

Supplementary Material

Supplementary Table 1. Risk of depression and anxiety in individuals diagnosed with young-onset colorectal cancer (yCRC; <50 years) compared to those with average age-onset colorectal cancer (aCRC; ≥50 years) (1985-2017)

	Depression HR (95% CI)	Anxiety HR (95% CI)
1: Unadjusted model		
yCRC (vs. aCRC)	1.15 (1.05, 1.25)	1.30 (1.12, 1.50)
2: Multivariable model		
yCRC (vs. aCRC)	1.41 (1.25, 1.60)	1.05 (0.86, 1.28)
Age	1.01 (1.00, 1.01)	0.99 (0.98, 1.00)
Sex (female vs. male)	1.23 (1.16, 1.30)	1.63 (1.48, 1.80)
Neighbourhood income quintile	0.98 (0.96, 1.00)	0.97 (0.94, 1.00)
Charlson-Romano comorbidity index	1.01 (0.99, 1.03)	0.97 (0.94, 1.01)
Residence (rural vs. urban)	0.85 (0.79, 0.93)	0.92 (0.79, 1.06)
Number of outpatient visits	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)
Number of inpatient visits	0.96 (0.93, 0.99)	0.97 (0.92, 1.02)

Supplementary Table 2. Risk of depression and anxiety in individuals diagnosed with young-onset colorectal cancer (yCRC; <50 years) compared to those with average age-onset colorectal cancer (aCRC; ≥50 years) adjusting for stage of CRC (2010-2016)

	Depression HR (95% CI)	Anxiety HR (95% CI)
1: Unadjusted model		
yCRC (vs. aCRC)	1.15 (1.05, 1.25)	1.30 (1.12, 1.50)
2: Multivariable model		
yCRC (vs. aCRC)	1.56 (1.13, 2.14)	1.17 (0.79, 1.75)
CRC stage 2 (vs. stage 1)	1.56 (1.23, 1.97)	1.15 (0.85, 1.55)
CRC stage 3 (vs. stage 1)	1.80 (1.44, 2.24)	1.45 (1.10, 1.92)
CRC stage 4 (vs. stage 1)	2.30 (1.75, 3.02)	1.64 (1.14, 2.36)
Age	0.99 (0.98, 1.00)	0.98 (0.96, 0.99)
Sex (female vs. male)	1.29 (1.11, 1.51)	1.96 (1.59, 2.42)
Neighbourhood income quintile	0.97 (0.92, 1.02)	1.00 (0.93, 1.08)
Charlson-Romano comorbidity index	0.99 (0.94, 1.05)	1.00 (0.93, 1.07)
Residence (rural vs. urban)	0.87 (0.69, 1.11)	0.92 (0.67, 1.26)
Number of outpatient visits	1.02 (1.01, 1.02)	1.02 (1.01, 1.02)
Number of inpatient visits	0.95 (0.86, 1.05)	1.00 (0.89, 1.11)

Supplementary Table 3. Unadjusted and adjusted hazard ratios of depression and anxiety in individuals diagnosed with colorectal cancer (CRC; ≥ 18 years), young-onset colorectal cancer (yCRC; <50 years), average age-onset colorectal cancer (aCRC; ≥ 50 years) as compared to their respective controls (1985-2017)

	CRC HR (95% CI)	yCRC HR (95% CI)	aCRC HR (95% CI)
1: Depression			
Unadjusted model			
CRC (vs. control)	1.12 (1.09, 1.15)	1.02 (0.94, 1.12)	1.13 (1.10, 1.17)
Adjusted model			
CRC (vs. control)	1.03 (1.00, 1.06)	1.00 (0.92, 1.10)	1.03 (1.00, 1.07)
Age	1.00 (1.00, 1.01)	0.99 (0.98, 0.99)	1.02 (1.02, 1.02)
Sex (female vs. male)	1.43 (1.41, 1.45)	1.42 (1.36, 1.48)	1.38 (1.36, 1.40)
Neighbourhood income quintile	0.98 (0.98, 0.99)	0.95 (0.94, 0.97)	0.99 (0.98, 0.99)
Charlson-Romano comorbidity index	1.01 (1.00, 1.02)	0.99 (0.95, 1.03)	1.02 (1.00, 1.03)
Residence (rural vs. urban)	0.97 (0.95, 0.99)	1.03 (0.96, 1.10)	0.98 (0.96, 1.00)
Number of outpatient visits	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)
Number of inpatient visits	1.02 (1.01, 1.03)	1.01 (0.98, 1.04)	1.02 (1.01, 1.03)
2: Anxiety			
Unadjusted model			
CRC (vs. control)	1.19 (1.13, 1.25)	1.08 (0.94, 1.25)	1.20 (1.14, 1.27)
Adjusted model			
CRC (vs. control)	1.11 (1.06, 1.17)	1.10 (0.95, 1.27)	1.11 (1.05, 1.18)
Age	0.99 (0.99, 0.99)	0.99 (0.98, 0.99)	1.00 (1.00, 1.00)
Sex (female vs. male)	1.72 (1.68, 1.77)	1.54 (1.43, 1.65)	1.73 (1.68, 1.78)
Neighbourhood income quintile	1.01 (1.00, 1.02)	0.99 (0.96, 1.02)	1.01 (1.00, 1.02)
Charlson-Romano comorbidity index	0.93 (0.91, 0.96)	0.91 (0.84, 0.98)	0.94 (0.91, 0.96)
Residence (rural vs. urban)	1.06 (1.02, 1.10)	1.02 (0.91, 1.13)	1.07 (1.03, 1.11)
Number of outpatient visits	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)	1.02 (1.02, 1.02)
Number of inpatient visits	1.02 (1.01, 1.04)	1.05 (1.01, 1.09)	1.02 (1.00, 1.04)