

# Assessment of Cognitive Impairment and Complaints in Individuals With Colorectal Cancer

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**Purpose/Objectives:** To assess cognitive function in individuals with colorectal cancer (CRC) and identify factors associated with cognitive effects.

**Design:** Cross-sectional, comparative design.

**Setting:** Midwest hospital.

**Sample:** Men and women with (n = 50) and without (n = 50) CRC.

**Methods:** Comparative and regression analyses were performed to assess the relationship between cognition and CRC.

**Main Research Variables:** Attention, cognitive control, and memory function were assessed with neuropsychological tests and self-report.

**Findings:** Compared to healthy volunteers, individuals with CRC performed worse and reported more problems on tasks requiring attention and cognitive control ( $p < 0.05$ ). After controlling for covariates, poorer performance on tasks of attention and cognitive control was associated ( $p < 0.001$ ) with having CRC, older age, and less education. In contrast, poorer perceived attention and cognitive control were associated ( $p < 0.001$ ) with greater fatigue but not CRC.

**Conclusions:** Individuals with CRC are vulnerable to cognitive problems. In addition, older age, less education, and fatigue can increase risk for worse cognitive performance and self-reported cognition.

**Implications for Nursing:** Cognitive problems can profoundly affect an individual's ability to function in everyday life and cope with cancer. Nurses should assess for cognitive problems in patients with CRC and intervene to reduce distress.

More than 1.1 million individuals in the United States have a history of colorectal cancer (CRC) (American Cancer Society [ACS], 2014). Since the mid-1970s, advances in treatment and early detection have increased five-year survival rates by 14% for colon cancer and 20% for rectal cancer (ACS, 2014). Because of the prevalence of the disease and improved survival rates, understanding the effects of CRC and its treatment is critical to improving the quality of survivorship. A growing body of research suggests that individuals with non-central nervous system cancers can experience cognitive changes across the trajectory from pretreatment to as many as 20 years post-treatment (Koppelmans et al., 2012; Wefel, Vardy, Ahles, & Schagen, 2011). Potential mechanisms underlying cognitive changes include attentional or mental fatigue, psychological and symptom distress, inflammation, central neurotoxicity from chemotherapy, and changes in hormones (Merriman, Von Ah, Miaskowski, & Aouizerat, 2013). Individuals with CRC may be particularly vulnerable to cognitive changes secondary to increased proinflammatory activity associated with host-tumor interactions and cancer treatments, as well