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Physical inactivity, energy intake, obesity and the risk of rectal cancer in Canada.

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We conducted a population-based case-control study of 1,447 incident rectal cancer cases and 3,106 population controls aged 20-76 years to assess the effect of recreational physical activity, energy intake and obesity on rectal cancer risk in 7 of 10 Canadian provinces in 1994-97. After adjustment for the effect of various potential confounding factors, total recreational physical activity in the highest quartile was associated with an odds ratio (OR) for rectal cancer risk of 0.88 (95% confidence interval [CI] = 0.64-1.20) in women and 1.15 (95% CI = 0.88-1.49) in men. Women and men in the highest quartile of caloric intake ($\geq 56,741$ and $\geq 63,143$ kJ/week) had ORs of 1.50 (95% CI = 1.00-2.25) and 1.61 (95% CI = 1.13-2.28), respectively. Total dietary fat intake was not associated with a risk of rectal cancer after adjustment for caloric intake. Obesity (BMI ≥ 30 kg/m²) was associated with an OR of 1.44 (95% CI = 1.06-1.95) for women and 1.78 (95% CI = 1.36-2.34) for men. Men and women with lifetime maximum body mass index (BMI) ≥ 30 kg/m² had respective ORs of 1.70 (95% CI = 1.30-2.23) and 1.26 (95% CI = 0.96-1.66). The greatest increase in rectal cancer risk was observed in men and women with simultaneous high energy intake, high BMI and low physical activity. Our study provides evidence that physical inactivity, high energy intake and obesity are associated with the risk of rectal cancer, and there is a probable synergic effect among the 3 risk factors. Copyright 2003 Wiley-Liss, Inc.

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