

# Intestinal Cancer in Celiac Disease

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**Abstract** Celiac disease is an autoimmune disease caused by gluten in genetically predisposed persons. The prevalence of the disease in Western Europe is about 1%. Early diagnosis of celiac disease is important because it allows the onset of gluten free diet that will prevent the occurrence of gastrointestinal cancers. Considering that the symptoms of the disease do not always include typical manifestations, diagnosis may not always be easily supported. This disease can evolve in various forms - masks of celiac disease - including: classic form, non-classical, subclinical and potential form. The risk of complications, especially cancer, increases with delay in diagnosis.

**Keywords:** *celiac disease, intestinal cancer, malignancy*

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## 1. Introduction

We know that there are many factors that lead to the development of cancer including gastrointestinal cancer. It is a combination of harmful factors, of which the most important are: diet, environmental factors, chronic diseases of the gastrointestinal tract and heredity. [1,2] Food plays an important role in the development of gastrointestinal cancer and it can be said about people "we are what we eat". A balanced diet is one that includes all essential nutrients in the right proportion. [3] The diet with high content of meat leads to increase fatty acids production and through the digestive process these can be carcinogens. In geographic areas where meat consumption is low (India, Central Africa) gastrointestinal cancer incidence is low. [4] It is indicated that the daily diet contains vegetable food because eating it shortens the transit through the colon and reduce the exposure of the colon mucosa to the activity of carcinogens. It is important to know that how meat is cooking is an essential factor in carcinogenesis. In this sense the way of cooking meat by smoking process can cause harmful carcinogenic substances that act on the intestinal mucosa. [4]

## 2. Findings on the Possibility of Developing Malignancy in Patients with Celiac Disease

Foods known to have carcinogenic risk may result in the formation of harmful chemicals to the intestinal mucosa such as nitrates, amides, amines, aromatics, and tryptophan and tyrosine metabolites. Carcinogens act on the cellular genome causing mutations and translocations, with proto-oncogenes cell transformation in active

oncogenes. These active oncogenes produce syntheses of oncoproteins and cell turns into a cancerous cell. It was found that in some gastrointestinal diseases such as inflammatory bowel disease, the incidence of cancer is much increased. [3]

It is considered that the length of the clinical course of the disease influences the degree of cancer risk. So the lack of an early diagnosis and a long evolution with clinical or subclinical manifestations of celiac disease may lead to gastrointestinal cancer. [5,6]

There were analyzed several studies related to frequency of bowel cancer in celiac disease.

There are 3 types of cancer often associated with celiac disease: associated T cell lymphoma enteropathy (EATL), non-Hodgkin's lymphoma, and adenocarcinoma of the small intestine. [6] Gastrointestinal lymphoma is the most common neoplasm in celiac disease. [Gastrointestinal lymphoma is divided into Hodgkin and non-Hodgkin lymphoma. Of the non-Hodgkin forms the T-cell lymphoma is commonly associated with celiac disease. [7,8] WHO classification recognizes an enteropathy associated T cell lymphoma. There were also described Burkitt lymphoma like (BLL) and mucosa associate lymphoid tissue (MALT). [9]

There is colorectal cancer in patients with celiac disease, but the risk of developing this cancer is rare. Patients with celiac disease can develop small bowel adenocarcinoma (SBA). [1,9]

Development of these types of cancer is not very common and most patients with celiac disease do not develop these cancers. Clinical manifestations of cancer include weight loss, abdominal pain, increase lymph nodes, fatigue, and sometimes fever. Cancer risk in celiac disease is low if the disease is treated properly. The risk of developing cancer is higher if the disease is not diagnosed in time and gluten-free diet is not met. [10]

Studies have shown that the risk of digestive cancers increases in patients whose disease has not been diagnosed

or has been diagnosed after a long period of time. Gluten-free diet reduces the risk of developing digestive cancers or does occur much later. [11,12] These studies showed that the risk of developing lymphoma is slightly higher in people with celiac disease than the rest of the population. Patients who were diagnosed at an advanced age often have a higher risk of developing digestive cancers.

### 3. Conclusions

Although it seems easy to diagnose celiac disease, there are atypical forms of the disease are diagnosed later

Studies show that celiac disease may be protective for some cancers, but it is a risk factor for other cancers.

The mechanism of developing gastrointestinal cancer in celiac disease is not fully defined.

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