Response to Letter Regarding Article, “Frequent Physical Activity May Not Reduce Vascular Disease Risk as Much as Moderate Activity: Large Prospective Study of Women in the United Kingdom”

We thank Lin and colleagues for drawing attention to hypotheses about the possible role of heavy manual work and work-related stress in vascular disease. We previously reported associations between coronary heart disease, cerebrovascular disease, and venous thromboembolism risk and the frequency of strenuous activity and of any activity.1 We also assessed the associations between these diseases and walking, gardening, cycling, housework, and strenuous activity, which were reported for the first time ≈3 years after recruitment.1 At that time, women were asked about whether or not they were in paid work: about half (53%) reported that they were not in paid work.

Findings for women not in paid work cannot be confounded by heavy manual work or stress at work. We therefore conducted further analyses for vascular disease risk associated with physical activity, restricted to the 376,732 women who reported not being in paid work, using the date at which they reported their employment status as the start of follow-up. Similar to our previous findings for all women,1 we again observed that the lowest risks were among women with a moderate frequency of physical activity, suggesting that these associations are not attributable to heavy manual work or stress at work. (There may, of course, be residual confounding with other factors, as discussed in our original article.)

The results for the frequency of strenuous physical activity among women who reported not being in paid work are presented here, for comparison with our findings for all women.1 For coronary heart disease risk (20,861 cases), in comparison with inactive women, the women who were active at most once per week had a relative risk (RR) of 0.85 (95% confidence interval [CI], 0.82–0.87), women active 2 to 3 times per week had an RR of 0.80 (95% CI, 0.77–0.84), women active 4 to 6 times per week had an RR of 0.74 (95% CI, 0.67–0.81), and those active daily had an RR of 0.91 (95% CI, 0.84–0.99). For cerebrovascular disease (7638 cases), the corresponding RRs and 95% CIs were 0.83 (0.78–0.88), 0.84 (0.78–0.90), 0.84 (0.74–0.97), and 0.92 (0.80–1.05), for venous thromboembolism (5999 cases), the corresponding RRs and 95% CIs were 0.85 (0.80–0.90), 0.82 (0.76–0.89), 0.86 (0.73–1.00), and 0.98 (0.84–1.13). The P values for heterogeneity across activity levels were significant (P<0.001) for each vascular disease. Similar to our previous findings for all women,1 we again observed that the lowest risks were among women with a moderate frequency of physical activity, suggesting that these associations are not attributable to heavy manual work or stress at work. (There may, of course, be residual confounding with other factors, as discussed in our original article.)

In summary, about half the women in this study were not in paid work, and results restricted to them still support our main conclusion that moderate physical activity is associated with lower risks than inactivity for coronary heart disease, stroke, and venous thromboembolism and that, among active women, there is little evidence to suggest greater benefits with increasing the frequency of activity.

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Disclosures
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