these cause <3%–10% of cancers (Roukos, 2009). Common examples include certain inherited mutations in the genes BRCA1 and BRCA2, which may cause inherited breast cancer and ovarian cancer (Petrucelli et al., 2016). Li-Fraumeni syndrome (LFS) includes defects in the p53 gene that leads to bone cancers, breast cancers, soft tissue sarcomas, brain cancers, etc. (Libè et al., 2007). People with Down's syndrome are known to develop malignancies such as leukemia and testicular cancer (Goldacre et al., 2004). Hereditary nonpolyposis colorectal cancer (HNPCC or Lynch syndrome) is present in about 3%–5% of people with colorectal cancer (Peltomäki, 1999).

(5) Hormones

Insulin-type growth factors and their binding proteins play a critical role in the development of cancer in cancer cell proliferation, differentiation, and apoptosis, suggesting possible involvement in carcinogenesis (Yu and Rohan, 2000; Arcidiacono et al., 2012). Hormones are related in sex organ-related cancers, such as: breast cancer, endometrium, prostate, ovary, and testicular cancer (Anand et al., 2008; Petrucelli et al., 2016). For example, the daughters of women with breast cancer have significantly higher levels of estrogen and progesterone than the daughters of women without breast cancer (Ahsan et al., 2004). These higher hormone levels may explain why they have a higher risk of breast cancer, even in the absence of a breast-cancer gene. Similarly, men of African ancestry have significantly higher levels of testosterone than men of European ancestry and have a correspondingly higher level of prostate cancer (Giri et al., 2009). Men of Asian ancestry, with the lowest levels of testosterone-activating androstanediol glucuronide, have the lowest levels of prostate cancer (Balkwill, 2009).

(6) Immune system dysfunction

Impaired immunity can lead to several cancers including Kaposi's sarcoma, non-Hodgkin's lymphoma, and HPV-associated malignancies such as anal cancer and cervical cancer (Moscicki et al., 2015; Shiels et al., 2011). There is also a connection between celiac disease and cancers. People with celiac disease have a high risk for cancer, but this risk decreases with time after diagnosis and treatment, probably due to the adoption of a gluten-free diet, which seems to have a protective role against development of malignancy in people with celiac disease (Silano et al., 2007). However, delay in diagnosis and initiation of a gluten-free diet seems to increase the risk of malignancies (Silano et al., 2007). Rates of gastrointestinal cancers are increased in people with Crohn's disease and ulcerative colitis, due to chronic inflammation (Mattar et al., 2011). Also, immunomodulators and biologic agents used to treat these diseases may promote developing extraintestinal malignancies (Axelrad et al., 2016).

10.1.5 Prevention

Cancer prevention includes any action taken to help lower the chance of getting cancer. A report shows that in 2017, over 1.6 million people will be diagnosed