated by consume enough vitamin D and calcium.

Malnutrition

The damage in the intestines prevent is to absorb enough nutrient for the body. These malnutrition conditions can makes the body cannot function normally or recover in the event of infection or wounded. Severe malnutrition can cause fatigue, dizzy and confused. The muscles become languish and it is very difficult to keep the warm of the body. In children, the malnutrition can hamper the growth and late development. The malnutrition can be treated by additional supplement or eating enough calories in the diet.

Lactose Intolerance

Someone with celiac disease has high possibility to also develop lactose intolerance, where the body is not enough producing enzymes to digest milk sugar (lactose) found in dairy products. Celiac disease symptoms such as diarrhea, bloating and abdominal discomfort are caused by lactose intolerance. Lactose intolerance does not damage the body, but rather cause the above discomfort, the gastrointestinal symptoms, because the body cannot digest the lactose properly. Lactose intolerance can be treated by not drinking or eating dairy product. Additional supplement such as calcium might be needed because dairy product is one of the main sources of calcium for the body.

Cancer

It is suggested in some research that having celiac disease can raise the possibility to develop certain type of cancer, including bowel cancer and lymphoma, cancer in the lymphatic system, part of the immune system. Based on research, it is estimated that people with celiac disease has two times higher possibility to develop bowel cancer than general population[8]. The highest risk to develop cancer is thought in the first year after diagnosis, and drop to normal after the gluten free diet take effect. Whether or not someone has celiac disease, it is important to be aware to the symptom of bowel cancer which includes unexplained weight loss, blood in stools (feces) and change in the normal bowel habit lasting more than four weeks.

SIGNIFICANCE OF A COMPREHENSIVE APPROACH TO CELIAC DISEASE

The symptom of celiac disease sometimes unrecognizable or people think that it is the symptom to other disease. Take the right approach to find the disease and how to react to it seems necessary. The approach to celiac disease can be divided into two categories, the correct diagnosis and correct treatment.

Diagnosis

Routine screening for celiac disease is not recommended unless someone has the potential to develop them. If someone have symptom that already explained above, then it is recommended to test for celiac disease. Testing is also recommended if someone have the following condition:

- Type 1 diabetes
- Irritable bowel syndrome (IBS)

- Underactive or overactive thyroid gland
- Dermatitis herpetiformis, a skin condition that causes blistering

In other circumstances, testing is also recommended if someone has this condition:

- Addison disease, where certain gland in the body are attacked by immune system
- Down Syndrome, an abnormal physical and mental development that is caused by genetic condition
- Epilepsy
- Lymphoma, a type of cancer
- Bone diseases such as rickets, the softening and weakening of the bone
- Persistent of unexplained constipation
- Repeated miscarriages
- Sjogren's Syndrome, a condition where the tear and saliva gland are attacked by the immune system
- Turner Syndrome, infertility and delayed growth affecting a woman because of a genetic condition
- Unexplained fertility

The screening to diagnose celiac disease involves two steps. The first step is the blood test, to help identify the people who may have celiac disease and then biopsy as the second test to confirm that people have celiac disease.

In the blood test, the general practitioner will take sample of the blood and then test it for antibodies that usually can be found in the bloodstream of people with celiac disease. Before and during the test, the people that will be

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diagnosed should not avoid gluten in their diet as this can lead to inaccurate test result. If the test is positive, mean that there is a celiac disease antibodies found the blood, it is recommend to take second step of the test, biopsy.

Sometimes, someone has celiac disease but the blood test result is negative, mean that no antibodies found in the blood. If the symptoms of celiac disease keep coming, the doctor usually will recommend taking biopsy test.

The second step, biopsy test usually carried out in a hospital and is performed by gastroenterologist, a specialist that treats any conditions in the stomach and intestines. Before the procedure, local anesthetic will be given to the patient to numb her throat or sedative to make her relax. An endoscope, a thin and flexible tube with a light will then is inserted in to her mouth and gently pass down to her small intestine. A tiny biopsy tool will be passed through the endoscope to takes sample of the lining in the small intestine. The sample will then be inspected under microscope to confirm the presence of a celiac disease.

If someone diagnoses with celiac disease, she may also need to take other test to assess how the celiac disease has affected the body so far. She may need to do another blood test to check the level of iron, vitamins and mineral in the blood. This test will help to determine whether she already has anemia due to poor digestion. A skin biopsy may need to be taken if she appears to develop dermatitis herpetiformis, a gluten intolerance condition marked by an itchy rash in the skin.

In other cases, a DEXA scan may also be recommended. This test will particularly see the condition of the bones. The DEXA scan is some kind of X-ray to measure the bones density to see if she have the risk of bone fracture when she getting older. This test may necessary if the doctor suspects that the celiac disease has already affected the bone and cause osteoporosis.

Treatment

The simplest way to explain the treatment celiac disease is by move away from food contains gluten. Do not eat it even just a small amount of it. This action will prevent the damage of the lining in the intestines or gut that is caused by gluten, and its associated symptom such as diarrhea and stomach pain.

Someone with celiac disease should avoid gluten in their diet for life because this protein, if is consumed will cause the symptom to comeback and cause long-term damage to the health. This may looks worrying and daunting, but help is always available from the doctor or dietician about how to manage the diet.

Few weeks after starting gluten free diet, the symptom will improve considerably. However, it may take quite long time; up to two years before the digestive system heal completely.

As mentioned above, a dietician might be endorsed by the doctor to give advice about healthy diet without gluten. They will also help to check the balance of the nutrient in the new diet. Someone with celiac disease will no longer able to eat foods that contain wheat, barley or rye. Even if they eat

just a spoonful of pasta, the celiac symptom will start to emerge, such as the unpleasant intestinal sensation. If gluten is ate regularly, in the long run it will increase the risk to develop osteoporosis or cancer in later life.

The good news is, as protein, gluten is not essential to the diet and the replacement can be found in many other foods. Alternatives for gluten-free foods are widely available in store, supermarket or healthy food shops, including pizza, pasta and bread. Wide ranges of gluten-free food are also available on prescription.

Many basic foods such as vegetables, rice, cheese, potatoes and meat are naturally gluten-free so to put them in the personal diet of someone with celiac disease is not a problem. To give a brief picture about which food contain gluten or not, the list below will show you some of the food with gluten and without gluten.

- *Food containing gluten*

Do not eat the following food unless it has label as gluten-free version:

1. Bread
2. Pasta
3. Cereal
4. Biscuit or crackers
5. Cakes and pastries
6. Pies
7. Gravies and Sauces

It is important to always check the label of the food that being bought. By law, food labeled as gluten-free can contain no more than 20 ppm (parts per million) of gluten.[9]Most people can accept this amount trace of gluten, but very few people cannot tolerate even very small of it. For those type of people, they really need to eat gluten-free food.

Many foods, mainly those that are processed may contain gluten in additives, such as modified food starch and malt flavoring.

Gluten may also found in some non-food product such as lipstick, postage stamps or some type of medication. Cross contamination can occur if gluten-free food is processed together with same utensils with the food that contain gluten.

- *Gluten free food*

The following foods naturally do not contain gluten:

1. Rice
2. Potatoes
3. Fruit and vegetables
4. Fish and meat
5. Most dairy product such as milk, butter and cheese
6. Gluten free flour such as corn, soy, rice and potato

Oats is also an example of gluten-free food; nevertheless many people with celiac disease avoid eating them because they can become contaminated by gluten from other cereal. To eat oats, someone with celiac disease should carefully check that the oats is pure and no gluten contaminations have

occurred. It is recommended to eat oat when the gluten-free diet already taken full-effect. If the symptom emerges again, stop eating oats.

In early prevention of celiac disease to be developed in people, it is advised to not introduce any diets that contain gluten to less than six months old baby. Breast milking the baby is the best way to feed them since the breast milk does not contain gluten. The baby milk formula is also gluten-free.

Besides eating gluten free diet, other treatments are also needed especially if the celiac disease already affecting the body. For the first six month after diagnosis, additional supplement might be needed to ensure that the body have enough nutrient its needed before the digestive system repair itself. Taking supplement can also remedy any deficiencies such as anemia.

In the case where the celiac disease causing the spleen work less efficiently, which makes someone vulnerable to infection, an additional vaccination should be applied. The vaccinations include influenza and HIB/MenC vaccine which protect against meningitis, pneumonia and sepsis or blood poisoning. Pneumococcal should also be taken to protect against infections caused by the Streptococcus Pneumonia bacterium.

For some people, celiac disease can also cause an itchy rash in the skin called dermatitis herpetiformis. Taking a gluten free diet as treatment is usually enough to clear it up. In some cases, it takes quite long time to clear up the rash. Medicine called Dapsone might be prescribed by the doctor to help the body speed up the clearing of the rash. However, side effects such as depression and headaches should be expected, so it usually will be prescribed in the lowest effective dose.

Celiac disease has a long run damaging effect to the body. It is suggested that comprehensive approach, which include diagnosis and treatment as explain above should become common knowledge for people, especially someone with the higher risk to develop the disease because of family genetic or other factor.

[1]<http://www.aafp.org/afp/2007/1215/p1795.html>

[2]<http://www.nhs.uk/Conditions/Coeliac-disease/Pages/Introduction.aspx>

[3]<http://www.nhs.uk/Conditions/Coeliac-disease/Pages/Introduction.aspx>

[4]<http://www.nhs.uk/Conditions/Coeliac-disease/Pages/Introduction.aspx>

[5]<http://www.nhs.uk/Conditions/Coeliac-disease/Pages/Causes.aspx>

[6]<http://www.nhs.uk/Conditions/Coeliac-disease/Pages/Causes.aspx>

[7]<http://www.nhs.uk/Conditions/Coeliac-disease/Pages/Causes.aspx>

[8]<http://www.nhs.uk/Conditions/Coeliac-disease/Pages/Complications.aspx>

[9]<http://www.nhs.uk/Conditions/Coeliac-disease/Pages/Treatment.aspx>