Objective Shift work and risk of cardiovascular diseases (CVD) have been investigated during many decades. The evidence is, however, still conflicting. This study aims to examine whether shift work among Danish female nurses is associated with the risk of CVD.

Methods Of 16 086 nurses without previous CVD events at baseline, 5504 developed CVD during a mean follow-up of 16 years, with an incidence rate of 21.4 cases per 1000 person-years. 63.4% of the nurses reported day work as their primary work schedule, while 10.0%, 5.3% and 21.6% worked in evening, night and rotating shifts, respectively. We found no associations between shift work and the risk of CVD when compared to day workers, with hazard ratio of 0.99 (95% confidence interval 0.91–1.09) for evening and 1.01 (0.90–1.13) for night and 1.03 (0.96–1.10) for rotating shifts, in the fully adjusted model.

Conclusions We found no evidence of an increased risk of CVD among female shift workers.

In 1982 IARC concluded that there was sufficient evidence for a causal association between occupational exposures in the rubber manufacturing industry and urinary bladder cancer and leukaemia. To enable evaluations of exposure-response associations in a cohort of men age 35+ employed in the British rubber industry in 1967 with a 49 year mortality followup (n=40,867), we created a quantitative historical job-exposure matrix (JEM) covering the period 1915–2000 based on personal and area measurements previously collated within the EU-EXASRUB project for rubber dust (n=4,187), rubber fumes (n=3,852), and n-Nitrosamines (n=10,215). These data were modelled by job function using linear mixed-effects models with sample year and industry sector as explanatory factors and a random factory intercept.

Variations in exposure levels over time between compounds and department were observed. For example, rubber dust exposures ranged from −8.8%/yr (crude materials and mixing, p<0.001) to +0.5%/yr (curing, p=0.01) while rubber fumes exposures declined between −8.3%/yr (crude materials and mixing, p<0.001) and −0.2%/yr (finishing, assembly, and miscellaneous, p=0.218).

JEM-estimates were linked to all cohort members for each year worked to calculate average annual and lifetime cumulative exposures (AAE, LCE), thereby allowing quantitative evaluation of exposure-response associations between 50 year occupational exposure and cancer mortality. AAE rubber dust exposures ranged between 0.3 mg/m³ (curing) and 36.3 mg/m³ (crude materials and mixing). Rubber fumes exposures ranged between 0.3 mg/m³ (finishing, assembly, and miscellaneous) and 5.4 mg/m³ (crude materials and mixing). LCE trends mirrored AAE results.