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Chronic Inflammation, Cardiorespiratory Fitness, and Dietary Inflammatory Index in Cancer Survivors

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Chronic inflammation has been linked to the development and progression of cancer. Age, body composition, cardiorespiratory fitness, and dietary factors are associated with a global marker of inflammation, c-reactive protein (CRP), in healthy populations. However, few studies have explored the relationship between these variables with physically active cancer survivors. **PURPOSE:** To examine differences in fitness, and dietary characteristics of active cancer survivors when grouped according to serum CRP (Low vs. Moderate to High). **METHODS:** Cancer survivors (N = 14, mean age = 66 ± 15 years) were evaluated for body mass index (BMI), body composition, and cardiorespiratory fitness (VO₂peak). Diet logs (3 day) were analyzed and the dietary inflammatory index (DII) for each subject was obtained. Serum CRP was evaluated with an enzyme linked immunosorbent assay (ELISA). Subjects were assigned to one of two groups based on their serum CRP concentrations: Low CRP (≤ 1 mg/L) (LO) (N = 7) or Moderate to High (CRP > 1 mg/L) (MH) (N = 7). A t-test was used to compare LO and MH groups. Data are presented as mean \pm SD. **RESULTS:** MH had significantly higher BMI (kg/m²) (MH 30 ± 5.2 vs. LO 24 ± 8.8 , $p = 0.02$), higher body fat percentage (40.3 ± 7.77 vs. 32.4 ± 5.34 , $p = 0.05$), and lower VO₂peak values (mL/kg/min) (19.4 ± 5.54 vs. 31.8 ± 2.70 , $p = 0.0002$). There were no significant differences between LO and MH with respect to age, caloric intake, or DII. **CONCLUSION:** Cancer survivors with moderate to high serum concentrations of CRP had higher BMI, more body fat and lower cardiorespiratory fitness. These data suggest that interventions aimed at reducing body fat and improving cardiorespiratory fitness may be useful in controlling chronic inflammation as defined by serum CRP concentrations in cancer survivors.