

EPIC–Oxford Newsletter 2022



Hello again from all of us here at the EPIC-Oxford Study!

During 2021 and 2022 EPIC-Oxford has continued to provide important evidence on the relationships of diet and other factors with long-term health, with our main focus on the health of vegetarians and vegans as well as collaborative work in the EPIC study across Europe on risk factors for cancer and other chronic diseases. We thank all the participants in EPIC-Oxford and the funding agencies for their continued support. In the last year, the data you have contributed to EPIC-Oxford (www.epic-oxford.org) have been included in analyses leading to more than 50 scientific publications. Below we summarize the findings from a few of these.



Overview of “plant-based diets” and long-term health

Major findings from EPIC-Oxford were presented in a plenary lecture at the Nutrition Society Summer Conference in 2021 “Nutrition in a changing world”, hosted by the University of Southampton. The concept of plant-based diets has become popular due to the purported benefits for both human health and environmental impact. Important characteristics of plant-based diets which would be expected to be beneficial for long-term health are low intakes of saturated fat and high intakes of dietary fibre, whereas potentially deleterious characteristics are the risk of low intakes of some micronutrients such as vitamin B12, vitamin D, calcium and iodine, particularly in vegans. Vegetarians and vegans typically have lower body mass index (obesity), serum LDL (“bad”) cholesterol and blood pressure than comparable regular meat-eaters, as well as slightly lower bone mineral density. Vegetarians in EPIC-Oxford have experienced a relatively low risk of ischaemic heart disease, diabetes, diverticular disease, kidney stones, cataracts and possibly some cancers, but a relatively high risk of stroke (principally haemorrhagic stroke) and bone fractures, in comparison with meat-eaters. Vegans in EPIC-Oxford have experienced a lower risk of diabetes, diverticular disease and cataracts and a higher risk of fractures (particularly at the hip), but there are insufficient data for other conditions to draw conclusions. Overall, the health of people following vegetarian and vegan diets appears to be generally good, with advantages but also some risks, and the extent to which the risks may be mitigated by optimal food choices, fortification and supplementation is not yet known.

Proc Nutr Soc. 2022 May;81(2):190-198.
<https://pubmed.ncbi.nlm.nih.gov/35934687/>



Insulin-like growth factors and prostate cancer risk; direct and genetic evidence

Prostate cancer is the most common cancer among men in the UK, but its causes are not well understood. We used data from EPIC-Oxford, together with data from other EPIC centres across Europe and other collaborating studies around the world, to examine the role of a hormone called insulin-like growth factor-I (IGF-I) in the development of prostate cancer. We showed that men with higher levels of IGF-I in their blood have a moderately increased risk for prostate cancer, and confirmed that this association is likely to be causal by also showing that minor genetic differences that lead to slightly higher blood levels of this hormone also predict a slightly higher risk. Importantly, we also found that high IGF-I is associated with risk of the more aggressive types of prostate cancer. Overall, the evidence implicating IGF-I as a contributing cause of prostate cancer is now strong, and we are continuing other research to establish whether diet has a significant effect on the levels of this hormone, using dietary information and blood samples from EPIC and other studies.

Int J Epidemiol. 2022 Jun 21:dyac124.
<https://pubmed.ncbi.nlm.nih.gov/35726641/>



Meat consumption and risk of ischaemic heart disease: a systematic review and meta-analysis

There is still uncertainty regarding the association between meat consumption and the risk of ischaemic heart disease (IHD), and little is known regarding the association with poultry intake. We therefore conducted a systematic review and “meta-analysis” (statistical averaging of all the results available) to assess the evidence from all published prospective studies. Data were included from 13 cohort studies. We found a 9% higher risk of IHD per 50 g per day higher intake of unprocessed meat, and an 18% higher risk per 50 g per day higher intake of processed meat, while there was no association for poultry intake. This study provides substantial evidence that consuming unprocessed red meat and processed meat, though not poultry, is associated with a higher risk of developing IHD. The mechanisms for the association were not investigated in this analysis, but it may be due to saturated fat as well as the high salt content of most processed meat.

Crit Rev Food Sci Nutr. 2021 Jul 20:1-12.
<https://pubmed.ncbi.nlm.nih.gov/34284672/>



Metabolomic profiles in meat-eaters, fish-eaters, vegetarians and vegans

“Metabolomics” is a modern laboratory analytical method which makes it possible to measure a wide range of chemicals called metabolites (which are derived both from diet and from the actions of the liver and other organs of the body) in just a few drops of blood. These measurements can be assessed as broad patterns and may be characteristic of diet and also predictive of various diseases. Looking at these measures in a sample of participants in EPIC-Oxford, we

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found that metabolomic profiles varied markedly by diet group, especially for vegans. The main differences compared to meat-eaters were lower levels of DHA, total n-3 and saturated fatty acids, cholesterol and triglycerides in very-low-density lipoproteins, various lipid fractions in high-density lipoprotein, sphingomyelins, tyrosine and creatinine; and higher levels of linoleic acid, total n-6, polyunsaturated fatty acids and alanine. We are now looking further at the relationships of these metabolic profiles with disease risk using data from both EPIC and the UK Biobank.

Metabolites. 2021 Feb 20;11(2):121.

<https://pubmed.ncbi.nlm.nih.gov/33672542/>



New study on plant-based diets

“Feeding the Future” – or FEED – is a new online survey which aims to generate up-to-date information on diets in the UK, with a focus on the contemporary diets of those following plant-based diets including vegans, vegetarians, fish eaters and “flexitarians”. We have already recruited nearly 4,000 participants, and are starting data analyses, looking particularly at intakes of protein and vitamin B12 in people choosing current plant-based meat and dairy alternatives. The study is still recruiting, so if you are interested please look at the webpage:

<https://www.ceu.ox.ac.uk/research/feeding-the-future-study-feed>



Public engagement in 2021 and 2022

We have presented our work widely to the public, putting our research in EPIC-Oxford in the context of our group’s research on nutrition and other diseases, and more broadly in relation to the best dietary choices for health and for the environment. We have presented our findings to a range of audiences including at the Oxford Science Museum, the Blenheim Food Festival, the Witney Festival of Food and Drink, the “Meat your persona” UK tour on the health and environmental impacts of meat (which received the Oxford University Vice-Chancellor’s Award for Innovation and Engagement), and radio interviews stimulated by Veganuary. We have also contributed to the World Health Organization’s European Office for the Prevention and Control of Noncommunicable Diseases fact sheet on plant-based diets and their impact on health, sustainability and the environment, which is aimed at informing the public across Europe.



The EPIC-Oxford Participant Panel

Recruiting again now! Be part of the EPIC-Oxford Participant Panel. We established a participant panel for the EPIC- Oxford study in 2019, consisting of a group of existing study participants who meet with the EPIC team about once a year via video conference. It is important for us to have a participant panel to discuss and take advice on issues such as areas for research, providing adequate

information about the study, disseminating research findings and writing lay summaries, and providing feedback on the use of health data. The most recent online meeting of the Panel was held in October 2022. The main topics on the agenda were an update on our research, in particular seeking the advice of the members on the new revised version of the study website. Constructive feedback was received, agreeing that the revisions to the website have addressed their previous concerns for improved accessibility and transparency, with some additional advice for further improvements. We would like to expand the number of volunteers on this panel so if you would like to volunteer or wish to know more about the panel, please email us at queries@epic-oxford.org for further information.

Thank you

We would like to thank all of the EPIC-Oxford participants for your continued support. If you wish to contact us our details can be found below. Our website is regularly updated with news and new publications, and we value the support of our participants to be able to continue this important research.

Our Team

The Principal Investigator of EPIC-Oxford is Professor Tim Key and the Co-Investigator is Professor Ruth Travis. The study is co-ordinated by the Steering Committee, comprising Professors Key and Travis and Dr Tammy Tong.

Please be reminded that participants in EPIC-Oxford are free to withdraw from the study at any time. Full details of how to do this, as well as details of how we use your data, are given on our website at <https://www.ceu.ox.ac.uk/research/epic-oxford-1/for-participants/frequently-asked-questions-1> or if you don’t have access to the website you can contact us by e-mail or telephone. Our privacy policy can also be viewed at <https://www.ceu.ox.ac.uk/research/epic-oxford-1/for-participants/data-protection>.

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