

Abstract #: 260**Smoking, body mass index, and risk of vasomotor symptoms: a pooled analysis of eight studies**Hsin-Fang Chung¹, Debra Anderson², Gita Mishra¹¹School of Public Health, University of Queensland, Brisbane, Australia, ²University of Technology Sydney, Sydney, Australia

Background: Vasomotor symptoms (VMS), including hot flushes and night sweats, are linked with adverse health outcomes. This study investigated the associations between smoking, body mass index (BMI), and their joint effects with the risk of VMS.

Methods: We pooled individual-level data on 21,460 midlife women from eight cohort studies in the InterLACE consortium. Frequency or severity of VMS were self-reported and categorised into four levels (from none to frequent/severe). Multinomial logistic regression models were used to estimate relative risk ratios (RRRs) and 95% CIs adjusted for within-study correlation and covariates.

Results: Nearly 60% of the women experienced some degree of VMS; 30% were overweight, 21% obese, and 17% current smokers. We found that smoking more cigarettes with longer duration and earlier initiation and being overweight or obese were all associated with more frequent/severe VMS. Never smokers who were obese had a 1.5-fold increased risk of frequent/severe VMS (RRR 1.52, 95%CI 1.35-1.73), compared with never smokers who were of normal-weight. Smoking strengthened the association because the risk of frequent/severe VMS was much greater among smokers who were obese (RRR 3.02, 95%CI 2.41-3.78). However, women who quit smoking before age 40 years had a similar level of risk as never smokers.

Conclusions: Cigarette smoking and overweight/obesity substantially increased women's risk of frequent or severe VMS in a dose-response manner, and smoking intensified the effect of obesity.

Key messages: Quitting smoking before age 40 years and maintaining a normal weight before the menopausal transition may mitigate the excess risk of VMS in midlife.