
Session 8: Cancer prevention: Metabolic aspects; proffered papers/best abstracts and question forum

S34. Metabolic aspects of cancer prevention: Intermittent is at least as effective as continuous calorie restriction in women at risk of breast cancer

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Excess energy, whether it is the form of high energy diets or low energy expenditure (sedentary lifestyle), is a risk factor for breast cancer. Observational studies show that continuous energy restriction (CER) or exercise reduce risk, particularly of postmenopausal breast cancer. Animal data indicate that intermittent energy restriction (IER) may be superior to or at least as effective as continuous calorie restriction in preventing or reducing the growth rate of mammary tumours. IER may also be more acceptable than CER which has been difficult to implement.

In order to test the effectiveness and acceptability of IER, we performed a randomised trial of IER (n=53) versus CER (n=54) in overweight or obese women (baseline weight IER 81.5±14.3 kg, CER 84.4±17.2 kg).

Energy restriction was 25% in both arms. IER subjects had 650 kcal on 2 days per week and ad lib food on other days, CER subjects had ~1500 kcal/day over 7 days. 12 of the IER and 7 CER women did not complete 6 months restriction. In completers (n=41 vs n=46). IER vs CER for weight loss (7.5±4.8 v 6.2±4.3 kg, p 0.199), decrease in waist circumference (7.6±5.3 cm vs 5.5±3.6 cm, p 0.054), decrease in insulin resistance -0.4 (0.5 0.17 0.5 (HOMA p<0.056). There were no significant differences in changes in lipids, SHBG and hormones.

These data indicate that 2 day IER gives similar results to CER with respect to the parameters measured and may be an alternative approach to energy restriction. We need to investigate the mechanism of IER and its optimal duration and its influence on mammary cell function.