



## Association between red and processed meat with breast cancer: Comment on “Red and processed meat intake and risk of breast cancer: a meta-analysis of prospective studies” by Guo et al.

Ran Xu<sup>1</sup> · Jing Zhu<sup>2</sup>

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To the Editor,

We have reviewed with great interest the article by Guo et al. entitled “Red and processed meat intake and risk of breast cancer: a meta-analysis of prospective studies” [1], which evaluated the association of red and processed meat intake with breast cancer risk. The authors concluded that increased intake of red and processed meat is associated with an increased risk of breast cancer. We appreciate for the authors’ thorough analysis. However, we found several worthwhile issues that need to be addressed by the authors.

First and foremost, the authors did not follow the selection criteria when they searched the database. This is a meta-analysis of prospective studies, thus the included studies must belong to prospective study. In the study selection section, the authors claimed that case–control studies, ecological assessments, correlation studies, experimental animal studies, and mechanistic studies were excluded in this meta-analysis. However, a case-control study was included in this study [2]. Actually, Shannon et al. conducted a case-control study of breast cancer in Shanghai which did not belong to prospective study [2]. The study by Shannon et al. did not meet the inclusion criteria but did meet the exclusion criteria “Case–control studies, ecological assessments, correlation studies, experimental animal studies, and mechanistic studies were excluded.” As this case-control study was included in this meta-analysis, we think the strength of their conclusion may be weakened.

Secondly, the authors only searched the literature from PubMed up to October 2014. We believe that a comprehensive search should include MEDLINE, the Cochrane Central Register of Controlled Trials (CENTRAL), Google Scholar, CINAHL, OvidSP et al. Searching only one database is far from enough in a meta-analysis. Therefore, more electronic databases should be systematically searched in order to obtain more relevant information of this meta-analysis.

Finally, we noticed that the authors made a funnel plot for prospective studies of red meat and breast cancer. There were 16 points in the Fig. 4, but only 14 trials were included in this meta-analysis. We hope that the authors could explain this issue.

Overall, we respect the authors’ contribution in this meta-analysis. Guo et al. analyzed an interesting issue but the accuracy of conclusion is doubtful due to the limitations mentioned above. We hope that the authors could correct the inconsistencies and inaccuracies in this meta-analysis.

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### Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

**Ethical approval** This manuscript complies with the ethical rules applicable for this journal.

**Informed consent** For this type of study, formal consent is not required.

**Research involving with human and animal rights** This article does not contain any studies with human participants or animals performed by any of the authors.

✉ Jing Zhu  
cellbiology@126.com

<sup>1</sup> Medical School of Nantong University, Jiangsu 226001, China

<sup>2</sup> Department of Oncology, The Affiliated Huaian No. 1 People’s Hospital of Nanjing Medical University, No. 6 Beijing West Road, Jiangsu 223001, China

## References

1. Guo J, Wei W, Zhan L (2015) Red and processed meat intake and risk of breast cancer: a meta-analysis of prospective studies. *Breast Cancer Res Treat* 151(1):191–198
2. Shannon J, Ray R, Wu C, Nelson Z, Gao D, Li W, Hu W, Lampe J, Horner N, Satia J et al (2005) Food and botanical groupings and risk of breast cancer: a case-control study in Shanghai, China. *Cancer Epidemiol Biomark Prev* 14(1):81–90