## COMMENTS AND RESPONSES

# Comment on: Torres-Mejía et al. Moderate-Intensity Physical Activity Ameliorates the Breast Cancer Risk in Diabetic Women. Diabetes Care 2012; 35:2500–2502

We read with great interest the article by Torres-Mejía et al. (1) showing that moderate-intensity physical activity can substantially ameliorate the increased risk of breast cancer (BC) in diabetic women. In addition, higher serum levels of C-peptide, IGF-1, and IGF-1 binding protein 3 (IGFBP3) were found to increase BC risk in premenopausal women. The finding is important because there is little evidence on physical activity and BC risk in diabetic women. In this letter, we would like to draw attention to several aspects.

First, compared with the least active women, a 50% and 70% reduction in BC risk was observed for premenopausal women and postmenopausal women taking more than 19 h/week of moderate-intensity physical activity, respectively. The effect is very strong and, if not by chance, the finding is important for the primary prevention of BC in diabetic women. However, very few women could take more than 19 h/week of moderate-intensity physical activity, especially diabetic women. In our recent meta-analysis (2), the BC risk decreased by 4%, 9%, 12%, 15%, and 17% for women taking 1.5, 3.5, 5.5, 7.5, and 9.5 h/week of moderate-intensity physical activity, respectively.

Second, although we found a significant association of physical activity with invasive BC risk (relative ratio = 0.81, 95% CI = 0.73–0.91) (2), a recent study by Steindorf et al. (3) showed no evidence of an association between physical activity and in situ BC risk. Only a marginally significant association (relative ratio 0.88 [95% CI 0.77–1.00]) of physical activity with in situ BC risk was found when combining our result with that of Steindorf et al. (3). Besides, BMI, estrogen receptor, and progesterone receptor status were also shown significantly influencing the association between physical activity and BC risk (2). However, the above-mentioned information was not provided in the article (1). Therefore, the findings need to be confirmed in diabetic women, especially for the findings with in situ BC. This is important for the primary prevention of BC as in situ BC is considered a risk factor or precursor of subsequent invasive BC (4).

Third, previous studies found that physical activity could significantly decrease levels of insulin, C-peptide, and IGF-1 (5). Torres-Mejía et al. (1) found that higher serum levels of C-peptide, IGF-1, and IGFBP3 could increase BC risk in diabetic women. This important finding contributes to the current evidence that diabetes increases BC risk and that physical activity decreases BC risk.

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