

Dietary fat and breast cancer survival: a systematic review and meta-analysis

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As the number of breast cancer survivors increases worldwide⁽¹⁾, there is growing interest in the potential effect of dietary and lifestyle behaviours on overall prognosis. This is especially important as a cancer diagnosis is often referred to as a 'teachable moment'⁽²⁾ as patients seek information about lifestyle behaviours and so provision of evidence-based guidelines is essential. A positive association between dietary fat and breast cancer risk has been previously reported⁽³⁾ but its influence upon breast cancer survival is unclear. The aim of this review and meta-analysis is to critically appraise the literature published to date and to conduct meta-analyses to pool the results of studies to clarify the association between dietary fat and breast cancer survival.

Relevant articles published up to March 2011 that examined dietary fat and breast cancer recurrence and survival were identified from searches in MEDLINE and EMBASE. Meta-analyses were conducted in which we evaluated the risk of all-cause or breast cancer death in women in the highest compared with the lowest categories of total fat intake (g/d) and per 20 g increase in intake of dietary fat. Multivariable adjusted relative risks (RR) and 95% CI from individual studies were weighted and combined using a random-effects model to produce a pooled estimate.

Twelve prospective cohort studies that investigated total fat intake (g) and breast cancer survival, and/or provided information on fat intake from which a linear trend could be estimated, were included in the analyses. There was no evidence of a difference in risk of breast cancer death (RR = 1.14; 95% CI 0.86, 1.52; $P = 0.34$) or all cause death (RR = 1.73; 95% CI 0.82, 3.6; $P = 0.15$) between the highest and lowest categories of total fat intake. Similarly, no significant difference in risk of breast cancer death (RR = 1.03; 95% CI 0.97, 1.10; $P = 0.261$) or all-cause death (RR = 1.06; 95% CI 0.88, 1.28; $P = 0.52$) was found per linear (20 g) increase in total fat intake.

The results of this systematic review and meta-analysis do not support an association between total dietary fat and breast cancer survival. Further investigation into the effect of specific types of dietary fat and breast cancer survival is of interest.

1. Cancer Research UK (2011) Available from: <http://info.cancerresearchuk.org/cancerstats/types/breast/> (updated 3 February 2011).
2. Demark-Wahnefried W, Aziz NM, Rowland JH *et al.* (2005) *J Clin Oncol* **23**, 5814–5830.
3. Boyd NF, Stone J, Vogt KN *et al.* (2003) *Br J Cancer* **89**, 1672–1685.