



**RED MEAT AND
PROCESSED MEAT**

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Table 2.5.4 Case-control studies: Processed meat and cancer of the prostate (web-only)

Reference, location enrolment/follow-up period, study design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled
Deneo-Pellegrini et al. (1999) Uruguay 1994–97 Case-control	Cases: 175; localized 25%, regional 72%, disseminated 3%. Controls: 233; hospital patients with conditions unrelated to diet- mainly mild surgical conditions, no cancers Exposure assessment method: Questionnaire; 64 food items Processed meat: sausage, bacon, salami, saucisson, mortadella, ham and salted meat.	Prostate: NR	Processed meat, quartile	48	1.2 (0.7–2.2)	Age, residence, urban/rural, education, family history, BMI, energy intake
			Q1	41	1.1	
			Q2	48	1.2 (0.7–2.2)	
			Q3	46	1.0 (0.6–1.8)	
			Q4	40	0.8 (0.4–1.4)	
			Trend-test <i>p-value</i> =	0.31		
Aune et al. (2009) Uruguay 1996–2004 Case-control	Cases: 345 histologically confirmed; Recruited in 4 major hospitals in Montevideo Controls: 2,117; Controls with non-neoplastic diseases not related to smoking or drinking, without recent changes in dietary habits Exposure assessment method: Questionnaire; 64 food items. FFQ tested for reproducibility correlation coefficients between 2 assessments = 0.55 for processed meat); processed includes hot dogs, sausages, ham, salami, saucisson, mortadella, bacon and salted meat.	Prostate: R	Processed meat, tertile (g/d)			Residence, age, education, income, interviewer, smoking, alcohol, intake of grains and fatty foods, fruits and vegetables, energy intake, BMI and other dietary habits.
			T1 (0–10)	86	1.0	
			T2 (> 10–40)	169	0.89 (0.66–1.21)	
			T3 (> 40–258.8)	90	0.95 (0.66–1.38)	
			Trend-test <i>p-value</i> =	0.82		

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Reference, location enrolment/follow-up period, study design	Population size, description, exposure assessment method	Organ site	Exposure category or level	Exposed cases/ deaths	Risk estimate (95% CI)	Covariates controlled
John et al. (2011) USA 1997–2000 Case-control	Cases: 726; Population-based, 40–70 years old. Non-Hispanic whites and African-Americans. SEER codes 41– 85 Controls: 527; Controls identified with random-digit dialing (RDD) and random selections from the rosters of beneficiaries of the Health Care Financing Administration, frequency matched by age and ethnicity Exposure assessment method: Questionnaire; 74-item food questionnaire Processed meat: Sausages made from red or white meat, bacon and cold cuts	Prostate: Advanced cases	Processed meat, tertile g/1000 kcal/d)	135	1.25 (0.85–1.83)	Age, race, SES, family history, BMI, calorie intake, fat, fruits, vegetables
			No processed meat consumed	88	1.0	
			T1	135	1.25 (0.85–1.83)	
			T2	129	1.15 (0.77–1.71)	
			T4	179	1.57 (1.04–2.36)	
			Trend-test <i>p</i> -value =	0.05		
Deneo-Pellegrini et al. (2012)	Cases: 326; Hospital-based study. Localized cancers, 25%; regional, 72%; and disseminated, 3% Controls: 1,488; Hospital controls: conditions not related to smoking, drinking, and without recent dietary changes (minor surgical conditions). Matched 2:1 on age and residence Exposure assessment method: Questionnaire; 64 food items Processed meat: bacon, sausage, blood pudding, mortadella, salami, saucisson, hot dog, ham. Salted meat presented separately	Prostate	Processed meat, tertile			Education, family history, energy intake, other types of meat
			T1	103	1.0	
			T2	114	1.19 (0.85–1.66)	
			T3	109	1.0 (0.71–1.42)	
			Trend-test <i>p</i> -value =	0.98		

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