


Chapter 21

Nutrition and Cancer

Shazia Ali

 <https://orcid.org/0000-0003-3116-9194>
Sher-i-Kashmir Institute of Medical Sciences,
India

Asiya Batool

Indian Institute of Integrative Medicine (CSIR),
India

Asma Tariq

Government of Jammu and Kashmir, India

Aashiq Hussain Bhat

Sheri-Kashmir Institute of Medical Sciences,
India


Abid Qureshi

Sher-i-Kashmir Institute of Medical Sciences,
India

Basharat Bashir Teli

Jawaharlal Nehru University, India

Iqbal Qasim

 <https://orcid.org/0000-0002-3797-1180>
Sher-i-Kashmir Institute of Medical Sciences,
India

Sumit Kumar

National Institute of Pathology, New Delhi, India


Abhilash Gangadharan

Institute of Genomics and Integrative Biology
(CSIR), India

Raj Kumar

Jawaharlal Nehru University, India

Barre Vijay Prasad

 <https://orcid.org/0000-0003-2332-8220>
All India Institute of Medical Sciences, India

ABSTRACT

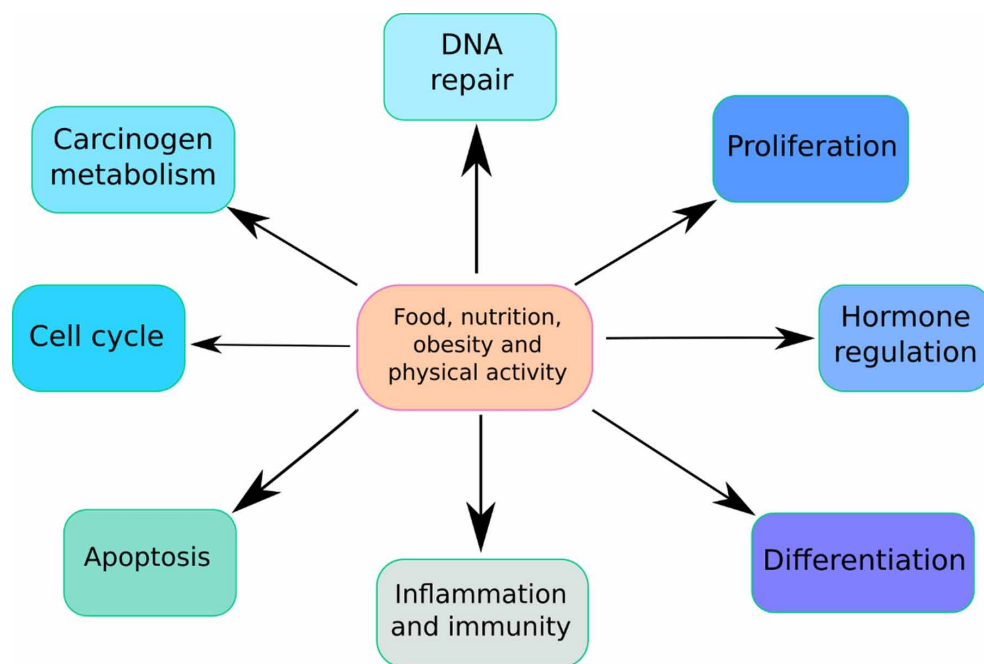
Cancer is the second biggest killer worldwide. It has been estimated that specific lifestyle and dietary measures can prevent 30–40% of all cancers. Consumption of nutrient sparse foods, such as refined flour products and concentrated sugars, consumption of red meat, low fibre intake, and disproportion of omega 3 and omega 6 fatty acids, contributes to cancer risks. Microbiological and chemical food contaminants as well as conventional and industrial food processing methods may further increase the carcinogenicity of diets while protective agents in a cancer prevention diet include folic acid, selenium, vitamin D, vitamin B-12, chlorophyll, and antioxidants such as the carotenoids, kryptoxanthin, lycopene, and lutein. Diet can also influence the gut microbes that may have positive or adverse effects on cancer risk. The authors summarize cancer prevention by functional foods and discuss the role of different dietary factors such as promoter or inhibitor in pathogenesis of different subtypes of cancer worldwide.

DOI: 10.4018/978-1-7998-6530-8.ch021

INTRODUCTION

The relationship between nutrition and cancer was initially recognized in 1940 by an experimental study, where progressive confinement of nutritional factors evidently reduced the prevalence of cancer in mice (Tannenbaum, 1940). Other advancements came after two decades depicting the relation between geographical impact and cancer incidence. This was suggestive of the difference in dietary habits and lifestyle (Doll, 1966; Doll, 1970). This was followed by protuberant number of case-control studies that led to the identification of cancer risk factors in diet. Macro and micronutrient components in food along with food patterns play etiological roles in incidence of cancer (Fig. 1). The effects of these components can be altered by lifestyle factors like exercise and physical activity. Besides increasing the body weight, physical inactivity is thought to contribute to cancer risk by negatively effecting the endocrine and immune system. Diets with low in vegetables, fruits and whole grains, are linked with a number of cancers. In this chapter, we discuss the significant role of dietary factors in promotion or inhibition of pathogenesis of different subtypes of cancer worldwide.

Figure 1. Effect of diet on different cellular processes



Over Consumption of Energy

Our diet is an essential fuel to sprint our body function smoothly and adequately, not only health but mental health as well. A common saying from Mark Twain states that the only way to keep healthy is to eat what we don't want, drink what we don't like, and do what we'd rather not." This quote consciously warns our mind of balanced diet.

15 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/nutrition-and-cancer/267058

Related Content

Cardiovascular Disease in Elderly an Early Care: Biopsychosocial Perspective

Barre Vijaya Prasad, Shamsi Akbarand Ashwini R. (2018). *Handbook of Research on Geriatric Health, Treatment, and Care* (pp. 175-193).

www.irma-international.org/chapter/cardiovascular-disease-in-elderly-an-early-care/201381

Cancer Stem Cells and Advanced Novel Technologies in Oncotherapy

Shalini Sakthivel, Manjita Srivastava, Muneesh Kumar Barman, Nerethika Ravichandiran, Salonee Martins, Meenakshi Singh, Kailash Chand, Subash C. Sonkarand Prudhvilal Bhukya (2021). *Handbook of Research on Advancements in Cancer Therapeutics* (pp. 486-513).

www.irma-international.org/chapter/cancer-stem-cells-and-advanced-novel-technologies-in-oncotherapy/267054

Supporting People Who Experience Co-Existing Mental Health and Addiction Problems: A National Approach to Improving Responsiveness in Aotearoa New Zealand

Ashley Koningand Suzette Janet Poole (2019). *Substance Abuse and Addiction: Breakthroughs in Research and Practice* (pp. 59-80).

www.irma-international.org/chapter/supporting-people-who-experience-co-existing-mental-health-and-addiction-problems/219407

The Effects of Probiotic Cultures in Functional Foods: Technological Aspects of Probiotics

Gulden Basyigit Kilic (2019). *Complementary and Alternative Medicine: Breakthroughs in Research and Practice* (pp. 352-373).

www.irma-international.org/chapter/the-effects-of-probiotic-cultures-in-functional-foods/211779

Community Music Therapy Partnering With Community Musicians: Orchestral Dialogues – Accepting Self, Accepting Others

Janelle S. Junkin (2019). *Healing Through the Arts for Non-Clinical Practitioners* (pp. 214-226).

www.irma-international.org/chapter/community-music-therapy-partnering-with-community-musicians/211675