

Appendix 1 (as supplied by the authors): Overview of published studies that evaluated the association between obstructive sleep apnea and incident cancer or death from cancer				
	Nieto et al,¹ 2012	Campos-Rodriguez et al,² 2013	Christensen et al,³ 2013	Marshall et al,⁴ 2014
Population	Community-based (the Wisconsin Sleep Study)	Clinic-based (7 Spanish teaching hospitals)	Community-based (the Copenhagen City Heart Study)	Community-based (the Busselton Health Study)
Cohort Size*	N total = 1,522 N (oxygen saturation) = 1,306 N (AHI ≥ 15) = 143	N total = 4,910 N (AHI ≥ 18.7) = 3,273	N total = 8,783 (snoring and breathing cessations) N (the ESS) = 5,894 (1998) N (snoring, breathing cessations, and DS) = 3,647	N = 390 N (RDI ≥ 15) = 17
Outcome: no. of events	Cancer deaths: Total = 50 Oxygen saturation subsample = 33	Incident cancer = 261	Incident cancer: Total = 1,985 1998 population = 1,097	Incident cancer = 125 Cancer deaths = 39
Follow-up	Maximum 22 years	Median 4.5 years	Average 13 years	Maximum 20 years
Obstructive sleep apnea diagnosis	Full polysomnography	Either full standard polysomnography (32%) or respiratory polygraphy (ECG, oronasal flow and pressure, respiratory movements, SaO ₂)	Self-reported snoring, breathing cessation and DS (measured by ESS)	MESAM IV: 4-channel portable home-monitoring device (snoring, heart rate, SaO ₂ , body position)
Cancer diagnosis: sources	Cancer mortality: the National Death Index and the Wisconsin State Bureau of Health Information and Policy, Vital Records Section	Cancer incidence: cancer and pathology registries, medical records and computerized databases, primary care physician in charge of the patient	Cancer incidence: from nationwide hospital discharge registry	Cancer incidence and mortality: the Western Australian Cancer Registry, the Western Australian Death register
Analyses, variables in final model	Cox regression analyses Age, sex, BMI, BMI ² , and smoking	Cox regression analyses Age, BMI, sex, alcohol intake, smoking, type of sleep study, and hospital of enrolment as random effects	Cox regression analyses Main: age, BMI, tobacco and alcohol consumption, educational and marital status, physical activity. Additional: lung function, menopausal status and hormone therapy use	Cox regression analyses Age, sex, BMI, waist circumference, smoking status
Results: HR (95% CI)†	4.8 (1.7–13.2) (AHI > 30 vs. < 5) 8.6 (2.6–28.7) (HI > 11.2 vs. < 0.8)	1.06 (0.62–1.80) (AHI > 30 vs. < 5) 2.33 (1.57–3.46) (HI > 12 vs. < 1.2)	Often/always vs. seldom/rarely 1.04 (0.90–1.21) for snoring; 1.07 (0.70–1.62) for stop breathing; 1.13 (0.89–1.44) for 2–3 vs. 0 SBD symptoms	RDI ≥ 15 vs. RDI < 5 Death: 3.4 (1.1–10.2) Incidence: 2.5 (1.2–5.0)
Interactions	predictors and BMI, sleepiness, sex and age: NS	- age and predictors (p < 0.05) - sex and HI (p = 0.05) - predictors and BMI: NS	age and DS was suspected	sex and RDI: NS
<p>Note: AHI = apnea-hypopnea index (events/hour); BMI = body mass index; DS = daytime sleepiness; ECG = electrocardiography; ESS = Epworth Sleepiness Scale; HI (hypoxemia index) = percent sleep time below 90% oxyhemoglobin saturation; HR = hazard ratio; IQR = interquartile rang; NS = not significant; RDI = respiratory disturbance index, SaO₂ = oxygen saturation; SBD = sleep breathing disorder; SD = standard deviation. *Sample size for cancer analyses. †Analyses based on the fully adjusted model on the entire sample.</p>				

References

1. Nieto FJ, Peppard PE, Young T, et al. Sleep-disordered breathing and cancer mortality: results from the Wisconsin Sleep Cohort Study. *Am J Respir Crit Care Med* 2012;186:190-4.
2. Campos-Rodriguez F, Martinez-Garcia MA, Martinez M, et al. Association between obstructive sleep apnea and cancer incidence in a large multicenter Spanish cohort. *Am J Respir Crit Care Med* 2013;187:99-105.
3. Christensen AS, Clark A, Salo P, et al. Symptoms of sleep disordered breathing and risk of cancer: a prospective cohort study. *Sleep* 2013;36:1429-35.
4. Marshall NS, Wong KK, Cullen SR, et al. Sleep apnea and 20-year follow-up for all-cause mortality, stroke, and cancer incidence and mortality in the busselton health study cohort. *J Clin Sleep Med* 2014;10:355-62.