

## OBESITY, DIET, AND PHYSICAL INACTIVITY AND RISK OF BREAST CANCER IN THAI WOMEN

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### ABSTRACT

To evaluate the relationship between obesity, diet, physical activity and breast cancer in Thai women, we conducted a case control study with 1130 cases and 1142 controls. The informed consent was obtained from all participants and a structured questionnaire was performed by trained interviewers to collect information on demographic and anthropometric data, reproductive and medical history, residential history, physical activity and occupation as well as dietary habits. A significant positive association with an increased risk of breast cancer was observed in women body mass index (BMI) of  $\geq 25$  mg/m<sup>2</sup> (OR=1.33, 95%CI 1.07-1.65), the risk was higher in postmenopausal women (OR=1.67, 95%CI 1.24-2.25). In addition, the underweight of BMI at age 10 and 20 years showed an inverse association in all women (OR=0.70, 95%CI 0.56-0.88 and OR=0.74, 95%CI 0.59-0.93, respectively) and in premenopausal status (OR=0.69, 95%CI 0.51-0.93 and OR=0.76, 95%CI 0.56-0.99, respectively). Regular exercise was associated with a decreased risk of breast cancer (OR=0.78, 95%CI 0.68-0.98). Interestingly, analysis by type of activity revealed significant protective effects for women who reported the highest levels of walk for shopping (OR=0.58, 95%CI 0.38-0.88). High consumption of vegetable and fruit were associated with a decreased risk of breast cancer, in contrast, high consumption of animal fat showed an increase risk in postmenopausal women.

In conclusion, our results indicated that obesity and high consumption of animal fat are associated with breast cancer risk particularly in postmenopausal women, while the recreational physical activity has protective effects on breast cancer. It seems that primary prevention of breast cancer should be promoted in an integrated manner. Effective strategies need to be identified to engage women in healthy lifestyles.

**Key words:** breast cancer, diet, obesity, physical activity, case control study