

**S9 Table.** Incidence and risk of early-onset colorectal cancer according to TG change status among participants aged 20-49 years by anatomic sites, if incidence age > 50 then censored (adjusted additionally with waist circumference)

Cancer site	TG change	No.	Event	PY	IR	Model 1	Model 2	Model 3	Model 4	Model 4*
Colorectal	Group 1	2,053,340	4,575	12,574,460	0.364	1 (reference)	1 (reference)	1 (reference)	1 (reference)	1 (reference)
	Group 2	380,412	806	2,296,872	0.351	0.965 (0.895-1.040)	1.031 (0.955-1.113)	1.027 (0.951-1.108)	1.007 (0.932-1.088)	1.004 (0.929-1.085)
	Group 3	331,637	731	1,955,253	0.374	1.029 (0.952-1.113)	1.036 (0.957-1.123)	1.030 (0.951-1.116)	1.013 (0.934-1.098)	1.011 (0.933-1.096)
	Group 4	575,246	1380	3,395,512	0.406	1.119 (1.053-1.188) <sup>a)</sup>	1.151 (1.078-1.228) <sup>a)</sup>	1.137 (1.065-1.214) <sup>a)</sup>	1.097 (1.025-1.174) <sup>a)</sup>	1.090 (1.019-1.166) <sup>a)</sup>
Colon	Group 1	2,053,340	3465	12,574,460	0.276	1 (reference)	1 (reference)	1 (reference)	1 (reference)	1 (reference)
	Group 2	380,412	558	2,296,872	0.243	0.882 (0.807-0.964)	1.021 (0.932-1.118)	1.017 (0.928-1.115)	0.996 (0.908-1.093)	0.994 (0.907-1.090)
	Group 3	331,637	466	1,955,253	0.238	0.866 (0.786-0.954)	0.943 (0.855-1.041)	0.938 (0.850-1.035)	0.923 (0.835-1.019)	0.922 (0.835-1.018)
	Group 4	575,246	903	3,395,512	0.266	0.967 (0.898-1.040)	1.120 (1.034-1.212) <sup>a)</sup>	1.108 (1.023-1.199) <sup>a)</sup>	1.068 (0.983-1.160)	1.063 (0.979-1.154)
Rectum	Group 1	2,053,340	1110	12,574,460	0.088	1 (reference)	1 (reference)	1 (reference)	1 (reference)	1 (reference)
	Group 2	380,412	248	2,296,872	0.108	1.224 (1.066-1.404) <sup>a)</sup>	1.063 (0.924-1.223)	1.056 (0.917-1.215)	1.040 (0.903-1.199)	1.035 (0.898-1.192)
	Group 3	331,637	265	1,955,253	0.136	1.536 (1.344-1.757) <sup>a)</sup>	1.266 (1.104-1.452) <sup>a)</sup>	1.256 (1.095-1.441) <sup>a)</sup>	1.236 (1.076-1.419) <sup>a)</sup>	1.232 (1.073-1.413) <sup>a)</sup>
	Group 4	575,246	477	3,395,512	0.14	1.593 (1.431-1.774) <sup>a)</sup>	1.232 (1.100-1.380) <sup>a)</sup>	1.214 (1.083-1.362) <sup>a)</sup>	1.175 (1.042-1.325) <sup>a)</sup>	1.162 (1.032-1.309) <sup>a)</sup>
Proximal colon	Group 1	2,053,340	312	12,574,460	0.025	1 (reference)	1 (reference)	1 (reference)	1 (reference)	1 (reference)
	Group 2	380,412	57	2,296,872	0.025	1.001 (0.755-1.327)	0.907 (0.680-1.209)	0.895 (0.671-1.193)	0.858 (0.642-1.147)	0.854 (0.640-1.141)
	Group 3	331,637	66	1,955,253	0.034	1.363 (1.045-1.778) <sup>a)</sup>	1.147 (0.875-1.505)	1.134 (0.864-1.488)	1.100 (0.837-1.447)	1.099 (0.836-1.443)
	Group 4	575,246	119	3,395,512	0.035	1.416 (1.146-1.749) <sup>a)</sup>	1.132 (0.905-1.417)	1.103 (0.880-1.383)	1.030 (0.814-1.305)	1.020 (0.807-1.289)
Distal Colon	Group 1	2,053,340	722	12,574,460	0.057	1 (reference)	1 (reference)	1 (reference)	1 (reference)	1 (reference)
	Group 2	380,412	147	2,296,872	0.064	1.115 (0.934-1.332)	1.113 (0.928-1.334)	1.104 (0.920-1.323)	1.067 (0.888-1.282)	1.068 (0.889-1.283)
	Group 3	331,637	98	1,955,253	0.05	0.874 (0.708-1.079)	0.810 (0.654-1.004)	0.804 (0.648-0.996)	0.783 (0.631-0.972)	0.785 (0.633-0.974)
	Group 4	575,246	251	3,395,512	0.074	1.290 (1.117-1.489) <sup>a)</sup>	1.182 (1.013-1.379) <sup>a)</sup>	1.164 (0.996-1.360)	1.100 (0.935-1.294)	1.099 (0.935-1.291)

Unspecified	Group 1	2,053,340	2,417	12,574,460	0.192	1 (reference)	1 (reference)	1 (reference)	1 (reference)	1 (reference)
	Group 2	380,412	351	2,296,872	0.153	0.795 (0.711-0.890)	1.006 (0.897-1.127)	1.006 (0.897-1.128)	0.992 (0.883-1.113)	0.990 (0.883-1.112)
	Group 3	331,637	299	1,955,253	0.153	0.797 (0.707-0.899)	0.953 (0.843-1.078)	0.950 (0.840-1.074)	0.938 (0.829-1.062)	0.938 (0.829-1.061)
	Group 4	575,246	529	3,395,512	0.156	0.812 (0.739-0.892)	1.087 (0.982-1.203)	1.080 (0.975-1.197)	1.053 (0.946-1.171)	1.050 (0.945-1.167)

Model 1 was unadjusted. Model 2 was adjusted for age. Model 3 was adjusted for age, smoking status, alcohol consumption, regular exercise, and low-income status. Model 4 was adjusted for age, smoking status, alcohol consumption, regular exercise, low-income status, obesity, diabetes mellitus, and hypertension. Model 4\* was adjusted for age, smoking status, alcohol consumption, regular exercise, low-income status, waist circumference, diabetes mellitus, and hypertension. Analyses were done using the variables measured in 2011. IR, incidence rate, per 1,000 person-years; PY, person-years; TG, triglyceride. <sup>a)</sup>Indicates statistical significance.