Supplementary Table S3. Risk of bias assessment of the included nested case-control studies by Newcastle-Ottawa Scale

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Cohort reference | Exposure | | | Comparability | Outcome | | | Total score  (max. 8) |
| Selection of non-exposed group | Absence of outcome at start of study | Exposure measure  (first-morning/12-hour overnight urine samples) | Comparability | Outcome assessment | Adequacy of follow-up | Adequate follow-up period |
| The ORDET cohort  (postmenopausal women)1 | ★ | ★ | ★ | ★★ | ★ | ★ | ★ | 8 |
| The ORDET cohort  (premenopausal women)2 | ★ | ★ | ★ | ★★ | ★ | ★ | ★ | 8 |
| The Guernsey III study3 | ★ | ★ | ★ | ★★ | ★ | ★ | ★ | 8 |
| Women’s Health Initiative Observational Cohort4 | ★ | ★ | ★ | ★★ | ★ | ★ | ★ | 8 |
| Nurses’ Health Study II5 | ★ | ★ | ★ | ★★ | ★ | ★ | ★ | 8 |
| Nurses’ Health Study6 | ★ | ★ | ★ | ★★ | ★ | ★ | ★ | 8 |
| The DOM study | ★ | ★ | ★ | ★★ | ★ | ★ | ★ | 8 |

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For comparability, one star was given to studies that matched control participants to cases on age at urine collection, date on urine collection, and assay batch, and one extra star was given to studies that adjusted for at least five other covariates in the regression models. The adequacy of the follow-up period was set at a total follow-up period of 10+ years, and objective ascertainment of breast cancer cases was preferred over self-reported cases (unless with additional adjudication by medical records). One star was granted to studies with record linkage to cancer registry for outcome ascertainment, as record linkage is likely to achieve virtually complete follow-up.

References

1. Schernhammer ES, Berrino F, Krogh V, Secreto G, Micheli A, Venturelli E, et al. Urinary 6-sulfatoxymelatonin levels and risk of breast cancer in postmenopausal women. J Natl Cancer Inst. 2008;100(12):898-905.

2. Schernhammer ES, Berrino F, Krogh V, Secreto G, Micheli A, Venturelli E, et al. Urinary 6-Sulphatoxymelatonin levels and risk of breast cancer in premenopausal women: the ORDET cohort. Cancer Epidemiol Biomarkers Prev. 2010;19(3):729-37.

3. Wang XS, Tipper S, Appleby PN, Allen NE, Key TJ, Travis RC. First-morning urinary melatonin and breast cancer risk in the Guernsey Study. Am J Epidemiol. 2014;179(5):584-93.

4. Sturgeon SR, Doherty A, Reeves KW, Bigelow C, Stanczyk FZ, Ockene JK, et al. Urinary levels of melatonin and risk of postmenopausal breast cancer: women's health initiative observational cohort. Cancer Epidemiol Biomarkers Prev. 2014;23(4):629-37.

5. Brown SB, Hankinson SE, Eliassen AH, Reeves KW, Qian J, Arcaro KF, et al. Urinary melatonin concentration and the risk of breast cancer in Nurses' Health Study II. Am J Epidemiol. 2015;181(3):155-62.

6. Devore EE, Warner ET, Eliassen AH, Brown SB, Beck AH, Hankinson SE, et al. Urinary Melatonin in Relation to Postmenopausal Breast Cancer Risk According to Melatonin 1 Receptor Status. Cancer Epidemiol Biomarkers Prev. 2017;26(3):413-9.