

# Food Safety Knowledge and Self-Reported Food-Handling Practices in Cancer Treatment

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**OBJECTIVES:** To explore awareness of foodborne infection risk during chemotherapy treatment, to assess knowledge of risk-reducing food safety practices in patients with cancer and their family caregivers, and to determine self-reported food-handling practices.

**SAMPLE & SETTING:** A convenience sample of 121 patients receiving chemotherapy and 51 family caregivers of patients receiving chemotherapy in the United Kingdom recruited in the community and using online advertising.

**METHODS & VARIABLES:** Participants completed a self-report questionnaire to determine food safety knowledge and self-reported food-handling practices.

**RESULTS:** Although patients receiving chemotherapy and family caregivers reported awareness of food safety practices, self-reported practices indicated that potentially unsafe practices may be used in relation to temperature control, handwashing, safe cooking, and adherence to use-by dates. Such practices may increase the risk of foodborne illness to patients receiving chemotherapy treatment.

**IMPLICATIONS FOR NURSING:** Nursing research is required to explore the food safety training and awareness of healthcare providers. Highly focused and specifically targeted food safety interventions need to be developed and delivered to increase awareness and to implement food safety practices.

**KEYWORDS** chemotherapy; family caregivers; food safety; knowledge; self-reported practices; foodborne infection

**ONF, 45(5), E98-E110.**

**DOI** 10.1188/18.ONF.E98-E110

Because of the cytotoxic drugs used in chemotherapy for the treatment of cancer, immune responses in patients with cancer are suppressed (Oliver & Nouri, 1992). Consequently, patients with cancer receiving chemotherapy treatment have an increased risk of infection, including foodborne infections. Given that patients with cancer have very little defense against opportunistic pathogens, these infections may be more difficult and take longer to treat; consequently, the mortality rates of enteric viral infections are elevated in patients with cancer (Gerba, Rose, & Haas, 1996). Cancer and chemotherapy are recognized as underlying conditions for foodborne infections from *Campylobacter* (Pacanowski et al., 2008), *Salmonella* (Rolston & Bodey, 2000), and *Listeria monocytogenes* (Silk et al., 2012; Swaminathan & Gerner-Smidt, 2007). Among people with suppressed immune systems, infections (e.g., norovirus) are reported to pose an increased risk of more severe consequences (Mattner et al., 2006). The evidence suggests that 15%–25% of serious *Salmonella* infections occur among patients with cancer (Rolston & Bodey, 2000). A large proportion of listeriosis cases in England and Wales is reported to be associated with patients with cancer (Gillespie et al., 2009; Mook, O'Brien, & Gillespie, 2011). Patients with cancer are reported to have a five-fold increased risk of listeriosis, and one-third of non-pregnancy-associated listeriosis cases are reported to be among patients with cancer (Mook et al., 2011). Invasive listeriosis has a hospitalization rate of less than 90% (Centers for Disease Control and Prevention, 2011) and a mortality rate of less than 41% (Mook, Patel, & Gillespie, 2012); therefore, reducing the risk of developing such foodborne infections among patients receiving chemotherapy is essential.

## Background

### Neutropenic Diet

To reduce the risk of foodborne infection, a need exists to reduce the likelihood of consuming foodborne