Fasting glucose

Fastir	ig giu	cose																									
	Study 1 Yamada et al, 1998 2 Schoon et al, 1999	Country Japan USA	Design case-control cohort	Gender FM	Age(years) 34-73 73.9(mean)	cancer types and No. of cases/controls/cohort CRC:179,control258 CRC:102,cohort:5849	unit of fasting glacos ing cli	Adjustment for covaria age, sex, BML alcohol co	tos necesption																		
	2 Schoen et al. 1999 3 Jee et al. 2005 4 Chang et al. 2006	USA Koma Koma Fishad Asstian	cohert cohert case-control seeted case-control cohert	FM FM FM M FM	73.9(mean) 30-95 CRC58.4,control58.7	CRC: 102, cohort: 5849 CRC: 3352, cohort: 5849770tnen, 468615 women CRC: 105, control: 105 CRC: 119, control: 109, cohort: 20133 CRC: 677, cohort: 53585 men, 77228 women	ngd ngd ngd	age, sex and physical a adjusted for age, age so Adjusted for age, sex .	ctivity puared, amount of smokin BMLTG,chokeneral	g, and alcohol use																	
	2 Schoon et al. 1999 3 Iou et al. 2005 4 Chung et al. 2006 5 Limburg et al. 2006 6 Rapp et al. 2006 7 Statlin et al. 2007 8 Gunter et al. 2007 9 Stocks et al. 2008 9 Stocks et al. 2009	Fished Asseries Seveden USA	cohort cohort	M FM FM	50-09 46(mean)	t.so.:139,comrol:399,cohort29133 CRC:677,cohort63585mm,77228women CC:147,RC87,cohort64597	unit of farting glucos ngcd ngcd ngcd ngcd ngcd ngcd nmolt nmolt ngcd	cigaretu pack-years, b ago, emoking status, oc ago, calendar year, s	nest mption civity paned, amount of smokin paned, amount of smokin BMLTG_chalanated ody mass index protein in cupational group, and BM proking	ease, fat istake, fiber i fi	neake, alcoh	ol consump	etina, calloria	c intaku, hisa	ary of diabetes in	entitus and occu	opurional ph	yvical activ	ey.								
	S Guster et al,2008 9 Stocks et al,2008 0 Stocks et al,2009	Sweden	cohort need case-control need case-control ne-cohort	FM FM	46(mean) 50-70 50-70 44.5(mean) 51.5(mean) 44(mean) 50-70 45-75	CC:147 RCB7 cohorts4597 CRC-UR, cosmol \$16, cohort 94516 CRC-UR, cosmol \$95, cohort 104451 CC:206, cosmol \$95, cohort 104451 CC:204, RC:1345, cohort 2741 26sees, 275819 somen	Bygg Homm Homm	age case-control status, sex adjusted for baseline a	a gg, smoking etams and g, age, smoking etams and gp, birth, and smoking eta king g, birth year, smoking eta rases index, alcohol inst necesithnicity, hierary of c C and TG levels, age, gu a triffycordis, ur's caid ing, BMI, smoking etams indiso, amokina, alcoho	facting time before ble tue, and RRs per I run	od draw sold were ad	Mitionally a	djusted for	facing time													
1	0 Stocks et al,2009 1 Yamamoto et al,2010 2 Stocks et al,2011 3 Kabar et al,2012 4 Otherding et al,2012 5 Wedningsh et al,2012 6 Hakozaki et al,2013 7 Parekh et al,2013	Norway, Austria a Japan Norway UK	case-control cohort neural case-control neural case-control	FM FM	53.8(mean) 44(mean) 50.70	CBC-22_councide CBC-666_cubar-218500 CBC-666_cubar-218500 CBC-166_cuncide12_cubar-4902 CBC-196_cuncide12_cubar-215000 CBC-196_cubar-216009 CBC-29_councide0 CBC-29_councide0	Bigar Homan	BMI, smoking and drie adjusted for baseline a Adjusted for our body	king p., birth year, smoking sta many index, should irrel	rus, and quintles of B	MI mile binon	of colonic	nlower e	shairin and	naticipation in t	to OS or more	new sens of	each clinic	al trial								
1	4 Otherding et al, 2012 5 Wedningsh et al, 2012	UK USA Sweden Japan USA	nested case-control cohort case-control cohort	FIM FIM FIM FIM	45-75 43.84(mean) 48(mean) 66.8(mean)	CRC:1954_coams2587_cobort:215000 CC:2472_RC:1510_cobort:540509	Boan Dyn Dyn Dyn Dyn Dyn	Adjusted for ago, sex, adjusted for glacose, T	C and TG levels, age, go	olorical polyp, family ider, SES, and faming	history of c	colorectal ca	ncer, BMI	physical acti	nity, processed in	eut intake, pad	k-years of s	moking, al	cohol consu	omption, an	d mutual ad	justment fo	r IGF-I and	KGFBP-3,			
i	Pankh et al,2013 Shin et al,2014	USA Korea	cohort	FM FM	66.5(mean) 42(mean)	CRC:176,cobort:4615 CRC:320.cobort:175677	ngti meti	age, sex, alcohol, smoli age, sex, body mass	ing, BMI, smoking status index, amokino, alcoho	drinking, and regula	e esercise.																
1 molii 1000mmol	1mmolL+15mg/dl Yamada/1995 129CRC,255controls	Relation of sen	um total cholesterol.	serum triglycerides	and fasting plasma	glucose to colorectal carcinoma in situ																					
Japan case-control	129CRC 258controls Numbers of cases an to the levels of serun		fasting glucose(mg/d	i) and 95% confidenc	e interval/CII fcolore	ctalcarcinomainaituaccordino																					
fasting glucose(mg/d)	cu95	52/103 52/103 43/95 14/36 20/22		adjusted OR		age,sex,BMI, smoking, alcohol consumption																					
	96-105 106-115 116+ trend	1438 2022	0.7(0.4-1.5) 1.8(0.9-3.6) pu0.12	1(0.5-1.7) 0.7(0.3-1.5) 2(0.9-4.4) ps0.11																							
US cohort	Schoen/1999 102CRC,5849cohort 77morths		d glucose and insulin tasting glucose(mg/d		ident colorectal cano	er																				_	
fasting glucose range men	Relative risk of incide Q1	O2	CG Cardiovasc	alar Health Study Q4	linear model	adjusted for age, sex, and physical activity																					
men women case/subjects RR	51-95 53-93 22/1591 1.0 (referent)	97-103 94-99 18/1352	03 104-115 100-110 29/1433 1.4(0.8-2.4)	115-445 111-657 32/1393																							
RR																											
3 Korean	Jee/2005 1298385cohort(829770	Fasting serum men, 468615 women	glucose level and car n) age 30-95	ncer risk in Korean	men and women	Glacose Level in Korean Men, 1993-2002 p																					
Korean 10year prospective coh	Age-Adjusted Incider <90	ce Rate per 100 0 90-109	tasting glucose(mg/d 100 Men for All Cancer 110-125	and Various Cance 125-139	ers by Fasting Serum	Glucose Level in Korean Men, 1993-2002 p	disbetes 41860		adjusted for age, age	aquared, amount of	smoking, a	and alcohol	Luse														
Men colon/tedsum incidence ratel fil 100000 HR	429370 52.4 1	304362 57.8	58020 63.1 () 1.14 (1.02-1.27)	11459	26559																						
women	270157	1.08 (1.01-1.15	22578	1.03 (0.82-1.28) 5657	1.13 (0.98-1.30)	0.35	1.11(1.00-1.24) 21056																				
colon/tectum incidence rate(1) 100000 HR	36.6		36.5) 1.11 (0.92-1.34)			0.84	51.8 1.17(0.98-1.40)																				
		_																									
Korean case-control	Chung/2006 105CRC,105adenoms, Multivariate-adjusted cases/controls 27/46 44/44	105control OR with 95% CI fe	age,58.4control,58.7 or advanced adenomi	cancer and cancer in rela	fasting glucose(mg/c stion to BMI, serum g	I) lucose and lipids	III NUTEE																				
Korean case-control alucose(maldf) <89 90-109 >110	cases/controls 27/48 44/44 34/13	2.0(0.9-4.4) 3.0(0.9-9.8)	1		Adjusted for age, sec	s BMI.TG, cholesterol																					
5 Finland nested case-control men	Limburg/2006 134CRC,399controls,2 Associations Between	0133men n Fasting Insulin,	e, insulin resistance, : Glucose, HOMA-IR an	and incident colore age 50-69 id Incident Colorer	ctal cancer in male a	mokers and by Anatomic Subalte																					
	Q1 <92	fastino Glucosel G2 93-08	moldii 03 99-107	Q4 >107	P			Insulin analyses are physical activity	adjusted for cigarette p	ack-years, body mas	a index, pro	otein intak	e, fat intak	e, fiber intal	ke, alcohol con	sumption, calo	oric intake,	history of	dabetes r	melitus an	d occupati	onal					
all CRC case/control HR(age)	23/99 1.00 (ret.) 1.00 (ret.)		44/101 0) 2.08 (1.14–3.79) 1) 1.95 (0.97–3.91)		0.04																						
case/control HR(age) HR(multi) Proximal CRC case/control																											
HR(age) HR(multi) Distal CRC	8/99 1.00 (ref.) 1.00 (ref.)		15/101 () 2.15 (0.85-5.41) () 1.92 (0.66-5.58)																								
case/control HR(age) HR(multi)	15/29 1.00 (ret.) 1.00 (ret.)	18/100 1.22 (0.58-2.57 1.03 (0.42-2.51	29/101 7) 2.04 (1.02–4.09) 1) 2.09 (0.89–4.91)	25/99 1.81 (0.90-3.65) 1.85 (0.77-4.4*\	0.04																						
6																										-	
6 Austrian供给剂 cohort	Rapp/2006 63585men,77228wome MALE	rasting blood g	8.4years follow up	testing Glucose(mr	mol(f)							age and a	djusted for	smoking st	atus (never, for	mer, current).	occupatio	nal group	(white coll	lar, blue co	ollar, self-e	mployed),	and BMI				
fasting Glucose(mmol/l) Total participants CRC	2.2-4.1 n 15505 59	HR	4.2-5.2 n 30510 148	HR 1	5.3-6 n 11636 66	HR	5.1-6.9 3467 33	HR	>u7 n 2467 27	HR	р																
		0.92(0.68-1.25				1.02(0.76-1.36)	_	1.37(0.94-2.01)	_	1.19(0.79-1.81)	0.12																
Total participants CRC	Female 20582 75	1.07(0.82-1.41	39210) 159	1	11784 57	0.97(0.71-1.32)	3361 34	1.57(1.08-2.28)	2291 16	0.88(0.52-1.48)	0.87																
7 Colon	Stattin et al, 2007		dy of hyperglycemia and	fasting Glucose(mr	nol()																						
Colon Fasting (a: 147) RR (95% CE) 1 Rectum Fasting (a: 87) RR (95% CE)	nd(Q1)		Q3 0.90 (0.56-1.46)																								
RR (95% CI)	Risk was adjusted for ago	1 1.18 (0.59-2.32) calendar year, and s	0.99 (0.53-1.87) moking, by including the	1.13 (0.62-2.12) e covariates into the st	0.782 atistical model.																						
8	Gunter/2006	Insulin, insulin-	like growth factor-I, e	ndogenous estradi	iol, and risk of colore	ctal cancer in postmenopausal women																					
US nested case-control	93575 women, 438CR0 Age-adjusted and mu plucose, HOMA-IR inc	,815controls Bivariate associati lex, extradiol, hor	age50-79 tions (HRs and 95% C mone therapy use, at	fasting Glucose(mg f) of baseline IGF4, ad obesity with inci-	o(d) free IGF-I, IGFBP-3, i dent colorectal cano	ctal cancer in postmenopsusal women	Adjusted for age of	de																			
Glucose casses/subcohort HR	<85 99/200	85-91.5 108/210 0.94 (0.55-1.34	mone therapy use, at 91.5-100 98/195 0.91 (0.63-1.30)	>=100 129/207 1.16 (0.83-1.63)	ident colorectal cano p 0.4																						
9	Stocks/2008																										
Sweden nested case-control	305CRC,595control Odds ratios for colore	sge50-70 ctal cancer by qu	f the metabolic syndr sartiles	fasting Glucose)mr	cancer risk; a prosp	ective study																					
Fasting glucose mmol/L cases/control OR OR adjusted for BMI	Q1 <5 63/102	5-5.3 42/86	the metabolic synde C3 53-5.6 38/118 () 0.53 (0.32-0.87) 0.53 (0.33-0.88)	>5.6 70/103	P																						
OR adjusted for BMI	1	0.82 (0.50-1.33)	() 0.53 (0.32-0.87) () 0.53 (0.33-0.88)	1.05 (0.65-1.68)	0.98																						
10	Stocks/2009	Blood glucose	and risk of incident a	nd fatal cancer in th	ne metabolic syndron	ne and cancer project (me-can): analysis of six p	rospective cohorts																				
cohorts from Norway, A	astria, and Sweden	274,125 men an	d 275,818 women	age44.8,follow.up1	0.4years Q4	2 cohort fasted-8h. one cohort fasted-8h emolii OS	p	All participants in the the health examinate RR per framol/L incr	VHMSPP and the MPI on, whereas 95% of par errent	and 90% of particip ticipants in the Norw	egian coho	VIP had fo	asted 5 h b sted,5 h.	efore												=	
colon men women	1,455		0.93 (0.52-1.64) 0.97 (0.44-2.05)			1.33 (0.79-2.28) 1.33 (0.65-2.59)		1.02 (0.88-1.18) 0.99 (0.84-1.16)		attained age as tim additionally adjuste					var, andadjust	ed for beautine	e age, BMI	and amo	king status	s, and RRs	per 1 mm	alf were					
colon men women redum men women	859 445	1	1.74 (0.81-3.69) 0.84 (0.28-2.52)	1.94 (0.90-4.22) 0.79 (0.28-2.25)	2.52 (1.21-5.10) 1.15 (0.44-3.29)	1.69 (0.81-3.53) 1.00 (0.37-2.79)	0.5	1.14 (0.94–1.37) 1.09 (0.85–1.40)																			
	Yamamoto/2010 22CRC,66controls	Visceral fat are	a and markers of insu	din resistance in re	lation to colorectal n	ecolasia																					
Jupan case-control fasting Glucose/mgidl) case/control OR adjusted OR1 solutated OR2	22CRC,65controls Associations of gluce Q1	se, insulin, and H	OMA-IR with the prev	fasting Glucose)mg alence of adenoma P	old) and cancer in the co	Norectum																					
fasting Glucose(mg/d) case/control OR	421 1	99-108 6/22 1.69 (0.35-7.96	>108 12/23 i) 3.12 (0.76–12.74)	0.09		Adjusted for smoking and alcohol drinking Additionally adjusted for BMI																					
adjusted OR1 adjusted OR2	1	2.17 (0.41-11.5)	0) 4.07 (0.86-19.37)	0.07																							
12						in the metabolic syndrome and cancer project sting Glucose(mmolf) is	(Me-Can)																				
Norway cohort	The Relative Risk of I		I Cancer in Men and V	Nomen by Quintile:	s of Metabolic Factor Women																						
Q1 Q2	glucose(mmolt.) 4.2 4.5	Cases 490 503 537 630 668	RR 1.00 (neferent) 1.00 (0.63-1.55) 1.19 (0.77-1.86) 1.11 (0.74-1.70) 1.15 (0.74-1.75)	glucose(mmoit.) 4.1 4.6 5 5.3 6.5	283 283 290 392 365 520	RR 1.00 (referent) 1.07 (15-51-92) 1.11 (15-51-192) 1.15 (15-62-203) 1.41 (1.83-2.35)		attained age as the t	ime scale, was stratified	by cohort and adjur	sted for bas	seline age	birth year	smoking s	tatus, and quint	les of BMI (ex	copt BMI)										
03 04 05	5.1 5.5 6.9	630 668	1.11 (0.74-1.70) 1.15 (0.74-1.75) 0.89	5.3 6.5	368 520	1.15 (0.85-2.03) 1.41 (0.83-2.35) 0.33																					
model 1 model 2	colon 1705 1.11 (0.94-1.31) 0.98 (0.82-1.17)	neclum 1074 1.16 (0.95-1.43 1.08 (0.87-1.34	5)	colon 1237 1.09 (0.91-1.32) 1.08 (0.89-1.32)	rectum 588 1.24 (0.95-1.62) 1.22 (0.92-1.62)		model 1	The RR from Cox re-	gression model, with att verted into uncorrected	ained age as the tim RRs, as described in	e scale, wa Table 4.	us stratified	d by cohort	and adjust	ed for baseline	age, birth yea	r, and amo	king statu	s. RRs are	a corrected	d for the re	gression d	lution				
							model 2	The RRs from Cox re analysis) Zacores de	cression models, with rived from original value	attained age as the t as were calibrated	me scale.	were strati	fied by col	nort and adi	usted for basel	ne ace, birth	vear, amok	ing status	and all in	dividualZa	cores (exc	ept in the	MerS				
UK nested case-control	Kabet(2012 4902 women,81CRC,1	A longitudinal s Dyears follow up	study of serum insulin 4821 control	and glucose level age,64.3CRC,62.5	ls in relation to colors control	ctal cancer risk among postmenopausal women prin the Women's Health Initiative																					
	Association of basels Colorectal cancer case/rep-rese	ne serum insulin,	glucose, and HOMA-I	R with risk of colors colon cancer	ectal and colon cance	or in the Women's Health Initiative																					
Glucose mg/dl <89.5 89.5-99.5 >x99.5	Colorectal cancer case/ron-case 18/1520 28/1641 35/1660	1.41(0.78-2.57 1.73(0.98-3.04	HR(mult) 1 1 132(0.72-2.4) 1 1.74(0.97-3.15) 0.06 1.031(1.009-1.054)	15 28 22	1.84(0.92-3.68)	1,72(0.05-3.40)		Adjusted for age, box	dy mass index, alcohol	intaka (drinka per w	sek), physic	cal activity	(MET-hou	ins per week	k), family history	of colorectal	cancer, et	hnicity (wi	vite, black,	other), an	nd participa	tion in the	OS or trea	tment avm	of each cl	nical trial.	
P Continous		0.06	0.06 1.031(1.009-1.054)		2.18(1.11-4.29) 0.03	2.25(1.12-4.51) 0.02 1.034(1.009-1.060)																					
14	Ollberding/2012	-			ulin-like growth facto	ers, insulin, and glucose and the risk of colorects	cancer: the Multie	theic Cohort study																			
US nested case-control	215000cohort, 1954cm 215000cohort, 1954cm ORs and 95% Cla for to casses/controls 258/1,701 249/1,571	ertiles of circulat	ing IGF system bloms	warng ulucoseing erkers, insulin, gluc Q3	ose, and colorectal c	ancer	model *	Adminstrat to a	and rape late																	=	
fasting glucose mg/d model 1 model 3	258/1,701 249/1,571	77.18	89.87 0.90 (0.65-1.25) 0.87 (0.62-1.23)	111.89 1.03 (0.75–1.43) 0.87 (0.62–1.22)	0.738 0.472		model 1 model 3	Adjusted for age, ser Adjusted for age, ser), moderate or vigoro ohysical sate	and receive the city to receive the city, history sus cessed meat intake, pa	of colorectal polyp, I	smily histor	ry of colon	ectal cance	er, BMI (kg)	nt for Wat 1	Gran.										=	
								where appropriate							- 1200												
15 Swedish cohort	wutaningsih/2012 540309cohort, 2472Ci Hazard ratios and 951	Serum Lipids a C, 1510RC confidence inter	ing the Risk of Gastro rvals for GI cancer for	testinal Malignan fasting Glucose(mr quartiles of lipid or	cres in the Swedish A mol/L) 1534/ssting, 147 components, adjusted	NAIORIS Study had feating, 790 missing for age, gender, DES, feating																					
glucose mmolfL <4.4	status, glucose (conti n(colon) 310	nuous), total chol Colon 1.00 (Ref)	esterol (continuous), n(Rectsl) 242	and triglycerides (c rectsi 1.00 (Ref)	continuous).		adjusted for glucos	se, TC and TG levels	(if not																		
glucose mmol/L <4.4 4.4-4.8 4.8-5.2 >15.2 p	572 622 968	1.14 (1.00-1.32 1.12 (0.98-1.29 1.21 (1.05-1.40	() 338 () 346 () 584	0.85 (0.72-1.00) 0.77 (0.65-0.91) 0.88 (0.74-1.05)			strongly correlated age, gender, SES,	with the covariate of and fasting status	rrarest), as well as																		
												Date !	ney		_												
16 Japan case-control	Hakozaki/2013 29CRC,440control	age48CRC,45cc	ontrol,41-52	follow up 10years	rs with the risk of col fasting Glucose(mg/	orectal adenoma and cancer: A retrospective co d)	hort study with lon	g-term follow-up to	al colonoscopy			=_	9	×	Tercal 4 20												
Japan case-control glucose mg/dl <109 110-125 >126	control 334 70 36	CRC 16 9		recalculated 2.08(1.18-3.65)	1							Υ -	334		370	3										\equiv	
>126	36	4		2.05(81-5.21)								F ***	55 350	date (0 390											\equiv	
17 USA cohort	Parekh/2013 4615cshort,136CRC, a	Metabolic dyan pe66.8,follow up-3	egulation of the insuli 7years	n-glucose axis and fasting Glucose(mo	I risk of obesity-relate	ed cancers in the Framingham heart study-offspr	ring cohort (1971-20	108)																			
cohort feeting glucose	Exposure to markers cases/cohort 136/4192	of insulin-glucos HR(sgs)	e metabolism and risi HR(adjusted)	k of commonly diag	gnosed obesityrelate	ed cancers in the Framingham heart study-offspr d cancer sites																					
fasting glucose <110mg/dl >110mg/dl			1 2.2(1.48-3.27)		Adjusted for age, sec on self-reported data	c, alcohol, amoking, and BMI (<25, 25-30, and+30). 5	Smoking status (neve	r, past, and current ar	moker) was based																		
18	Shin/2014	Association betw	veen fasting serum gluc	ose levels and incide	ence of colorectal cano	er in Korean men: the Korean Cancer Prevention St.	idy-II																				
Korea	prospective cohort	Table 3 – Incider person-year	77 follow-up 4.7y nos rate and hazard rat CRC	o for developing cold	fasting blood glucoso prectal cancer in individ HR1	er in Korean men: the Korean Cancer Prevention St. e mgldl balls with high or low feating serum glucose levels 1972	HR3																				
<100 >100	total low high	677,675.6 138,467.0	50 22		5 1.40(1.10-1.78)		1 1.45(1.10-1.90)				l adirect				-												
	men low high	375,362.6	50 140		3 1.54(1.17-2.02)		1.51(1.11-2.05)				2 adjusted for a 3 adjusted for a	age, and, and le		-	oling and regular to												
	high women low high	302 313.0	20 7																								
	high	Table 4 - Incides	nce rate and hazard rat	o for developing pror	1 0.99(0.57-1.70)	1,25(0.68-2.28) s, and rectal cancers in individuals with	1.23(0.67-2.26)																				
+100	total low	high or low fastir proximal colon	ng serum glucose levels distal cancer	rectal cancer																						\equiv	
+100 +100	total low high men	1.42(0.77-2.62)	1.60(0.99-2.61)	1.49(1.00-2.24)	4					Cox proportional ha	szards regn	ression and	alysis adju	ated for age	, sex, body ma	ss index, smo	king, alcoh	ol drinkin	g, and reg	ular exerci	ise.						
	high	1.69(0.81-3.53)	1.53(0.88-2.64)	1.59(1.01-2.48)																							
	women low high	1.11(1.06-1.15)	1.94(0.65-5.66)	1.12(0.41-3.06)	1																						

Fasting insulin

Study 1 Schoo 2 Palm 3 Limb								
1 Scho 2 Palm 3 Limb 4 Control	ıdy (Country	Design	Gender	Age(years)	cancer types and No. of cases/controls/cohort	unit of fasting insulin	djestment for covariates
3 Limb	hoen et al,1999 Imqvist et al,2003	USA	Design cohort case-control	F)M F)M	Age(years) 73.9(mean) 30-70	cancer types and No. of cases/controls/cohort CRC:102,cohort:5849 CC:110,RC:58,control/336	unit of fasting insulin IU/ml pmol1	generation of containing and containing generating gene
4 Count	inquist et al, 2003 inburg et al, 2006 inter et al, 2008	Finland	nested case-control	M M	50-69			g, net, 1801, smrking, IA-thi Eveds genetic pack-years, body mass index, protein intuke, fat intuke, fater intuke, alcohol consumption, caloric intuke, history of diabetes mellitus and occupational physical activity.
			nested case-control case-control	F FM	50-79 53.8(mean)	CRC:438,control:816,cohort:93676 CRC:22,control:66	uIU/ml uIU/dl	N MI condition and deinition
6 Chen	mamoto et al.2010 en et al.2012 et nkner et al.2012 li bat et al.2012 li berding et al.2012 l rekh et al.2013	China	case-control cohort	M EM	early concert? I adv	CRC:165,control:102 CRC:44,cohort:1695	mIU/I mIU/I	
8 Kaba	bat et al,2012 1	UK	nested case-control	F	51.8(mean) 50-79 45-75	CRC:94,control:1095 CRC:81,control:4821,cohort:4902 CRC:1954,control:2587,cohort:215000	mIU/I mIU/I	dipisted for age, sex, and estimately dipisted for age, body mass index, alcohol intake, physical activity, family history of colorectal cancer, ethnicity, and participation in the OS or treatment arm of each clinical trial.
9 Olibe 10 Pard	berding et al.2012 rekh et al.2013	USA	nested case-control cohort	F)M F)M	45-75 66.8(mean)	CRC:1954,control:2587,cohort:215000 CRC:136,cohort:4615	mIU/I pmol1	listed for any, ext, and efficiency [disternation of the contraction o
CRC-insulii	in					insulin pmpl/L = mIU/Lx6.965		
					TOID/ITE TITEO/C	mauni priore - morexesos	1000ulU=1lU=45.4ug insulin	
1 se	Schoen/1999 I 2CRC,5849cohort	Increased blood gli	cose and insulin, body fasting insulin(IU/ml)	size, and incident color	rectal cancer			
short								
	lative risk of inci	Q2	cer in the Cardiovascul Q3	Q4	linear model	adjusted for age, sex, and physical activity		
sing insulin U1 inge en 4-10 omen 3-9 ise/subjects 29/18 R 1.0 (i	10	11-13	14-18	19-400				
omen 3–9 ise/subjects 29/16	9	10–13 17/1538	14-18 29/1232	19-400 26/1297				
₹ 1.0 ((referent)	0.6(0.3-1.1)	1.4(0.8-2.3)	1.2(0.7–2.1)	NA			
2 Palm	Imqvist/2003	Plasma insulin, IGF	-binding proteins-1 and	-2 and risk of colorecta	d cancer: a prospe	ctive study in northern Sweden		
	8CRC(110CC,58R	C),336controls	M COLON OD DECTUM	pmol/l	AN CEDUM NEU	N, IGFBP-1 AND IGFBP-2		
ase-controls OR C nsulin Q1 RC R	OF CANCER OF	Q2	Q3	Q4	P P	N, IGPBF-1 AND IGPBF-2		
R R	1	1(0.56-1.74)	1.21(0.69-2.12)	1.22(0.64-2.31)	0.41		adjusted for smoking	
ises/controls ean exposure	41/84 3.22	39/86 5.31	44/81 7.97	42/84 27.98			Analyses on both fasting and	nfasting subjects
olon	5.22							
R ises/controls	22/54	1.43(0.70-2.95) 31/56	1.52(0.75-3.09) 31/56	1.2(0.52-2.77) 26/54 27.26	0.56			
uses/controls ean exposure ectum	3.19	5.32	31/56 7.98	27.26				
R	1	0.48(0.17-1.31)	0.93(0.32-2.74)	1.37(0.46-4.08)	0.48			
ises/controls ean exposure	19/30 3.27	8/30 5.3	13/25 7.95	16/30 29.22				
3 Limit	mburo/2006	Insulin alucas: '-	rulin registrance, and in-	ident colorectal c	in male emol			
	mburg/2006 I 4CRC,399controls	,29133men	ulin resistance, and inc Glucose, HOMA-IR and	age50-69	maie smokers			
ested case-control Asso en	sociations Between	een Fasting Insulin fasting insulin(uIU/	Glucose, HOMA-IR and nl)		ncer, Overall and b			
Q1 <2.8		02 2.9-4.1	Q3 4.2-6.1	Q4 >6.1	P	Insulin analyses are adjusted for cigarette pac physical activity.	k-years, body mass index, pro	n Intake, fat Intake, fiber Intake, alcohol consumption, caloric Intake, history of diabetes mellitus and occupational
I CRC				- AL		pery acult dictivity.		
se/control 31/10 R(age) 1.00	10 (ref.)	37/97 1.40 (0.78–2.51)	25/103 0.94 (0.51–1.74)	41/95 1.84 (1.03–3.30)	0.12	2		
R(multi) 1.00 roximal CRC	10 (ref.)	1.43 (0.74–2.78)	0.77 (0.35-1.69)	1.74 (0.74-4.07)	0.4			
ise/control 13/10	104	13/97	9/103	12/95				
R(multi) 1.00	10 (ref.) 10 (ref.)	1.30 (0.56–3.04) 1.36 (0.53–3.52)	0.91 (0.36-2.33) 0.82 (0.26-2.65)	1.53 (0.62-3.76) 1.62 (0.45-5.86)	0.54	1		
istal CRC ise/control 18/1		24/97	16/103	29/95				
R(age) 1.00 R(multi) 1.00	0 (ref.)	1.46 (0.72–2.97)	0.96 (0.46–1.99) 0.73 (0.28–1.87)	2.03 (1.04-3.97)	0.			
(mun) 1.00	iu (ret.)	1.45 (0.65–3.27)	0.73 (0.28-1.87)	1.73 (0.63-4.77)	0.49			
4 Guni S 9367	inter/2008 I	Insulin, insulin-like	growth factor-I, endoger	nous estradiol, and risk	of colorectal cano	er in postmenopausal women		
ested case-control Age	e-adjusted and r	nultivariate associa	age50-79 itions (HRs and 95% CI)	of baseline IGF-I, free I	GF-I, IGFBP-3, insu	din,		
sulin	<3.6	3.6-5.7	rmone therapy use, and	>=9.5	p		Adjusted for age only	
sses/subcohort R	74/199 1	97/192 1.32(0.90-1.91)	116/206 1.45(1·2.09)	142/203 1.89(1.33-2.69)	0.0005			
5 Yam	mamoto/2010	Visceral fat area an	d markers of insulin res	istance in relation to co	olorectal neonlasia			
pan 22CF	CRC,66controls		IOMA-IR with the preval	fasting insulin(uU/dl)				
ise-control Asso	Q1	Q2 5-7.8	Q3 >7.8	p p	cancer in the color	ectum		
sting insulin(uU/dl) ise/control R	<5 5/21	8/22	8/23			Adjusted for smoking and alcohol drinking Additionally adjusted for BMI		
3	1	1.55 (0.45-5.32)	1.38 (0.40-4.76)	>0.2 >0.2		Additionally adjusted for BMI		
ljusted OR1 ljusted OR2	1	1.65 (0.38-7.28) 1.88 (0.39-9.03)	1.29 (0.28-5.84)	>0.2				
6 Chei	en/2012	Association of plas	ma total and high-molec	ular-weight adiponecti	n with risk of color	ectal cancer: an observational study in Chir	nese male	
hina 71ea ise-control	early cancer,94ad	vanced cancer, 102c	ontrol	male	Fasting insulin (mil	J/L)		
		case/control						ge, BMI, WHR, SBP, TG, fasting insulin, HOMA-IR, total adiponectin, HMW adiponectin, lifestyle characteristics, medications,
arly cancer asting insulin (mIU/L <6.8,	8,>=6.8	22/47	high 49/55	univariate analysis 2.117(0.934-7.281)	P 0.048	Multi analysis 3 1.327(0.614-6.881)	D 0.292	mily history of CRC and diabetes
asting insulin (mIU/L <6.8, dvanced cancer asting insulin (mIU/L <6.8,	8 >=6.8	36/47	58/55	3.209(0.911-9.336)	0.14	3 1.937(0.734-7.963)	0.285	ge, BMI, WHR, SBP, TG, fasting insulin, HOMA-IR, total adiponectin,
					-			MW adjoonectin, lifestyle characteristics, medications, family history of CRC and diabetes
7 Dani	nkner/2012	Effect of elevated b	asal insulin on cancer in	ncidence and mortality	in cancer incident	patients: the Israel GOH 29-year follow-up :	study	
ohort Cane	ncer incidence d	1695cohort Sensity (per 10000 p	erson-years) of selecte	age51.8, follow up 22 y d sites and HR (95% CI	e Fasting insulin (mil) for cancer events	Four region, European-American, North African among 1,695 men	n, yemenite, and Other Middle	ssem
and	d women accord total	ling to quartiles of p	olasma values of basal in Q2	nsulin* (1, lowest quart	ile; 4, highest quar Q4	tile) HR of insulin Q4 compared with Q1-3		
				420				djusted for age, sex (except for breast and prostate cancers), and ethnicity
erson-years follow u blon/rectum	11.8	9,414 12.7	9,670 11.4	9,077 13.2	9,115	0.82 (0.39-1.72)		
8 Kabi	bat/2012	A longitudinal stud	of serum insulin and g	lucose levels in relatio	n to colorectal can	cer risk among postmenopausal women		
K 4902	02 women,81CRC	,11.9years follow up	4821control	age,64.3CRC,62.5cont	rol	-		
Asso	sociation of base	eline serum insulin	glucose, and HOMA-IR	with risk of colorectal a	and colon cancer is	the Women's Health Initiative		
sulin ulU/ml ca	dorectal cancer case/non-case	HR(age)	HR(multi)	colon cancer case	HR(age)	HR(multi)		
7.75 75-11.85	29/1561 24/1545	0.85(0.5-1.47)	0.89(0.51-1.55)	21 25	1.03(0.56-1.89)	1 11(0 50.2 08)		discised for age, body mass index, alcohol intake (drinks per week), physical activity (MET-hours per week), family history of colorectal cancer.
11.85	27/1563	0.99(0.59-1.68)	1.11(0.61-2.01)	18	1.11(0.61-2.02)	1.28(0.65-2.53)		djusted for age, body mass index, alcohol intake (drinks per week), physical activity (MET-hours per week), family history of colorectal cancer, history (white, black, other), and participation in the OS or treatment arm of each clinical trial.
ontinous		0.99	0.75 1.000(0.965-1.036)		0.73	1.003(0.964-1.044)		
	lberding/2012	Genetic variants. p	ediagnostic circulating	levels of insulin-like ar	owth factors, insul	in, and glucose and the risk of colorectal ca	ancer: the Multiethnic Cohor	tudy
9 one	5000cohort, 1954c	cases,2587controls	age45-75	Fasting insulin (mlU/mL kers insulin alunca	and colorectal care	Tor.		
9 Ollibus S 2150	Rs and 95% CI+ #			Q3	p p			
S 2150 ested case-control ORs	Rs and 95% Cls fo cases/controls	UI.	5.75 1.16 (0.83–1.62)	11.41	0.022		model 1 model 3	djusted for age, sex, and race/ethnicity djusted for age, sex, race/ethnicity, history of colorectal polyp, family history of colorectal cancer, BMI (kg/m
S 2150 ested case-control ORs ca asting insulin (mIU/mL) odel 1	cases/controls 258/1,701	Q1 3.04 1	1.16 (0.83-1.62)		0.293			moderate or vigorous hysical activity, processed meat intake, pack-years of smoking, alcohol consumption, and mutual adjustment for ISF-I and IGFBP-3,
S 2150 ested case-control ORs ca asting insulin (mIU/mL) odel 1	cases/controls	3.04 1 1	1.06 (0.75-1.51)	1.21 (0.84-1.75)				a part of the second se
S 2150 sated case-control ORs ca asting insulin (mIU/mL) odel 1 odel 3	258/1,701 249/1,571	1	1.06 (0.75–1.51)					here appropriate
S 2150 ssted case-control ORs ca asting insulin (mlU/mL) odel 1 odel 3	258/1,701 249/1,571	1 1	1.06 (0.75-1.51)	ore axis and risk of obs	esity-related cance	rs in the Framingham heart study-offspring	cohort (1971-2008)	TOTAL SEPTIMENT CONTRACTOR CONTRA
S 2150 ssted case-control ORs ca asting insulin (mlU/mL) odel 1 odel 3	258/1,701 249/1,571	Metabolic dysregul , age68.8/follow up>	1.06 (0.75–1.51) ation of the insulin-gluce	ore axis and risk of obs	esity-related cance	rs in the Framingham heart study-offspring ancer sites	cohort (1971-2008)	NO STATE OF THE ST
S 2150 ORS cassed case-control ORS casted price of the casted case of the casted	258/1,701 249/1,571 249/1,571 249/1,571 249/1,571 249/1,571 249/1,571 250/100/1,196CRC 250/100/100/100/100/100/100/100/100/100/1	1 1	1.06 (0.75–1.51)	ore axis and risk of obs	esity-related cance d obesityrelated c	rs in the Framingham heart study-offspring ancer sites	cohort (1971-2008)	
S 2150 Sated case-control ORs ca asting insulin (mIUmL) odel 3 10 Pare SA 4615 Abhort Exp	258/1,701 249/1,571	Metabolic dysregul , age66.8,follow upo- rs of insulin-gluco HR(age)	1.06 (0.75–1.51) ation of the insulin-gluci 37 years se metabolism and risk HR(adjusted)	ore axis and risk of obs	d obesityrelated o	ancer sites		
S 2150 Sasted case-control ORs casted case-control ORs casting insulin (mlUlmL) odel 3 10 Pares SA 4615 Short Exp	258/1,701 249/1,571 249/1,571 249/1,571 249/1,571 249/1,571 249/1,571 250/100/1,196CRC 250/100/100/100/100/100/100/100/100/100/1	Metabolic dysregul , age66.8,follow upo- rs of insulin-gluco HR(age)	1.06 (0.75–1.51) ation of the insulin-gluce	ore axis and risk of obs	d obesityrelated c	ancer sites		

HOMA-IR

	Study	Country	Design	Gender	Age(years)	cancer types and No. of cases/c	ontrols/cohort														
- 1	Limburg et al,2006	Finland	nested case-control	M	50-69	CRC:139,control:399,cohort:29	133														
2	Gunter et al.2008	USA	nested case-control	F	50-79	CRC:438,control:816,cohort:93	676														
3	Yamamoto et al,2010	Japan	case-control	F/M	53.8(mean)	CRC:22,control:66															
4	Chen et al,2012	China	case-control	M	early cancer62.1.advanced cancer61.8.control58.3	CRC:165,control:102															
	Kabat et al,2012	UK	nested case-control	P Pag	50-79	CRC:81,control:4821,cohort:49	02										\vdash				-
6	Ollberding et al,2012 Parekh et al,2013	USA USA	nested case-control cohort	F/M F/M	45-75 66.8(mean)	CRC:1954,control:2587,cohort: CRC:136,cohort:4615	215000										\vdash				-
	Erarslan et al,2013		case-control			CRC:21,control:30															_
	Liminan et nç2014	Tunkey	Case-Control	17.04	CRC.JO,COMOUD.Z.)	CRC-213Collifor.50															
CRC-H	$OM\Delta$																				
	CIVIA		HOMA-IR was deriv	ed as fasting insulin	x fasting glucose/22.5																
1	Limburg/2006	Insulin, alucose, insu	lin resistance, and i	incident colorectal	cancer in male smokers																
Finland	134CRC,399controls,	29133men		age50-69																	
nested case-cont	Associations Betwe	en Fasting Insulin, Glud	cose, HOMA-IR and	Incident Colorecta	Cancer, Overall and by Anatomic Subsite																
men		HOMA-IR	fasting		<u> </u>																
	Q1 <92	Q2 93-98	Q3 99-107	Q4 >107	P												-				-
all CRC	C 02	53-50	55-107	2107													_				_
case/control	33/102	37/99	18/98	46/100																	
HR(age)	1.00 (ref.)	1.27 (0.71-2.26)	0.67 (0.35-1.30)	1.85 (1.06-3.24)	0.12																
HR(multi)	1.00 (ref.)	1.30 (0.68-2.47)	0.51 (0.23-1.16)	1.71 (0.77-3.78)	0.38																
Proximal CRC	14/102	12/99	6/98	15/100													_				-
HR(age)	1.00 (ref.)	1.11 (0.47–2.61)	0.63 (0.22-1.79)	1.70 (0.73–3.97)	0.4												-				-
HR(multi)	1.00 (ref.)	1.33 (0.52–3.42)	0.47 (0.13–1.67)	1.96 (0.56–6.91)	0.4																_
Distal CRC					0.54																
case/control	19/102	25/99	12/98	31/100																	
HR(age)	1.00 (ref.)	1.36 (0.69-2.70)	0.70 (0.32-1.52)	1.94 (1.01-3.73)	0.15																
HR(multi)	1.00 (ref.)		0.53 (0.20-1.38)	1.58 (0.63-3.93)	0.53 ake, alcohol consumption, caloric intake, history of		entional										-				-
Insulin analyses a physical activity.	are adjusted for cigaret	e pack-years, body mas:	s muex, protein intake	, ras intake, fiber inta	же, аксипи consumption, caloric intake, history of	or diabetes mellitus and occup	auonal										\vdash				-
2	Gunter/2008	Insulin, insulin-like gr	owth factor-I, endo	genous estradiol, a	and risk of colorectal cancer in postmenopau	isal women															
US	93676 women, 438CF	C,816controls	age50-79	fasting													-				_
nested case-cont	alucose HOMA ID	ultivariate associations dex, estradiol, hormor	s (HRs and 95% CI)	or paseline IGF-I, fr	ree IGF-I, IGFBP-3, insulin,	-	Adjusted for age only										\vdash				-
HOMA-IR	<0.71	0.71-1.14	1.14-1.93	>=1.93	ent colorectal cancer		Aujusted for age only														_
cases/subcohort	77/200	99/199	112/200	140/200	,																_
HR	1	1.25(0.86-1.81)	1.35(0.94-1.94)	1.85(1.3-2.64)	0.001																
3	Yamamoto/2010	Visceral fat area and	markers of insulin r	esistance in relation	on to colorectal neoplasia																
Japan	22CBC 66controls			fasting																	
case-control	Associations of gluc	ose, insulin, and HOM/	A-IR with the preval	ence of adenoma a	and cancer in the colorectum																
	Q1	Q2	Q3	p																	
HOMA-IR	1.33	1.33-2.04	>2.04			Adjusted for a 11	ab at details										-				-
case/control OR	4/21	8/22 1.85 (0.52–6.62)	9/23 1.89 (0.51–6.94)	>0.2		Adjusted for smoking and ald Additionally adjusted for BMI	onol drinking										\vdash				-
adjusted OR1	1	2.60 (0.62-10.97)	3 10 (0 71-13 54)	0.15		Auditionally adjusted for BMI															_
adjusted OR2	1	2.63 (0.60-11.41)	2.20 (0.45-10.81)	0.15 >0.2																	_
		2.00 (0.00 1)																			
4	Chen/2012	Association of plasm	a total and high-mo	lecular-weight adin	onectin with risk of colorectal cancer: an ob	servational study in Chines	a mala														
China		anced cancer, 102contro	l total and mgm mo	male	biledili will risk of colorectal carber: all ob	Servational stady in online	indic														_
case-control	,,																				
		case/control							age, BM	WHR, S	BP, TG, fa	sting insuli	n, HOMA-I	R, total ad	iponectin,	HMW adir	iponectin, lif	festyle cha	aracteristic	s, medicat	itions,
early cancer		low	high	univariate analysis	P	Multi analysis	p		family his	ory of CF	C and dia	betes									
	<2.5,>=2.5	32/70	39/32	3.567(2.274-11.592	0.002	2.881(1.086-10.227)	0.029														
advanced cance HOMA-IR	er <2.5.>=2.5	58/70	46/32	2.089(0.934-7.673)	0.072	1.834(0.785-8.153)	0.142		ngo PMI	WID C	D TO to	ation inculia	, HOMA-IF	total adii	noncetin		-				-
HOMA-IK	<2.5,>=2.5	30//0	40/32	2.009(0.934-7.073)	0.072	1.034(0.703-0.133)	0.142									f CRC and	d dishetes				_
									· iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii	ZOTICOLITI,	ilicotyte et	ar dottorious	o, modicul	Orio, ruirii	y mistory of	Orto uno	Juliabolos				
F																					
	K-h-4/2042	A 1																			
5	Kabat/2012	A longitudinal study of	of serum insulin and	d glucose levels in	relation to colorectal cancer risk among pos	stmenopausal women															
IIK	4902 women 81CRC	A longitudinal study of 1.9years follow up, 482	of serum insulin and control fasting blood sample	d glucose levels in age,64.3CRC,62.5e	relation to colorectal cancer risk among pos control	stmenopausal women															
IIK	4902 women,81CRC, trol Association of base	1.9years follow up, 482 women	control fasting blood sample	age,64.3CRC,62.5	control																
UK nested case-cont	4902 women,81CRC, trol Association of base Colorectal cancer	11.9years follow up, 4821 women ine serum insulin, gluc	fasting blood sample cose, and HOMA-IR	age,64.3CRC,62.5e with risk of colored colon cancer	control ctal and colon cancer in the Women's Health	Initiative															
UK nested case-cont HOMA-IR	4902 women,81CRC, trol Association of base Colorectal cancer case/non-case	1.9years follow up, 482 women	fasting blood sample cose, and HOMA-IR HR(multi)	age,64.3CRC,62.5e with risk of colored colon cancer case	control																
UK nested case-cont HOMA-IR <31.2	4902 women,81CRC, trol Association of base Colorectal cancer case/non-case 27/1556	1.9years follow up, 482 women Ine serum insulin, gluc HR(age)	fcontrol fasting blood sample cose, and HOMA-IR HR(multi)	age,64.3CRC,62.5e with risk of colored colon cancer case 21	control	Initiative HR(multi) 1															
UK nested case-cont HOMA-IR <31.2 31.2-50.2	4902 women,81CRC, trol Association of base Colorectal cancer case/non-case	11.9years follow up, 4821 women ine serum insulin, gluc	fasting blood sample cose, and HOMA-IR HR(multi)	age,64.3CRC,62.5e with risk of colored colon cancer case	control tal and colon cancer in the Women's Health HR(age) 1 100(0 55-1 89)	Initiative															
UK nested case-cont HOMA-IR <31.2 31.2-50.2 >=50.2 P	4902 women,81CRC, trol Association of base Colorectal cancer case/non-case 27/1556 23/1560	1.9years follow up, 482° women line serum insulin, gluc HR(age) 1 0.86(0.5-1.51)	toontrol fasting blood sample cose, and HOMA-IR HR(multi) 1 0.93(0.52-1.66) 1.37(0.76-2.49) 0.3	age,64.3CRC,62.5ie with risk of colored colon cancer case 21 24 19	control	Initiative HR(multi) 1 1.14(0.6-2.16) 1.51(0.77-2.98) 0.23															
UK nested case-cont HOMA-IR <31.2 31.2-50.2 >=50.2 P continous	4902 women,81CRC, trol Association of base Colorectal cancer case/non-case 27/1556 23/1560 30/1553	1.9years follow up, 482* women ine serum insulin, gluc HR(age) 1 0.86(0.5-1.51) 1.18(0.7-1.98) 0.54	toontrol fasting blood sample cose, and HOMA-IR HR(multi) 1 0.93(0.52-1.66) 1.37(0.76-2.49) 0.3 1.001(0.995-1.007)	age,64.3CRC,62.5ie with risk of colored colon cancer case 21 24 19	control HR(age) 1 1.02(0.55-1.89) 1.27(0.7-2.29) 0.43	HR(multi) 1 1.14(0.6-2.16) 1.51(0.77-2.98) 0.23 1.002(0.995-1.009)															
UK nested case-cont HOMA-IR <31.2 31.2-50.2 >=50.2 P continous	4902 women,81CRC, trol Association of base Colorectal cancer case/non-case 27/1556 23/1560 30/1553	1.9years follow up, 482* women ine serum insulin, gluc HR(age) 1 0.86(0.5-1.51) 1.18(0.7-1.98) 0.54	toontrol fasting blood sample cose, and HOMA-IR HR(multi) 1 0.93(0.52-1.66) 1.37(0.76-2.49) 0.3 1.001(0.995-1.007)	age,64.3CRC,62.5ie with risk of colored colon cancer case 21 24 19	control tal and colon cancer in the Women's Health HR(age) 1.02(0.55-1.89) 1.27(0.7-2.29)	HR(multi) 1 1.14(0.6-2.16) 1.51(0.77-2.98) 0.23 1.002(0.995-1.009)	spation in the OS or trea	tment arm	of each cl	nical trial											
UK nested case-cont HOMA-IR <31.2 31.2-50.2 >=50.2 P continous Adjusted for age,	4902 women,81CRC, trol Association of base Colorectal cancer case/non-case 27/1556 23/1560 30/1553 body mass index , alco	11.9years follow up, 482* women ine serum insulin, gluc HR(age) 0.88(0.5-1.51) 1.18(0.7-1.98) 0.54 hol intake (drinks per we	I control fasting blood sample	age,64.3CRC,62.5ie with risk of colored colon cancer case 21 24 19 (MET-hours per wee	control tal and colon cancer in the Women's Health HR(age) 1 1,02(0.55-1.89) 1,27(0.72-29) 0,43 Ak), family history of colorectal cancer, ethnicity (v	HR(multi) 1 1.14(0.6-2.16) 1.51(0.77-2.98) 0.23 1.002(0.995-1.009) white, black, other), and partic			of each cl	nical trial											
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UK HOMA-IR -3312 - 312-50.2 >>=50.2 >>=50.2 P Continuous Adjusted for age, US Solution HOMA-IR -3400 - 3400 T T USA	4902 women,81CRC, trol Association of base Colorectal cancer case/hor-case 22/1590 30/1553 Dody mass index, alcc CiRs and 95% Cis to cases/controls CiRs and 95% Cis to cases/controls 249/1,571 Parekh/2013	1 syears follow up. 482 women in serum insulin, gluc HR(ape) (19) (19) (19) (19) (19) (19) (19) (19	Icontrol control contr	age,64.3 CRC.62.5s e with risk of colorer colon cancer colon cancer 21 24 19 (MET-hours per wee Mg levels of insulin Fasting kers, insulin, glucoe Q3 2.935 1.55 (1.12-2.16) 1.28 (0.88-1.85)	tal and colon cancer in the Women's Health HR(age) 10,2(0.55-1.89) 127(0.7-2.29) 0.43 Alt, family history of colorectal cancer, ethnicity (like growth factors, insulin, and glucose and se, and colorectal cancer P 0.004	Initiative HR(multi) 1.14(0.6.2-16) 1.51(0.77-2-98) 0.23 0.20 white, black, other, and partic	er: the Multiethnic Col model 1 model 3	Adjusted 1 Adjusted 1), modera physical s	or age, se for age, se te or vigor octivity, pro	x, and rai	nnicity, his	tory of cold							r IGF-I and	IGFBP-3,	
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UK HOMA-IR 31.2 11.2-80.2 20.2 20.2 20.2 20.2 20.2 20.2 20.2	4902 women,81GRC, for land and an analysis of the colorectal cancer case/non-case 27/15/56 27/56/56 27/56/56 27/56/56 27/56/56 27/56/56 27/56/56 27/56/56 27/56/56 27/56/56 27/56/56 27/56/56 27/56/56/56/56/56/56/56/56/56/56/56/56/56/	1 Syears follow up. 482 women in serum insulin, gluc inserum insulin, gluc inserum insulin, gluc inserum insulin, gluc inserum insulin, gluc insulin i	Testing Test	age 64 S APC 62 5 6 e with risk of colors of the color cancer costs 25 e with risk of colors of the color cancer costs 25 e with risk of colors of the color cancer costs 25 e with risk of the color cancer costs 25 e with risk of the color cancer costs 25 e with risk of the color cancer ca	tal and colon cancer in the Women's Health HR[age) 1,02(0.55-1.89) 1,27(0.75-2.9) 0,43 0,43 HR[age) 1,27(0.75-2.9) 0,49 HR[age) 1,040 HR[age]	Initiative HR(multi) 1.14(0.6.2.16) 1.51(0.77.2.98) 1.002(0.995-1.009) white, black, other), and partic the risk of colorectal canc the risk of colorectal canc am heart study-offspring co	er: the Multiethnic Col model 1 model 3 short (1971-2008)	Adjusted I Adjusted I), modera physical a where app	for age, se for age, se te or vigor cctivity, pre propriate	x, and rai x, race/et sus cessed n	nnicity, his	tory of cold							r IGF-I and	IGFBP-3.	
UK HOMA-IR HOMA-IR JUSA T USA T USA	4902 women,81CRC, trol Association of base Colorectal cancer case/hor-case 22/1506 30/1553 body mass index, slict Ofliberding/2012 215000cohort, 1954c. ORs and 59% Cls fo cases/control 249/1,571 49/1,5	1.9 years follow up. 482 women insufin, gluc MR (age) 0.88(0.5-1.51) 1.18(0.7-1.98) 0.5 (o.5-1.51) 1.18(0.7-1.98) 0.5 (o.5-1.98) 0.5 (o.5-1.9	Testing Test	age 64 S APC 62 5 6 e with risk of colors of the color cancer costs 25 e with risk of colors of the color cancer costs 25 e with risk of colors of the color cancer costs 25 e with risk of the color cancer costs 25 e with risk of the color cancer costs 25 e with risk of the color cancer ca	tal and colon cancer in the Women's Health HR[age) 1,02(0.55-1.89) 1,27(0.75-2.9) 0,43 0,43 HR[age) 1,27(0.75-2.9) 0,49 HR[age) 1,040 HR[age]	Initiative HR(multi) 1.14(0.6.2.16) 1.51(0.77.2.98) 1.002(0.995-1.009) white, black, other), and partic the risk of colorectal canc the risk of colorectal canc am heart study-offspring co	er: the Multiethnic Col model 1 model 3 short (1971-2008)	Adjusted I Adjusted I), modera physical a where app	for age, se for age, se te or vigor cctivity, pre propriate	x, and rai x, race/et sus cessed n	nnicity, his	tory of cold							r KSF-I and	IGFBP-3.	
UK HOMA-IR	4902 women,81GRC, for location of base Colorectal cancer case-inor-case 27/1569 27/156	1 Syears follow up. 482: women ine serum insulin, gluc HR(ape) 0.88(0.5-1.51) 1.18(0.7-1.98) 0.50 0.81(0.5-1.51) 1.18(0.7-1.98) 0.50 0.61 0.61 0.62 0.63 0.63 0.63 0.63 0.63 0.63 0.63 0.63		age 64 S APC 62 5 6 2 with risk of colors of the color cancer case 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	tal and colon cancer in the Women's Health HR[age) 1,02(0.65-1.89) 1,27(0.75-2.89) 0,43 0,43 1,46), family history of colorectal cancer, ethnicity (in the colorectal cancer per per per per per per per per per p	Initiative HR(multi) 1.14(0.6.2.16) 1.51(0.772.98) 0.23 0.23 white, black, other), and partic It he risk of colorectal canc	er: the Multiethnic Col model 1 model 3 short (1971-2008)	Adjusted I Adjusted I), modera physical a where app	for age, se for age, se te or vigor cctivity, pre propriate	x, and rai x, race/et sus cessed n	nnicity, his	tory of cold							r KGF-I and	IGFBP-3,	
UK HOMA-IR 31.2-50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2	4902 women,81GRC, for location of base Colorectal cancer case-inor-case 27/1569 27/156	1 syears follow up. 482-women insulin, gluc MR(age) 0.88(0.5-1.51) 1.18(0.7-1.98) 0.54 hol intake (drinks per we see 2587-controls terriles of circulating 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		age 64 S APC 62 5 6 2 with risk of colors of the color cancer case 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	tal and colon cancer in the Women's Health HR[age) 1,02(0.55-1.89) 1,27(0.75-2.9) 0,43 0,43 HR[age) 1,27(0.75-2.9) 0,49 HR[age) 1,040 HR[age]	Initiative HR(multi) 1.14(0.6.2.16) 1.51(0.772.98) 0.23 0.23 white, black, other), and partic It he risk of colorectal canc	er: the Multiethnic Col model 1 model 3 short (1971-2008)	Adjusted I Adjusted I), modera physical a where app	for age, se for age, se te or vigor cctivity, pre propriate	x, and rai x, race/et sus cessed n	nnicity, his	tory of cold							r IGF-I and	IGFBP-3	
UK HOMA-IR 31.2-50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2 >=50.2	4902 women,81CRC, trol Association of base Colorectal cancer case/nor-case 2241560 30/1553 body mass index, slot CORs and 95% Cis fo case/control 2249/1,571 Parekh/2013 4615cohort,156CRC, Exposure to marker case/cohort 71/3428 Erarstan/2014 21CRC,30controls	1 syears follow up. 482-women insulin, gluc MR(age) 0.88(0.5-1.51) 1.18(0.7-1.98) 0.54 hol intake (drinks per we see 2587-controls terriles of circulating 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	tootrot institute of the control of	age 64 S APC 62 5 6 2 with risk of colors of the color cancer case 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	tal and colon cancer in the Women's Health HR[age) 1,02(0.65-1.89) 1,27(0.75-2.89) 0,43 0,43 1,46), family history of colorectal cancer, ethnicity (in the colorectal cancer per per per per per per per per per p	Initiative HR(multi) 1.14(0.6.2.16) 1.51(0.772.98) 0.23 0.23 white, black, other), and partic It he risk of colorectal canc	er: the Multiethnic Col model 1 model 3 short (1971-2008)	Adjusted I Adjusted I), modera physical a where app	for age, se for age, se te or vigor cctivity, pre propriate	x, and rai x, race/et sus cessed n	nnicity, his	tory of cold							r KGF-I and	IGFBP-3.	
UK HOMA-IR	4902 women,81CRC, trol Association of base Colorectal cancer case(non-case) 27/1556 23/1550 30/1553 body mass index, sloc Ollberding/2012 21/5000cohort, 1954c, or Cosses/controls 258/1,701 249/1,571 Parekh/2013 4615cohort,196CRC, Exposure to marker case/coding/2012 21/5000cohort,196CRC, Exposure to marker	1 Syears follow up. 482 women insulin, glue women insulin, glue HR(age) 1.0 A86(0.5-1.51) 1.18(0.7-1.98) 0.54 hol intake (drinks per we Genetic variants, pre escribing of circulating in the control of	tootrot institute of the control of	age 64 S APC 62 5 6 2 with risk of colors of the color cancer case 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	tal and colon cancer in the Women's Health HR[age) 1,02(0.65-1.89) 1,27(0.75-2.89) 0,43 0,43 1,46), family history of colorectal cancer, ethnicity (in the colorectal cancer per per per per per per per per per p	Initiative HR(multi) 1.14(0.6.2.16) 1.51(0.772.98) 0.23 0.23 white, black, other), and partic It he risk of colorectal canc	er: the Multiethnic Col model 1 model 3 short (1971-2008)	Adjusted I Adjusted I), modera physical a where app	for age, se for age, se te or vigor cctivity, pre propriate	x, and rai x, race/et sus cessed n	nnicity, his	tory of cold							r IGF-land	(GFBP-3,	

HbA1c

1	Study Platz et al,1999	Country USA	Design nested case-control	Gender F	Age(years) 44-69	cancer types and No. oi CRC:79,control:156,col	f cases/controls/cohort tor:121700	unit of HbAlc				
3	Saydah et al. 2003 Khaw et al. 2004 Lin et al. 2005	Country USA USA UK USA USA USA	case-control cohort cohort	F/M F/M	>18 45-79	cancer types and No. of CRC:79 control 156, col CC:132,RC41 control 3 CRC:67 cohort:9605 CRC:168, cohort:27110	46	%				
5 6		USA USA Europen countries	nested case-control nested case-control	F F F/M	>=45 30-55 35-69			%				
7 8	Stocks et al,2008 Parekh et al,2013	Sweden USA	nested case-control cohort	FM FM	35-69 50-70 65.8(mcan)	CRC:1026,control:1028 CRC:306,control:915,co CRC:136,cohort:4615	short:104461	%				
1												
USA nested rese, motivo	Platz/1999 Nurses' Health Study	79CRC, 156control	eglobin and risk of co ears) CRC:61.2 Cont of colorectal cancer a	olorectal cancer and 201distal colorectal s	adenoma (United S idenoma, 201control	tates)						
	(OR) and 95% confi 1989a94			occording to tertiles	of HbA1cin the Nurs	es' Health Study,		HbA1c was determin turbidometric immune	ed (blinded to case sta pinhibition in red blood zer (Boehringer Mann	atus) by I cells using		
	Q1 5.20%	HbA1c Q2 5.50% 31/80 1.2(0.6-2.5) 22/47 0.9(0.4-2.2) 12/29 1.9(0.5-6.8)	Q3 5.80% 28/48 1.2(0.6-2.7) 15/28 1.2(0.5-3) 18/20 4.8(1.2-17.1)	p-trend	top 10% HbA1c vs b	elow cases and controls w	ere matched on year	the Hitachi 911 analy of birth, month of bloo	zer (Boshringer Mann d draw, and fasting sta	theim).		
CRC(case/control) OR CC(case/control) OR Advanced CRC(case OR	5.20% 22/48 1 ref 18/36 1 ref 7/24 1 ref	31/60 1.2(0.6-2.5)	26/48 1.2(0.6-2.7)	0.6								
OR Advanced CRC(case	18/36 1 ref 2/24	0.9(0.4-2.2) 12/29	1.2(0.5-3) 18/20	0.7	7/11 1.3(0.5-3.8) 8/12 1.6(0.5-5.2)							
				0.02								
2 USA	Saydah/2003	Association of mar 173CRC(132CC,41F	kers of insulin and g RC),346controls ling to fourths of mar									
case-control	OR(95% CI) of color HbA1c Q1	ectal cancer accord	ling to fourths of mar		p p	JE II cohort of Washin		sex, race, time since I	ast meal, and date of I	hinori draw		
CRC(case/control) OR	<5.38% 3987	02 5.38-5.54% 29/86 0.77(0.43-1.36)	Q3 5.54-5.78% 43/86 1.12(0.65-1.91)	Q4 >5.78% 62/87 1.57(0.94-2.60)								
OR	1.97(1.11-3.48)	0.77(0.43-1.38)	1.12(0.65-1.91)	1.57(0.94-2.60)	0.02							
Colon Proximal colon Distal colon Rectum	2.1(1-4.4) 1.61(0.72-3.58) 0.91(0.36-2.26)	0.02 0.13 0.69										
Rectum	0.91(0.36-2.26)	0.69										
3	Khaw/2004	Preliminary commi	unication: glycated h	emoglobin, diabete	s, and incident colo	rectal cancer in men	and women: a pros	pective analysis from	n the European pros	pective investigation	on into cancer-Norfoll	study
UK cohort	Incident colorectal ca glycated HbA1c level	noer rates and RRs* a and known diabetes:	age45-79 adjusted for age and a status in 9,805 men ar	ge, sex, smoking, and id women ages 45 to 1	BMI by category of P9 years without know	m						
	cancer at baseline, 1											
Men and Women	Level of glycated Hb. <5% 2,627 10	5-5.9% 5,721 35 1.13 (0.56-2.30) 1.07 (0.53-2.20)	6-6.9% 899 13 1.93 (0.83-4.47) 1.95 (0.84-4.56)	>=7% 137 3 2.94 (0.80-10.85) 2.85 (0.76-10.7)	Known diabetes 221 6 4.02 (1.44-11.22) 3.35 (1.12-10.00)		Р					
Men and Women cases RR(age, sex) RR(age, sex, BMI an	10	35 1.13 (0.56-2.30) 1.07 (0.53-2.20)	13 1.93 (0.83-4.47) 1.95 (0.84-4.56)	2.94 (0.80-10.85) 2.85 (0.76-10.7)	4.02 (1.44-11.22) 3.95 (1.12-10.00)		<0.001					
men cases RR(age, sex)	1,152	2,634	434	76	149	4,445	<0.001					
RR(age, sex) RR(age, sex, BMI an	1 1	18 1.64 (0.55-4.85) 1.61 (0.54-4.82)	3.10 (0.90-10.73) 3.40 (0.97-11.92)	2 4.94 (0.89-27.35) 5.19 (0.92-29.38)	6.96 (1.84-26.34) 6.02 (1.47-24.65)	36	×0.001					
women	1,475	3,087	465	61	72	5,160	0.03					
cases RR(age, sex) RR(age, sex, BMI an	1 1	0.77 (0.30-1.98) 0.70 (0.27-1.82)	1.14 (0.36-3.68) 1.08 (0.33-3.50)	1 1.58 (0.19-13.46) 1.36 (0.15-12.04)	1.57 (0.19-13.14) 1.38 (0.16-11.76)	31						
All incident colorared	连续升高,多元调整。 I cancer in = 67/0 and	model3										
HbA1c (per 1% incre Men only, all incident	(1.30 (1.04-1.61) t colorectal cancers (n	0.02 = 36/4,445)										
Women only, all incid HbA1c (per 1% incid HbA1c (per 1% incid	手能升高, 6元调整, cancer (n = 6779,605 i1.30 (1.04-1.61) colorectal cancers (n i1.35 (1.04-1.76) Sent colorectal cancers i1.20 (0.81-1.78)	0.02 (n = 31/5,160)										
4	Lin/2005 27110women,168CR	Hemoglobin A1c co	encentrations and ris	k of colorectal cano	er in women							
women cohort	RRs and 95% Cts o Quartile of HbA1c Q1 2.3-4.8				ne Women's Health	Study						
		Q2 >4.8-5.0	Q3 >5.0-5.2	04 >5.2								
No. of cases RR1 RR2	36 1 1	41 1.00 (0.64-1.57) 1.02 (0.65-1.61)	46 1.03 (0.66-1.60) 0.95 (0.60-1.50)	45 0.89 (0.57-1.40) 0.83 (0.52-1.33)	0.59 0.35							
CC No. of cases RR1 RR2	29	27 0.81 (0.48-1.36) 0.83 (0.49-1.41)	33 0.89 (0.54-1.47) 0.81 (0.48-1.38)	38 0.90 (0.55-1.47) 0.86 (0.51-1.44)								
RR2 Tumor location	1	0.83 (0.49-1.41)	0.81 (0.48-1.38)	0.86 (0.51-1.44)	0.84 0.65							
RR2 Tumorms (seeing) Tumorms (colors can all all all all all all all all all a	15 1	0.96 (0.48-1.93)	0.95 (0.48-1.89)	0.74 (0.36-1 50)	0.37							
RR2 Distal colon cancer	1 14	0.96 (0.48-1.93) 0.89 (0.44-1.79)	0.95 (0.48-1.89) 0.73 (0.36-1.48)	0.74 (0.36-1.50) 0.51 (0.25-1.08)	0.37							
No. of cases RR1 RR2	14	10 0.63 (0.28-1.42) 0.74 (0.32-1.69)	14 0.81 (0.39-1.72) 0.91 (0.42-2.00)	21 1.09 (0.54-2.17) 1.47 (0.70-3.08)	0.51							
Rectal cancer No. of cases	7	12 1.64 (0.65-4.18) 1.64 (0.64-4.18)	12 1.61 (0.63-4.12) 1.55 (0.60-4.01)	6								
RR2 Tumor stage	1	1.64 (0.64-4.18)	1.61 (0.63-4.12)	6 0.77 (0.26-2.33) 0.60 (0.18-1.99)	0.53 0.34							
Duke's A No. of cases	15	9	17 1.14 (0.58-2.30) 1.53 (0.59-3.99)	11	0.79							
RR2 Duke's B	1	0.55 (0.24-1.28) 0.45 (0.16-1.29)	1.53 (0.59-3.99)	0.95 (0.42-2.16) 1.23 (0.40-3.78)	0.72 0.48							
No. of cases RR1 RR2	5	13 2.12 (0.74-6.05) 3.19 (0.83-12.26)	11 2.05 (0.70-6.04) 4.98 (1.22-20.34)	11 2.58 (0.86-7.78) 4.69 (1.14-19.30	0.14							
Duke's C No. of cases	15	18	17	21								
RR1 RR2	1 1 Model was adjusted	1.09 (0.53-2.21) 1.35 (0.59-3.06) for age and random to	1.07 (0.52-2.18) 0.72 (0.30-1.74) eatment assignment	1.54 (0.76-3.12) 1.27 (0.52-3.18)	0.21	cer in a first-degree ret menopausal status, an						
2	Model was adjusted physical activity, smo	for age, random treats king status, red meat	nent assignment, body intake, alcohol consun	mass index, family his option, total energy int	atory of colorectal can ake, multivitamin use,	cer in a first-degree rel menopausal status, ar	ative, history of colon of baseline postmeno	polyps, pausal				
									women			
5									women			
5 us nested case-control women	Wei/2005 32826women, 182CR RR and 95% Cl of c Nurses' Health Stur	A prospective studi C,350controls olorectal cancer acc sy, 1989-2000	ly of C-peptide, insul follow up 10years cording to quartiles o	in-like growth factor age30-55 f plasma levels of C		h factor binding prote and HbA1c in the			women			
US nested case-control women HbA1c% CRC	Wei/2005 32826woman, 182CR RR and 95% Cl of c Nurses' Health Stur C1 5.1	A prospective stud C,350controls olorectal cancer acc sy, 1989-2000 Q2 5.4	ly of C-peptide, insul follow up 10years cording to quartiles of Q3 5.6	in-like growth factor age30-55 f plasma levels of C Q4 5.8	-l, insulin-like growt peptide, IGFBP-1, a				women			
US nested case-control woman HbA1c % CRC cases[control RR1 RR2 colon	Wei/2005 S2829women, 182CR RR and 95% Cl of c Nurses' Health Stur 5.1 41/73 1	A prospective stud C.350controls olorectal cancer acc ty, 1983-2000 0.2 5.4 40/89 0.82 (0.48-1.41) 0.75 (0.43-1.30)	y of C-peptide, insul follow up 10 years cording to quartiles of 5.6 48/87 1.01 (0.59-1.73) 0.94 (0.54-1.85)	in-like growth factor lege/30:55 f plasma levels of C Q4 5.8 46:83 0.99 (0.57-1.71) 0.85 (0.47-1.51)	-l, insulin-like growt peptide, IGFBP-1, a				women			
US nested case-control women HbA1c % CRC cases/control RR1 RR2 colon cases/control RR1	Wei/2005 32826worman, 182CR RR and 95% Cl of c Nurses' Health Stor Cl 5.1 41/73 1 1 1 33/55	A prospective studi C,350controls colorectal cancer acc sy, 1983-2000 Q2 5.4 40/69 0.82 (0.48-1.41) 0.75 (0.43-1.30)	y of C-peptide, insuf follow up 10years cording to quartiles o 03 5.6 48/87 1.01 (0.59-1.73) 0.94 (0.54-1.85)	in-like growth factor age:30-55 f plasma levels of C Q4 5.8 46/83 0.99 (0.57-1.71) 0.85 (0.47-1.51)	-I, insulin-like growt peptide, IGFBP-1, a P 0.74				women			
5 US nested case-control women HbA1c % CRC case/control RR1 RR2 color RR1 RR1 RR2	Weit2005 S2828/women, 182CR RR and 95% Cl of c Nurses' Health Stu 5.1 41/73 1 1 5.3555 1 1	A prospective stud C.390controls olorectal cancer acc by, 1983-2608 G2 5.4 40/89 0.82 (0.48-1.41) 0.75 (0.43-1.30) 28/70 0.86 (0.35-1.23) 0.57 (0.29-1.10)	by of C-peptide, insufficient up 10years follow up 10years cording to quarties of Q3 5.6 48/87 1.01 (0.59-1.73) 0.94 (0.54-1.65) 41/68 1.08 (0.59-1.98) 1.02 (0.53-1.95)	in-like growth factor legs30-55 f plasma levels of C Q4 5.8 0.99 (0.57-1.71) 0.85 (0.47-1.51) 35/64 0.95 (0.51-1.76) 0.82 (0.42-1.61)	L insulin-like growt peptide, IGFBP-1, a P 0.74	h factor binding prote and HbA1c in the	ais-1, and the risk o	colorectal cancer in	women			
5 US nested case-control women HbA1c % CRC case/control RR1 RR2 color RR1 RR1 RR2	Weit2005 S2828/women, 182CR RR and 95% Cl of c Nurses' Health Stu 5.1 41/73 1 1 5.3555 1 1	A prospective stud C.390controls olorectal cancer acc by, 1983-2608 G2 5.4 40/89 0.82 (0.48-1.41) 0.75 (0.43-1.30) 28/70 0.86 (0.35-1.23) 0.57 (0.29-1.10)	by of C-peptide, insufficient up 10years follow up 10years cording to quarties of Q3 5.6 48/87 1.01 (0.59-1.73) 0.94 (0.54-1.65) 41/68 1.08 (0.59-1.98) 1.02 (0.53-1.95)	in-like growth factor legs30-55 f plasma levels of C Q4 5.8 0.99 (0.57-1.71) 0.85 (0.47-1.51) 35/64 0.95 (0.51-1.76) 0.82 (0.42-1.61)	L insulin-like growt peptide, IGFBP-1, a P 0.74		ais-1, and the risk o	colorectal cancer in	women			
5 US nessad cisse-control woman HbA1c % CRC cisse(control RR1 RR2 colon cisse(control RR1 RR2 1 2 2	Wel/2005 52829women 1520R RR and 59% Cit of c Nurses' Health Stu 5.1 41/73 1 1 33/55 1 1 RR from conditional I RR from conditional of colonactal canoar,	A prospective stud C.350conteós olorectal cancer acc ty, 1983-2006 C2 5.4 4039 0.82 (0.48-1.41) 0.75 (0.43-1.30) 2.66 (0.35-1.23) 0.57 (0.29-1.10) ogásic regression addisprin use, history of	y of C-paptide, insufficion up 10-years cording to quartiles of 0.5 to 48/87 1.01 (0.59-1.73) 0.94 (0.54-1.65) 4.1/86 1.08 (0.59-1.98) 1.02 (0.53-1.95) 1.02 (0.53-1.95) 1.02 (0.53-1.95) 1.02 (0.53-1.95) 1.02 (0.53-1.95)	in-like growth factor lags/30.55 plasma levels of C Q4 5.8 46/83 0.29 (0.57-1.71) 0.85 (0.47-1.51) 0.5/64 0.25 (0.47-1.51) 0.82 (0.42-1.81) 0.82 (0.42-1.81) 0.82 (0.42-1.81)	L insulin-like growt peptide, IGFBP-1, a p p 0.74 0.91 ack-years smoked, a ostmenopausal horm	h factor binding protein HbAtc in the	ain-1, and the risk o	colorectal cancer in	swomen			
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Generation Particular Services of Control Cont	West	A prospective such as provided in the control of th	9 of Caparida, head 9 of Caparida, in a 9 of Caparida, in a 10 of Caparida, in a 11 of Caparida, in a 12	so the growth factors in the graph of the gr	4. Installed growth of the gro	A decide in the second of the	in HBA1c	colorectal cancer in	woman			
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Generation Facility of the Control o	West	A prospective study - A prospective study - Colomorates - Co	y of Ceparidis, head with a provided, but of the provided of t	inches general cases in inches and inches an	4. Installed agreement of the grant of the g	An Action in the Committee of the Commit	in the risk of the	rily history rily history cancer and nutrition				
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Generation Facility of the Control o	West	A prospective study - A prospective study - Colomorates - Co	y of Ceparidis, head with a provided, but of the provided of t	inches general cases in inches and inches an	4. Installed agreement of the grant of the g	An Action in the Committee of the Commit	in the risk of the	rily history rily history cancer and nutrition				
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C-peptide

C-per	otiae												
1	Study Kaaks et al,2000	Country USA	Design nested case-control	Gender F	Age(years) 35-65	cancer types and No. of cases/controls/cohor CRC:102,control:200,cohort:14275	pmol/ml						
2 3	Ma et al,2004 Stattin et al,2004	USA Norway	nested case-control nested case-control	M M	40-84 45(mean)	CRC:176,control:294,cohort:14916 CC:235,RC:143,control:378,cohort:600000	pmol/ml ng/ml						
4 5	Wei et al,2005 Jenab et al,2007	USA 10 European countries	nested case-control nested case-control	F F/M	30-55	CRC:182,control:350,cohort:32826 CRC:1078,control:1078,cohort:520000 CRC:375,control:750,cohort:38373	ng/ml ng/ml						
6 7	Otani et al,2007 Stocks et al,2008	Japan Sweden	nested case-control nested case-control	F/M F/M	40-69 50-70	CRC:375,control:750,cohort:38373 CRC:306,control:595,cohort:104461	ng/ml ng/ml						
8 9	Nakajima et al,2010 Wu et al,2011	Japan USA	case-control nested case-control	F/M M		CRC:115,control:115 CRC:499,control:992,cohort:51129	x x						
1	3.02ng/ml=1pmol/												
USA	Kaaks/2000 14275cohort, 102		suin-Like Growth Factor	(IGF)-I,IGF-Binding Pro	leins, and Colorectal Can C-peptide, pmol/mL	cer Risk in women							
nested case-cor	ntrol	Odds ratios (ORs)	of cancer of the colored	tum or of the colon fo	or quintiles of serum ins	sulin-like growth factor (IGF)-I,							
C-peptide	Q1	Q2	Q3	Q4	Q5	р							
OR case/controls	1 17/44	0.56 (0.22-1.38) 11/47	1.92 (0.90-4.09) 25/35	1.26 (0.53-3.02) 19/43	2.92 (1.26-6.75) 30/30	0.001							
mean exposure colon	0.41	0.57	0.74	1.01	1.67								
OR case/controls	1 12/22	0.41 (0.13-1.27)	1.42 (0.60-3.34)	1.99 (0.68-5.85) 16/27	3.96 (1.49-10.50) 24/21	<.001							
mean exposure	13/32 0.42	5/36 0.55	17/30 0.72	0.99	1.73								
_													
2	Ma/2004 Male	14916cohort, 176c	ly of plasma C-peptide a ases, 294controls	age40-84	C-peptide, pmol/mL								-
nested case-cor	ntrol Q1	Association betwee	Q3	Q4	s of plasma C-peptide c	oncentration p							
Overall follow-	0.14 (0.06-0.20)		0.38 (0.30-0.44)	0.54 (0.44-0.73)	0.97 (0.74-2.02)								
case/control RR* (95% CI)	19/58 1.0 (referent)	29/59 1.4 (0.7 to 3.0)	46/59 2.5 (1.2 to 5.2)	39/59 2.3 (1.1 to 4.7)	43/59 2.5 (1.1 to 5.6)	0.06	age and smoking status and a	adjusted for fasting s	tatus				
Multivariable RF	R 1.0 (referent)	1.5 (0.7 to 3.3)	2.2 (1.0 to 4.8)	1.6 (0.7 to 3.5)	2.5 (1.2 to 5.6)	0.04	age and smoking status and a BMI, alcohol consumption, vig	adjusted for fasting storous exercise, and	aspirin assignment				
							number of markers for insulin- insulin-like growth factor I (IGI	resistance defined a F-I) and IGF binding	as the number of any protein 3 (IGFBP-3)	of the folk	owing four	factors	
case/control	5 years of follow- 16/50	22/42	40/50	24/43	35/48								
RR* (95% CI) Multivariable RF	1.0 (referent) R 1.0 (referent)	1.6 (0.7 to 3.8) 1.6 (0.7 to 3.8)	2.8 (1.2 to 6.3) 2.6 (1.1 to 6.0)	2.1 (0.9 to 4.8) 2.0 (0.8 to 4.7)	3.3 (1.4 to 8.2) 3.4 (1.3 to 8.8)	0.03 0.03	age and smoking status and a age and smoking status and a	djusted for fasting s	tatus				
							BMI, alcohol consumption, vig	orous exercise, and	aspinn assignment				
3 Norway	Stattin/2004 235CC,143RC,37	'8control	cancer: does leptin pro age45	follow up 17vears	C-peptide, ng/mL								-
nested case-cor	ODDS RATIOS A	ND 95% CONFIDENC	CE INTERVAL OF CANC	ER OF THE COLON A	ND OF THE RECTUM FO	OR QUARTILES OF C-PEPTIDE							_
Colon	<0.18	0.18-0.31	0.31-0.7	>=0.7									
cases/control OR(crude)	52/65	63/54 1.68 (0.92-3.05)	60/58 1.53 (0.82-2.86)	60/58 1.81 (0.67-4.86)	0.19	Adjustment for leptin by adding it as conf	inuous variable to the model.						
OR(adjusted leg right colon	1	1.69 (0.93-3.09)	1.53 (0.82-2.86)	1.74 (0.65-4.69)	0.21								
cases/control OR(crude)	24/25	25/25 1.04 (0.49-2.23)	24/25 1.12 (0.44–2.82)	26/24 3.35 (0.29-38.6)	0.65								
OR(adjusted leg Left colon	1	1.04 (0.49-2.23)	1.12 (0.44-2.82)	3.35 (0.29-38.6)	0.65								
Cases/control OR(crude)	31/32	29/34 0.91 (0.41–2.02)	34/29 1.32 (0.57-3.07)	32/31 1.31 (0.41–4.17)	0.47								
OR(adjusted leg Rectum cases/control	<0.18	0.91 (0.40-2.03) 0.18 0.36 38/34	1.27 (0.54-2.98) 0.36 1.06	1.23 (0.38-3.97) >=1.06 35/37	0.55								_
OR(crude)	37/34	0.89 (0.41-1.95)	33/38 0.61 (0.24-1.55) 0.63 (0.24-1.68)	0.44 (0.10-1.99)	0.21								
OR(adjusted leg	1	0.90 (0.41–1.98)	0.63 (0.24-1.68)	0.46 (0.10-2.17)	0.27								
4	Wei/2005 32826women,182	A prospective stud CRC,350controls	ly of C-peptide, insulin- follow up 10years	like growth factor-I, in age30-55	c-peptide, ng/mL	binding protein-1, and the risk of cold	rectal cancer in women						
nested case-cor women	RR and 95% CI o Nurses' Health S	of colorectal cancer a Study, 1989-2000	ccording to quartiles o	f plasma levels of C-p	eptide, IGFBP-1, and HI	bA1c in the							-
C-peptide CRC	Q1 0.9	Q2 1.4	Q3 2	Q4 3.6	р								
case/control RR1	35/87	50/86	54/89	43/88									
RR2	1	1.46 (0.86-2.45) 1.46 (0.84-2.53)	1.50 (0.88-2.57) 1.41 (0.79-2.55)	1.22 (0.70-2.13) 1.17 (0.63-2.20)	0.94								
colon case/control	23/70	41/65	42/71	34/62									
RR1 RR2	1	1.88 (1.04-3.42) 1.88 (1.00-3.56)	1.83 (0.96-3.48) 1.85 (0.92-3.74)	1.65 (0.88-3.09) 1.76 (0.85-3.63)	0.38								
2	RR from condition	al logistic regression al logistic regression a	additionally adjusted for B	MI, physical activity, pa	ck-years smoked, and alc	cohol intake as continuous variables, famil	y history						
	oi coloreciai cario	er, aspiriir use, riistory	of screening, menopausa	is status, and use or po	sineriopausai riorriories								
5	Jenab/2007	Serum C-peptide, I	GFBP-1 and IGFBP-2 ar	nd risk of colon and re	ctal cancers in the Euro	ppean Prospective Investigation into C	Cancer and Nutrition						
10 western Euro nested case-cor	opean countries	1078CRC.1078contr	ols.520000cohort		C-peptide, ng/mL	ECTUM COMBINED, BY FASTING STA							
c-peptide	cases/control	asting and nonfasting crude OR	combined adjusted OR	cases/control	fasting subject	cts only adjusted OR	non cases/control	fasting subject crude OR	adjusted OR				-
colon 1	104/121	1	1	27/32	1	1	77/89	1	1				
3	139/150 120/136	1.08 (0.76-1.55) 1.07 (0.75-1.55)	1.05 (0.73-1.50) 1.06 (0.72-1.54) 1.17 (0.80-1.71)	40/41 32/38	1.15 (0.58-2.26) 0.99 (0.48-2.04)	1.20 (0.59-2.45) 0.98 (0.47-2.06)	99/109 88/98	1.10 (0.72-1.69)	1.04 (0.68-1.59) 1.10 (0.71-1.70) 1.19 (0.77-1.85)				
4 5	143/136 168/131	1.29 (0.89-1.86) 1.67 (1.14-2.46)	1.48 (0.98-2.25)	38/36 41/31	1.27 (0.62-2.62) 1.66 (0.80-3.45)	1.22 (0.56–2.67) 1.58 (0.70–3.56)	105/100 127/100	1.30 (0.85-1.98) 1.66 (1.06-2.65)	1.49 (0.91-2.42)				
rectum	78/93	<0.01	<0.01	15/18	0.18	0.49	63/75	0.01	0.01				
2	71/68 94/80	1.26 (0.80-1.99) 1.43 (0.93-1.20)	1.25 (0.79–1.99) 1.29 (0.82–2.04)	12/11 20/13	1.37 (0.46-4.10) 1.99 (0.60-5.72)	1.25 (0.41–3.83) 1.62 (0.49–5.39)	59/57 74/67	1.25 (0.75-2.06)	1.25 (0.75-2.09) 1.26 (0.76-2.08)				
4 5	68/81 93/82	1.02 (0.65-1.20) 1.02 (0.90-2.25)	0.94 (0.59-1.51) 1.25 (0.76-2.03)	14/16 15/18	0.92 (0.30-2.80) 1.11 (0.38-3.25)	0.68 (0.20–2.31) 0.78 (0.23–2.58)	54/65 78/64	1.33 (0.83-2.15) 1.03 (0.63-1.68) 1.53 (0.92-2.55)	0.97 (0.58-1.63) 1.37 (0.80-2.36)				
p	3302	0.35	0.78	10.10	0.86	0.16	7004	0.25	0.49				
1 2	182/214 210/218	1 1.14 (0.87–1.51)	1 1.11 (0.84–1.47)	42/50 52/52	1 1.20 (0.68–2.12)	1 1.20 (0.67–2.16)	140/164 158/166	1 1.13 (0.82–1.55)	1 1.09 (0.79–1.51)				_
3 4	214/216 211/217	1.20 (0.91-1.59) 1.19 (0.90-1.58)	1.13 (0.85–1.51) 1.09 (0.81–1.46)	52/51 52/52	1.24 (0.69-1.21) 1.22 (0.67-2.21)	1.11 (0.61–2.03) 1.09 (0.57–2.05)	162/165 159/165	1.20 (0.87-1.55)	1.14 (0.82-1.58) 1.10 (0.79-1.53)				
5 p	261/213	1.56 (1.16-2.09) <0.01	1.37 (1.00-1.88) 0.03	56/49	1.41 (0.78-2.55) 0.31	1.22 (0.64–2.35)	205/164	1.61 (1.15-2.26) 0.01	1.44 (1.00-2.06) 0.02				
fasting subjects	Q1	Q2	Q3	Q4	Q5								
non-fasting subj		2.2-2.8 Q2	2.8-3.2 Q3	3.2-3.8 Q4	>=3.8 Q5	ng/ml							
Values for Crude	<2.7 le are OR (95%CI) o	2.7-3.8 derived from univariate	3.8-5 models conditioned on the	5-6.8 he matching factors	>=6.8	ng/ml							
values for Adjus	and OK (95% C	on, derived from univar	movers conditioned o	ni are matching factors	una runner aujusted for b	ody mass index and physical activity							
_													
6 Japan	Otani/2007 C,750control,3837	3cohort	11.5year follow up		C-peptide, ng/mL	ns and risk of colorectal cancer in a ne			th center-based pro	ospective	study		<u> </u>
nested case-cor	AND INSULIN-LII	KE GROWTH FACTO	ENCE INTERVAL (CI) O R BINDING PROTEINS		CER FOR BASELINE CO	DICENTRATIONS OF PLASMA C-PEP	TIDE, INSULIN-LIKE GROWT	H FACTOR-I (IGF-I)					
Colorectum	Q1	Q2	Q3	Q4	p								
Men c-peptide	1.1	1.9	3.3	5.6									
Case/control OR	25/86 1	49/92 2.3 (1.2–4.5)	50/93 2.8 (1.3-6.1)	56/88 3.2 (1.4–7.6)	0.0072								
c-peptide	1.1	1.9	2.8 46/93	4.8 46/88									
OR Colon	51/80	32/77 0.71 (0.39–1.3)	46/93 0.75 (0.40-1.4)	46/88 0.78 (0.38–1.6)									
Men women	1	2.1 (0.96-4.6)	2.6 (1.0-6.3)	3.5 (1.2–10)	0.025 0.54								
women rectum Men	1	0.65 (0.29-1.4) 1.8 (0.40-8.0)	0.92 (0.41-2.0) 3.8 (0.83-18)	0.72 (0.28–1.8) 2.2 (0.47–10)	0.54								
women	1 using matched noise	0.88 (0.34-2.3)	0.46 (0.14-1.5)	0.76 (0.23-2.5)	0.82	continuous), body mass index							
						lasma measurements mutually:							
7		_											
7 Sweden	Stocks/2008 306CRC,595contr	rcage50-60		and colorectal cancer	risk; a prospective stud C-peptide, ng/mL	3 y							
	Odds ratios for o	colorectal cancer by Q2	quartiles Q3	Q4	p								
C-peptide ng/ml fasting <4h	<2.6	2.6-3.7	3.7-5.2	>5.2									
fasting>4h cases/control	<1.5 74/136	1.5-1.9 72/138	1.9-2.5 72/137	>2.5 73/138									
OR	1	0.94 (0.63-1.40)	0.93 (0.62-1.39)	0.94 (0.62-1.41)	0.82								
8	Nakajima/2010	Adipocytokines 90	new promising marker	s of colorectal fumore	s: adiponectin for colors	ectal adenoma, and resistin and visfati	in for colorectal cancer						
Japan case-control	115CRC,115contr	rcage,63.7CRC,63.5cc				,							-
	Univariate	P	Multi	P									
c-peptide).711 (0.550-0.920	0.01	0.983 (0.663-1.458)	0.93									
_													_
9	Wu/2011 male,499cases,99	2control	age40-75			(IGF)-1 and C-peptide with risk of colo	rectal cancer						
00	n Multivariable adi	justed odds ratios (C	(K) of colorectal and co	on cancer by median	of plasma analyte leve	I, MPFS and NHS							
nested case-cor	combined												
nested case-cor	combined colorectal cancer low	high	colon cancer low	high		Martin for O.F.							
nested case-cor	combined colorectal cancer low 197/455	high 277/460 1.37(1.05-1.78)	low 140/337	high 211/339 1 1.58(1.16-2.16)		Models for C-Peptide only included parti	cipants without self-reported d	iabetes mellitus.					

total

nda et al. 1998 Ju	ountry	Design	Gender	Agelyeans)	cancer types and No. of cases/controls/cohort	CRC Diagnosis	Adjustment for covariates
			FM		CBC+19 commit 158		AQUITMENT NO CONTRACTOR TO AN
1999 U	coan.	case-control nested case-control	-M		CRC:129.compsi:158.cohort:121700	histologically confirmed colorectal carcinoma in situ ido not peretrate beyond the muscularis mucosael with no history of ISD teview of histoarhologic reports.	lace, ass Affraicabel consumerion was of birth, accorde consumerion was of birth, nonthed oblood draw, and fasting state in
1999 U		nessed case-control	EM	73.9(mean)	CRC:102.cohort:5849	Insures of Integrationage reports ICD-9 codes for opion/15(3):0-15(3) 4 and 15(3):0-15(3) 9 and recopi/15(4):0-15(4) and 15(4):0 ICD-9 codes for opion/15(3):0-15(3):4 and 15(3):0-15(3):9 and recopi/15(4):0-15(4):1 and 15(4):0 ICD-9 codes for opion/15(3):0-15(3):4 and 15(3):0-15(3):9 and recopi/15(4):0-15(4):1 and 15(4):0 ICD-9 codes for opion/15(3):0-15(3):4 and 15(3):0-15(3):9 and recopi/15(4):0-15(4):0 ICD-9 codes for opion/15(3):0-15(4):0-1	
69 U		cohort	-M	73.9(mean)	CRC 102.compl 200.cohort 14275	ECH 9 0088 for 0300(1020-1024 and 1524-1523) and Notal(1540,154.1 and 154.8)	lage, sex and physical activity
		nested case-control	-			Medical records reviewed to confirm pathologic diagnosis of cancer	Ago, mercopausal status, day of menetraal cycle (for premenopausal women), and time of last tood consumption and smoking status.
2003 5			EM		OC:110 RC:58 control:396	verified histologically by reviewing medical records.	ace, sex SMI, smoking IGFSP levels
303 JU	SA	case-control	FM	+18 45-79	OC:132,RC41,coresi:346	ICD-9 codes for colon (153) and rectum (154) and confirmed by pathology report	age, sex, race, time since last meal, and date of blood draw
14 U	K	cohort	FM	45-79	CRC 67 cohort 9605	ED-9 153-154.1 and 159	ass RMI, smoking habit
U	SA	nested case-control	м		CRC:176,compsi 294,cohort:14916	Medical records	lage, smoking status, fasting status, SMN, alcohol consumption, vigorous exercise, and aspirin assignment
2004 N	DOWNEY .	nested case-control	M	45(mean)	CC:235 RC:143 control:378 cohort 600000	Inkace with the Nonwolan cancer and all-cause mortality registries	Adjustment for leptin by adding it as continuous variable to the model.
			F		CRC:168.cohort:27110		age, random treatment assignment, BMI, family history of CRC and colon polyps, physical activity, erroking status, red meat intake, alcohol consumption, total energy intake, multivitamin use, menopalusal status, and baseline postneropausal hormonie use
005 Kr	crea	cohort	EM	30-96	CRC 3052, cohort 929770men, 46861 Swomen	positive report form the national cancer registry or a hospital admission for cancer diagnosis.	ladiusted for soe, soe squared, amount of smoking, and alcohol use
2006 lu	GA AD	nested case-control		30-55	CRC:182.compol:350.cohorr:32826		SMI shveical activity, oxide-years smoked, and alcohol intake as continuous variables, family history of CRC aspirin use, history of screening, meropassal status, and use of postmeropassal homores
al 2006 No		case-control			CRC:105.compd:105	histopathologic diagnosis of adenocarcinoms and subsite information were confirmed through colonocappy or surgery	Adjusted for son, see SBM TG cholesterol
(al.2006 Fi		nested case-control		50-69	CRC 139 correct 399 cohort 29133	Finnish Cancer Registry, medical records and ICD-9153.0-153.4, 153.6-153.9 and 154.0-154.1	Cigarette pack-years, body mass index, prosein intake, fat intake, filter intake, alcohol consumption, caloric intake, history of disbeses mellitus and occupational physical activity.
						histologically verified and according to ICO-9	lage, smoking status, cocupational group, and SMI
		nested case-control		36.7-76.9	CRC-1078 control 1078 cohort \$20000	record linkage with regional cancer registries or health insurance records, contacts with caner and pathology registries and active follow-up	Ass, conder BMI, chrysical activity, bibonstory analysis and case-control status
	pan	nested case-control	CAL	40-69	CRC 375 coreol 750 cohort 38373	pathologically confirmed as adenocarcinores and ICD-O-9 for color C180-C180 and encurs C190-C209	Indications for pack-years of straining, alcohol consumption. BMI, physical seasonics, family history of coloractal cancer and following plasma measurements mutually
al,2007 S	weden	cohort	EM	46(mean)	CC:147 RC97 cohort 64597		Jack Calendar year, enricing
		nested case-control			CRC-408.compi 816.cohom90676	IDD-9152-0-152-6-1529 and 154-0-154.1	
M-2008 U	SA	nested case-control		50-79	CRC:438.compl.816.cohort93676	ED-9 153.0-153.4, 153.6-153.9 and 154.0-154.1	<u> </u>
		nested case-control nested case-control		35-69	CRC:1036.control:1036.cohort:370000women,150000men CRC:306.control:596.cohort:104461	record inkage with regional cancer registries or health insurance records, contacts with caner and pathology registries and active follow-up medical records and pathology reports, ICD0 colon(16.0 and 16.3-16.9) and rectum (16.9 and 20.9)	Gender, age at blood donation, time of the day at blood donation, believe up time, fasting status and, in women, manopausal summer days of the menetrical cycle for premeropausal somen case-order times of the days of
						Indexes records and partnergy reports, EUO color(16.0 and 162-16.9) and recture (16.9 and 20.9) EO 7	
si,2009 N	onway, Austri				OC:2434 RC:1345,cohort:274126men,275816women		adjusted for baseline age, BMI, and smoking status, and RRs per 1 minolit were additionally adjusted for fasting time
et al. 2010 Ja	conn.		EM		CRC-115 coreol-115	pathologically discrepted with colorectal cancer by biopey using polonoscopy	Ass. sender: EAR summ stace and summ location
o et al,2010 Ji	pan.		FM		ORC 22,control 64	histologically confirmed carcinoma in situ or cancer invading within the submucosa	BMI, smoking and drinking
s(2011 N	onway	cohort	FM	44(mean)	CRC 4695, cohort 579500	ICD-7 colon (153) and rectum (154)	adjusted for baseline age, birth year, smoking status, and quintiles of BMB
011 JU		nested case-control	M		CRC 499, cormol 992	medical and pathology records	Age, gender, BMI, month of blood donation, emoking stassus, physical activity, intake of alcohol, methonine, folses, retinol, red and processed meat, calcium intake, temly biscory of CRC, fasting stassus
12012 (0	hina	case-control	м	learly cancer62.1 advs	CRC:165.com(s):102	pathologically disprosed	ace, SML WHR, SSP, TG, fasting insulin. HOMA-R, stral adjooractin. HMW adjooractin. Wethle characteristics, medications, family history of CRC and diabetes
tal,2012 Fi		cohort	FM			linkage of the GOH database with the Israel National Cancer Registry	
i,2012 JU	K	nested case-control	F		CRC 91,control:4821,cohort:4902	pathology reports, discharge summaries, operative and radiology reports and tumor registry abstracts	Adjusted for age, body mass index, alcohol intake, physical activity, tamily history of colorectal cancer, ethnicity, and participation in the CG or resament arm of each clinical trial.
peral/2012 NJ	SA	nested case-control	EM	45-75	CRC:1954.control:2587.cohort:215000		Adjusted for see, see, receiverhicky, history of coloracial poles, tenth history of coloracial concer. EMI chysical activity, processed meet implies pack-years of smoking, alcohol consumption, and musual adjustment for GFF-1.
sih et al 2012 S		cohort	EM	43.84(mean)	CC:2472 RC:1510 cohort 540009	colon (ICD-7: 152), and rectal cancer (ICD-7: 154) was taken from the National Cancer Registry	adjusted for glucose. TC and TG levels, son, oender, SES, and feeting status
et al.2013 Us			EM		CEC 29 control 44)	advanced objects: cancer as a cancer lesion penetrating beyond the latting proping mucosase	lage, gender, cholement, triplecide, unclassification
al 2013 U	SA.	cohort	EM	66.8(mean)	CRC 136 cohort 6615	pathologic reports and ICO codes	lage, ass, alone), smoling (MA, smoling assault)
			FM	CRCS8.control52.9			
t al. 2014 T		case-control cohort			ORC:300,cohort:175677	total colonoscopy positive report from National Cancer Registry or hospital admission for a cancer diagnosis. ICD-10 CRC(C18-C26)	ace, SML VFA, serum IGF-1, fasting insulin and slucose
2014 6	orea			42(mean)			lage, sex, body mass index, smoking, alcohol drinking, and regular exercise.
	CASSE	controls	cohort				
al,1998	129	528	0				
1999	79	156	121700				
al,1999	102	0	5849				
62000	102	200	14225				
et al.2003							
al 2003		346					
2004			9606				
	176	294	14919				
	278	378	600000				
004 sl.2004							
12004	168		27110				
12004	168	0					
12004		0 0	27110 1298385 22836				
1,2004 105 005 006	168 3352 182	0 0 350	1296365				
12004 06 105 106 12006	168 2352 182 105	0 0 350 935	1298385 32826 0				
12004 05 005 005 006 12006 nl.2006	168 2052 182 105 129	0 350 105 299	1298385 32826 0 29133				
12004 05 005 005 006 12006 al 2006 2006	168 2352 182 105 139 677	399	1298385 32826 0 29133 140813				
2004 36 05 05 06 2006 8,2006 1006 2007	168 2952 182 105 129 677 1078	399 0 1078	1298385 22826 0 29133 140813 520000				
2004 26 05 06 2006 al 2006 2000 2007	168 2052 182 105 129 677 1078 275	399	1298385 32826 0 29133 140813 520000 38273				
12004 06 005 005 006 12006 si 2006 2006 2007 2007	168 2352 182 105 129 677 1078 375 234	399 0 1078 750 0	1298385 32826 0 29133 140813 530000 382273 64587				
2004 25 05 05 06 2006 4,2006 5000 2007 2007 2007	168 2052 182 105 129 627 1078 375 234 438	399 0 1078	1298385 32806 0 29133 140813 520000 38273 64587 93678				
2004 25 05 05 06 2006 4,2006 5000 2007 2007 2007	168 2352 182 105 129 677 1078 375 234	399 0 1078 750 0	1298385 32826 0 29133 140813 530000 382273 64587				
2004 26 05 05 06 2006 2006 2007 2007 2007 2007 2007	168 2352 182 105 129 677 1078 275 234 438 1006	299 0 1078 750 0 814 1006	1298385 32808 0 29133 140813 520000 38273 64587 93678 520000				
2004 26 05 05 05 2006 2006 2007 1007 2007 2007 2008 2008	168 2052 182 105 129 677 1078 275 234 428 1026 209	209 0 1078 750 0 816	1298385 22908 0 29133 140313 520000 38273 64587 93676 520000 104461				
2004 6 5 15 06 2006 4 2006 000 000 000 2007 2007 2008 2008 2008 20	168 2052 182 105 129 677 1078 275 234 438 1006 2079	209 0 1078 750 0 814 1006 595 0	1298385 32808 0 29133 140813 520000 38273 64587 93678 520000				
2004 6 5 15 06 2006 4 2006 000 0007 2007 2008 2008 2008 2008 2008	168 2052 182 105 120 677 1078 375 234 438 1026 2079 115	299 0 1078 750 0 814 1006	1298385 22908 0 29133 140313 520000 38273 64587 93676 520000 104461				
2004 55 505 505 505 505 505 505 505 505 5	168 2352 182 195 129 627 1078 275 234 438 1026 306 2779 115 22	209 0 1078 750 0 814 1006 595 0	129036 2006 0 29123 140313 50000 20273 64637 93074 520000 104601 546044 0 0				
2004 6 5 15 15 15 15 15 15 15 15 15 15 15 15 1	168 2052 182 105 120 677 1078 375 234 438 1026 2079 115	209 0 1078 750 0 814 1006 595 0	1298385 22908 0 29133 140313 520000 38273 64587 93676 520000 104461				
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