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## Review Article

# The need for standardized dietary guidelines for cancer patients - with review of literature from governing bodies

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### ABSTRACT

**Objective:** Dietary advices in the form of dietary guidelines help immensely in the management of health and disease, more so in the management of cancer patient. The objective of this study is to emphasize the need for standardized dietary guidelines which will guide the cancer patients and the medical fraternity involved in the management of cancer patient.

**Data sources:** Thorough search was done from recognized authorities for the available dietary guidelines for cancer patients. We also performed literature search with the use of PubMed, and Google Scholar as our database articles citing the benefits of dietary intervention in cancer management.

**Inclusion criteria:** Only the guidelines and dietary advices in the management of cancer patients which were given by the authorized bodies were considered.

**Results:** The dietary guidelines for cancer patients that we found after thorough search are very few. These guidelines have remained the same for decades now and need revival.

**Conclusion:** There is a strong need for standardized dietary advices given by the concerned authorities to guide the medical fraternity to help to support the cancer patients in a better and confident way. More and more studies are required to standardize the dietary requirements during cancer management. The process, though herculean, can begin with simple and short guidelines for the dietary management of common health concerns during cancer treatment. With the help of outcomes of larger studies in this domain, more appropriate guidelines can be formulated.

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## 1. Introduction

Cancer diagnosis itself is devastating news for anyone. Many questions arise in the patient's mind- treatment and its success, the economic burden etc. Most importantly, if not to the patient himself/herself, the caregivers are concerned about the quality of life of the patient during the course of treatment which is a long journey, beginning from the very day of diagnosis. During this long journey the patient is concerned about anything and everything about him/her.

### 1.1. Why do we need dietary guidelines?

Next to treatment, diet is viewed as 'the most important aspect during the treatment phase'.

Understandably, dietary advice is of immense importance in the management of cancer patients.

These advices serve many purposes-

1. Improvement in management of the condition,
2. Serve to the individual needs as per patients personal complaints during the treatment,
3. Help to cope with disease medication and most importantly
4. Improve the quality of living.

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These guidelines are especially more valuable in management of advanced cancers wherein symptomatic relief and improvement of quality of living is of paramount importance. Last but not the least, they also help in removing confusion and dogma around the advice given by experts including medical practitioners, nutritionists, epidemiologists and the like.

This article reviews the literature pertaining to the dietary guidelines for cancer patients that have been released by various authorities around the world.

## 2. Materials and Methods

Thorough search was done from recognized authorities for the available dietary guidelines for cancer patients. We also performed literature search with the use of PubMed, and Google Scholar as our database articles citing the benefits of dietary intervention in cancer management. The search terms included a combination of “diet and cancer,” “dietary guidelines in Cancer,” “diet and cancer management,” “benefits of diet in cancer management.” Each record was retrieved and was manually reviewed before being entered into the compiled list.

## 3. Review of Literature

### 3.1. Global History of Dietary Guidelines -Guidelines from authorized institutions

Wayback in 1971, President Nixon declared a war on cancer. This was followed by first dietary recommendations specifically designed for cancer prevention by the National Cancer Institute (NCI) in 1979 which was reviewed comprehensively by National Research Council (NRC) by conducting studies linked to diet and cancer risk which lead to the publishing of dietary guidelines based on the findings. Later on in 1982 Diet, Nutrition, and Cancer by National academy of Sciences was rolled on.<sup>1-4</sup>

The basic approach that is followed for the formulation of such dietary guidelines is by using the epidemiologic studies. These studies take into consideration the intake of a particular food item and incidence of a particular cancer. Needless to say, these epidemiologic studies usually are confined to a particular geographic area or country and require long periods for valuable interpretation.

The National Research Council completed the first such review in 1982 and American Institute for Cancer Research (AICR) brought the first ever global perspective in 1997. When we study these analyses, the general recommendations are to increase the dietary fiber intake, fruits and vegetables and moderate the consumption of alcohol and salt and decrease the intake of fat along with an increase in physical activity.<sup>5-7</sup> Table 1 gives the dietary guidelines by the American Cancer Society on Diet, Nutrition, and Cancer Prevention.

**Table 1:** Americancancer society guidelines on diet, nutrition, and cancer prevention.<sup>8</sup>

1	Choose most of the foods you eat from plant sources Eat five or more servings of fruits and vegetables each day. Eat other foods from plant sources, such as breads, cereals, grain products, rice, pasta, or beans several times each day.
2	Limit your intake of high-fat foods, particularly from animal sources Choose foods low in fat. Limit consumption of meats, especially high-fat meats.
3	Be physically active: Achieve and maintain a healthy weight Be at least moderately active for 30 minutes or more on most days of the week Stay within your healthy weight range.
4	Limit consumption of alcoholic beverages, if you drink at all

### 3.2. Recommendations for specific cancer types<sup>8</sup>

Breast Cancer- diets high in fruits and vegetables. Increase fiber intake and vegetable servings<sup>9</sup>

Colorectal Cancer- to consume fewer high-fat foods, limit intake of red meats, eat more vegetables,

Fruits, and whole grains.

Endometrial cancer- Food habits to prevent obesity

Lung cancer, Stomach cancer, Oral and Esophageal Cancers -eat at least five servings of vegetables and fruits every day.

Prostate cancer- limit intake of foods from animal sources, especially saturated fats and red meats. It is advised to achieve a healthy body weight through regular exercise and a healthful plant-based diet rich in fruits, vegetables, and whole grains.<sup>10</sup> The tumor biology can be altered by either a vegan low-fat diet or eliminating simple carbohydrates accompanied by weight loss.<sup>11</sup>

### 3.3. Effect of dietary guidelines on public health and cancer incidence<sup>12</sup>

Following the implementation of some of the above mentioned guidelines, studies were done to see the impact of such guidelines on general population.

#### 3.3.1. Effects of low salt intake

The gastric cancer incidence dropped suddenly in the United States due to year round intake of fruits and vegetables. While in Japan, with the use of electric refrigerators, the public in Japan reduced the per capita salt consumption by 16% in 17 years (1971-88). This public measure resulted in drastic reduction in Cancer mortality up to 50% in 30 years.

### 3.3.2. Effects of low Fat intake

Studies have shown parallel reduction of animal fat consumption and reduction of incidence of breast and colorectal cancers.

### 3.3.3. Effects of consumption of green and yellow vegetables

Studies have shown that the higher the intake of green yellow vegetables, the lower the risk of stomach and colon cancer by up to 40%. This has led to the dictum to encourage the intake of green yellow vegetables, 'daily practice for cancer prevention'.

### 3.4. Guidelines from various websites

On searching for cancer specific dietary guidelines in the search engine, it was seen that most of the private cancer institutes have come up with their own recommendations and advices. Most of these websites give elaborate details which are directed towards patient concerns. The websites mention useful links for the recommended recipes for the same. These have in fact become the most sought-after places for gathering such important dietary advice.

## 4. The Indian Scenario

The assessment and analysis of cancer in India based on the data from the National Cancer Registry Programme (NCRP).NCRP commenced in December 1981 as a long term activity of Indian Council of Medical Research (ICMR) with a network of cancer registries across the country. NCRP provides a direction to the cancer control programme in the states for planning and prevention programs, establishing treatment facilities, allocating resources and assessing the impact of specific activities such as screening, awareness generation etc. Hospitals benefit by using the registry data for improving their Cancer care services.<sup>13</sup>

Apart from the 'cancer samiksha' website of the government of India, extensive search through various other government websites relating to nutrition and cancer showed no data guiding for proper diet in cancer patients . The Indian Council of Medical Research (ICMR) has been giving information on nutritional requirements specific to the population of India, which is updated every 10 years. These ICMR updates the nutrition recommendations based on information from studies and surveys conducted by the National Institute of Nutrition (NIN), Hyderabad and research data. The ICMR recommendations for cancer prevention, include a diet that is high intake of fresh vegetables and fruits, with spices such as turmeric, in adequate amounts.<sup>14</sup>

The dietary guidelines for Indians only provide guidelines for good health and are not very specific to cancer patients.

## 5. Cancer Patients can be Guided

Diet has always helped to heal. Good nutrition ensures easy and quick recovery from the ailments.

Good nutrition is especially important in cancer. This is because the cancer patient has to sustain the ill effects of the cancer itself as well as that imposed by the treatment regime. Both the cancer and its treatments can affect the food habits of the patient. They can also affect the way the body tolerates certain foods and uses nutrients and so also the metabolism. Therefore, the development of dietary guidelines in such conditions is a herculean job which requires extensive long duration studies.

### 5.1. How to help

Realizing the magnitude of efforts and time needed to come up with proper dietary guidelines for cancer patients, it will be rewarding if we begin this voyage at the earliest. Cancer patients come up with numerous complaints pertaining to the quality of life, side effects of treatment and many more. General guidelines for cancer patients will be most welcomed. These may be revised timely to focus on nutritional requirements and guidelines.

Prima Facie the nutritional goals which can be considered -

1. Maintaining the recommended body weight
2. Keeping the energy levels high
3. Better toleration of the food eaten
4. Helping to keep feeling better
5. Reduce the incidence of infection
6. Quick recovery from minor health concerns

### 5.2. Some of the recommendations which might help to an extent include-

1. Dietary guidelines which are specific for some of the common concerns during cancer management- One of the most common concerns is the weight loss during cancer therapy or due to cancer itself. This concern can have recommendations such as consumption of a high calorie and protein diet.
2. Advices on adequate water intake can be emphasized.
3. Giving dietary supplements like vitamin c and probiotics.<sup>15</sup>
4. Patients should be advised to eat foods high in protein, healthy fats, whole grains, and vitamins and minerals.<sup>16</sup>
5. Handouts with dietary advice can be given mandatorily during cancer therapy.
6. The dietary supplements need to be replaced by food items. This will be more effective as the bioavailability of the nutrients is far better from the food items as compared to the supplements.

## 6. Conclusion

The pharmacologic interventions are expensive and increase medication burden on the patient. They are also not easily accepted by patients during treatment. On the other hand if the pharmacologic interventions are combined with beneficial dietary interventions in the form of guidelines, the management will become cost-effective and will allow patient adherence in the treatment and improve the outcomes.

Moreover, with the increasing number of cancer diagnoses, there is an extensive need to develop dietary guidelines for cancer patients. In this era of digital information, there are many sources which claim to provide advice for every query statement raised. This leads to a lot of misinformation than proper health education of the needy. In context to cancer, the dietary guidelines can begin with simple and short guidelines should be released for the dietary management of common health concerns during cancer treatment. With the help of outcomes of larger studies in this domain, more appropriate guidelines can be formulated.

## 7. Conflict of Interest

None.


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