

Table S1.11 Exposure assessment quality in studies of cancer at other sites among night shift workers other than aircrew

	Type of assessment 1. Objective; 2. Subjective; 3. JEM	Definition of night shift 1. Defined (exp 3+ hrs b/w 23–06) 2. Defined (other) 3. Undefined	Reference group: Past or present schedule includes NSW 1. No 2. Yes 3. Undefined	Intensity of NSW 1. Precise 2. Imprecise 3. No info	Duration of exposure to NSW 1. Complete 2. Partial (limited period) 3. Partial (1 time pt) 4. No info	Temporality of exposure 1. Complete 2. Partial 3. No info	Number of consecutive night shifts (speed of rotation) 1. Precise 2. Imprecise 3. No info	Direction of night shift rotation 1. Precise 2. Imprecise 3. No info	Type of NSW schedule 1. Perm night 2. Rotating 3. Imprecise 4. No info	Start and end times of all shifts 1. Precise 2. Imprecise 3. No info
Bhatti et al. (2013)	Subjective	Defined (exp 3+ hrs b/w 23–06)	No	Imprecise	Partial (limited period)	Complete	No info	No info	No info	No info
Carreón et al. (2014)	Objective	Defined (other)	Undefined	Imprecise	Partial (limited period)	Complete	Precise	Precise	Rotating	No info
Carter et al. (2014)	Subjective	Defined (exp 3+ hrs b/w 23–06) + Defined (other)	Undefined	No info	Partial (1 time pt)	No info	No info	No info	Perm night, Rotating	Imprecise
Costas et al. (2016)	Subjective	Defined (exp 3+ hrs b/w 23–06)	No	Precise	Complete	Complete	No info	No info	Perm night, Rotating	No info
Gu et al. (2015)	Subjective	Undefined	Undefined	Imprecise	Partial (limited period)	No info	No info	No info	No info	No info
Gyarmati et al. (2016)	Subjective	Defined (exp 3+ hrs b/w 23–06)	No	Precise	Complete	Complete	No info	No info	Perm night, Rotating	No info
Heckman et al. (2017)	Subjective	Undefined	Undefined	Imprecise	Complete	Partial	No info	No info	No info	No info
Kwon et al. (2015)	Objective + Subjective	Defined (exp 3+ hrs b/w 23–06)	No	Precise	Complete	Complete	Imprecise	Imprecise	Rotating	No info
Leung et al. (2019)	Subjective	Defined (other)	No	Precise	Complete	Complete	No info	No info	Perm night, Imprecise	No info
Lin et al. (2015)	Subjective	Defined (other)	Undefined	No info	No info	No info	No info	No info	Imprecise	No info
Lin et al. (2013)	Subjective	Defined (other)	Undefined	No info	No info	No info	No info	No info	Imprecise	No info
Parent et al. (2012)	Subjective	Defined (other)	No	No info	Complete	Complete	No info	No info	No info	No info
Poole et al. (2011)	Subjective	Undefined	Undefined	Imprecise	Complete	No info	No info	No info	No info	No info
Schernhammer et al. (2013)	Subjective	Undefined	Undefined	Imprecise	Partial (limited period)	No info	No info	No info	No info	No info
Viswanathan et al. (2007)	Subjective	Undefined	Undefined	Imprecise	Complete	No info	No info	No info	No info	No info
Yong et al. (2014a) Incidence	Objective	Defined (exp 3+ hrs b/w 23–06)	No	No info	Partial (limited period)	Complete	No info	No info	Rotating	No info
Yong et al. (2014b) Mortality	Objective	Defined (exp 3+ hrs b/w 23–06)	No	No info	Partial (limited period)	Complete	No info	No info	Rotating	No info

References

- Bhatti P, Cushing-Haugen KL, Wicklund KG, Doherty JA, Rossing MA (2013). Nightshift work and risk of ovarian cancer. *Occup Environ Med.* 70(4):231–7. <https://doi.org/10.1136/oemed-2012-101146> PMID:23343856
- Carreón T, Hein MJ, Hanley KW, Viet SM, Ruder AM (2014). Coronary artery disease and cancer mortality in a cohort of workers exposed to vinyl chloride, carbon disulfide, rotating shift work, and o-toluidine at a chemical manufacturing plant. *Am J Ind Med.* 57(4):398–411. <https://doi.org/10.1002/ajim.22299> PMID:24464642
- Carter BD, Diver WR, Hildebrand JS, Patel AV, Gapstur SM (2014). Circadian disruption and fatal ovarian cancer. *Am J Prev Med.* 46(3) Suppl 1:S34–41. <https://doi.org/10.1016/j.amepre.2013.10.032> PMID:24512929

- Costas L, Benavente Y, Olmedo-Requena R, Casabonne D, Robles C, Gonzalez-Barca EM, et al. (2016). Night shift work and chronic lymphocytic leukemia in the MCC-Spain case-control study. *Int J Cancer*. 139(9):1994–2000. <https://doi.org/10.1002/ijc.30272> PMID:27416551
- Gu F, Han J, Laden F, Pan A, Caporaso NE, Stampfer MJ, et al. (2015). Total and cause-specific mortality of U.S. nurses working rotating night shifts. *Am J Prev Med*. 48(3):241–52. <https://doi.org/10.1016/j.amepre.2014.10.018> PMID:25576495
- Gyarmati G, Turner MC, Castaño-Vinyals G, Espinosa A, Papantoniou K, Alguacil J, et al. (2016). Night shift work and stomach cancer risk in the MCC-Spain study. *Occup Environ Med*. 73(8):520–7. <https://doi.org/10.1136/oemed-2016-103597> PMID:27312400
- Heckman CJ, Kloss JD, Feskanich D, Culnan E, Schernhammer ES (2017). Associations among rotating night shift work, sleep and skin cancer in Nurses' Health Study II participants. *Occup Environ Med*. 74(3):169–75. <https://doi.org/10.1136/oemed-2016-103783> PMID:27663986
- Kwon P, Lundin J, Li W, Ray R, Littell C, Gao D, et al. (2015). Night shift work and lung cancer risk among female textile workers in Shanghai, China. *J Occup Environ Hyg*. 12(5):334–41. <https://doi.org/10.1080/15459624.2014.993472> PMID:25616851
- Leung L, Grundy A, Siemiatycki J, Arseneau J, Gilbert L, Gotlieb WH, et al. (2019). Shift Work Patterns, Chronotype, and Epithelial Ovarian Cancer Risk. *Cancer Epidemiol Biomarkers Prev*. 28(5):987–95. <https://doi.org/10.1158/1055-9965.EPI-18-1112> PMID:30842128
- Lin Y, Nishiyama T, Kurosawa M, Tamakoshi A, Kubo T, Fujino Y, et al.; JACC Study Group (2015). Association between shift work and the risk of death from biliary tract cancer in Japanese men. *BMC Cancer*. 15(1):757. <https://doi.org/10.1186/s12885-015-1722-y> PMID:26490349
- Lin Y, Ueda J, Yagyu K, Kurosawa M, Tamakoshi A, Kikuchi S (2013). A prospective cohort study of shift work and the risk of death from pancreatic cancer in Japanese men. *Cancer Causes Control*. 24(7):1357–61. <https://doi.org/10.1007/s10552-013-0214-0> PMID:23619608
- Parent ME, El-Zein M, Rousseau MC, Pintos J, Siemiatycki J (2012). Night work and the risk of cancer among men. *Am J Epidemiol*. 176(9):751–9. <https://doi.org/10.1093/aje/kws318> PMID:23035019
- Poole EM, Schernhammer ES, Tworoger SS (2011). Rotating night shift work and risk of ovarian cancer. *Cancer Epidemiol Biomarkers Prev*. 20(5):934–8. <https://doi.org/10.1158/1055-9965.EPI-11-0138> PMID:21467237
- Schernhammer ES, Feskanich D, Liang G, Han J (2013). Rotating night-shift work and lung cancer risk among female nurses in the United States. *Am J Epidemiol*. 178(9):1434–41. <https://doi.org/10.1093/aje/kwt155> PMID:24049158
- Viswanathan AN, Hankinson SE, Schernhammer ES (2007). Night shift work and the risk of endometrial cancer. *Cancer Res*. 67(21):10618–22. <https://doi.org/10.1158/0008-5472.CAN-07-2485> PMID:17975006
- Yong M, Blettner M, Emrich K, Nasterlack M, Oberlinner C, Hammer GP (2014a). A retrospective cohort study of shift work and risk of incident cancer among German male chemical workers. *Scand J Work Environ Health*. 40(5):502–10. <https://doi.org/10.5271/sjweh.3438> PMID:24892305
- Yong M, Nasterlack M, Messerer P, Oberlinner C, Lang S (2014b). A retrospective cohort study of shift work and risk of cancer-specific mortality in German male chemical workers. *Int Arch Occup Environ Health*. 87(2):175–83. <https://doi.org/10.1007/s00420-013-0843-3> PMID:23377535