

SUPPLEMENTARY MATERIAL

Supplementary Table 1: Search Strategy

Ovid MEDLINE(R) and In-Process, In-Data-Review & Other Non-Indexed Citations <1946 to August 10, 2021>		
1	exp Colorectal Neoplasms/	212708
2	((anal or anus or bowel or circumanal or colon or colorectal or lynch or perianal or rectal or rectum or sigmoid) adj3 (adenoma or adenocarcinoma or cancer or cancerous or carcinoma or malignant or malignancy or neoplasm or neoplastic or oncology or oncological or tumor or tumour)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	215837
3	1 or 2	280148
4	exp Africa/	286464
5	(Africa or African or Africans or Algeria or Angola or Ascension or Benin or Botswana or "Burkina Faso" or Burundi or "Cabo Verde" or Cameroon or "Central African Republic" or Chad or Comoros or "Cote d'Ivoire" or Congo or Djibouti or Egypt or "Equatorial Guinea" or Eritrea or Eswatini or Ethiopia or Gabon or Gambia or Ghana or "Guinea-Bissau" or Guinea or Kenya or Lesotho or Liberia or Libya or Madagascar or Malawi or Mali or Mauritania or Mauritius or Morocco or Mozambique or Namibia or Niger or Nigeria or Principe or Rwanda or "Saint Helena" or "Sao Tome" or Senegal or Seychelles or "Sierra Leone" or Somalia or "South Africa" or "South Sudan" or "Sub-Saharan" or Sudan or Swaziland or Tanzania or Togo or "Tristan da Cunha" or Tunisia or Uganda or Zambia or Zimbabwe).mp.	708356
6	4 or 5	708356
7	3 and 6	2891
8	exp Risk Factors/	880885
9	exp Epidemiology/	27568
10	exp Morbidity/	595668
11	exp Risk Assessment/	289203
12	exp "Correlation of Data"/	2070
13	(risk or correlat* or predict* or factors).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	8188068
14	exp Genes/	797379
15	exp Genetic Predisposition to Disease/	145858

16	exp Colorectal Neoplasms/ge [Genetics]	39128
17	exp Genetic Variation/	1120454
18	(Genetic or gene or "family history" or mother or father or brother or sister or sibling or polymorphism or mutation or allele or predisposition or predisposed or variant or genotype or hereditary or heritable or inherited).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	3979145
19	exp Life Style/	100670
20	exp Smokers/	2962
21	exp Ex-Smokers/	127
22	exp Alcoholics/	858
23	exp Alcohol Drinking/	72398
24	exp Diet/	298555
25	exp Exercise/	214352
26	exp Tobacco Products/	8989
27	exp Smoking/	153243
28	exp Feeding Behavior/	179306
29	exp Health Behavior/	338684
30	exp "Tobacco Use"/	6692
31	(smoking or alcohol or lifestyle or "life style" or diet or food or foods or cigarette or cigar or tobacco or beer or wine or drinker or smoker or high fat or exercise or "Physical activity" or "environmental factors" or sedentary or Inactivity or "High fiber" or "low fiber").mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	2139694
32	exp Inflammatory Bowel Diseases/	85732
33	exp Diabetes Mellitus/	450653
34	exp Adenomatous Polyps/	8256
35	exp Colonic Polyps/	8898
36	exp Obesity/	229136
37	(Crohns or Colitis or diabetes or "Adenomatous Polypos*" or "lynch syndrome" or "adenomatous polyps" or "sessile serrated lesions" or "SSLs lesions" or obesity or "Polyposis Syndrome" or "Familial Polypos*" or obese or "Myh-Associated Polypos*" or "Intestinal Polypos*" or "Gardner Syndrome" or "Muir-Torre Syndrome").mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol	1061586

	supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	
38	8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37	12807796
39	3 and 6 and 38	2158
40	exp animals/ not humans.sh.	4867788
41	39 not 40	2137
42	("African American*" not ("African american" and African)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	42416
43	41 not 42	1559

Supplementary Table 2: Characteristics of studies that reported incidence of CRC in Africa and included in the meta-analysis

Study	Year of Study	Country	Period	ASIR (per 100,000 population)	
				Male	Female
Katsidzira et al. (2016)	2016	Zimbabwe	2003-2012	14.8	14.2
Timotewo et al (2017)	2017	Ethiopia	2012–2013	7.6	7.0
Walker et al (2001)	2001	South Africa	1995–1999	1.7	2.0
Walker et al (1996)	1996	South Africa	1993–1995	24.7	19.3
Wentik et al (2010)	2010	South Africa	2002-2009	3.7	3.9
Agyemang-Yeboah et al (2017)	2017	Kumasi, Ghana	2009-2015	5.2	4.1
Missaoui et al (2010)	2010	Tunisia	1993-2007	11.7	10.0
Bayo et al (1990)	1990	Bamako, Mali	1987-1988	4.4	1.7
Bodalal et al (2014)	2014	Bengazi, Libya	2012	17.5	17.2
Adnane Tazi et al (2013)	2013	Rabat, Morocco	2006 - 2008	12.0	9.0

Study	Year of Study	Country	Period	ASIR (per 100,000 population)	
				Male	Female
Khiari et al (2018)	2018	Northern Tunisia	2007 - 2009	13.6	11.1
Benarba et al (2014)	2014	Northwest Algeria	2000 - 2010	1.0	1.3
Katalambula et al (2016)	2016	Tanzania		3.8	3.0
KOULIBALY et al (1997)	1997	Conakry, Guinea	1992–1994	1.9	0.7
Lorenzoni et al (2020)	2020	Maputo, Mozambique	2015–2017)	3.0	2.6
Lorenzoni et al (2020)	2020	Beira, Mozambique	2014–2017	2.0	1.8
Medhin et al (2019)	2019	Eritrea	2011–2017	9.97	6.2
Motsuku et al (2021)	2021	South Africa	2002–2014	11.01	6.81
Saeed et al (2014)	2014	Khartoum, Sudan	2009–2010.	6.2	5.9
Veruttipong et al (2012)	2012	Egypt	1999-2007	6.1	4.9
Wabinga et al (2000)	2000	Kyadondo county, Uganda	1960-1966	3.0	2.7
Wabinga et al (2000)	2000	Kyadondo county, Uganda	1967-1971	4.8	6.3
Wabinga et al (2000)	2000	Kyadondo county, Uganda	1991-1994	8.3	5.7
Wabinga et al (2000)	2000	Kyadondo county, Uganda	1960-1966	6.8	6.6

Supplementary table 3: Characteristics of studies reporting associations between various risk factors and CRC

Study name	Country	Study design	Measure of Effect	Risk factors					
				Demographics	MOE (95% CI)	Lifestyle factors	MOE (95% CI)	Dietary risk factors	MOE (95% CI)
Barbirou et al. (2020)	Tunisia	Case control	Odds ratio	female	2.20 (1.16-4.2)	Alcohol consumption	3.07 (1.48-6.59)	Meat consumption (0.14-0.57)	0.22
						Tobacco consumption	1.64 (0.81-3.35)	Fat consumption (3.45-12.3)	6.40
						Physical activity	0.02 (0.01-0.03)	Vegetables	1.28 (0.65-2.38)
Baroudi et al. (2014)	Tunisia	Case control	Odds ratio			Physical activity	0.37 (0.19-0.7)	Vegetables >3x/week	0.18(0.1-0.31)
						Tobacco consumption	2.25 (1.56-4.2)	Tea consumption >1x/day	2.9 (1.67-5.09)
								Fruits >3x/week	0.19 (0.1-0.35)
Kaindi et al. (2018)	Kenya	Case control	Odds ratio			Alcohol consumption	2.2 (1.2-4.2)	Red Meat consumption	1.3 (0.7-2.4)

						Physical activity	0.9 (0.3-2.9)	Processed Meat consumption	2.3 (0.7-7.1)
						Tobacco smoking	1.6 (0.8-3.3)	Fish consumption	1.0 (0.6-1.7)
								Frequent butter consumption	2.1 (0.4-10.6)
Mahfouz et al. (2014)	Egypt	Case control	Odds ratio			Smoking	8.8 (3.9 - 19.3)	Red meat >500g/week	57.1 (12.1-270.3)
						Alcohol	1.1 (0.8-1.2)	Processed meat	2.4 (1.5-3.8)
						Obesity	1.3 (0.7-2.1)	Fruits/vegetables	0.02 (0.008-0.09)
						Physical activity	0.001 (0.001-0.0002)	Soft drinks	4.6 (1.9-11.01)
								Fresh fish	0.38 (0.25-0.59)
								High Calcium diet	0.08 (0.04-0.17)
Negrichi et al. (2021)	Algeria	Case control	Odds ratio	Family history of CRC (1st degree)	7.45 (1.67-33.23)	Alcohol consumption	5.48 (2.22-13.5)	Red Meat	1.67 (1.11-2.51)

				Family history of CRC (2nd/3rd degree)	4.94 (1.39–17.47)	Tobacco smoking	1.99 (1.22–3.24)	Fizzy drinks	2.66 (1.78-3.99)
				Any cancer in first-degree relative	2.46 (1.50–4.05)	Daily NSAID use	0.17 (0.04–0.79)	Yogurt	0.63 (0.41-0.96)
				Any cancer in 2nd/3rd degree relative	2.50 (1.61–3.90)	Occupational exposure to carcinogens	3.37 (1.73–6.55)	Frequent butter consumption	0.253 (0.14-0.43)
								Vegetables	0.28 (0.057-1.35)
								Fruits	0.83 (0.42-1.65)
Walker et al. (1989)	South Africa	Case control	Odds ratio					Low fibre diet	1.67 (0.44-6.29)
								High fat diet	1.45 (0.66-4.80)

